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COMPACT HANDBOOK
OF THE
BIRDS
OF INDIA
AND PAKISTAN

COMPACT HANDBOOK OF THE
BIRDS
OF INDIA
AND PAKISTAN
*TOGETHER WITH THOSE OF BANGLADESH,
NEPAL, BHUTAN AND SRI LANKA*

SECOND EDITION

SÁLIM ALI
AND
S. DILLON RIPLEY

WITH 104 PLATES
DEPICTING ALL THE SPECIES
BY
JOHN HENRY DICK

*Sponsored by the
Bombay Natural History Society*

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CONTENTS

Publisher's note to the second edition	vi
Note to the first edition	vii
Acknowledgements	ix
Systematic index	xi
List of plates	xxiii
Introduction	xxix
General	xxxix
Migration	xxxix
Zoogeography of the Indian Subregion	xxxiv
Physical map of the Indian Subregion, showing distribution of climatic types	between xxxvi and xxxvii
Systematics of Birds of the Indian Subregion	xxxvii
Glossary of Terms for Physical Units	xxxix
Changes in territorial names	xl
Terms used in the Description of a Bird	xli
Abbreviations	xliv
Descriptive texts, Appendices and References cited	
Vol. 1	1
2	95
3	180
4	260
5	325
6	393
7	453
8	511
9	579
10	654
Eclectic bibliography	715
Regional references	721
Consolidated index to Vols. 1–10	
Scientific names	723
English names	733
Plates	

PUBLISHER'S NOTE TO THE SECOND EDITION

This book was first published as *The Handbook of the Birds of India and Pakistan: Compact Edition*. The title has now been changed to *Compact Handbook of the Birds of India and Pakistan*, Second Edition.

The second edition includes the revised texts of Volumes 1-4. The 113 colour plates by diverse artists which appeared in the original *Handbook* volumes have been replaced with 104 plates by the well-known American bird painter, John Henry Dick. These new illustrations originally appeared in *A Pictorial Guide to the Birds of the Indian Subcontinent* (1983) and depict *all* the bird species found in the subcontinent (the original plates contained only some 900 illustrations of the over 1220 species described). All references to the plates in the text of the *Compact* have now been altered to match the numbering of the new plates.

The Bombay Natural History Society and the authors acknowledge the munificence of the U.S. Fish & Wildlife Service (Department of the Interior) and John Henry Dick for the 104 plates which illustrate this edition of the *Compact Handbook*. They feel especially beholden to the U.S. Fish & Wildlife Service and to the U.S. Embassy in India for their continued good offices in arranging the transport of the plates between the U.S.A. and India; also for making possible the overseas travel of the artist for carrying out necessary alterations to some of the plates.

The birds illustrated in this edition are in adult plumage, unless otherwise stated. The following abbreviations and symbols are used in the plates:

ad- = subadult	↓ = from above	} for birds in flight
imm = immature	↑ = from below	
juv = juvenile	● = dark phase	
S = summer	○ = pale phase	
W = winter	◐ = intermediate phase	
br+ = breeding	SE = species extralimital	
br- = non-breeding	RE = race extralimital	

NOTE TO THE FIRST EDITION

The *Handbook* was first published in ten volumes from 1968 to 1975. Volumes 1–3 have since appeared in second editions and new editions of the remaining volumes are in preparation. The *Compact Edition* contains the complete descriptive text of the ten volumes as they stand. It thus includes the texts of the second editions of Volumes 1–3 and the first editions of Volumes 4–10. Like the original ten volumes, the *Compact Edition* contains 113 colour plates altogether; but twenty-four of these are new and replace most of those taken from Smythies' *Birds of Burma* for the first editions of the separate volumes.

In the *Compact Edition* the main descriptive text of the ten volumes, along with the references cited in each volume and the Appendices for Volumes 1–4, appear in a photographically reduced form, with four pages of the original text occupying one page of the *Compact Edition*. The page headings indicate the Volume and its relevant page numbers. The text type and black-and-white line drawings have been reduced to seventy per cent of their original size, but the magnifications printed below the drawings have not been altered. Users of this volume should thus note that the drawings are three-tenths smaller than suggested by the magnifications printed below them.

The preliminary pages of the *Compact Edition* include a systematic index and list of plates that are relevant for the complete work, as also the Introduction, which has been abstracted from Volume 1. The volume contains the Eclectic Bibliography and Consolidated Index of Scientific and English Names which were published in Volume 10, and all the colour plates are grouped together (in their original sizes) at the end of the book. There are a few minor variations between the captions to the plates and the text; the text has not been altered, but the captions incorporate taxonomic changes that have occurred since the *Handbook* was first published.

ACKNOWLEDGEMENTS

IN the Introduction to Volume I (pp. xxx-xxxi) we expressed our indebtedness to a number of individuals and institutions for various courtesies received. To these we must now add many more but for whose active and solicitous collaboration the progress of these volumes could not have been half so smooth or expeditious.

Gorman M. Bond, already named before, began his association with the project almost from its start in 1964. He provided much of the basic material for the preparation of the Keys in the earlier volumes. Subsequently this work was ably taken over by Michel Desfayes who was responsible also for the methodical and efficient arrangement of a part of Hugh Whistler's voluminous manuscript notes in conformity with the pattern laid down by the authors. Both these men laboured punctiliously in bringing up to date all references and citations — Desfayes also in preparing skeleton drafts of the text and sketches of the Distribution Maps for the later volumes. We are deeply beholden to them. We must also express high appreciation of the painstaking industry with which Miss Adele Issa typed the bulky first drafts of the MSS. from the Washington side. On the Indian side the conscientious and unflagging help of J. S. Serrao was indispensable. Throughout the execution of the project — from the initial extracting of the literature through the protracted drudgery of 'decoding', typing and retyping the first untidy handwritten drafts, and sometimes two or more redrafts, up to the final copy for the printer, the correcting of successive printer's proofs and revises, and the preparation and checking of the indexes and bibliography — he slogged ungrudgingly and even seemingly cheerfully! Furthermore it was a rare facility to have such skilful artists as Jamshed P. Irani and his wife Hutokshi, 'on tap' as it were, ever ready to render prompt help in all matters concerning art work.

The list of all the parties to whom we are indebted is too long to detail here. But one who has earned our very special obligation is Roy E. Hawkins. His personal interest and sense of participation in the project from its inception, first in his official capacity as head of the Indian branch of Oxford University Press, and after his retirement in 1970 as friend and fellow bird-watcher, were invaluable. Hawkins's long experience in book publishing, his meticulous eye for detail ('Hawk's eye'), and his running bombardment of helpful queries, suggestions and criticisms — right from the MS. stage to the finished product — made all the difference.

Biswamoy Biswas, whose association with the project was acknowledged in the Introduction (Vol. I), maintained his erudite and helpful cooperation throughout the work. His comments and criticisms of the MS. drafts have saved us from many a hidden pitfall, and we are deeply grateful to him.

In the Introduction we had also paid tribute to the outstanding contribution to Indian ornithology in the early years of the present century by Hugh Whistler and Claud Ticchurst who worked in intimate collaboration. During the preparation of these volumes we had abundant occasion for a closer scrutiny and assessment of their joint and several contributions. Whistler's MS. notes, now reposing in the British Museum (Natural History), bespeak a thoroughness and scientific acumen coupled with phenomenal industry that cannot but command unbounded admiration. Indian ornithology indeed owes a heavy debt to these two dedicated workers. And finally, we must record our grateful appreciation to the authorities of the Bird Room of the above museum for so readily making available to us xeroxed copies of Whistler's unpublished MSS. and collected extracts. This unique and authentic source material is a very valuable addition to the fund of literature on Indian birds in our respective institutions.

SYSTEMATIC INDEX

VOLUME I

Order GAVIIFORMES

- Family GAVIIDAE: Divers, Loons
1 Blackthroated Diver, *Gavia arctica uschinski* (Zarudnyi) 1
2 [Redthroated Diver, *Gavia stellata* (Pontoppidan)] 2

Order PODICIPITIFORMES

- Family PODICIPEDIDAE: Grebes
3 Great Crested Grebe, *Podiceps cristatus cristatus* (Linnaeus) 3
3a Rednecked Grebe, *Podiceps grisegena* (Boddaert) 5,369
4 Blacknecked Grebe, *Podiceps nigricollis nigricollis* Brehm 5
5 Little Grebe or Dabchick, *Podiceps ruficollis capensis* Salvadori 6

Order PROCELLARIIFORMES

- Family PROCELLARIIDAE: Petrels, Shearwaters
6 Cape Petrel, *Daption capensis* (Linnaeus) 10
7 Whitefronted or Streaked Shearwater, *Procellaria leucomelana* Temminck 11
8 Pinkfooted Shearwater, *Procellaria carmelis* (Gould) 11
9 Wedgetailed Shearwater, *Procellaria pacifica chlororhyncha* (Lesson) 12
10 Slenderbilled or Short-tailed Shearwater, *Procellaria tenuirostris* Temminck 13
11 Mauritius Shearwater, *Procellaria thermani* Baillon Bonaparte 13
12 Persian Shearwater, *Procellaria thermani perica* (Hume) 14
13 Mascarene Black Petrel, *Bulweria aterrima* (Bonaparte) 15
13a Jousanin's Gadfly Petrel, *Bulweria fallax* Jousanin 15
13b Bulwer's Gadfly Petrel, *Bulweria bulwerii* (Jardine & Selby) 16
Family HYDROBATIDAE: Storm Petrels
14 Wilson's Storm Petrel, *Oceanites oceanicus oceanicus* (Kuhl) 17
15 Duskyvented Storm Petrel, *Fregetta tropica melanogaster* (Gould) 20
16 Forktailed Storm Petrel, *Oceanodroma leucorhoa minoris* (Swinhoe) 21

Order PELECANIFORMES

- Family PHAETHONTIDAE: Tropic-birds
17 Short-tailed Tropic-bird, *Phaethon aethereus indicus* Hume 22
18 Redtailed Tropic-bird, *Phaethon rubricauda rubricauda* Boddaert 24
19 White Tropic-bird, *Phaethon lepturus lepturus* Daudin 24

- Family PELECANIDAE: Pelicans
20 White or Rosy Pelican, *Pelecanus onocrotalus* Linnaeus 27
21 Spottedbilled or Grey Pelican, *Pelecanus philippensis philippensis* Gmelin 29
22 Dalmatian Pelican, *Pelecanus philippensis crispus* Bruch 30

- Family SULIDAE: Boobies
23 Masked Booby, *Sula dactylatra melanops* Heuglin 32
24 Redfooted Booby, *Sula sula rubripes* Gould 33
25 Brown Booby, *Sula leucogaster plotus* (Forster) 34

- Family PHALACROCORACIDAE: Cormorants and Darter
26 Large Cormorant, *Phalacrocorax carbo sinensis* (Shaw) 37
27 Indian Shag, *Phalacrocorax fuscicollis* Stephens 39
28 Little Cormorant, *Phalacrocorax niger* (Vieillot) 41
28a Pygmy Cormorant, *Phalacrocorax pygmaeus* (Pallas) 42
Darter or Snake-bird, *Anhinga rufa melanogaster* Pennant 43

- Family FREGATIDAE: Frigate Birds or Man-of-war Hawks
30 Christmas Island Frigate Bird, *Fregata aendrii* Mathews 47
31 Lesser Frigate Bird, *Fregata minor albobrunis* Mathews 47
32 Least Frigate Bird, *Fregata ariel iridalei* Mathews 49

Order CICONIIFORMES

- Family ARDEIDAE: Herons, Egrets, Bitterns
33 Great Whitebellied Heron, *Ardea insignis* Hume 53
34 Giant Heron, *Ardea goliath* Cretzschmar 53
35 European Grey Heron, *Ardea cinerea cinerea* Linnaeus 54
36 Eastern Grey Heron, *Ardea cinerea rectirostris* Gould 55
37 Western Purple Heron, *Ardea purpurea manilensis* Meyen 57
37a Eastern Purple Heron, *Ardea purpurea purpurea* Linnaeus 59,369
45 Large Egret or Great White Heron, *Ardea alba alba* Linnaeus 68
46 Eastern Large Egret, *Ardea alba modesta* J. E. Gray 69
38 Little Green Heron, *Butorides striatus japonicus* (Horsfield) 59
39 Andaman Little Green Heron, *Butorides striatus spodiopater* Sharpe 61
40 Paler Maldivian Green Heron, *Butorides striatus didii* Phillips & Sims 62
41 Darker Maldivian Green Heron, *Butorides striatus albidulus* Bangs 62
42 Indian Pond Heron or Paddybird, *Ardeola grayii grayii* (Sykes) 63
42a Maldivian Pond Heron, *Ardeola grayii philippii* Scheer 65
43 Chinese Pond Heron, *Ardeola bacchus* (Bonaparte) 65
44 Cattle Egret, *Bubulcus ibis coromandus* (Boddaert) 66
47,48 Smaller or Median Egret, *Egretta intermedia intermedia* (Wagler) 71
49 Little Egret, *Egretta garzetta garzetta* (Linnaeus) 72
50 Indian Reef Heron, *Egretta gularis schistacea* (Hemprich & Ehrenberg) 74
51 Eastern Reef Heron, *Egretta sacra* (Gmelin) 77
52 Night Heron, *Nycticorax nycticorax nycticorax* (Linnaeus) 78
53 Malay or Tiger Bittern, *Gorachius melanolephus melanolephus* (Raffles) 80
54 Nicobar Tiger Bittern, *Gorachius melanolephus minor* Hachisuka 82
55 Little Bittern, *Isoerythrus minutus minutus* (Linnaeus) 83
56 Chestnut Bittern, *Isoerythrus cinnamomeus* (Gmelin) 84
57 Yellow Bittern, *Isoerythrus sinensis* (Gmelin) 85
58 Black Bittern, *Isoerythrus flavicollis flavicollis* (Latham) 88
59 Bittern, *Botaurus stellaris stellaris* (Linnaeus) 89

- Family CICONIIDAE: Storks
60 Painted Stork, *Mycteria leucorhyncha* (Pennant) 93
61 Openbill Stork, *Anastomus osculator* (Boddaert) 95
62 Whitenecked Stork, *Ciconia episcopus episcopus* (Boddaert) 98
63 White Stork, *Ciconia ciconia ciconia* (Linnaeus) 99
64 Eastern White Stork, *Ciconia ciconia boyciana* Swinhoe 102
65 Black Stork, *Ciconia nigra* (Linnaeus) 102
66 Blacknecked Stork, *Ephippiorhynchus asiaticus asiaticus* (Latham) 104
67 Adjutant Stork, *Leptoptilos dubius* (Gmelin) 105
68 Lesser or Haircrested Adjutant, *Leptoptilos javanicus* (Horsfield) 107

- Family THRESKIORNITHIDAE: Ibises, Spoonbill
69 White Ibis, *Threskiornis aethiopicus melanorhyncha* (Latham) 110
70 Indian Black Ibis, *Pseudibis papillosa papillosa* (Temminck) 112
71 Glossy Ibis, *Plagiodontus falcinellus falcinellus* (Linnaeus) 114
72 Spoonbill, *Platalea leucorodia major* Temminck & Schlegel 116

- Family PHOENICOPTERIDAE: Flamingos
73 Flamingo, *Phoenicopterus roseus* Pallas 118
74 Lesser Flamingo, *Phoeniconotus minor* (Geoffroy) 121

Order ANSERIFORMES

- Family ANATIDAE: Ducks, Geese, Swans
75 Redbreasted Goose, *Branta ruficollis* (Pallas) 124
76 Forest Bean Goose, *Anser fabalis middendorffi* Severtzov 125
77 Tundra Bean Goose, *Anser fabalis rufus* Butorlin 125
78 [Pinkfooted Goose, *Anser fabalis brachyrhynchus* Baillon] 126
79 Whitefronted Goose, *Anser albifrons albifrons* (Scopoli) 126
80 Lesser Whitefronted or Dwarf Goose, *Anser erythropus* (Linnaeus) 128
81 Eastern Greylag Goose, *Anser anser rubripennis* Swinhoe 129
82 Barheaded Goose, *Anser indicus* (Latham) 131
83 [Lesser Snow Goose, *Anser carolinensis carolinensis* (Linnaeus)] 133
84 Bewick's or Western Whistling Swan, *Cygnus columbianus bewickii* Yarrell 134

- 85 Jankowski's or Eastern Whistling Swan, *Cygnus columbianus jankowskii* Alpheraky 135
86 Whooper Swan, *Cygnus cygnus* (Linnaeus) 136
87 Mute Swan, *Cygnus olor* (Gmelin) 137
88 Lesser Whistling Teal or Tree Duck, *Dendrocygna jamaica* (Horsfield) 138
89 Large Whistling Teal, *Dendrocygna bicolor* (Vieillot) 139
90 Ruddy Shelduck or Brahminy Duck, *Tadorna ferruginea* (Pallas) 141
91 Common Shelduck, *Tadorna tadorna* (Linnaeus) 144
92 Marbled Teal, *Mareca marstonia angustirostris* (Ménétries) 147
93 Pintail, *Anas acuta* Linnaeus 149
94 Common Teal, *Anas crecca crecca* Linnaeus 151
95 Baikal, Clucking or 'Formosa' Teal, *Anas formosa* Georgi 154
96 Grey, Andaman or Oceanic Teal, *Anas gibberifrons albogularis* (Hume) 155
97 Spotbill Duck, *Anas poecilorhyncha poecilorhyncha* J. R. Forster 157
98 Burmese Spotbill Duck, *Anas poecilorhyncha haringtoni* (Oates) 159
99 Eastern Grey Duck, *Anas poecilorhyncha zonorhyncha* Swinhoe 159
100 Mallard, *Anas platyrhynchos* Linnaeus 160
101 Gadwall, *Anas strepera strepera* Linnaeus 163
102 Falcated or Bronzecapped Teal, *Anas falcata* Georgi 165
103 Wigeon, *Anas penelope* Linnaeus 167
104 Garganey or Bluewinged Teal, *Anas querquedula* Linnaeus 169
105 Shoveller, *Anas platyrhynchos* Linnaeus 172
106 Pinkheaded Duck, *Rhodessa coryphallacea* (Latham) 175
107 Redcrested Pochard, *Nettion rufum* (Pallas) 177
108 Common Pochard, *Aythya ferina* (Linnaeus) 180
109 White-eyed Pochard or Ferruginous Duck, *Aythya nyroca* (Gildenstädt) 182
110 Baer's Pochard or Eastern White-eye, *Aythya baeri* (Radde) 184
111 Tufted Duck, *Aythya fuligula* (Linnaeus) 185
112 Scaup Duck, *Aythya marila marila* (Linnaeus) 187
113 Mandarin Duck, *Aix galericulata* (Linnaeus) 189
114 Cotton Teal or Quacky-duck, *Nettion coromandelianus coromandelianus* (Gmelin) 190
115 Nakta or Comb Duck, *Sarkidiornis melanotos melanotos* (Pennant) 192
116 Whitewing Duck, *Cairina scutulata* (S. Müller) 194
117 Longtail Duck or Old Squaw, *Clangula himalayi* (Linnaeus) 196
118 Goldeneye Duck, *Bucephala clangula clangula* (Linnaeus) 198
119 Smew, *Mergus albellus* Linnaeus 201
120 Goosander or Common Merganser, *Mergus merganser merganser* Linnaeus 203
121 Eastern Merganser, *Mergus merganser orientalis* Gould 204
122 Redbreasted Merganser, *Mergus serrator* Linnaeus 206
123 Whiteheaded Stiff-tailed Duck, *Oxyura leucocephala* (Scopoli) 208

Order FALCONIFORMES

- Family ACCIPITRIDAE: Hawks, Vultures, etc.
124 Blackwinged Kite, *Elanus caeruleus caeruleus* (Latham) 212
125 Blyth's Baza or Northern Brown Lizard Hawk, *Aviceda jerdoni jerdoni* (Blyth) 215
126 Legge's Baza or Southern Brown Lizard Hawk, *Aviceda jerdoni ceylonensis* (Legge) 216
127 Indian Blackcrested Baza or Lizard Hawk, *Aviceda leuphotes leuphotes* (Dumont) 218
128 Burmese Blackcrested Baza or Lizard Hawk, *Aviceda leuphotes syama* (Hodgson) 220
128a Andaman Blackcrested Baza, *Aviceda leuphotes andamanica* Abdulali & Grubb 221,370
129 Siberian Honey Buzzard, *Pernis ptilorhynchus orientalis* Taczanowski 221
130 Crested Honey Buzzard, *Pernis ptilorhynchus ruficollis* Lesson 222
131 European or Red Kite, *Milvus milvus milvus* (Linnaeus) 225
132 Black Kite, *Milvus migrans migrans* (Boddaert) 226
133 Pariah Kite, *Milvus migrans grisea* Sykes 227
134 Blackeared or Large Indian Kite, *Milvus (migrans) lineatus* (Gray) 229
135 Brahminy Kite, *Haliastur indus indus* (Boddaert) 230
136 Eastern Goshawk, *Accipiter gentilis schvedoni* (Menzies) 233
137 Central Asian Shikra, *Accipiter badius cenchroides* (Severtzov) 235
138 Indian Shikra, *Accipiter badius dussumieri* (Temminck) 235
139 Ceylon Shikra, *Accipiter badius badius* (Gmelin) 237
140 Burmese Shikra, *Accipiter badius polioptus* (Hume) 237
141 Car Nicobar Shikra, *Accipiter badius butleri* (Gurney) 238
142 Kachal Shikra, *Accipiter badius obsoletus* (Richmond) 239
143 Horsfield's or Chinese Goshawk, *Accipiter solonensis* (Horsfield) 239
144 North Indian Crested Goshawk, *Accipiter tringatus indicus* (Hodgson) 240
145 South Indian Crested Goshawk, *Accipiter tringatus peninsularis* Koelz 242
146 Ceylon Crested Goshawk, *Accipiter tringatus layardi* (Whistler & Kinnear) 242
147 Asiatic Sparrow-Hawk, *Accipiter nisus nisus* (Tickell) 243
148 Indian Sparrow-Hawk, *Accipiter nisus melaschistis* Hume 245
149 West Himalayan Bera Sparrow-Hawk, *Accipiter virgatus kashmiriensis* Whistler & Kinnear 246
150 East Himalayan Bera Sparrow-Hawk, *Accipiter virgatus effinis* Hodgson 247
151 Southern Bera Sparrow-Hawk, *Accipiter virgatus bera* Jerdon 249
152 Eastern Sparrow-Hawk, *Accipiter virgatus gularis* (Temminck & Schlegel) 250
153 Longlegged Buzzard, *Buteo rufinus rufinus* (Cretzschmar) 252
154 Upland Buzzard, *Buteo hemilais* Temminck & Schlegel 253
155 Desert Buzzard, *Buteo buto vulpinus* (Gloger) 254
156 Buzzard, *Buteo buto japonicus* (Temminck & Schlegel) 255
157 White-eyed Buzzard-Eagle, *Buteo buto terra* (Franklin) 257
158 Hodgson's or Feathered Hawk-Eagle, *Spizaeus nipalensis nipalensis* (Hodgson) 259
159 Legge's or Ceylon Feathered Hawk-Eagle, *Spizaeus nipalensis kelaarti* Legge 260
160 Changeable Hawk-Eagle, *Spizaeus cirrhatus himalayensis* (Horsfield) 261
161 Indian Crested Hawk-Eagle, *Spizaeus cirrhatus gularis* (Gmelin) 262
162 Andamans Crested Hawk-Eagle, *Spizaeus cirrhatus andamanensis* Tytler 265
163 Bonelli's or Slender Hawk-Eagle, *Hieraeetus fasciatus fasciatus* (Vieillot) 266
164 Booted Hawk-Eagle, *Hieraeetus ternatus* (Gmelin) 268
165 Rufousbellied Hawk-Eagle, *Hieraeetus kinnierii kinnierii* (E. Geoffroy) 270
166 Himalayan Golden Eagle, *Aquila chrysaetos dzhungara* Severtzov 273
167 Imperial Eagle, *Aquila heliaca heliaca* Savigny 274
168 Tawny Eagle, *Aquila rapax ruficeps* Franklin 276
169 Eastern Steppe Eagle, *Aquila rapax nipalensis* Hodgson 278
170 Greater Spotted Eagle, *Aquila clanga* Pallas 279
171 Lesser Spotted Eagle, *Aquila pomarina hastata* (Lesson) 281
172 Black Eagle, *Icthyophaga malayensis periger* (Hodgson) 283
173 Whittailed Sea Eagle, *Haliaeetus albicollis* (Linnaeus) 286
174 Whitebellied Sea Eagle, *Haliaeetus leucogaster* (Gmelin) 287
175 Ringtailed or Pallas's Fishing Eagle, *Haliaeetus leucorhynchus* (Pallas) 289
176 Greyheaded Fishing Eagle, *Icthyophaga ichthyophaga ichthyophaga* (Horsfield) 292
177 Ceylon Greyheaded Fishing Eagle, *Icthyophaga ichthyophaga plumbeiceps* Baker 294
178 Himalayan Greyheaded Fishing Eagle, *Icthyophaga nana plumbeiceps* (Jerdon) 294
179 Black or King Vulture, *Sarcophaga calvus* (Scopoli) 296
180 Cinerous Vulture, *Argyrops vultur* (Linnaeus) 298
181 Indian Griffon Vulture, *Gyps fulvus fulvus* Hume 301
182 Himalayan Griffon Vulture, *Gyps himalayensis* Hume 302

182	Indian Longbilled Vulture, <i>Gyps indicus indicus</i> (Scopoli)	304	Family FALCONIDAE: Falcons	
184	Himalayan Longbilled Vulture, <i>Gyps indicus tenuirostris</i> G. R. Gray	306	204 Himalayan Redbreasted Falconet, <i>Microhierax caerulescens caerulescens</i> (Linnaeus)	338
185	Indian Whitebacked Vulture, <i>Gyps bengalensis</i> (Gmelin)	307	205 Whitelegged Falconet or Pied Pigmy Falcon, <i>Microhierax melanoleucus</i> (Blyth)	340
186	Egyptian Vulture, <i>Neophron percipiter percipiter</i> (Linnaeus)	310	206 Saker or Cherrug Falcon, <i>Falco biarmicus cherrug</i> J. E. Gray	342
187	Indian Scavenger Vulture, <i>Neophron percipiter ginglymus</i> (Latham)	312	207 Shanghai Falcon, <i>Falco biarmicus milvipes</i> Jerdon	344
188	Himalayan Bearded Vulture or Lämmergeier, <i>Cypaetus barbatus aureus</i> (Hablizl)	314	208 Laggar Falcon, <i>Falco biarmicus jugger</i> J. E. Gray	344
189	Hen Harrier, <i>Circus cyaneus cyaneus</i> (Linnaeus)	317	209 Eastern Peregrine Falcon, <i>Falco peregrinus japonensis</i> Gmelin	347
190	Pale Harrier, <i>Circus macrourus</i> (S. G. Gmelin)	319	210 Redcapped or Barbary Falcon, <i>Falco peregrinus babylonicus</i> P. L. Sclater	349
191	Montagu's Harrier, <i>Circus pygargus</i> (Linnaeus)	321	211 Shaheen Falcon, <i>Falco peregrinus peregrinator</i> Sundevall	350
192	Pied Harrier, <i>Circus melanoleucus</i> (Pennant)	323	212 Hobby, <i>Falco subbuteo subbuteo</i> Linnaeus	352
193	Marsh Harrier, <i>Circus aeruginosus aeruginosus</i> (Linnaeus)	324	213 Central Asian Hobby, <i>Falco subbuteo centralasiæ</i> (Buturlin)	353
194	Eastern Marsh Harrier or Striped Harrier, <i>Circus aeruginosus spilonorius</i> Kaup	326	214 Indian Hobby, <i>Falco severus rufipedoides</i> Hodgson	355
195	Short-toed Eagle, <i>Circus gallius gallius</i> (Gmelin)	327	215 Burmese Hobby, <i>Falco severus severus</i> Horsfield	356
196	Crested Serpent Eagle, <i>Spilornis cheela cheela</i> (Latham)	329	216 Sooty Falcon, <i>Falco concolor</i> Temminck	356
197	Lesser or Peninsular Crested Serpent Eagle, <i>Spilornis cheela melanotis</i> (Jerdon)	331	217 North Asiatic Merlin, <i>Falco columbarius insignis</i> (Clark)	357
198	Ceylon Crested Serpent Eagle, <i>Spilornis cheela spilogaster</i> (Blyth)	332	218 Pallid Merlin, <i>Falco columbarius pallidus</i> (Sushkin)	358
199	Burmese Crested Serpent Eagle, <i>Spilornis cheela burmanicus</i> Swann	333	219 Redheaded Merlin, <i>Falco chiqueira chiqueira</i> Daudin	359
200	Andaman Pale Serpent Eagle, <i>Spilornis cheela daniensis</i> Hume	333	220 Eastern Redlegged Falcon, <i>Falco vespertinus amurensis</i> Radde	361
201	Nicobar Crested Serpent Eagle, <i>Spilornis cheela minimus</i> Hume	334	221 Lesser Kestrel, <i>Falco naumanni Fleischer</i>	363
202	Great Nicobar Crested Serpent Eagle, <i>Spilornis klossi</i> Richmond	335	222 European Kestrel, <i>Falco tinnunculus tinnunculus</i> Linnaeus	365
202a	Andaman Dark Serpent Eagle, <i>Spilornis elgini</i> (Blyth)	335, 371	223 East Himalayan Kestrel, <i>Falco tinnunculus interstinctus</i> McClelland	367
203	Osprey, <i>Pandion haliaetus haliaetus</i> (Linnaeus)	336	224 Indian Kestrel, <i>Falco tinnunculus oburgatus</i> (Baker)	368

VOLUME 2

Order GALLIFORMES			
Family MEGAPODIDAE: Megapodes			
225	North Nicobar Megapode, <i>Megapodius freycinet nicobariensis</i> Blyth	1	
226	South Nicobar Megapode, <i>Megapodius freycinet abbotti</i> Oberholser	3	
Family PHASIANIDAE: Pheasants, Partridges, Quails, etc.			
227	Snow Partridge, <i>Lerwa lerwa</i> (Hodgson)	6	
228	Scese Partridge, <i>Ammoperdix griseogularis griseogularis</i> (J. F. Brandt)	8	
229	Tibetan Snowcock, <i>Tetraogallus tibetanus tibetanus</i> Gould	11	
230	Sikkim Snowcock, <i>Tetraogallus tibetanus aquilonifer</i> R. & A. Meinertzhagen	12	
231	Central Tibetan Snowcock, <i>Tetraogallus tibetanus centralis</i> Sushkin	13	
232	Himalayan Snowcock, <i>Tetraogallus himalayensis himalayensis</i> G. R. Gray	13	
233	Pheasant-Grouse, <i>Tetraophasis szechenyi</i> Madarasz	16	
234	Persian Chukor, <i>Alectoris chukar korovickovi</i> (Zarudny)	17	
235	Northern Chukor, <i>Alectoris chukar pallens</i> (Hume)	18	
236	Chukor Partridge, <i>Alectoris chukar chukar</i> (J. E. Gray)	18	
237	South Persian	21	
238	Indian Black I	22	
239	Assam Black F	24	
240	Northern Pain	25	
241	S	27	line & Selby)
242	C	27	
243	B	28	
244	Baluchistan Grey Partridge, <i>Francolinus pondicerianus mecranensis</i> Zarudny & Härms	29	
245	North Indian Grey Partridge, <i>Francolinus pondicerianus interpositus</i> Hartert	30	
246	South Indian Grey Partridge, <i>Francolinus pondicerianus pondicerianus</i> (Gmelin)	31	
247	Swamp Partridge or Kyah, <i>Francolinus gularis</i> (Temminck)	33	
248	L	35	Meinertzhagen
249	T	35	
250	C	37	
251	Japanese Grey Quail, <i>Coturnix coturnix japonica</i> Temminck & Schlegel	40	
252	Blackbreasted or Rain Quail, <i>Coturnix coromandelica</i> (Gmelin)	41	
253	Bluebreasted Quail, <i>Coturnix chinensis chinensis</i> (Linnaeus)	42	
254	Nicobar Bluebreasted Quail, <i>Coturnix chinensis trivittatus</i> (Richmond)	44	
255	Jungle Bush Quail, <i>Perdula asiatica asiatica</i> (Latham)	45	
256	Punjab Jungle Bush Quail, <i>Perdula asiatica punjabi</i> Whistler	47	
257	Konkan Jungle Bush Quail, <i>Perdula asiatica vidali</i> Whistler & Kinnear	48	
257a	Tamil Nadu Jungle Bush Quail, <i>Perdula asiatica vellorei</i> Abdulali & Reuben	48, 338	
258	Ceylon Jungle Bush Quail, <i>Perdula asiatica ceylonensis</i> Whistler & Kinnear	48	
259	Rajasthan Rock Bush Quail, <i>Perdula argoondah meinertzhageni</i> Whistler	49	
260	Deccan Rock Bush Quail, <i>Perdula argoondah argoondah</i> (Sykes)	49	
261	Mysore or Laterite Rock Bush Quail, <i>Perdula argoondah salimalii</i> Whistler	50	
262	Painted Bush Quail, <i>Perdula erythrorhynchos erythrorhynchos</i> (Sykes)	51	
263	Northern Painted Bush Quail, <i>Perdula erythrorhynchos blewittii</i> (Hume)	53	
264	Assam Painted Bush Quail, <i>Perdula manipurensis ingliai</i> (Ogilvie-Grant)	53	
265	Manipur Painted Bush Quail, <i>Perdula manipurensis manipurensis</i> Hume	54	
266	Simla Hill Partridge, <i>Arborophila torqueola torqueola</i> (Baker)	56	
267	Common Hill Partridge, <i>Arborophila torqueola torqueola</i> (Valenciennes)	57	
268	Assam Hill Partridge, <i>Arborophila torqueola interstincta</i> Ripley	58	
269	Kachin Hill Partridge, <i>Arborophila torqueola batemani</i> (Ogilvie-Grant)	59	
270	Rufous-throated Hill Partridge, <i>Arborophila rufogularis rufogularis</i> (Blyth)	59	
271	Arakan Hill Partridge, <i>Arborophila rufogularis intermedia</i> (Blyth)	61	
272	Whitecheeked Hill Partridge, <i>Arborophila atrogularis</i> (Blyth)	62	
273	Redbreasted Hill Partridge, <i>Arborophila mandellii</i> Hume	63	
274	Assam Bamboo Partridge, <i>Bambusiolela fytchii hopkinsoni</i> Godwin-Austen	64	
275	Red Spur-fowl, <i>Gallus padica padica</i> (Gmelin)	67	
276	Aravalli Red Spur-fowl, <i>Gallus padica cavinna</i> Blanford	68	
277	Travancore Red Spur-fowl, <i>Gallus padica steuarti</i> Baker	69	
278	Painted Spur-fowl, <i>Gallus padica torquata</i> (Valenciennes)	70	
279	Ceylon Spur-fowl, <i>Gallus padica bicolorata</i> (J. R. Forster)	71	
280	Mountain Quail, <i>Ophryotroica superciliosa</i> (J. E. Gray)	73	
281	Nepal Blood Pheasant, <i>Ithaginis cruentus cruentus</i> (Hardwicke)	75	
282	Sikkim Blood Pheasant, <i>Ithaginis cruentus affinis</i> Beebe	77	
283	Tibetan Blood Pheasant, <i>Ithaginis cruentus tibetanus</i> (Baker)	78	
284	Mishmi Blood Pheasant, <i>Ithaginis cruentus kusuri</i> Beebe	78	
285	Western Horned Pheasant, <i>Tragopan melanocephalus</i> (J. E. Gray)	80	
286	Crimson Horned Pheasant or Satyr Tragopan, <i>Tragopan satyra</i> (Linnaeus)	82	
287	Tibetan Greybellied Tragopan, <i>Tragopan blythii molesworthi</i> Baker	84	
288	Greybellied Tragopan, <i>Tragopan blythii blythii</i> (Jerdon)	85	
289	Temminck's Tragopan or Chinese Crimson Horned Pheasant, <i>Tragopan temminckii</i> (J. E. Gray)	86	
290	Impeyan or Himalayan Monal Pheasant, <i>Lophophorus impeyanus</i> (Latham)	88	
291	Sclater's or Mishmi Monal Pheasant, <i>Lophophorus sclateri</i> Jerdon	90	
292	Elwes's Eared Pheasant, <i>Grousephila crupellion hamrni</i> Elwes	92	
293	Whitecrested Kaleej Pheasant, <i>Leptura leucomelana hamiltoni</i> (J. E. Gray)	94	
294	Nepal Kaleej Pheasant, <i>Leptura leucomelana leucomelana</i> (Latham)	97	
295	Blackbacked Kaleej Pheasant, <i>Leptura leucomelana melanota</i> (Hutton)	98	
296	Blackbreasted Kaleej Pheasant, <i>Leptura leucomelana lathamii</i> (J. E. Gray)	99	
297	Williams's Kaleej Pheasant, <i>Leptura leucomelana williamsi</i> (Oates)	101	
298	Moffitt's Kaleej Pheasant, <i>Leptura leucomelana moffitti</i> (Hachisuka)	101	
299	Indian Red Junglefowl, <i>Gallus gallus margini</i> Robinson & Kloss	102	
300	Burmese Red Junglefowl, <i>Gallus gallus spadiceus</i> (Bonnaterre)	106	
301	Grey Junglefowl, <i>Gallus sonnerati</i> Temminck	106	
302	Ceylon Red Junglefowl, <i>Gallus lafeyettii</i> Lesson	109	
303	Chestnutmantled Koklas Pheasant, <i>Pucrasia macrolopha castanea</i> Gould	111	
304	Kashmir Koklas Pheasant, <i>Pucrasia macrolopha biddulphi</i> Marshall	113	
305	Koklas Pheasant, <i>Pucrasia macrolopha macrolopha</i> (Lesson)	113	
306	Nepal Koklas Pheasant, <i>Pucrasia macrolopha nipalensis</i> Gould	115	
307	Chir Pheasant, <i>Coturnix wallichii</i> (Hardwicke)	116	
308	Mrs Hume's Barredback Pheasant, <i>Symaticus humiae humiae</i> (Hume)	119	
309	Bhutan Peacock-Pheasant, <i>Polyplectron bicalcaratum bakeri</i> Lowe	120	
310	Burmese Peacock-Pheasant, <i>Polyplectron bicalcaratum bicalcaratum</i> (Linnaeus)	122	
311	Indian Peafowl, <i>Pavo cristatus</i> Linnaeus	123	
312	Burmese or Green Peafowl, <i>Pavo muticus spicifer</i> Shaw & Nodder	126	
Order GRUIFORMES			
Family TURNICIDAE: Bustard-Quails			
313	Little Bustard-Quail, <i>Turnix sylvatica dussumieri</i> (Temminck)	128	
314	Indian Yellowlegged Button Quail, <i>Turnix tanki tanki</i> Blyth	129	
315	Burmese Yellowlegged Button Quail, <i>Turnix tanki blanfordii</i> Blyth	131	
316	Northern Bustard-Quail, <i>Turnix susiator plumbeus</i> (Hodgson)	132	
317	Lower Bengal Bustard-Quail, <i>Turnix susiator bengalensis</i> Blyth	132	
318	Indian Bustard-Quail, <i>Turnix susiator taigoo</i> (Sykes)	133	
319	Ceylon Bustard-Quail, <i>Turnix susiator leggeti</i> Baker	135	
Family GRUIDAE: Cranes			
320	Eastern Common Crane, <i>Grus grus tilfordi</i> Sharpe	136	
321	Blacknecked Crane, <i>Grus nigricollis</i> Przevalski	139	
322	Hooded Crane, <i>Grus monacha</i> Temminck	140	
323	Indian Sarus Crane, <i>Grus antigone antigone</i> (Linnaeus)	141	
324	Burmese Sarus, <i>Grus antigone sharpi</i> Blanford	144	
325	Siberian or Great White Crane, <i>Grus leucogeranus</i> Pallas	144	
326	Demoiselle Crane, <i>Anthropoides virgo</i> (Linnaeus)	146	
Family RALLIDAE: Rails, Coots			
327	Turkestan Water Rail, <i>Rallus aquaticus korejewi</i> Zarudny	149	
328	Indian Water Rail, <i>Rallus aquaticus indicus</i> (Linnaeus)	151	
329	Indian Bluebreasted Banded Rail, <i>Rallus striatus albiventer</i> Swainson	152	
330	Andaman Bluebreasted Banded Rail, <i>Rallus striatus obscurus</i> (Hume)	153	
331	Malayan or Redlegged Banded Crane, <i>Rallina fasciata</i> (Raffles)	154	
332	Indian or Slaty-legged Banded Crane, <i>Rallina eurizonoides amauroptera</i> (Jerdon)	155	
333	Andaman Banded Crane, <i>Rallina cinnamini</i> (Blyth)	157	
334	Corncrake or Landrail, <i>Crex crex</i> (Linnaeus)	158	
335, 336	Little Crane, <i>Porzana parva parva</i> (Scopoli)	159	
337	Eastern Baillon's Crane, <i>Porzana pusilla pusilla</i> (Pallas)	160	
338	Spotted Crane, <i>Porzana porzana</i> (Linnaeus)	162	
339	Northern Ruddy Crane, <i>Porzana fusca fusca</i> (Linnaeus)	164	
340	Southern Ruddy Crane, <i>Porzana fusca zeylonica</i> (Baker)	165	
341	Elwes's Crane, <i>Amauornis bicolor</i> (Walton)	166	
342	Brown Crane, <i>Amauornis akool akool</i> (Sykes)	167	
343, 344	Indian Whitebreasted Waterhen, <i>Amauornis phoeniceus phoeniceus</i> (Pennant)	168	
345	Andamans Whitebreasted Waterhen, <i>Amauornis phoeniceus insularis</i> Sharpe	171	
346	Kora or Watercock, <i>Gallinula cinerea cinerea</i> (Gmelin)	172	
347	Indian Moorhen, <i>Gallinula chloropus indica</i> Blyth	175	
347a	Malay Moorhen, <i>Gallinula chloropus orientalis</i> Horsfield	177	
348	Baluchi Purple Moorhen, <i>Porphyrio porphyrio seistanicus</i> Zarudny & Härms	178	
349	Indian Purple Moorhen, <i>Porphyrio porphyrio poliocephalus</i> (Latham)	178	
350	Coot, <i>Fulica atra atra</i> Linnaeus	180	
Family HELIOTHIRIDAE: Finfoots			
351	Masked Finfoot, <i>Helipais personata</i> (G. R. Gray)	184	
Family OTIDIDAE: Bustards			
352	Great Bustard, <i>Otis tarda dybowskii</i> Taczanowski	185	
353	Eastern Little Bustard, <i>Otis tetrix orientalis</i> Hartert	187	
354	Great Indian Bustard, <i>Chlorotis nigripes</i> (Vigors)	188	
355	Houbara Bustard, <i>Chlamydotis undulata macquennii</i> (J. E. Gray)	191	
356	Bengal Florican, <i>Eupodotis bengalensis bengalensis</i> (Gmelin)	194	
357	Leekh or Lesser Florican, <i>Syrrhaptes indica</i> (J. F. Miller)	196	
Order CHARADRIIFORMES			
Family JACANIDAE: Jacanas			
358	Pheasant-tailed Jacana, <i>Hydrophasianus chirurgus</i> (Scopoli)	199	
359	Bronzewinged Jacana, <i>Metopidius indicus</i> (Latham)	201	
Family HAEMATOPODIDAE: Oystercatchers			
360	Oystercatcher or Sea-Pie, <i>Haematopus ostralegus ostralegus</i> Linnaeus	203	
361	Chinese Oystercatcher, <i>Haematopus ostralegus esculentus</i> Swinhoe	204	
Family CHARADRIIDAE: Plovers, Sandpipers, Snipe			
Subfamily CHARADRIINAE: Plovers			
362	Whitetailed Lapwing, <i>Vanellus leucurus</i> (Lichtenstein)	206	
363	Sociable Lapwing, <i>Vanellus gregarius</i> (Pallas)	208	
364	Pewit, Lapwing or Green Plover, <i>Vanellus vanellus</i> (Linnaeus)	210	
365	Grey-headed Lapwing, <i>Vanellus cinereus</i> (Blyth)	211	
366	Redwattled Lapwing, <i>Vanellus indicus indicus</i> (Boddaert)	212	
367	Ceylon Redwattled Lapwing, <i>Vanellus indicus lankae</i> (Koelz)	214	
368	Burmese Redwattled Lapwing, <i>Vanellus indicus atronuchalis</i> (Jerdon)	215	
369	Spurwinged Lapwing, <i>Vanellus spinosus ducaculii</i> (Lesson)	216	
370	Yellow-wattled Lapwing, <i>Vanellus malabaricus</i> (Boddaert)	218	
371	Blackbellied or Grey Plover, <i>Pluvialis squatarola</i> (Linnaeus)	220	
372	Golden Plover, <i>Pluvialis apricaria apricaria</i> (Linnaeus)	221	
373	Eastern Golden Plover, <i>Pluvialis dominica fulva</i> (Gmelin)	222	
374	Large Sand Plover, <i>Charadrius leschenaulti</i> Lesson	226	
375	Australian Blackfronted Plover, <i>Charadrius melanops</i> Vieillot	227	
376	Caspian Sand Plover, <i>Charadrius asiaticus asiaticus</i> Pallas	228	
377	Eastern Sand Plover, <i>Charadrius asiaticus versutus</i> Gould	229	

378	Eastern Ringed Plover, <i>Charadrius hiaticula tundrae</i> (Lowe)	230
379	European Little Ringed Plover, <i>Charadrius dubius curonici</i> Gmelin	231
380	Indian Little Ringed Plover, <i>Charadrius dubius jerdoni</i> (Legge)	231
381	Kentish Plover, <i>Charadrius alexandrinus alexandrinus</i> (Linnaeus)	235
382	Ceylon Kentish Plover, <i>Charadrius alexandrinus seebolmi</i> Hartert & Jackson	237
383	Longbilled Ringed Plover, <i>Charadrius placidus</i> J. E. Gray	237
384	Pamirs Lesser Sand Plover, <i>Charadrius mongolus atrifrons</i> Wagler	238
Subfamily SCOLOPACINAE: Curlews, Sandpipers, Snipe, Woodcock		
385	Whimbrel, <i>Numenius phaeopus phaeopus</i> (Linnaeus)	242
386	Eastern Whimbrel, <i>Numenius phaeopus variegatus</i> (Scopoli)	244
387	Curlew, <i>Numenius arguata arguata</i> (Linnaeus)	245
388	Eastern Curlew, <i>Numenius arguata orientalis</i> C. L. Brehm	246
389	Blacktailed Godwit, <i>Limosa limosa limosa</i> (Linnaeus)	249
390	Eastern Blacktailed Godwit, <i>Limosa limosa melanoides</i> Gould	251
391	Bartailed Godwit, <i>Limosa lapponica lapponica</i> (Linnaeus)	252
392	Spotted or Dusky Redshank, <i>Tringa erythropus</i> (Pallas)	255
393, 394	Common Redshank, <i>Tringa totanus totanus</i> (Linnaeus)	257
395	Marsh Sandpiper or Little Greenshank, <i>Tringa stagnatilis</i> (Bechstein)	259
396	Greenshank, <i>Tringa nebularia</i> (Gunnerus)	261
397	Green Sandpiper, <i>Tringa ochropus</i> Linnaeus	263
398	Wood or Spotted Sandpiper, <i>Tringa glareola</i> Linnaeus	265
399	Spotted Greenshank or Armstrong's Sandpiper, <i>Tringa guttifer</i> (Nordmann)	268
400	Terek Sandpiper or Avocet-Sandpiper, <i>Tringa terek</i> (Latham)	269
401	Common Sandpiper, <i>Tringa hypoleucos</i> Linnaeus	271
402	Turnstone, <i>Arenaria interpres interpres</i> (Linnaeus)	274
403	Snipebilled Godwit or Asian Dowitcher, <i>Limnodromus semipalmatus</i> (Blyth)	276
404	Eastern Solitary Snipe, <i>Gallinago solitaria solitaria</i> Hodgson	278
405	Wood Snipe, <i>Gallinago nemoralis</i> Hodgson	280
406	Pintail Snipe, <i>Gallinago stenura</i> Bonaparte	282
407	Swinhoe's Snipe, <i>Gallinago megala</i> Swinhoe	284
408	Great Snipe, <i>Gallinago media</i> (Latham)	286

409	Common or Fantail Snipe, <i>Gallinago gallinago gallinago</i> (Linnaeus)	287
410	Jack Snipe, <i>Gallinago minima</i> (Brünnich)	290
411	Woodcock, <i>Scolopax rusticola rusticola</i> Linnaeus	292
412	Knot, <i>Calidris canuta canuta</i> (Linnaeus)	296
413	Eastern Knot, <i>Calidris tenuirostris</i> (Horsfield)	297
414	Sanderling, <i>Calidris albus</i> (Pallas)	298
415	Eastern Little Stint, <i>Calidris ruficollis</i>	300
416	Little Stint, <i>Calidris minuta</i> (Leisler)	301
417	Temminck's Stint, <i>Calidris temminckii</i> (Leisler)	303
418	Longtoed Stint, <i>Calidris subminuta</i> (Middendorff)	305
419	Asian Pectoral or Sharptailed Sandpiper, <i>Calidris acuminata</i> (Horsfield)	307
420, 421	Dunlin, <i>Calidris alpina alpina</i> (Linnaeus)	308
422	Curlew-Sandpiper, <i>Calidris testacea</i> (Pallas)	310
423	Spoonbilled Sandpiper, <i>Eurythorhynchus pygmaeus</i> (Linnaeus)	313
424	Broadbilled Sandpiper, <i>Limicola falcinellus falcinellus</i> (Pontoppidan)	315
425	Eastern Broadbilled Sandpiper, <i>Limicola falcinellus sibirica</i> Dresser	317
425a	Buffbreasted Sandpiper, <i>Tryngites subruficollis</i> (Vieillot)	317
426	Ruff, <i>Philomachus pugnax</i> (Linnaeus)	318
Subfamily PHALAROPINAE: Phalaropes		
427	Grey Phalarope, <i>Phalaropus fulicarius</i> (Linnaeus)	322
428	Rednecked Phalarope, <i>Phalaropus lobatus</i> (Linnaeus)	323
Family ROSTRATULIDAE: Painted Snipe		
429	Painted Snipe, <i>Rostratula benghalensis benghalensis</i> (Linnaeus)	325
Family RECURVIROSTRIDAE: Stilts, Avocets, Ibisbills		
430	Indian Blackwinged Stilt, <i>Himantopus himantopus himantopus</i> (Linnaeus)	329
431	Ceylon Blackwinged Stilt, <i>Himantopus himantopus ceylonensis</i> Whistler	331
432	Avocet, <i>Recurvirostra avosetta</i> Linnaeus	332
433	Ibisbill, <i>Ibidorhynchos struthersii</i> Vigors	334
Family DROMADIDAE: Crab Plovers		
434	Crab Plover, <i>Dromas ardeola</i> Paykull	337
Appendix		
		341

VOLUME 3

Order CHARADRIIFORMES (cont.)

Family BURHINIDAE: Stone Curlews, Thick-knees		
435	Persian Stone Curlew, <i>Burhinus oediceramus harterti</i> Vaurie	1
436	Indian Stone Curlew, <i>Burhinus oediceramus indicus</i> (Salvadori)	2
437	Great Stone Plover, <i>Esacus magnirostris recurvirostris</i> (Cuvier)	5
438	Australian Stone Plover, <i>Esacus magnirostris magnirostris</i> (Vieillot)	6
Family GLAREOLIDAE: Coursers (Courier Plovers), Pratincoles		
439	Creamcoloured or Desert Courser, <i>Cursorius cursor cursor</i> (Latham)	8
440	Indian Courser, <i>Cursorius coromandelicus</i> (Gmelin)	9
441	Jerdon's or Doublebanded Courser, <i>Cursorius bitorquatus</i> (Blyth)	11
442	Collared Pratincole or Swallow-Plover, <i>Glareola pratincola pratincola</i> (Linnaeus)	12
443	Large Indian Pratincole or Swallow-Plover, <i>Glareola pratincola maldivarum</i> J. R. Forster	14
444	Small Indian Pratincole or Swallow-Plover, <i>Glareola lactea</i> Temminck	15
Family STERCORARIIDAE: Skuas, Jaegers		
445	Antarctic or Falkland Skua, <i>Catharacta skua antarctica</i> (Lesson)	18
446	Brown or Great Skua, <i>Catharacta skua lombergi</i> Mathews	19
446a	South Polar Skua, <i>Catharacta skua macrormicki</i> (Saunders)	19
447	Pomarine Skua or Jaeger, <i>Stercorarius pomarinus</i> (Temminck)	20
448	Parasitic or Richardson's Skua or Jaeger, <i>Stercorarius parasiticus</i> (Linnaeus)	21
Family LARIDAE: Gulls, Terns		
449	Sooty Gull, <i>Larus hemprichii</i> Bruch	24
450	Yellowlegged Herring Gull, <i>Larus argentatus heuglini</i> Bree	26
451	Pinklegged Herring Gull, <i>Larus argentatus mongolicus</i> Sushkin	27
452	Lesser Blackbacked Gull, <i>Larus fuscus fuscus</i> Linnaeus	28
452a	Great Blackbacked Gull, <i>Larus marinus</i> Linnaeus	29, 317
453	Great Blackheaded Gull, <i>Larus ichthyaeus</i> Pallas	29
454	Brownheaded Gull, <i>Larus brunneiceps</i> Jerdon	31
455	Blackheaded Gull, <i>Larus ridibundus ridibundus</i> Linnaeus	33
456	Slenderbilled Gull, <i>Larus geni</i> Brème	35
457	Little Gull, <i>Larus minutus</i> Pallas	37
	[Greater Blackbacked Gull, <i>Larus marinus</i> Linnaeus]	38
458	Indian Whiskered Tern, <i>Chlidonias hybridus indicus</i> (Stephens)	39
459	Whitewinged Black Tern, <i>Chlidonias leucophaea</i> (Temminck)	41
459a	Black Tern, <i>Chlidonias niger niger</i> (Linnaeus)	42
460	Gullbilled Tern, <i>Gelochelidon nilotica nilotica</i> (Gmelin)	42
461	Javan Gullbilled Tern, <i>Gelochelidon nilotica affinis</i> (Horsfield)	44
462	Caspian Tern, <i>Hydroprogne caspia caspia</i> (Pallas)	45
463	Indian River Tern, <i>Sterna aurantia</i> J. E. Gray	48
464	European Common Tern, <i>Sterna hiundo hiundo</i> Linnaeus	50
465	Tibetan Common Tern, <i>Sterna himalaia tibetana</i> Saunders	51
466	Rosate or Rosy Tern, <i>Sterna dougallii korstesi</i> (Hume)	52
466a	Arctic Tern, <i>Sterna macrura</i> Naumann	54
467	Whitecheeked Tern, <i>Sterna repressa</i> Hartert	55
468	Eastern Blacknaped Tern, <i>Sterna sumatrana sumatrana</i> Raffles	56
469	Western Blacknaped Tern, <i>Sterna sumatrana mathewi</i> Stresemann	57
470	Blackbellied Tern, <i>Sterna acuticauda</i> J. E. Gray	59
471, 472, 473	Brownwinged Tern, <i>Sterna anaethetus anaethetus</i> Scopoli	57
474	Sooty Tern, <i>Sterna fuscata nubilosa</i> Sparrman	62
475	Little Tern or Ternlet, <i>Sterna albifrons albifrons</i> Pallas	64
476	Blackshafted Ternlet, <i>Sterna saundersi</i> Hume	65
477	Whiteshafted Ternlet, <i>Sterna albifrons pusilla</i> Temminck	66
478	Red Sea Large Crested Tern, <i>Sterna bergii velox</i> Cretschmar	67
479	Indian Lesser Crested Tern, <i>Sterna bengalensis bengalensis</i> Lesson	69
480	Sandwich Tern, <i>Sterna sandwicensis sandwicensis</i> Latham	70
481	Noddy Tern, <i>Anous stolidus pileatus</i> (Scopoli)	71
482	Whitecapped Noddy, <i>Anous tenuirostris worcesteri</i> (McGregor)	72
483	Indian Ocean White or Fairy Tern, <i>Gygis alba monte</i> Mathews	73
484	Indian Skimmer or Scissorbill, <i>Rynchops albigularis</i> Swainson	75

Order COLUMBIFORMES

Family PTEROCLIDIDAE: Sandgrouse		
485	Tibetan Sandgrouse, <i>Synophaps tibetanus</i> Gould	77
485a	Pallas's Sandgrouse, <i>Synophaps paradoxus</i> (Pallas)	79
486	Large Pintail Sandgrouse, <i>Pterocles alchata caudatus</i> (S. G. Gmelin)	80
487	Indian Sandgrouse, <i>Pterocles exustus erlangeri</i> (Neumann)	82
488	Spotted Sandgrouse, <i>Pterocles senegalensis</i> (Linnaeus)	84
489	Imperial or Blackbellied Sandgrouse, <i>Pterocles orientalis orientalis</i> (Linnaeus)	86
490	Coronated Sandgrouse, <i>Pterocles coronatus atratus</i> Hartert	89
491	Closebarred Sandgrouse, <i>Pterocles indicus arabicus</i> Neumann	91
492	Painted Sandgrouse, <i>Pterocles indicus indicus</i> (Gmelin)	92
Family COLUMBIDAE: Pigeons, Doves		
493	Pintailed Green Pigeon, <i>Treron apicuda apicuda</i> Blyth	94
494	Kokla or Wedgetailed Green Pigeon, <i>Treron sphenura sphenura</i> (Vigors)	96
495	Thickbilled Green Pigeon, <i>Treron curvirostra nipalensis</i> (Hodgson)	97
496	Greyfronted Green Pigeon, <i>Treron pompadora effinis</i> (Jerdon)	99
497	Pompador or Ceylon Greyfronted Green Pigeon, <i>Treron pompadora pompadora</i> (Gmelin)	100
498	Nepal Greyfronted Green Pigeon, <i>Treron pompadora ceylonensis</i> Rand & Fleming	101

499	Ashyheaded Green Pigeon, <i>Treron pompadora phayrei</i> (Blyth)	102
500	Andaman Greyfronted Green Pigeon, <i>Treron pompadora chloroptera</i> Blyth	103
501	Indian Orangebreasted Green Pigeon, <i>Treron bicincta bicincta</i> (Jerdon)	104
502	Ceylon Orangebreasted Green Pigeon, <i>Treron bicincta leggei</i> Hartert	106
503	Bengal Green Pigeon, <i>Treron phoenicoptera phoenicoptera</i> (Latham)	106
504	Southern Green Pigeon, <i>Treron phoenicoptera chlorogaster</i> (Blyth)	108
505	Ceylon Green Pigeon, <i>Treron phoenicoptera philipini</i> Ripley	109
506	Northern Green Imperial Pigeon, <i>Ducula aenea sylvatica</i> (Tickell)	111
507	Southern Green Imperial Pigeon, <i>Ducula aenea pusilla</i> (Blyth)	112
508	Nicobar Green Imperial Pigeon, <i>Ducula aenea nicobarica</i> (Pelzeln)	113
508a	Andaman Green Imperial Pigeon, <i>Ducula aenea andamanica</i> Abdulali	114
509	Pied Imperial Pigeon, <i>Ducula bicolor</i> (Scopoli)	115
510	Hodgson's or Nepal Maroonbacked Imperial Pigeon, <i>Ducula badia insignis</i> Hodgson	116
511	Jerdon's or Southern Maroonbacked Imperial Pigeon, <i>Ducula badia cuprea</i> (Jerdon)	118
512	Greyheaded Imperial Pigeon, <i>Ducula badia griseicapilla</i> Walden	119
513	West Himalayan Snow Pigeon, <i>Columba leuconota leuconota</i> Vigors	120
514	East Himalayan Snow Pigeon, <i>Columba leuconota gradaria</i> Hartert	122
515	Turkestan Hill Pigeon, <i>Columba rupestris turkestanica</i> Buturlin	123
516	Blue Rock Pigeon, <i>Columba livia neglecta</i> Hume	125
517	Indian Blue Rock Pigeon, <i>Columba livia intermedia</i> Strickland	125
518	Eastern Stock Pigeon, <i>Columba eversmanni</i> Bonaparte	128
519	Eastern Wood Pigeon or Cushat, <i>Columba palumbus carotis</i> (Bonaparte)	129
520	Speckled Wood Pigeon, <i>Columba hodgsonii</i> Vigors	131
521	Nigiri Wood Pigeon, <i>Columba elphinstonii</i> (Sykes)	132
522	Ceylon Wood Pigeon, <i>Columba torringtoni</i> Bonaparte	134
523	Ashy Wood Pigeon, <i>Columba pulchricollis</i> Blyth	134
524	Purple Wood Pigeon, <i>Columba punicea</i> Blyth	135
525	Andaman Wood Pigeon, <i>Columba palumboides</i> (Hume)	137
526	Bartailed Cuckoo-Dove, <i>Macropygia unchall tusalia</i> (Blyth)	138
527	Nicobar Cuckoo-Dove, <i>Macropygia rufipennis rufipennis</i> Blyth	139
527a	Andaman Cuckoo-Dove, <i>Macropygia rufipennis andamanica</i> Abdulali	140
528	[Streptopelia turtur turtur (Linnaeus)]	141
529	Persian Turtle-Dove, <i>Streptopelia turtur arenicola</i> (Hartert)	141
530	Rufous Turtle-Dove, <i>Streptopelia orientalis orientalis</i> (Latham)	142
531	Western Turtle-Dove, <i>Streptopelia orientalis meena</i> (Sykes)	143
532	Rufous Turtle-Dove, <i>Streptopelia orientalis agricola</i> (Tickell)	145
533	Peninsular Turtle-Dove, <i>Streptopelia orientalis erythrocephala</i> (Bonaparte)	146
534	Indian Ring Dove, <i>Streptopelia decaocto decaocto</i> (Frivaldszky)	147
535	Indian Red Turtle-Dove, <i>Streptopelia tranquebarica tranquebarica</i> (Hermann)	149
536	Burmese Red Turtle-Dove, <i>Streptopelia tranquebarica humilis</i> (Temminck)	151
537	Indian Spotted Dove, <i>Streptopelia chinensis suratensis</i> (Gmelin)	152
538	Ceylon Spotted Dove, <i>Streptopelia chinensis ceylonensis</i> (Reichenbach)	153
539	Burmese Spotted Dove, <i>Streptopelia chinensis tigrina</i> (Temminck)	154
540	NEFA Spotted Dove, <i>Streptopelia chinensis edwardsi</i> Ripley	155
541	Indian Little Brown or Senegal Dove, <i>Streptopelia senegalensis camboynensis</i> (Gmelin)	155
542	Indian Emerald Dove, <i>Chalcophaps indica indica</i> (Linnaeus)	157
543	Ceylon Emerald Dove, <i>Chalcophaps indica robinsoni</i> Baker	159
544	Andaman Emerald Dove, <i>Chalcophaps indica maxima</i> Hartert	160
544a	Nicobar Emerald Dove, <i>Chalcophaps indica augusta</i> Bonaparte	161, 318
544b	Nicobar Pigeon, <i>Caloenas nicobarica nicobarica</i> (Linnaeus)	161

Order PSITTACIFORMES

Family PSITTACIDAE: Parrots		
545	Large Indian Parakeet, <i>Pittacula eupatria nipalensis</i> (Hodgson)	164
546	Large Ceylonese Parakeet, <i>Pittacula eupatria eupatria</i> (Linnaeus)	166
547	Large Burmese Parakeet, <i>Pittacula eupatria acensis</i> (Kloss)	167
548	Large Andaman Parakeet, <i>Pittacula eupatria magnirostris</i> (Ball)	168
549	Northern Roseringed Parakeet, <i>Pittacula krameri borealis</i> (Neumann)	169
550	Roseringed Parakeet, <i>Pittacula krameri manillensis</i> (Bechstein)	171
551	Indian Redbreasted Parakeet, <i>Pittacula alexandri fasciata</i> (P. L. S. Müller)	172
552	Andaman Redbreasted Parakeet, <i>Pittacula alexandri abbotti</i> (Oberholser)	174
553	Blyth's Nicobar Parakeet, <i>Pittacula caniceps</i> (Blyth)	175
554	Lord Derby's Parakeet, <i>Pittacula derbyana</i> (Fraser)	175
555	Andaman Redcheeked Parakeet, <i>Pittacula longicauda tyleri</i> (Hume)	176
556	Nicobar Redcheeked Parakeet, <i>Pittacula longicauda nicobarica</i> (Gould)	177
557	Northern Blossomheaded Parakeet, <i>Pittacula cyanocephala bengalensis</i> (Forster)	178
558	Southern Blossomheaded Parakeet, <i>Pittacula cyanocephala cyanocephala</i> (Linnaeus)	179
559	Assam Blossomheaded Parakeet, <i>Pittacula roseata roseata</i> Biswas	181
560	Arakan Blossomheaded Parakeet, <i>Pittacula roseata jinnae</i> Biswas	182
561	Rothschild's Parakeet, <i>Pittacula intermedia</i> (Rothschild)	182
562	Himalayan Slatyheaded Parakeet, <i>Pittacula himalayensis</i> (Lesson)	183
563	Eastern Slatyheaded Parakeet, <i>Pittacula frontalis</i> (Hume)	184
564	Bluwinged Parakeet, <i>Pittacula columboides</i> (Vigors)	185
565	Layard's Parakeet, <i>Pittacula calliope</i> (Blyth)	187
566, 567	Indian Lorikeet, <i>Loriculus vernalis</i> (Sparrman)	188
568	Ceylon Lorikeet, <i>Loriculus berylus</i> (J. R. Forster)	190

Order CUCULIFORMES

Family CUCULIDAE: Cuckoos		
569	Redwinged Crested Cuckoo, <i>Clamator coromandus</i> (Linnaeus) ..	192
570	Pied Crested Cuckoo, <i>Clamator jacobinus serratus</i> (Sparrrman) ..	194
571	Ceylon Pied Crested Cuckoo, <i>Clamator jacobinus jacobinus</i> (Boddaert) ..	197
572	Large Hawk-Cuckoo, <i>Cuculus sparveroides sparveroides</i> Vigors ..	198
573	Common Hawk-Cuckoo or Brainfever Bird, <i>Cuculus varius varius</i> Vahl ..	200
574	Ceylon Hawk-Cuckoo, <i>Cuculus varius cicelae</i> (Phillips) ..	202
575	Hodgson's Hawk-Cuckoo, <i>Cuculus fugax niscolor</i> Blyth ..	203
576	Indian Cuckoo, <i>Cuculus micropterus micropterus</i> Gould ..	204
577	Asiatic Cuckoo, <i>Cuculus canorus subtelephonus</i> Zarudny ..	207
578	Cuckoo, <i>Cuculus canorus canorus</i> Linnaeus ..	208
579	Khasi Hills Cuckoo, <i>Cuculus canorus bakeri</i> Hartert ..	210
580	Himalayan Cuckoo, <i>Cuculus saturatus saturatus</i> Blyth ..	211
580a	Horsfield's Cuckoo, <i>Cuculus saturatus horsfieldi</i> Moore ..	213, 319
581	Small Cuckoo, <i>Cuculus poliocephalus poliocephalus</i> Latham ..	213
582	Indian Baybanded Cuckoo, <i>Cacomantis sonneratii sonneratii</i> (Latham) ..	215
583	Ceylon Baybanded Cuckoo, <i>Cacomantis sonneratii waitii</i> (Baker) ..	217
584	Indian Plaintive Cuckoo, <i>Cacomantis passerinus</i> (Vahl) ..	218
585	Rufousbellied or Burmese Plaintive Cuckoo, <i>Cacomantis merulinus</i> Heine ..	220
586	Emerald Cuckoo, <i>Chalcites maculatus</i> (Gmelin) ..	221
587	Violet Cuckoo, <i>Chalcites xanthorhynchus xanthorhynchus</i> (Horsfield) ..	223
588	Indian Drongo-Cuckoo, <i>Sumiculus lugubris dicruroides</i> (Hodgson) ..	224
589	Ceylon Drongo-Cuckoo, <i>Sumiculus lugubris steuarti</i> Baker ..	226
590	Indian Koel, <i>Eudynamis scolopacea scolopacea</i> (Linnaeus) ..	227
591	Malay Koel, <i>Eudynamis scolopacea malayana</i> Cabanis & Heine ..	229
592	Andaman Koel, <i>Eudynamis scolopacea dolosa</i> Ripley ..	230
593	Large Greenbilled Malkoha, <i>Rhopodytes tristis tristis</i> (Lesson) ..	231
594	Burmese Large Greenbilled Malkoha, <i>Rhopodytes tristis saliens</i> Mayr ..	232
595	Small Greenbilled Malkoha, <i>Rhopodytes viridirostris</i> (Jerdon) ..	233
596	Western Sirkeer Cuckoo, <i>Taccocua leschenaultii sirkeer</i> (J. E. Gray) ..	234
597	Eastern Sirkeer Cuckoo, <i>Taccocua leschenaultii infusata</i> Blyth ..	236
598	Southern Sirkeer Cuckoo, <i>Taccocua leschenaultii leschenaultii</i> Lesson ..	237
599	Redfaced Malkoha, <i>Phaenitophaga pyrrhocephalus</i> (Pennant) ..	238
600	Common Crow-Pheasant or Coucal, <i>Centropus sinensis sinensis</i> (Stephens) ..	240
601	East Pakistan Crow-Pheasant, <i>Centropus sinensis intermedius</i> (Hume) ..	242
602	Southern Crow-Pheasant, <i>Centropus sinensis parroti</i> Stresemann ..	243
603	Andaman Crow-Pheasant, <i>Centropus (sinensis) andamanensis</i> Beavan ..	244
604	Ceylon Coucal, <i>Centropus chlororhynchus</i> Blyth ..	245
605	Lesser Coucal, <i>Centropus toulou bengalensis</i> (Gmelin) ..	246

Order STRIGIFORMES

Family STRIGIDAE		
Subfamily TYTONINAE: Barn Owls		
606	Indian Barn Owl, <i>Tyto alba stertens</i> Hartert ..	250
607	Andaman Barn Owl, <i>Tyto alba droopstorffii</i> (Hume) ..	251
608	Grass Owl, <i>Tyto capensis longimembris</i> (Jerdon) ..	252
609	Sikkim Bay Owl, <i>Phodilus badius saturatus</i> Robinson ..	253
610	Ceylon Bay Owl, <i>Phodilus badius assimilis</i> Hume ..	255
610a	Peninsular Bay Owl, <i>Phodilus badius ripleyi</i> Hussain & Khan ..	255, 319
Subfamily STRIGINAE: Owls		
611	Western Spotted Scops Owl, <i>Otus spilocephalus huttoni</i> (Hume) ..	256
612	Eastern Spotted Scops Owl, <i>Otus spilocephalus spilocephalus</i> (Blyth) ..	257
613	Andaman Scops Owl, <i>Otus balli</i> (Hume) ..	258
614	Striated or Pallid Scops Owl, <i>Otus brucei</i> (Hume) ..	259

615	Eastern Scops Owl, <i>Otus scops pulchellus</i> (Pallas) ..	261
616	North Indian Scops Owl, <i>Otus scops sumia</i> (Hodgson) ..	262
617	Peninsular Scops Owl, <i>Otus scops rufipennis</i> (Sharpe) ..	263
618	Ceylon Scops Owl, <i>Otus scops leggei</i> Ticehurst ..	264
618a	Andaman Scops Owl, <i>Otus scops modestus</i> (Walden) ..	265
618b	Nicobar Scops Owl, <i>Otus scops nicobariensis</i> (Hume) ..	265, 320
619	Punjab Collared Scops Owl, <i>Otus bakkamoena plumipes</i> (Hume) ..	266
620	West Pakistan Collared Scops Owl, <i>Otus bakkamoena deserticolor</i> Ticehurst ..	267
621	Gangetic Collared Scops Owl, <i>Otus bakkamoena gangeticus</i> Ticehurst ..	268
622	Central Indian Collared Scops Owl, <i>Otus bakkamoena marathae</i> Ticehurst ..	268
623	Ceylon Collared Scops Owl, <i>Otus bakkamoena bakkamoena</i> Pennant ..	269
624	Burmese Collared Scops Owl, <i>Otus bakkamoena lettia</i> (Hodgson) ..	270
625	Turkestan Horned or Eagle-Owl, <i>Bubo bubo turcomanus</i> (Eversmann) ..	271
626	Tibetan Horned or Eagle-Owl, <i>Bubo bubo tibetanus</i> Bianchi ..	272
626a	Himalayan Horned or Eagle-Owl, <i>Bubo bubo hemachalana</i> Hume ..	273
627	Indian Great Horned or Eagle-Owl, <i>Bubo bubo bengalensis</i> (Franklin) ..	273
628	Forest Eagle-Owl, <i>Bubo nipalensis nipalensis</i> Hodgson ..	276
629	Ceylon Forest Eagle-Owl, <i>Bubo nipalensis blighi</i> Legge ..	277
630	Dusky Horned Owl, <i>Bubo coromandus coromandus</i> (Latham) ..	278
631	Brown Fish Owl, <i>Bubo zeylonensis leschenaulti</i> (Temminck) ..	280
632	Ceylon Brown Fish Owl, <i>Bubo zeylonensis zeylonensis</i> (Gmelin) ..	282
633	Tawny Fish Owl, <i>Bubo flavipes</i> (Hodgson) ..	283
634	Snowy Owl, <i>Nyctea scandiaca</i> (Linnaeus) ..	284
635	Collared Pygmy Owllet, <i>Glaucidium brodiei brodiei</i> (Burton) ..	285
636	Barred Jungle Owlet, <i>Glaucidium radiatum radiatum</i> (Tickell) ..	286
637	Malabar Barred Jungle Owlet, <i>Glaucidium radiatum malabaricum</i> (Blyth) ..	288
638	Chestnutbacked Barred Owllet, <i>Glaucidium radiatum castanonotum</i> (Blyth) ..	288
639	West Himalayan Barred Owllet, <i>Glaucidium cuculoides cuculoides</i> (Vigors) ..	289
640	East Himalayan Barred Owllet, <i>Glaucidium cuculoides austerum</i> Ripley ..	291
641	Burmese Barred Owllet, <i>Glaucidium cuculoides rufescens</i> Baker ..	291
642	Indian Brown Hawk-Owl, <i>Ninox scutulata lugubris</i> (Tickell) ..	292
643	Burmese Brown Hawk-Owl, <i>Ninox scutulata burmanica</i> Hume ..	294
644	South Indian Brown Hawk-Owl, <i>Ninox scutulata hirsuta</i> (Temminck) ..	295
645	Hume's Brown Hawk-Owl, <i>Ninox scutulata obscura</i> Hume ..	295
646	Andaman Brown Hawk-Owl, <i>Ninox affinis affinis</i> Beavan ..	296
647	Nicobar Brown Hawk-Owl, <i>Ninox affinis isolata</i> Baker ..	297
648	Hutton's Owllet, <i>Athene noctua bactriana</i> Blyth ..	298
649	Tibet Owllet, <i>Athene noctua ludlowi</i> Baker ..	299
650	Northern Spotted Owllet, <i>Athene brama indica</i> (Franklin) ..	299
651	East Assam Spotted Owllet, <i>Athene brama ultra</i> Ripley ..	301
652	Southern Spotted Owllet, <i>Athene brama brama</i> (Temminck) ..	302
653	Forest Spotted Owllet, <i>Athene blewitti</i> (Hume) ..	302
654	Hume's Wood Owl, <i>Strix butleri</i> (Hume) ..	304
655	Saurashtra Mottled Wood Owl, <i>Strix ocellata grandis</i> Koelz ..	304
656	Northern Mottled Wood Owl, <i>Strix ocellata griseescens</i> Koelz ..	305
657	Southern Mottled Wood Owl, <i>Strix ocellata ocellata</i> (Lesson) ..	305
658	Himalayan Brown Wood Owl, <i>Strix leptogrammica newarensis</i> (Hodgson) ..	307
659, 660	Brown Wood Owl, <i>Strix aluco nivicola</i> (Blyth) ..	308
661	Scully's Wood Owl, <i>Strix aluco biddulphi</i> Scully ..	310
662	Himalayan Wood Owl, <i>Strix aluco nivicola</i> (Blyth) ..	311
663	Longeared Owl, <i>Asio otus otus</i> (Linnaeus) ..	313
664	Shorteared Owl, <i>Asio flammeus flammeus</i> (Pontoppidan) ..	314
665	Tengmalm's Owl, <i>Aegolius funereus caucasicus</i> (Buturlin) ..	317
Appendix		
665	Tengmalm's Owl, <i>Aegolius funereus caucasicus</i> (Buturlin) ..	319

VOLUME 4

Order CAPRIMULGIFORMES

Family PODARGIDAE: Frogmouths		
666	Ceylon Frogmouth, <i>Batrachostomus moniliger</i> Blyth ..	1
667	Hodgson's Frogmouth, <i>Batrachostomus hodgsoni hodgsoni</i> (G. R. Gray) ..	3
Family CAPRIMULGIDAE: Nightjars or Goatsuckers		
668	Great Eared Nightjar, <i>Eurostopus macrotis cerviniceps</i> (Gould) ..	5
669	ssp <i>bourdilloni</i> (Hume) ..	6
670	Indian Jungle Nightjar, <i>Caprimulgus indicus hazarae</i> Whistler & Kinnear ..	8
671	ssp <i>indicus</i> Latham ..	10
672	<i>kelaarti</i> Blyth ..	11
672a	<i>jataka</i> Temminck & Schlegel ..	12, 257
673	ssp <i>capensis</i> ..	12
673a	ssp <i>rtzov</i> ..	14, 258
674	ssp <i>ickell</i> ..	14
675	ssp <i>atripennis</i> Jerdon ..	16
676, 677	ssp <i>bimaculatus</i> Hartert ..	18
678	ssp <i>andamanicus</i> Hume ..	19
679	ssp <i>indicus</i> ..	20
680	Indian Little Nightjar, <i>Caprimulgus asiaticus asiaticus</i> Latham ..	21
681	ssp <i>eidus</i> Peters ..	23
682	Franklin's, or Allied, Nightjar, <i>Caprimulgus affinis monticola</i> Franklin ..	23

Order APODIFORMES

Family APODIDAE		
Subfamily APODINAE: Swifts		
683	Himalayan Swiftlet, <i>Collocalia brevirostris brevirostris</i> (Horsfield) ..	26
684	ssp <i>innominata</i> Hume ..	28
684a	Indomalayan or 'Black-nest' Swiftlet, <i>Collocalia maxima maxima</i> Hume ..	28
685	Indian Edible-nest Swiftlet, <i>Collocalia unicolor</i> (Jerdon) ..	29
686	Andaman Grey-rumped or 'White-nest' Swiftlet, <i>Collocalia fuciphaga inexpectata</i> Hume ..	31
687	Whitebellied Swiftlet, <i>Collocalia esculenta affinis</i> Beavan ..	32
688	Whitethroated Spinetail Swift, <i>Chaetura caudata nudipes</i> (Hodgson) ..	33
689	Cochinchina Spinetail Swift, <i>Chaetura cochinchinensis ruficincta</i> Biswas ..	35
690	ssp <i>cochinchinensis</i> Oustalet ..	35
691	Large Brown-throated Spinetail Swift, <i>Chaetura gigantea indica</i> Hume ..	36
692	Whiterumped Spinetail Swift, <i>Chaetura glystica</i> (Tickell) ..	37
693	Alpine Swift, <i>Apus melba melba</i> (Linnaeus) ..	39
694	ssp <i>nubifuga</i> Koelz ..	40
695	ssp <i>bakeri</i> Hartert ..	42
696	Swift, <i>Apus apus pekinnensis</i> (Swinhoe) ..	43
697	Pallid Swift, <i>Apus pallidus pallidus</i> (Shelley) ..	45
698	Darkbacked Swift, <i>Apus acuticauda</i> (Jerdon) ..	46
699	Large Whiterumped Swift, <i>Apus pacificus pacificus</i> (Latham) ..	47
700	ssp <i>leucorhynchus</i> (Blyth) ..	49
701	ssp <i>kawai</i> (Yamashina) ..	50

702	House-Swift, <i>Apus affinis galileensis</i> (Antinori) ..	50
703	ssp <i>affinis</i> (J. E. Gray) ..	51
704	<i>singalensis</i> Madarasz ..	54
705	<i>nipalensis</i> (Hodgson) ..	54
706	ssp <i>subfasciatus</i> (Blyth) ..	55
707	Palm Swift, <i>Cypsiurus parvus balaensis</i> (J. E. Gray) ..	56
708	ssp <i>infumatus</i> (Sclater) ..	57
Subfamily HEMIPROGNINAE: Crested Swifts		
709	Crested Swift, <i>Hemiprocne longipennis coronata</i> (Tickell) ..	58

Order TROGONIFORMES

Family TROGONIDAE: Trogons		
710	Trogon, <i>Harpactes fasciatus legeri</i> Koelz ..	61
711	ssp <i>malabaricus</i> (Gould) ..	61
712	<i>fasciatus</i> (Pennant) ..	63
713, 714	Redheaded Trogon, <i>Harpactes erythrocephalus hodgsonii</i> (Gould) ..	64
715	ssp <i>erythrocephalus</i> (Gould) ..	66
716	Ward's Trogon, <i>Harpactes wardi</i> (Kinnear) ..	66

Order CORACIIFORMES

Family ALCEDINIDAE: Kingfishers		
717	Pied Kingfisher, <i>Ceryle lugubris continentalis</i> Hartert ..	68
718	ssp <i>guttulata</i> Stejneger ..	70
719	Lesser Pied Kingfisher, <i>Ceryle rudis leucomelanura</i> Reichenbach ..	71
720	ssp <i>travancorensis</i> Whistler & Kinnear ..	73
721	Blyth's Kingfisher, <i>Alcedo hercules</i> Laubmann ..	74
722	Small Blue Kingfisher, <i>Alcedo althys pallasii</i> Reichenbach ..	75
723	ssp <i>bengalensis</i> Gmelin ..	76
724	ssp <i>laprobana</i> Kleinschmidt ..	77
725	Blue-eared Kingfisher, <i>Alcedo meninting collaris</i> Baker ..	78
726	ssp <i>philipini</i> Baker ..	79
726a	ssp <i>rufigaster</i> Walden ..	80
727	Threetoed Kingfisher, <i>Cox erythacus erythacus</i> (Linnaeus) ..	81
727a	ssp <i>rufidorsus</i> Strickland ..	82, 258
728	ssp <i>macrorhynchus</i> Oberholser ..	82
729	Brownwinged Kingfisher, <i>Pelargopsis amauroptera</i> (Pearson) ..	83
730	Storkbilled Kingfisher, <i>Pelargopsis capensis capensis</i> (Linnaeus) ..	84
731	ssp <i>osmaston</i> (Baker) ..	86
732	ssp <i>intermedia</i> Hume ..	86
733	Ruddy Kingfisher, <i>Halcyon coromanda coromanda</i> (Latham) ..	87
734	ssp <i>mizorkina</i> (Oberholser) ..	89
735	Whitebreasted Kingfisher, <i>Halcyon smyrnensis smyrnensis</i> (Linnaeus) ..	89
736	ssp <i>fusca</i> (Boddaert) ..	90
737	ssp <i>perpulchra</i> Madarasz ..	92
738	ssp <i>saturator</i> Hume ..	94
739	Blackcapped Kingfisher, <i>Halcyon pileata</i> (Boddaert) ..	95
740	Whitecollared Kingfisher, <i>Halcyon chloris vidali</i> Sharpe ..	95
741	ssp <i>humii</i> Sharpe ..	96

742	<i>darwini</i> Sharpe	97	806	Scalybellied Green Woodpecker, <i>Picus squamatus flavirostris</i> (Menzbier)	182
743	<i>occipitalis</i> (Blyth)	98	807	<i>spp squamatus</i> Vigors	182
Family MEROPIDAE: Bee-eaters					
744	Chestnutheaded Bee-eater, <i>Merops leschenaulti leschenaulti</i> Vieillot	99	808	Little Scalybellied Green Woodpecker, <i>Picus myrmecophoneus</i> Stresemann	184
745	<i>spp andamanensis</i> Marien	101	809	Blacknaped Green Woodpecker, <i>Picus canus sanguineiceps</i> Baker	186
746	European Bee-eater, <i>Merops apiaster</i> Linnaeus	102	810	<i>spp hessei</i> Gyldestolpe	188
747	Bluecheeked Bee-eater, <i>Merops superciliosus persicus</i> Pallas	104	811	<i>sordidior</i> Rippon	189
748	Bluetailed Bee-eater, <i>Merops philippinus philippinus</i> Linnaeus	106	812	Yellownaped Woodpecker, <i>Picus flavinucha kumaonensis</i> (Koelz)	190
749	Small Green Bee-eater, <i>Merops orientalis beludschicus</i> Neumann	108	813	<i>spp flavinucha</i> Gould	190
750	<i>spp orientalis</i> Latham	109	814	Small Yellownaped Woodpecker, <i>Picus chlorolophus similis</i> Meinertzhagen	192
751	<i>birmanus</i> Neumann	110	815	<i>spp chlorolophus</i> Vieillot	193
752	<i>ceylonicus</i> Whistler	111	816	<i>chlorogaster</i> Jerdon	194
753	Bluebearded Bee-eater, <i>Nyctornis atheroni atheroni</i> (Jardine & Selby)	112	817	<i>wellsi</i> Meinertzhagen	195
Family CORAGIIDAE: Rollers or Blue Jays					
754	Kashmir Roller, <i>Coracias garrulus semenowi</i> Loudon & Tschudi	114	818	Lesser Goldenbacked Woodpecker, <i>Dinopium benghalense dilutum</i> (Blyth)	196
755	Indian Roller, <i>Coracias benghalensis benghalensis</i> (Linnaeus)	116	819	<i>spp benghalense</i> (Linnaeus)	197
756	<i>spp indica</i> Linnaeus	118	820	<i>puncticollis</i> (Malherbe)	199
757	<i>affinis</i> Horsfield	119	821	<i>ulminas</i> (Whistler & Kinnear)	199
758, 761	Broadbilled Roller, <i>Eurystomus orientalis cyanicollis</i> Vieillot	120	822	<i>jaffense</i> (Whistler)	200
759	<i>spp laetior</i> Sharpe	122	823	<i>psarodes</i> (A. Lichtenstein)	201
760	<i>irisi</i> Deraniyagala	123	824	Himalayan Goldenbacked Threetoed Woodpecker, <i>Dinopium shorii</i>	202
762	<i>gigas</i> Stresemann	123		<i>shorii</i> (Vigors)	202
Family UPUPIDAE: Hoopoes					
763	Hoopoe, <i>Upupa epops epops</i> Linnaeus	124	825	Indian Goldenbacked Threetoed Woodpecker, <i>Dinopium javanense</i>	203
764	<i>spp saturata</i> Lonnberg	127		<i>malabaricum</i> Whistler & Kinnear	204
765	<i>ceylonensis</i> Reichenbach	128	826	<i>spp intermedium</i> (Blyth)	204
766	<i>longirostris</i> Jerdon	128	827	Paleheaded Woodpecker, <i>Gecinulus grantia grantia</i> (Horsfield)	205
Family BUCEROTIDAE: Hornbills					
767	Grey Hornbill, <i>Tockus bistris</i> (Scopoli)	130	828	Great Slaty Woodpecker, <i>Mulleripicus pulcherrulentus mohun</i> Ripley	206
768	Malabar Grey Hornbill, <i>Tockus griseus griseus</i> (Latham)	132	829	<i>spp harterti</i> Hesse	206
769	<i>spp gingalensis</i> (Shaw)	133	830	Great Black Woodpecker, <i>Dryocopus javensis hodgsonii</i> (Jerdon)	208
770	Whitethroated Brown Hornbill, <i>Ptilolaemus tickelli austeni</i> (Jerdon)	134	831	<i>spp hodgii</i> (Blyth)	210
771	Rufousnecked Hornbill, <i>Aceros nipalensis</i> (Hodgson)	135	831a	Black Woodpecker, <i>Dryocopus martius khamensis</i> (Buturlin)	210, 259
772	Wreathed Hornbill, <i>Rhyticeros undulatus tichehursti</i> Deignan	137	832	Rufousbellied Woodpecker, <i>Hypopieus hyperythrus marshalli</i> (Hartert)	211
773	Narcondam Hornbill, <i>Rhyticeros (plicatus) narcondami</i> (Hume)	139	833	<i>spp hyperythrus</i> (Vigors)	211
774	Indian Pied Hornbill, <i>Anthracoceros malabaricus malabaricus</i> (Gmelin)	140	834	Great Spotted Woodpecker, <i>Picoides major stresemanni</i> (Rensch)	213
775	Lesser Pied Hornbill, <i>Anthracoceros coronatus coronatus</i> (Boddaert)	142	835	Sind Pied Woodpecker, <i>Picoides assimilis</i> (Blyth)	215
776	Great Pied Hornbill, <i>Buceros bicornis honmai</i> Hodgson	143	836	Himalayan Pied Woodpecker, <i>Picoides himalayensis albescentis</i> (Baker)	216
Order PICIFORMES					
Family CAPITONIDAE: Barbets					
777	Great Barbet, <i>Megalaima virens marshallorum</i> Swinhoe	147	837	<i>spp himalayensis</i> (Jardine & Selby)	217
778	<i>spp magnifica</i> Baker	149	838, 839	Darjeeling Pied Woodpecker, <i>Picoides darjellensis darjellensis</i>	218
779	<i>mayri</i> Ripley	149		(Blyth)	219
780	Large Green Barbet, <i>Megalaima zeylanica caniceps</i> (Franklin)	150	840	Crimsonbreasted Pied Woodpecker, <i>Picoides cathpharius cathpharius</i> (Blyth)	219
781	<i>spp inornata</i> Walden	152	840a	<i>spp ludlowi</i> (Vaurie)	220
782	<i>zeylanica</i> (Gmelin)	152	841	<i>pyrrhorostris</i> (Hume)	221
783	Lineated Barbet, <i>Megalaima lineata rana</i> Ripley	153	842	Brownheaded Pied Woodpecker, <i>Picoides auriceps auriceps</i> (Vigors)	221
784	<i>spp hodgsoni</i> Bonaparte	154	843	<i>spp incognitus</i> (Scully)	222
785	Small Green Barbet, <i>Megalaima viridis</i> (Boddaert)	155	844	Stripebreasted Pied Woodpecker, <i>Picoides atratus</i> (Blyth)	223
786	Yellowfronted Barbet, <i>Megalaima flavifrons</i> (Cuvier)	157	845	Fulvousbreasted Pied Woodpecker, <i>Picoides macei macei</i> (Vieillot)	224
787	Goldthroated Barbet, <i>Megalaima franklinii franklinii</i> (Blyth)	157	846	<i>spp andamanensis</i> (Blyth)	225
788	Bluethroated Barbet, <i>Megalaima asiatica asiatica</i> (Latham)	158	847	Yellowfronted Pied Woodpecker, <i>Picoides maharattensis maharattensis</i>	226
789	Blue-eared Barbet, <i>Megalaima australis cyanotis</i> (Blyth)	160		(Latham)	226
790	Crimsonthroated Barbet, <i>Megalaima rubricapilla malabarica</i> (Blyth)	161	848	Greycrested Pigmy Woodpecker, <i>Picoides canicapillus mitchellii</i>	228
791	<i>spp rubricapilla</i> (Gmelin)	162		(Malherbe)	228
792	Crimsonbreasted Barbet or Coppermouth, <i>Megalaima haemacephala indica</i> (Latham)	163	849	<i>spp semicoronatus</i> (Malherbe)	229
Family INDICATORIDAE: Honeyguides					
793	Honeyguide, <i>Indicator xanthonotus raddiffi</i> Hume	165	850	<i>canicapillus</i> (Blyth)	230
794	<i>spp xanthonotus</i> Blyth	166	851	Pigmy Woodpecker, <i>Picoides nanus nanus</i> (Vigors)	231
795	<i>fulvus</i> Ripley	167	852	<i>spp hardwickii</i> (Jerdon)	231
Family PICIDAE					
Subfamily JYNGINAE: Wrynecks					
796	Wryneck, <i>Jynx torquilla torquilla</i> Linnaeus	168	853	<i>cinereigula</i> (Malherbe)	233
797	<i>spp chinensis</i> Hesse	170	854	<i>gymnophthalmus</i> (Blyth)	233
797a	<i>himalayana</i> Vaurie	170	855	Threetoed Woodpecker, <i>Picoides tridactylus funebris</i> Verreaux	234
Subfamily PICUMINAE: Piculets					
798	Speckled Piculet, <i>Picumnus inornatus inornatus</i> Burton	172	856	Heartspotted Woodpecker, <i>Hemicircus canente canente</i> (Lesson)	236
799	<i>spp malayorum</i> Hartert	174	857	Redeared Bay Woodpecker, <i>Blythipicus pyrrhotis pyrrhotis</i> (Hodgson)	238
800	Rufous Piculet, <i>Sasia ochracea ochracea</i> Hodgson	175	858	Blackbacked Woodpecker, <i>Chrysocolaptes festivus festivus</i> (Boddaert)	239
801	<i>spp reichenowii</i> Hesse	176	859	<i>spp tantus</i> Ripley	241
Subfamily PICINAE: Woodpeckers					
802	Rufous Woodpecker, <i>Micropternus brachyurus humei</i> Kloss	177	860	Larger Goldenbacked Woodpecker, <i>Chrysocolaptes lucidus sultaneus</i>	242
803	<i>spp phaeiceps</i> Blyth	178		(Hodgson)	242
804	<i>jerdonii</i> (Malherbe)	179	861	<i>spp guttauristatus</i> (Tickell)	243
Order PASSERIFORMES					
Family EURLAIMIDAE: Broadbills					
864	Collared Broadbill, <i>Serilophus lunatus rubropygius</i> (Hodgson)	247	862	<i>chersonesus</i> Kloss	244
865	Longtailed Broadbill, <i>Prarismomus dalhousiae dalhousiae</i> (Jameson)	248	863	<i>stricklandi</i> (Layard)	245
Family PITTIDAE: Pittas					
866	Bluenaped Pitta, <i>Pitta nipalensis nipalensis</i> (Hodgson)	250			
867	Indian Pitta, <i>Pitta brachyura brachyura</i> (Linnaeus)	252			
868	Bluewinged Pitta, <i>Pitta moluccensis megarhyncha</i> Schlegel	253			
869	Hooded or Greenbreasted Pitta, <i>Pitta sordida cucullata</i> Hartlaub	254			
870	<i>spp abbotti</i> Richmond	255			
871	Blue Pitta, <i>Pitta cyanea cyanea</i> Blyth	256			
Appendix					

VOLUME 5

Order PASSERIFORMES (cont.)

Family ALAUDIDAE: Larks

872	Singing Bush Lark, <i>Mirafra javanica cantillans</i> Blyth	2	891	Ganges Sand Lark, <i>Calandrella reyal reyal</i> (Blyth)	27
873	Bengal Bush Lark, <i>Mirafra asarumica assamica</i> Horsfield	4	892	Eastern Calandra Lark, <i>Melanocorypha bimaculata torquata</i> Blyth	29
874	Madras Bush Lark, <i>Mirafra assamica affinis</i> Blyth	5	893	Ladakh Longbilled Calandra Lark, <i>Melanocorypha maxima holdereri</i>	30
	<i>th</i>	7		Reichenow	30
	<i>th</i>	9	894	Sikkim Longbilled Calandra Lark, <i>Melanocorypha maxima maxima</i>	31
879	Blackcrowned Finch-Lark, <i>Eremophila nigricipes affinis</i> (Blyth)	10		Blyth	31
880	Indian Desert Finch-Lark, <i>Ammomanes deserti phoenicurus</i> (Blyth)	12	895	Pamir Horned Lark, <i>Eremophila alpestris albicula</i> (Bonaparte)	33
881	Persian Rufoustailed Finch-Lark, <i>Ammomanes phoenicurus zarudnyi</i>	13	896	Longbilled Horned Lark, <i>Eremophila alpestris longirostris</i> (Moore)	34
	Hartert	13	897	Sikkim or Elwes's Horned Lark, <i>Eremophila alpestris elwesi</i> (Blanford)	35
882	Indian Rufoustailed Finch-Lark, <i>Ammomanes phoenicurus phoenicurus</i>	14	898	Baluchistan Crested Lark, <i>Galerida cristata magna</i> Hume	37
	(Franklin)	14	899	Indian Crested Lark, <i>Galerida cristata chendoola</i> (Franklin)	37
883	Southern Rufoustailed Finch-Lark, <i>Ammomanes phoenicurus testaceus</i>	16	900	Gilgit Crested Lark, <i>Galerida cristata lynei</i> Whistler	39
	Koelz	16	901	Malabar Crested Lark, <i>Galerida malabarica</i> (Scopoli)	39
884	Large Desert Lark, <i>Alaemon alaudipes doriae</i> (Salvadori)	19	902	Deccan or Sykes's Crested Lark, <i>Galerida drea</i> (Sykes)	40
885	Yarkand Short-toed Lark, <i>Calandrella cinerea longipennis</i> (Eversmann)	19	903	West Siberian Skylark, <i>Alauda arvensis dulcior</i> Brooks	42
886	Rufous Short-toed Lark, <i>Calandrella cinerea dukhunensis</i> (Sykes)	21	903a	Caucasian Skylark, <i>Alauda arvensis cantarella</i> Bonaparte	43
887	Karakoram or Hume's Short-toed Lark, <i>Calandrella acutirostris acutirostris</i> Hume	23	904	Turkestan Small Skylark, <i>Alauda gulgula inornata</i> Severtzov	44
888	Tibet Short-toed Lark, <i>Calandrella acutirostris tibetana</i> Brooks	24	905	Kashmir Small Skylark, <i>Alauda gulgula thamarum</i> R. & A. Meinertzhagen	44
888a	Persian Short-toed Lark, <i>Calandrella rufescens persica</i> (Sharpe)	25	906	Tibetan Small Skylark, <i>Alauda gulgula inornata</i> Bianchi	45
889	Indus Sand Lark, <i>Calandrella reyal adarisi</i> (Hume)	26	907	Indian Small Skylark, <i>Alauda gulgula gulgula</i> Franklin	46
890	Saurashtra Sand Lark, <i>Calandrella reyal krishnakumarsinhji</i> Vaurie & Dharmakumarsinhji	27	908	Nilgiri Small Skylark, <i>Alauda gulgula australis</i> Brooks	47
			909	Yunnan Small Skylark, <i>Alauda gulgula terna</i> Mayr	48
Family HIRUNDINIDAE: Swallows					
910	Siberian Collared Sand Martin, <i>Riparia riparia dilata</i> (Sharpe & Wyatt)	49			

- 911 Eastern Collared Sand Martin, *Riparia riparia ijimae* (Lönngberg) .. 51
 912 Indian Greythroated Sand Martin, *Riparia paludicola chinensis* (J. E. Gray) .. 51
 913 Crag Martin, *Hirundo rupestris* Scopoli .. 53
 914 Dusky Crag Martin, *Hirundo concolor concolor* Sykes .. 55
 915 Pale Crag Martin, *Hirundo obsoleta pallida* (Hume) .. 56
 916 Western Swallow, *Hirundo rustica rustica* Linnaeus .. 57
 917 Eastern Swallow, *Hirundo rustica gutturalis* Scopoli .. 59
 918 Tytler's or Chestnutbellied Swallow, *Hirundo rustica tytleri* Jerdon .. 60
 919 .. 61
 920 .. 62
 921 .. 63
 922 Indian Cliff Swallow, *Hirundo fluvicola* Blyth .. 64
 923 Daurian Striated or Redrumped Swallow, *Hirundo daurica daurica* Linnaeus .. 66
 924 European Striated or Redrumped Swallow, *Hirundo daurica rufula* Temminck .. 67
 925 Himalayan Striated or Redrumped Swallow, *Hirundo daurica nipalensis* Hodgson .. 68
 926 Japanese Striated or Redrumped Swallow, *Hirundo daurica japonica* Temminck & Schlegel .. 70
 927 Indian Striated or Redrumped Swallow, *Hirundo daurica erythrogygia* Sykes .. 70
 928 Ceylon Striated or Redrumped Swallow, *Hirundo daurica hyperythra* Blyth .. 72
 929 Chinese Striated or Redrumped Swallow, *Hirundo striolata mayri* Hall .. 73
 930 European House Martin, *Delichon urbica urbica* (Linnaeus) .. 74
 931 Kashmir House Martin, *Delichon urbica cashmeriensis* (Gould) .. 75
 932 Nepal House Martin, *Delichon nipalensis nipalensis* Moore .. 76
- Family LANIIDAE: Shrikes or 'Butcher Birds'
- 933 Indian Grey Shrike, *Lanius excubitor lahtora* (Sykes) .. 79
 934 Baluchistan Grey Shrike, *Lanius excubitor pallidirostris* Cassin .. 81
 935 Persian Grey Shrike, *Lanius excubitor aucheri* Bonaparte .. 82
 936 Turkestan Grey Shrike, *Lanius excubitor homeyeri* Cabanis .. 82
 937 Lesser Grey Shrike, *Lanius minor* Gmelin .. 83
 938 Chestnutrumped Shrike, *Lanius collurioideus* Lesson .. 83
 939 Baluchistan Baybacked Shrike, *Lanius vittatus nargianus* Vaurie .. 84
 940 Indian Baybacked Shrike, *Lanius vittatus vittatus* Valenciennes .. 85
 941 Redbacked Shrike, *Lanius collurio collurio* Linnaeus .. 87
 942 Rufous Shrike, *Lanius collurio phoenicoides* (Schalow) .. 88
 943 Pale Brown Shrike, *Lanius collurio isabellinus* Hemprich & Ehrenberg .. 89
 944 Ladakh Greybacked Shrike, *Lanius tephronotus lahulensis* Koelz .. 91
 945 Eastern Tibet Greybacked Shrike, *Lanius tephronotus tephronotus* (Vigors) .. 92
 946 Rufousbacked Shrike, *Lanius schach erythronotus* (Vigors) .. 93
 947 South Indian Greybacked Shrike, *Lanius schach caniceps* Blyth .. 96
 948 Blackheaded Shrike, *Lanius schach tricolor* (Hodgson) .. 96
 949 Brown Shrike, *Lanius cristatus cristatus* Linnaeus .. 98
 950 Philippine Shrike, *Lanius cristatus lucionensis* Linnaeus .. 100
 951 Eastern Woodchat Shrike, *Lanius senator niloticus* (Bonaparte) .. 101
- Family ORIOOLIDAE: Orioles
- 952 European Golden Oriole, *Oriolus oriolus oriolus* (Linnaeus) .. 102
 953 Indian Golden Oriole, *Oriolus oriolus kundoo* Sykes .. 103
 954 Eastern Blacknaped Oriole, *Oriolus chinensis diffusus* Sharpe .. 105
 955 Slenderbilled Blacknaped Oriole, *Oriolus chinensis tenuirostris* Blyth .. 106
 956 Andaman Blacknaped Oriole, *Oriolus chinensis andamanensis* Tytler .. 107
 957 Nicobar Blacknaped Oriole, *Oriolus chinensis macrourus* Blyth .. 108
 958 North Indian Blackheaded Oriole, *Oriolus xanthornus xanthornus* (Linnaeus) .. 108
 959 South Indian Blackheaded Oriole, *Oriolus xanthornus maderaspatanus* Franklin .. 110
 960 Ceylon Blackheaded Oriole, *Oriolus xanthornus ceylonensis* Bonaparte .. 111
 960a Andaman Blackheaded Oriole, *Oriolus xanthornus andamanensis* Abdulali footnote .. 109
 961 Indian Maroon Oriole, *Oriolus trailii trailii* (Vigors) .. 112
- Family DICURURIDAE: Drongos
- 962 North Indian Black Drongo or King Crow, *Dicrurus adsimilis albirictus* (Hodgson) .. 114
 963 South Indian Black Drongo or King Crow, *Dicrurus adsimilis macrocerus* Vieillot .. 117
 964 Ceylon Black Drongo or King Crow, *Dicrurus adsimilis minor* Blyth .. 118
 965 Indian Grey Drongo, *Dicrurus leucophaeus longicaudatus* Hay .. 119
 966 Assam Grey Drongo, *Dicrurus leucophaeus hopwoodi* Baker .. 121
 966a Whitecheeked Grey Drongo, *Dicrurus leucophaeus salangensis* Reichenow .. 121
 967 Indian Whitebellied Drongo, *Dicrurus caerulescens caerulescens* (Linnaeus) .. 122
 968 Ceylon Whitebellied Drongo, *Dicrurus caerulescens insularis* (Sharpe) .. 123
 969 Ceylon Whitevented Drongo, *Dicrurus caerulescens leucopygialis* Blyth .. 124
 970 Crowbilled Drongo, *Dicrurus annectans* (Hodgson) .. 125
 971 Bronzed Drongo, *Dicrurus aeneus aeneus* Vieillot .. 126
 972 Lesser Racket-tailed Drongo, *Dicrurus remifer tectirostris* (Hodgson) .. 128
 973 Haircrested or Spangled Drongo, *Dicrurus hottentottus hottentottus* (Linnaeus) .. 131
 974 Large Andaman Drongo, *Dicrurus andamanensis dicruriformis* (Hume) .. 134
 975 Small Andaman Drongo, *Dicrurus andamanensis andamanensis* Tytler .. 134
 976 Northern Large Racket-tailed Drongo, *Dicrurus paradiseus grandis* (Gould) .. 136
 977 Southern Large Racket-tailed Drongo, *Dicrurus paradiseus paradiseus* (Linnaeus) .. 137
 978 Ceylon Large Racket-tailed Drongo, *Dicrurus paradiseus ceylonicus* Vaurie .. 140
 979 Ceylon Crested Black Drongo, *Dicrurus paradiseus lophorhinus* Vieillot .. 140
 980 Andaman Racket-tailed Drongo, *Dicrurus paradiseus otiosus* (Richmond) .. 142
 981 Nicobar Racket-tailed Drongo, *Dicrurus paradiseus nicobariensis* (Baker) .. 142
- Family ARTAMIDAE: Swallow-Shrikes or Wood Swallows
- 982 Ashy Swallow-Shrike, *Artamus fuscus* Vieillot .. 143
 983 Whitebreasted Swallow-Shrike, *Artamus leucorhynchus humei* Stresemann .. 145
- Family STURNIDAE: Starlings, Mynas
- 984 Spottedwinged Stare, *Saroglossa spiloptera* (Vigors) .. 147
 985 Tipperah Glossy Stare, *Aplonis panayensis affinis* (Blyth) .. 149
 986 Andaman Glossy Stare, *Aplonis panayensis tytleri* (Hume) .. 150
 987 .. (Gmelin) .. 152
 988 .. don) .. 154
 989 .. Jerdon) .. 155
 990 Andaman Whitecheeked Myna, *Sturnus erythropygius andamanensis* (Tytler) .. 156
 991 Nicobar Whiteheaded Myna, *Sturnus erythropygius erythropygius* (Blyth) .. 157
 992 Katchal Whiteheaded Myna, *Sturnus erythropygius katchalensis* (Richmond) .. 158
 993 Ceylon Whiteheaded Myna, *Sturnus sinex* (Bonaparte) .. 159
 994 Blackheaded or Brahminy Myna, *Sturnus pagodarum* (Gmelin) .. 160
 995 Daurian Myna, *Sturnus sturninus* (Pallas) .. 162
 996 Rosy Starling or Rosy Pastor, *Sturnus roseus* (Linnaeus) .. 163
 997 Finsch's or Common Indian Starling, *Sturnus vulgaris pollardskyi* Finsch .. 166
 998 .. Hume .. 168
 999 .. tus Sharpe .. 169
 1000 .. 170
 1001 .. 170
 1002 Indian Pied Myna, *Sturnus contra contra* Linnaeus .. 172
 1003 Eastern Pied Myna, *Sturnus contra sordidus* Ripley .. 175
 1004 Burmese Pied Myna, *Sturnus contra superciliosus* (Blyth) .. 175
 1005 Chinese or Greybacked Myna, *Sturnus sinensis* (Gmelin) .. 176
 1006 .. 177
 1007 .. 180
 1008 .. 181
 1009 Northern Jungle Myna, *Acridotheres fuscus fuscus* (Wagler) .. 183
 1010 .. 185
 1011 .. 186
 1012 .. 187
 1013 .. 188
 1014 Goldcrested Myna, *Mino coronatus* (Blyth) .. 189
 1015 Northern Hill Myna, *Gracula religiosa intermedia* A. Hay .. 191
 1016 Southern Hill Myna, *Gracula religiosa indica* (Cuvier) .. 194
 1017 Eastern Hill Myna, *Gracula religiosa peninsularis* Whistler & Kinnear .. 195
 1018 Andaman Hill Myna, *Gracula religiosa andamanensis* (Beavan) .. 196
 1019 Ceylon Hill Myna, *Gracula pilogenys* Blyth .. 197
- Family CORVIDAE: Crows, Magpies, Jays, etc.
- 1020 West Himalayan Redcrowned Jay, *Garrulus glandarius bispecularis* Vigors .. 199
 1021 East Himalayan Redcrowned Jay, *Garrulus glandarius interstinctus* Hartert .. 201
 1022 Blackthroated Jay, *Garrulus lanceolatus* Vigors .. 202
 1023 Green Magpie, *Cissa chinensis chinensis* (Boddaert) .. 205
 1024 Ceylon Blue Magpie, *Cissa ornata* (Wagler) .. 205
 1025 Western Yellowbilled Blue Magpie, *Cissa flavirostris acullata* (Gould) .. 207
 1026 Eastern Yellowbilled Blue Magpie, *Cissa flavirostris flavirostris* (Blyth) .. 208
 1027 Himalayan Redbilled Blue Magpie, *Cissa erythrorhyncha occipitalis* (Blyth) .. 209
 1028 Burmese Redbilled Blue Magpie, *Cissa erythrorhyncha magnirostris* (Blyth) .. 212
 1029 Kashmir or Whiterumped Magpie, *Pica pica bactriana* Bonaparte .. 213
 1030 Tibet or Blackrumped Magpie, *Pica pica bottanensis* Deléssert .. 215
 1030a Northwestern Tree Pie, *Dendrocitta vagabunda bristoli* Paynter .. 216
 1031 Western Tree Pie, *Dendrocitta vagabunda pallida* (Blyth) .. 217
 1032 Northeastern Tree Pie, *Dendrocitta vagabunda vagabunda* (Latham) .. 218
 1033 Kerala Tree Pie, *Dendrocitta vagabunda parvula* Whistler & Kinnear .. 220
 1034 Southeastern Tree Pie, *Dendrocitta vagabunda ceyroni* Whistler & Kinnear .. 221
 1035 Blackbrowed Tree Pie, *Dendrocitta frontalis frontalis* Horsfield .. 222
 1036 Whitebellied Tree Pie, *Dendrocitta leucogastra* Gould .. 223
 1037 West Himalayan Tree Pie, *Dendrocitta formosae occidentalis* Tiechurst .. 225
 1038, 1039 East Himalayan Tree Pie, *Dendrocitta formosae himalayensis* Blyth .. 226
 1040 Andaman Tree Pie, *Dendrocitta bayleyi* Tytler .. 228
 1041 Hume's Ground Chough, *Podoces humilis* Hume .. 229
 1042 Larger-spotted Nutcracker, *Nucifraga caryocatactes multipunctata* Gould .. 231
 1043 Himalayan Nutcracker, *Nucifraga caryocatactes hemispha* Vigors .. 233
 1044 Yunnan Nutcracker, *Nucifraga caryocatactes macella* Thayer & Bangs .. 235
 1045 Himalayan Yellowbilled or Alpine Chough, *Pyrrhocorax graculus* digilatus Hemprich & Ehrenberg .. 236
 1046 West Himalayan Redbilled Chough, *Pyrrhocorax pyrrhocorax centralis* Stresemann .. 239
 1047 East Himalayan Redbilled Chough, *Pyrrhocorax pyrrhocorax himalayensis* (Gould) .. 241
 1048 Sind House Crow, *Corvus splendens zugmayeri* Laubmann .. 243
 1049 Indian House Crow, *Corvus splendens splendens* Vieillot .. 244
 1050 Ceylon House Crow, *Corvus splendens protegatus* Madarász .. 246
 1051 Maldiva House Crow, *Corvus splendens maledivicus* Reichenow .. 247
 1052 Rook, *Corvus frugilegus frugilegus* Linnaeus .. 248
 1053 Jackdaw, *Corvus monedula monedula* Linnaeus .. 250
 1054 Himalayan Jungle Crow, *Corvus macrorhynchos intermedius* Adams .. 252
 1055 Eastern Jungle Crow, *Corvus macrorhynchos leuillanti* Lesson .. 254
 1056 Tibetan Jungle Crow, *Corvus macrorhynchos tibetensis* Kleinschmidt & Weigold .. 256
 1057 Indian Jungle Crow, *Corvus macrorhynchos culminatus* Sykes .. 256
 1058 Eastern Carrion Crow, *Corvus corone orientalis* Eversmann .. 259
 1058a Eastern Hooded Crow, *Corvus corone sharpii* Oates .. 260
 1059 Punjab Raven, *Corvus corax subcorax* Severtzov .. 262
 1060 Tibet Raven, *Corvus corax tibetanus* Hodgson .. 264
 1061 Brown-necked Raven, *Corvus corax ruficollis* Lesson .. 265
- Family BOMBYCILLIDAE
- Subfamily BOMBYCILLINAE: Waxwings
- 1062 Waxwing, *Bombycilla garrulus garrulus* (Linnaeus) .. 266
- Subfamily HYPOCOLINAE: Hypocolius
- 1063 Grey Hypocolius or Shrike-Bulbul, *Hypocolius ampelinus* Bonaparte .. 268
- Order PASSERIFORMES (cont.)
- Family CAMPEPHAGIDAE: Cuckoo-Shrikes and Minivets
- 1064 Brownbacked Pied Flycatcher-Shrike, *Hemipus picatus capitalis* (Horsfield) .. 1
 1065 Blackbacked Pied Flycatcher-Shrike, *Hemipus picatus picatus* (Sykes) .. 3
 1066 Ceylon Pied Flycatcher-Shrike, *Hemipus picatus leggeri* Whistler .. 5
 1067 Nepal Wood Shrike, *Tephrodornis gularis pelvica* (Hodgson) .. 6
 1068 Malabar Wood Shrike, *Tephrodornis gularis sylvicola* Jerdon .. 8
 1069 Sind Wood Shrike, *Tephrodornis pondicerianus pondicerianus* (Gmelin) .. 10
 1070 Indian Wood Shrike, *Tephrodornis pondicerianus pondicerianus* (Gmelin) .. 11
 1071 Ceylon Wood Shrike, *Tephrodornis pondicerianus affinis* Blyth .. 12
 1072 Indian Large Cuckoo-Shrike, *Coracina novaezollandiae macei* (Lesson) .. 14
 1073 Himalayan Large Cuckoo-Shrike, *Coracina novaezollandiae nipalensis* (Hodgson) .. 16
- 1074 Ceylon Large Cuckoo-Shrike, *Coracina novaezollandiae layardi* (Blyth) .. 17
 1075 Andaman Large Cuckoo-Shrike, *Coracina novaezollandiae andamana* (Neumann) .. 17
 1076 Barred Cuckoo-Shrike, *Coracina striata dobsoni* (Ball) .. 18
 1077 Dark Grey Cuckoo-Shrike, *Coracina melachistis melachistis* (Hodgson) .. 19
 1078 Himalayan Blackheaded Cuckoo-Shrike, *Coracina melanoptera melanoptera* (Rüppell) .. 21
 1079 Peninsular Blackheaded Cuckoo-Shrike, *Coracina melanoptera tytleri* (Strickland) .. 22
 1079a Nicobar Pied Cuckoo-Shrike, *Coracina nigra darwini* (Kloss) .. 23
 1080 North Indian Scarlet Minivet, *Pericrocotus flammeus speciosus* (Latham) .. 25
 1080a Andaman Scarlet Minivet, *Pericrocotus flammeus andamanensis* Beavan .. 27
 1081 Peninsular Indian Scarlet (or Orange) Minivet, *Pericrocotus flammeus flammeus* (Forster) .. 27

- 1082 Burmese Scarlet Minivet, *Pericrocotus flammeus fraterculus* Swinhoe .. 28
 1083 East Indian Scarlet Minivet, *Pericrocotus flammeus semiruber* Whistler & Kinnear .. 29
 1084 Shortbilled Minivet, *Pericrocotus brevirostris brevirostris* (Vigors) .. 30
 1085 West Himalayan Longtailed Minivet, *Pericrocotus ethologus fasciatus* Bangs & Phillips .. 32
 1086 East Himalayan Longtailed Minivet, *Pericrocotus ethologus latus* Mayr .. 34
 1087 Nagaland Longtailed Minivet, *Pericrocotus ethologus mariae* Ripley .. 35
 1088 Yellowthroated Minivet, *Pericrocotus solaris solaris* Blyth .. 36
 1089 Rosy Minivet, *Pericrocotus roseus roseus* (Vieillot) .. 37
 1089a Ashy Minivet, *Pericrocotus dicorietus dicorietus* (Raffles) .. 39
 1090 Sind Small Minivet, *Pericrocotus cinnamomeus pallidus* Baker .. 40
 1091 Northern Small Minivet, *Pericrocotus cinnamomeus peregrinus* (Linnaeus) .. 41
 1093 Southern Small Minivet, *Pericrocotus cinnamomeus cinnamomeus* (Linnaeus) .. 42
 1094 Malabar Small Minivet, *Pericrocotus cinnamomeus malabaricus* (Gmelin) .. 43
 1095, 1092 Eastern Small Minivet, *Pericrocotus cinnamomeus viridis* Baker .. 44
 1096 Whitebellied Minivet, *Pericrocotus erythropygius erythropygius* (Jerdon) .. 45
- Family IRENIDAE: Fairy Bluebirds, Ioras, Leaf Birds
 1097 Northwestern Iora, *Aegintha tiphia septentrionalis* Koels .. 48
 1098 Common Iora, *Aegintha tiphia tiphia* (Linnaeus) .. 49
 1099 Central Indian Iora, *Aegintha tiphia humei* Baker .. 50
 1100 Peninsular Indian Iora, *Aegintha tiphia digneni* Hall .. 52
 1101 Ceylon Iora, *Aegintha tiphia multicolor* (Gmelin) .. 53
 1102 Marshall's Iora, *Aegintha nigrolata* (Marshall) .. 53
 1103 Northern Goldfronted Chloropsis, *Chloropsis aurifrons aurifrons* (Temminck) .. 55
 1104 Southern Goldfronted Chloropsis, *Chloropsis aurifrons frontalis* (Pelzelin) .. 57
 1105 Ceylon Goldfronted Chloropsis, *Chloropsis aurifrons insularis* Whistler & Kinnear .. 58
 1106 Orangebellied Chloropsis, *Chloropsis hardwickii hardwickii* Jardine & Selby .. 59
 1107 Jerdon's Chloropsis, *Chloropsis cochinchinensis jerdoni* (Blyth) .. 60
 1108 Goldmantled Chloropsis, *Chloropsis cochinchinensis cochinchinensis* (Gmelin) .. 62
 1109, 1110 Fairy Bluebird, *Irena puella puella* (Latham) .. 63
- Family PYCNOTIDAE: Bulbuls
 1111 Finchbilled Bulbul, *Spizixos canifrons canifrons* Blyth .. 66
 1112 Blackheaded Bulbul, *Pycnotus atriceps atriceps* (Temminck) .. 68
 1113 Andaman Blackheaded Bulbul, *Pycnotus atriceps fusciflavescens* (Hume) .. 70
 1114 Greyheaded Bulbul, *Pycnotus priocephalus* (Jerdon) .. 70
 1115 Blackerested Yellow Bulbul, *Pycnotus melanicterus flaviventris* (Tickell) .. 72
 1116 Rubythroated Yellow Bulbul, *Pycnotus melanicterus gularis* (Gould) .. 73
 1117 Blackcapped Yellow Bulbul, *Pycnotus melanicterus melanicterus* (Gmelin) .. 74
 1118 Kumaon Redwhiskered Bulbul, *Pycnotus jocosus pyrrhoides* (Bonaparte) .. 75
 1119 Rajasthan Redwhiskered Bulbul, *Pycnotus jocosus abuenis* (Whistler) .. 76
 1120 Southern Redwhiskered Bulbul, *Pycnotus jocosus fuscicaudatus* (Gould) .. 77
 1121 Bengal Redwhiskered Bulbul, *Pycnotus jocosus emeria* (Linnaeus) .. 79
 1121a Assam Redwhiskered Bulbul, *Pycnotus jocosus monticola* (McClelland) .. 80
 1122 Andaman Redwhiskered Bulbul, *Pycnotus jocosus whistleri* Deignan .. 80
 1123 White-eared Bulbul, *Pycnotus leucogenys leucogenys* (Gould) .. 81
 1124 Hume's White-eared Bulbul, *Pycnotus leucogenys humii* (Oates) .. 83
 1125 Whitecheeked Bulbul, *Pycnotus leucogenys leucogenys* (Gray) .. 83
 1126 Punjab Redvented Bulbul, *Pycnotus cafer intermedius* Blyth .. 85
 1127 Central Indian Redvented Bulbul, *Pycnotus cafer hamayuni* Deignan .. 86
 1128 Redvented Bulbul, *Pycnotus cafer cafer* (Linnaeus) .. 87
 1129 Ceylon Redvented Bulbul, *Pycnotus cafer haemorrhoides* (Gmelin) .. 89
 1130 Orissa Redvented Bulbul, *Pycnotus cafer wetmorei* Deignan .. 90
 1131 Bengal Redvented Bulbul, *Pycnotus cafer bengalensis* Blyth .. 90
 1132 Burmese Redvented Bulbul, *Pycnotus cafer stanfordi* Deignan .. 91
 1133 Striated Green Bulbul, *Pycnotus striatus striatus* (Blyth) .. 92
 1134 Mishmi Striated Green Bulbul, *Pycnotus striatus arctus* Ripley .. 94
 1135 Yellowthroated Bulbul, *Pycnotus xantholaemus* (Jerdon) .. 94
 1136 Yellow-eared Bulbul, *Pycnotus penicillatus* Blyth .. 95
 1137 Blyth's Bulbul, *Pycnotus flavescens flavescens* Blyth .. 96
 1138 Whitebrowed Bulbul, *Pycnotus luteolus luteolus* (Lesson) .. 98
 1139 Ceylon Whitebrowed Bulbul, *Pycnotus luteolus inulace* Whistler & Kinnear .. 99
 1140 Whitethroated Bulbul, *Crinifer flaveolus flaveolus* (Gould) .. 100
 1141 Olive Bulbul, *Hyppipetes viridescens caucharensis* (Deignan) .. 102
 1142 Nicobar Bulbul, *Hyppipetes nicobariensis* Moore .. 103
 1143 North Sahyadri Yellowbrowed Bulbul, *Hyppipetes indicus ictericus* (Strickland) .. 104
 1144 Yellowbrowed Bulbul, *Hyppipetes indicus indicus* (Jerdon) .. 105
 1145 Ceylon Yellowbrowed Bulbul, *Hyppipetes indicus gurgulmi* (Ripley) .. 106
 1146 Rufousbellied Bulbul, *Hyppipetes macellandi macellandi* Horsfield .. 107
 1147 Brown-eared Bulbul, *Hyppipetes flammula flammula* (Blyth) .. 108
 1148 Himalayan Black Bulbul, *Hyppipetes madagascariensis praeoides* Vigors .. 110
 1149 South Indian Black Bulbul, *Hyppipetes madagascariensis ganeza* Sykes .. 112
 1150 Ceylon Black Bulbul, *Hyppipetes madagascariensis humii* (Whistler & Kinnear) .. 113
 1151 Assam Black Bulbul, *Hyppipetes madagascariensis nigrescens* Baker .. 114
- Family MUSCICAPIDAE
 Subfamily TIMALIINAE: Babblers
 1152 Western Spotted Babbler, *Pellorneum ruficeps punctatum* (Gould) .. 115
 1153 Mandelli's or Sikkim Spotted Babbler, *Pellorneum ruficeps mandelli* Blanford .. 116
 1154 Peninsular Spotted Babbler, *Pellorneum ruficeps ruficeps* Swainson .. 117
 1155 Kerala Spotted Babbler, *Pellorneum ruficeps olivaceum* Jerdon .. 119
 1156 Assam Spotted Babbler, *Pellorneum ruficeps chameleon* Deignan .. 119
 1157 Mishmi Spotted Babbler, *Pellorneum ruficeps pectorale* Godwin-Austen .. 120
 1158 Lakhimpur Spotted Babbler, *Pellorneum ruficeps ripleyi* Deignan .. 120
 1159 Manipur Spotted Babbler, *Pellorneum ruficeps vocale* Deignan .. 121
 1160 Marsh Spotted Babbler, *Pellorneum palustre* Gould .. 121
 1161 Brown-capped Babbler, *Pellorneum fuscescens fuscescens* (Blyth) .. 122
 1162 Pale Brown-capped Babbler, *Pellorneum fuscescens babaulti* (Wells) .. 123
 1163 Dusky Brown-capped Babbler, *Pellorneum fuscescens scottorum* Ripley .. 124
 1164 Assam Brown Babbler, *Pellorneum albiventris albiventris* (Godwin-Austen) .. 125
 1165 Mishmi Brown Babbler, *Pellorneum albiventris ignotum* Hume .. 126
 1166 Tickell's Babbler, *Trichastoma tickelli asanensis* (Sharpe) .. 126
 1167 Abbott's Babbler, *Trichastoma abbotti abbotti* (Blyth) .. 127
 1168 West Himalayan Slatyheaded Scimitar Babbler, *Pomatohinus schisticeps leucogaster* Gould .. 130
 1169 East Himalayan Slatyheaded Scimitar Babbler, *Pomatohinus schisticeps schisticeps* Hodgson .. 131
 1170 Mishmi Slatyheaded Scimitar Babbler, *Pomatohinus schisticeps salimellii* Ripley .. 132
 1171 Lakhimpur Slatyheaded Scimitar Babbler, *Pomatohinus schisticeps erythrurus* Hartert .. 133
 1172 Mount Abu Scimitar Babbler, *Pomatohinus schisticeps obscurus* Hume .. 133
 1173 Deccan Scimitar Babbler, *Pomatohinus schisticeps horsfieldii* Sykes .. 134
 1174 Kerala Scimitar Babbler, *Pomatohinus schisticeps trucearensis* Harington .. 135
 1175 Tamil Nadu Scimitar Babbler, *Pomatohinus schisticeps madraspetensis* Whistler .. 136
 1176 Common Ceylon Scimitar Babbler, *Pomatohinus schisticeps holdsworthi* Whistler .. 136
 1177 Southern Ceylon Scimitar Babbler, *Pomatohinus schisticeps vanderus* Blyth .. 137
- 1178 Nepal Rufousnecked Scimitar Babbler, *Pomatohinus ruficollis ruficollis* Hodgson .. 138
 1179 Sikkim Rufousnecked Scimitar Babbler, *Pomatohinus ruficollis godwinii* Kinnear .. 139
 1180 Cachar Rufousnecked Scimitar Babbler, *Pomatohinus ruficollis bakeri* Harington .. 140
 1181, 1182 West Himalayan Rustycheeked Scimitar Babbler, *Pomatohinus erythrogens erythrogens* Vigors .. 141
 1183 Sikkim Rustycheeked Scimitar Babbler, *Pomatohinus erythrogens haringtoni* Baker .. 143
 1184 Assam Rustycheeked Scimitar Babbler, *Pomatohinus erythrogens macellandi* Godwin-Austen .. 143
 1185 Large Scimitar Babbler, *Pomatohinus hypoleucus hypoleucus* (Blyth) .. 144
 1186 Sikkim Coralbilled Scimitar Babbler, *Pomatohinus ferruginus ferruginus* Blyth .. 145
 1187 Assam Coralbilled Scimitar Babbler, *Pomatohinus ferruginus formosus* Koelz .. 146
 1188 Mizo Coralbilled Scimitar Babbler, *Pomatohinus ferruginus phayrei* Blyth .. 147
 1189 Mishmi Longbilled Scimitar Babbler, *Pomatohinus ochraceiceps stenorhynchus* Godwin-Austen .. 147
 1190 Manipur Longbilled Scimitar Babbler, *Pomatohinus ochraceiceps austeni* Hume .. 148
 1191 Slenderbilled Scimitar Babbler, *Xiphirhynchus superciliosus superciliosus* Blyth .. 149
 1192 Assam Slenderbilled Scimitar Babbler, *Xiphirhynchus superciliosus intextus* Ripley .. 151
 1193 Longbilled Wren-Babbler, *Rimator malacoptilus* Blyth .. 151
 1194 Streaked Wren-Babbler, *Nepothera brevicaudata striata* (Blyth) .. 153
 1195 Austen's Small Wren-Babbler, *Nepothera epilepidota roberti* (Godwin-Austen & Walden) .. 154
 1196 Grant's Wren-Babbler, *Nepothera epilepidota guttaticollis* (Ogilvie-Grant) .. 155
 1197 Western Scalybreasted Wren-Babbler, *Procygna albiventer pallidior* Kinnear .. 156
 1198 Eastern Scalybreasted Wren-Babbler, *Procygna albiventer albiventer* (Hodgson) .. 156
 1199 Brown Wren-Babbler, *Procygna pusilla pusilla* Hodgson .. 158
 1200 Tailed Wren-Babbler, *Speleornis caudatus* (Blyth) .. 160
 1201 Mishmi Wren-Babbler, *Speleornis badeigularis* Ripley .. 161
 1202 Longtailed Wren-Babbler, *Speleornis longicaudatus* (Moore) .. 162
 1203 Streaked Longtailed Wren-Babbler, *Speleornis chocolatinus chocolatinus* (Godwin-Austen & Walden) .. 163
 1204 Chin Hills Longtailed Wren-Babbler, *Speleornis chocolatinus ocellatus* (Rippon) .. 164
 1205 Spotted Longtailed Wren-Babbler, *Speleornis troglodytes sherriffi* Kinnear .. 165
 1206 Spotted Short-tailed Wren-Babbler, *Speleornis formosus* (Walden) .. 166
 1207 Sikkim Wedgebilled Wren, *Sphenocichla humei humei* (Mandelli) .. 167
 1208 Cachar Wedgebilled Wren, *Sphenocichla humei roberti* Godwin-Austen & Walden .. 168
 1209 Assam Redfronted Babbler, *Stachyris rufifrons ambigua* (Harington) .. 169
 1210 Redheaded Babbler, *Stachyris ruficeps ruficeps* Blyth .. 170
 1211 Blackchinned Babbler, *Stachyris pyrrhops* Blyth .. 171
 1212 Nepal Goldenheaded Babbler, *Stachyris chrysaea chrysaea* Blyth .. 172
 1213 Chin Hills Goldenheaded Babbler, *Stachyris chrysaea binghami* Rippon .. 173
 1214 Blackthroated Babbler, *Stachyris nigripes nigripes* Blyth .. 174
 1215 Mishmi Blackthroated Babbler, *Stachyris nigripes coel* Ripley .. 176
 1216 Assam Blackthroated Babbler, *Stachyris nigripes spadix* Ripley .. 176
 1217 Nagaland Blackthroated Babbler, *Stachyris nigripes coltarti* Harington .. 177
 1218 Austen's Spotted Babbler, *Stachyris ocellatus* (Godwin-Austen) .. 177
 1219, 1220 Mount Abu Whitethroated Babbler, *Dumetia hyperythra abuenis* Harington .. 178
 1221 Whitethroated Babbler, *Dumetia hyperythra albogularis* (Blyth) .. 179
 1222 Rufousbellied Babbler, *Dumetia hyperythra hyperythra* (Franklin) .. 181
 1223 Ceylon Whitethroated Babbler, *Dumetia hyperythra phillyi* Whistler .. 182
 1224 Blackheaded Babbler, *Rhopocichla atriceps atriceps* (Jerdon) .. 183
 1225 Kerala Blackheaded Babbler, *Rhopocichla atriceps boadilloni* (Hume) .. 183
 1226 Ceylon Dry Zone Blackheaded Babbler, *Rhopocichla atriceps siccatus* Whistler .. 184
 1227 Ceylon Wet Zone Blackheaded Babbler, *Rhopocichla atriceps nigrifrons* (Blyth) .. 185
 1228 Yellowbreasted Babbler, *Macronous gularis rubricephala* (Tickell) .. 185
 1229 Redcapped Babbler, *Timalia pileata bengalensis* Godwin-Austen .. 187
 1230 Western Yellow-eyed Babbler, *Chrysomma sinense hypoleucum* (Franklin) .. 189
 1231 Yellow-eyed Babbler, *Chrysomma sinense sinense* (Gmelin) .. 190
 1232 Ceylon Yellow-eyed Babbler, *Chrysomma sinense nasalis* (Legge) .. 192
 1233 Sind Babbler, *Chrysomma altirostre scindianum* (Harington) .. 192
 1234 Hume's Babbler, *Chrysomma altirostre griseigularis* (Hume) .. 194
 1235 Bearded Tit-Babbler or Reedling, *Pannurus biarmicus ruscius* (Brehm) .. 195
 1236 Great Parrotbill, *Conostoma aemodum* Hodgson .. 196
 1237 Brown Parrotbill, *Paradoxornis unicolor* (Hodgson) .. 198
 1238 Fulvousfronted Parrotbill, *Paradoxornis fulvifrons fulvifrons* (Hodgson) .. 199
 1239 Tibetan Fulvousfronted Parrotbill, *Paradoxornis fulvifrons chrysalis* (Kinnear) .. 200
 1239a Garhwal Parrotbill, *Paradoxornis nipalensis garhwalensis* Fleming & Traylor .. 201
 1240 Ashy-eared Parrotbill, *Paradoxornis nipalensis nipalensis* (Hodgson) .. 202
 1241 Blackfronted Parrotbill, *Paradoxornis nipalensis humii* (Sharpe) .. 202
 1242 Blyth's or Assam Orange Parrotbill, *Paradoxornis nipalensis poliotis* (Blyth) .. 203
 1243 Tibetan Small Parrotbill, *Paradoxornis nipalensis croceus* Kinnear .. 204
 1244 Mizo Hills Parrotbill, *Paradoxornis nipalensis patriciae* Koelz .. 204
 1245 Lesser Redheaded Parrotbill, *Paradoxornis atrisuperciliaris ocellatus* (Sharpe) .. 205
 1246 Blackbrowed Parrotbill, *Paradoxornis atrisuperciliaris atrisuperciliaris* (Godwin-Austen) .. 206
 1247 Greater Redheaded Parrotbill, *Paradoxornis ruficeps ruficeps* Blyth .. 207
 1248 Assam Redheaded Parrotbill, *Paradoxornis ruficeps patriciae* (Hartert) .. 208
 1249 Greyheaded Parrotbill, *Paradoxornis gularis gularis* Gray .. 209
 1250 Assam Greyheaded Parrotbill, *Paradoxornis gularis transfluvialis* (Hartert) .. 209
 1251 Gould's or Blackthroated Parrotbill, *Paradoxornis flavirostris flavirostris* Gould .. 210
 1252 Whitethroated Parrotbill, *Paradoxornis guttaticollis* David .. 212
 1253 Afghan Babbler, *Turdoides caudatus hutereaui* (Blyth) .. 214
 1254 Common Babbler, *Turdoides caudatus caudatus* (Dumont) .. 215
 1255 Western Striated Babbler, *Turdoides earlei sonierus* (Koelz) .. 217
 1256 Striated Babbler, *Turdoides earlei earlei* (Blyth) .. 218
 1257 Slenderbilled Babbler, *Turdoides longirostris* (Hodgson) .. 219
 1258 Large Grey Babbler, *Turdoides malcolmi* (Sykes) .. 220
 1259 Rufous Babbler, *Turdoides subrufus subrufus* (Jerdon) .. 222
 1260 Kerala Rufous Babbler, *Turdoides subrufus hyperythrus* (Sharpe) .. 223
 1261 Sind Jungle Babbler, *Turdoides striatus striatus* (Ticehurst) .. 224
 1262 Peninsular Jungle Babbler, *Turdoides striatus orientalis* (Jerdon) .. 226
 1263 Bombay Jungle Babbler, *Turdoides striatus sonnerillii* (Sykes) .. 228
 1264 Malabar Jungle Babbler, *Turdoides striatus malabaricus* (Jerdon) .. 228
 1264a Orissa Jungle Babbler, *Turdoides striatus erissae* Jerdon .. 229
 1265 Bengal Jungle Babbler, *Turdoides striatus striatus* (Dumont) .. 230
 1266 Ceylon Rufous Babbler, *Turdoides rufescens* (Blyth) .. 231
 1267 Whiteheaded Babbler, *Turdoides effinis effinis* (Jerdon) .. 232
 1268 Ceylon Whiteheaded Babbler, *Turdoides effinis taprobana* Ripley .. 234
 1269 Spiny Babbler, *Turdoides nipalensis* (Hodgson) .. 234
 1270 Chinese Babax, *Babax leucolatus modii* Finn .. 236
 1271 Giant Babax, *Babax modii modii* Dresser .. 237

VOLUME 7

Order PASSERIFORMES (cont.)

Family MUSCICAPIDAE (cont.)

Subfamily TIMALIINAE: Babblers (cont.)

- 1272 Ashyheaded Laughing Thrush, *Garrulax cinereifrons* Blyth .. 3
 1273 Western Whitethroated Laughing Thrush, *Garrulax albogularis whistleri* Baker .. 4
 1274 Eastern Whitethroated Laughing Thrush, *Garrulax albogularis albogularis* (Gould) .. 5
 1275 Necklaced Laughing Thrush, *Garrulax monileger monileger* (Hodgson) .. 6
 1276 Mishmi Necklaced Laughing Thrush, *Garrulax monileger badius* Ripley .. 7
 1277 Nepal Blackgorgeted Laughing Thrush, *Garrulax pectoralis pectoralis* (Gould) .. 8
 1278 Assam Blackgorgeted Laughing Thrush, *Garrulax pectoralis melanotis* Blyth .. 8
 1279 Western Striated Laughing Thrush, *Garrulax striatus striatus* (Vigors) .. 10
 1280 Nepal Striated Laughing Thrush, *Garrulax striatus vibex* Ripley .. 12
 1281 Sikkim Striated Laughing Thrush, *Garrulax striatus sikkimensis* (Ticehurst) .. 12
 1282 Assam Striated Laughing Thrush, *Garrulax striatus cranbrookii* (Kinnear) .. 13
 1283 Himalayan Whitecrested Laughing Thrush, *Garrulax leucolophus leucolophus* (Hardwicke) .. 14
 1284 Assam Whitecrested Laughing Thrush, *Garrulax leucolophus patkaicus* Reichenow .. 16
 1285 Chestnutbacked Laughing Thrush, *Garrulax chinensis nuchalis* Godwin-Austen .. 17
 1286 Yellowthroated Laughing Thrush, *Garrulax galbanus galbanus* Godwin-Austen .. 18
 1287 Wynaad Laughing Thrush, *Garrulax delesserti delesserti* (Jerdon) .. 19
 1288 Yellowbreasted Laughing Thrush, *Garrulax delesserti gularis* (McClelland) .. 21
 1289 Western Variegated Laughing Thrush, *Garrulax variegatus similis* (Hume) .. 22
 1290 Eastern Variegated Laughing Thrush, *Garrulax variegatus variegatus* (Vigors) .. 23
 1291 Ashy Laughing Thrush, *Garrulax cineraceus cineraceus* (Godwin-Austen) .. 24
 1292, 1293 Western Rufouschinned Laughing Thrush, *Garrulax rufogularis occidentalis* (Hartert) .. 26
 1294 Rufouschinned Laughing Thrush, *Garrulax rufogularis rufogularis* (Gould) .. 27
 1295 Khasi Rufouschinned Laughing Thrush, *Garrulax rufogularis rufitinctus* (Koelz) .. 28
 1295a Burmese Rufouschinned Laughing Thrush, *Garrulax rufogularis rufibasis* (Koelz) .. 28
 1296 Assam Rufouschinned Laughing Thrush, *Garrulax rufogularis assamensis* (Hartert) .. 29
 1297 Giant Laughing Thrush, *Garrulax maximus* (Verreaux) .. 29
 1298 Garhwal Whitespotted Laughing Thrush, *Garrulax ocellatus griseicauda* Koelz .. 31
 1299 Whitespotted Laughing Thrush, *Garrulax ocellatus ocellatus* (Vigors) .. 32
 1300 Himalayan Greysided Laughing Thrush, *Garrulax caerulatus caerulatus* (Hodgson) .. 33
 1301 Khasi Hills Greysided Laughing Thrush, *Garrulax caerulatus sub-caerulatus* Hume .. 34
 1302 Nagaland Greysided Laughing Thrush, *Garrulax caerulatus livingstoni* Ripley .. 35
 1303 Rufousnecked Laughing Thrush, *Garrulax ruficollis* (Jardine & Selby) .. 36
 1304 Assam Spottedbreasted Laughing Thrush, *Garrulax merulinus merulinus* Blyth .. 37
 1305 Manipur Spottedbreasted Laughing Thrush, *Garrulax merulinus toxostomus* (Koelz) .. 38
 1306 Whitebrowed Laughing Thrush, *Garrulax sannio albosuperciliaris* Godwin-Austen .. 39
 1307, 1308 Nilgiri Laughing Thrush, *Garrulax cachinnans* (Jerdon) .. 40
 1309 Coorg Whitebreasted Laughing Thrush, *Garrulax jerdoni jerdoni* Blyth .. 42
 1310 Kerala Laughing Thrush, *Garrulax jerdoni fairbanki* (Blanford) .. 42
 1311 South Kerala Laughing Thrush, *Garrulax jerdoni meridionale* (Blanford) .. 43
 1312 Baluchistan Streaked Laughing Thrush, *Garrulax lineatus bilkeritichi* (Zarudny) .. 44
 1313 Gilgit Streaked Laughing Thrush, *Garrulax lineatus gilgit* (Hartert) .. 46
 1314 Simla Streaked Laughing Thrush, *Garrulax lineatus lineatus* (Vigors) .. 46
 1315 Nepal Streaked Laughing Thrush, *Garrulax lineatus setifer* (Hodgson) .. 48
 1316 Bhutan Streaked Laughing Thrush, *Garrulax lineatus imbricatus* Blyth .. 49
 1317 Manipur Streaked Laughing Thrush, *Garrulax virgatus* (Godwin-Austen) .. 49
 1318 Brown capped Laughing Thrush, *Garrulax austeni austeni* (Godwin-Austen) .. 50
 1319 Bluewinged Laughing Thrush, *Garrulax squamatus* (Gould) .. 51
 1320 Plaincoloured Laughing Thrush, *Garrulax subunicolor subunicolor* (Blyth) .. 53
 1321 Prince Henry's Laughing Thrush, *Garrulax henrici* (Oustalet) .. 54
 1322 Western Blackfaced Laughing Thrush, *Garrulax affinis affinis* Blyth .. 55
 1323 Eastern Blackfaced Laughing Thrush, *Garrulax affinis bethelae* Rand & Fleming .. 55
 1324 Redheaded Laughing Thrush, *Garrulax erythrocephalus erythrocephalus* (Vigors) .. 57
 1325 Nepal Redheaded Laughing Thrush, *Garrulax erythrocephalus kali* Vaurie .. 59
 1326 Sikkim Redheaded Laughing Thrush, *Garrulax erythrocephalus nigrimentus* (Oates) .. 59
 1327 NEFA Redheaded Laughing Thrush, *Garrulax erythrocephalus imbrudens* Ripley .. 60
 1328 Khasi Redheaded Laughing Thrush, *Garrulax erythrocephalus chrysopterus* (Gould) .. 61
 1329 Nagaland Redheaded Laughing Thrush, *Garrulax erythrocephalus godwini* (Harington) .. 61
 1330 Manipur Redheaded Laughing Thrush, *Garrulax erythrocephalus erythrolaema* (Hume) .. 62
 1331 Himalayan Crimsonwinged Laughing Thrush, *Garrulax phoeniceus phoeniceus* (Gould) .. 63
 1332 Assam Crimsonwinged Laughing Thrush, *Garrulax phoeniceus bakeri* (Hartert) .. 63
 1333 Himalayan Silvereared Mesia, *Leiothrix argentauris argentauris* (Hodgson) .. 65
 1333a Assam Silvereared Mesia, *Leiothrix argentauris aureigularis* (Koelz) .. 66
 1334 Burmese Silvereared Mesia, *Leiothrix argentauris vernayi* (Mayr & Greenway) .. 67
 1335 Western Redbilled Leiothrix, *Leiothrix lutea kumaiensis* Whistler .. 67
 1336, 1337 Eastern Redbilled Leiothrix, *Leiothrix lutea califfya* (Hodgson) .. 68
 1338 Firetailed Myzornis, *Myzornis thyrochra* Blyth .. 70
 1339 Nepal Cutia, *Cutia nipalensis nipalensis* Hodgson .. 71
 1340 Rufousbellied Shrike-Babbler, *Pteruthius rufopectus* Blyth .. 73
 1341 Redwinged Shrike-Babbler, *Pteruthius flavicapitis validirostris* Koelz .. 74
 1342 Western Green Shrike-Babbler, *Pteruthius xanthochlorus occidentalis* Harington .. 76
 1343 Eastern Green Shrike-Babbler, *Pteruthius xanthochlorus xanthochlorus* Gray .. 77

- 1344 Chin Hills Green Shrike-Babbler, *Pteruthius xanthochlorus hybridus* Harington .. 78
 1345 Chestnut-throated Shrike-Babbler, *Pteruthius melanotis melanotis* Hodgson .. 79
 1346 Chestnutfronted Shrike-Babbler, *Pteruthius aenobarbus aenobarbus* Koelz .. 80
 1347 Whiteheaded Shrike-Babbler, *Gampsorhynchus rufulus rufulus* Blyth .. 81
 1348 Himalayan Barwing, *Actinodura egeroni egeroni* Gould .. 83
 1349 Mishmi Barwing, *Actinodura egeroni lewisi* Ripley .. 84
 1350 Assam Barwing, *Actinodura egeroni khariana* Godwin-Austen .. 85
 1351 Mizo Barwing, *Actinodura egeroni ripponi* Ogilvie-Grant .. 85
 1352 Nepal Hoary Barwing, *Actinodura nipalensis nipalensis* (Hodgson) .. 86
 1353 Eastern Hoary Barwing, *Actinodura nipalensis vinctura* Ripley .. 88
 1354 NEFA Barwing, *Actinodura waldeni daflensis* Godwin-Austen .. 88
 1355 Manipur Barwing, *Actinodura waldeni waldeni* Godwin-Austen .. 89
 1356 [Chin Hills Barwing, *Actinodura waldeni poliitis* (Rippon)] .. 90
 1357 Redtailed Minla, *Minla ignotincta ignotincta* Hodgson .. 91
 1358 Western Barthroated Siva, *Minla strigula similansis* (Meinertzhagen) .. 92
 1359 Eastern Barthroated Siva, *Minla strigula strigula* (Hodgson) .. 92
 1360 NEFA Barthroated Siva, *Minla strigula yunnanensis* (Rothschild) .. 94
 1361 Assam Barthroated Siva, *Minla strigula cinereigenae* (Ripley) .. 95
 1362 Bluewinged Siva, *Minla cyanoptera cyanoptera* (Hodgson) .. 95
 1363 Sikkim Whitebrowed Yuhina, *Yuhina castaneiceps rufigenis* (Hume) .. 98
 1364 Mishmi Whitebrowed Yuhina, *Yuhina castaneiceps plumbeiceps* (Godwin-Austen) .. 99
 1365 Chestnut-headed Yuhina, *Yuhina castaneiceps castaneiceps* (Moore) .. 99
 1366 Whitenaped Yuhina, *Yuhina bakeri* Rothschild .. 100
 1367 Western Yellownaped Yuhina, *Yuhina flavicollis albicollis* (Ticehurst & Whistler) .. 101
 1368, 1369 Eastern Yellownaped Yuhina, *Yuhina flavicollis flavicollis* Hodgson .. 102
 1370 Assam Yellownaped Yuhina, *Yuhina flavicollis yowei* (Oustalet) .. 103
 1371 Western Stripethroated Yuhina, *Yuhina gularis vivax* Koelz .. 104
 1372 Eastern Stripethroated Yuhina, *Yuhina gularis gularis* Hodgson .. 104
 1373 Slatyheaded or Rufousvented Yuhina, *Yuhina occipitalis occipitalis* Hodgson .. 106
 1374 Blackchinned Yuhina, *Yuhina nigrimenta nigrimenta* Hodgson .. 107
 1375 Whitebellied Yuhina, *Yuhina xantholeuca xantholeuca* (Hodgson) .. 108
 1376 Himalayan Goldenbreasted Tit-Babbler, *Alcippe chrysotis chrysotis* (Blyth) .. 110
 1377 Assam Goldenbreasted Tit-Babbler, *Alcippe chrysotis albilineata* (Koelz) .. 111
 1378 Dusky Green or Yellowthroated Tit-Babbler, *Alcippe cinerea* (Blyth) .. 112
 1379 Chestnut-headed Tit-Babbler, *Alcippe castaneiceps castaneiceps* (Hodgson) .. 113
 1380 Western Whitebrowed Tit-Babbler, *Alcippe vinipictus kangrae* (Ticehurst & Whistler) .. 114
 1381 Nepal Whitebrowed Tit-Babbler, *Alcippe vinipictus vinipictus* (Hodgson) .. 115
 1382 Eastern Whitebrowed Tit-Babbler, *Alcippe vinipictus chumbiensis* (Kinnear) .. 116
 1383 Assam Whitebrowed Tit-Babbler, *Alcippe vinipictus austeni* (Ogilvie-Grant) .. 116
 1384 Himalayan Brownheaded Tit-Babbler, *Alcippe cinereiceps ludlowi* (Kinnear) .. 117
 1385 Manipur Brownheaded Tit-Babbler, *Alcippe cinereiceps manipurensis* (Ogilvie-Grant) .. 118
 1385a Streakthroated Tit-Babbler, *Alcippe striatocollis* (Verreaux) .. 118
 1386 Himalayan Redthroated Tit-Babbler, *Alcippe rufogularis rufogularis* (Mandelli) .. 119
 1387 Assam Redthroated Tit-Babbler, *Alcippe rufogularis collaris* Walden .. 120
 1388 Rufousheaded Tit-Babbler, *Alcippe brunnea mandelli* (Godwin-Austen) .. 121
 1389 Bombay Quaker Babbler, *Alcippe poioicephala brucei* Hume .. 122
 1390 .. 123
 1391 .. 124
 1392 .. 125
 1393 .. 126
 1394 .. 127
 1395 .. 128
 1396 .. 129
 1397 .. 131
 1398 Eastern Blackcapped Sibia, *Heterophasia capistrata bayleyi* (Kinnear) .. 131
 1399 Grey Sibia, *Heterophasia gracilis* (McClelland) .. 132
 1400 Beautiful Sibia, *Heterophasia pulchella* (Godwin-Austen) .. 133
 1401 Longtailed Sibia, *Heterophasia picaoides picaoides* (Hodgson) .. 134

Subfamily MUSCICAPINAE: Flycatchers

- 1402 Olive Flycatcher, *Rhinomyias brunneata nicobarica* Richmond .. 137
 1403, 1404 Spotted Flycatcher, *Muscicapa striata saradnyi* Snigirewski .. 140
 1405 Kashmir Sooty Flycatcher, *Muscicapa sibirica gulmergi* (Baker) .. 142
 1406 Nepal Sooty Flycatcher, *Muscicapa sibirica vacabata* Penard .. 145
 1407 Brown Flycatcher, *Muscicapa latirostris* Raffles .. 148
 1408 Brownbreasted Flycatcher, *Muscicapa multia multia* (Layard) .. 150
 1409 Rufoustailed Flycatcher, *Muscicapa ruficauda* Swainson .. 152
 1410 Ferruginous Flycatcher, *Muscicapa ferruginea* (Hodgson) .. 154
 1411 [Pied Flycatcher, *Muscicapa hypoleuca tomentis* Johansen] .. 154
 1411 Western Redbreasted Flycatcher, *Muscicapa parva parva* Bechstein .. 154
 1412 Eastern Redbreasted Flycatcher, *Muscicapa parva albicilla* Pallas .. 156
 1413 Kashmir Redbreasted Flycatcher, *Muscicapa subrubra* Hartert & Steinbacher .. 157
 1414 Orangeorgeted Flycatcher, *Muscicapa strophilata strophilata* (Hodgson) .. 159
 1415 Himalayan Whiteorgeted Flycatcher, *Muscicapa monileger monileger* (Hodgson) .. 161
 1416 Assam Whiteorgeted Flycatcher, *Muscicapa monileger leucops* (Sharpe) .. 162
 1417 Rufousbreasted Blue Flycatcher, *Muscicapa hyperythra hyperythra* Blyth .. 163
 1418 Rustybreasted Blue Flycatcher, *Muscicapa hodgsonii* (Verreaux) .. 164
 1419 Western Little Pied Flycatcher, *Muscicapa westermanni collini* Rothschild .. 166
 1420 Eastern Little Pied Flycatcher, *Muscicapa westermanni australorientis* Ripley .. 167
 1421 Whitebrowed Blue Flycatcher, *Muscicapa supercilialis supercilialis* Jerdon .. 168
 1422 Little Blue-and-White Flycatcher, *Muscicapa supercilialis aestigma* Gray .. 169
 1423 Western Slaty Blue Flycatcher, *Muscicapa leucomelanura leucomelanura* (Hodgson) .. 170
 1424 Eastern Slaty Blue Flycatcher, *Muscicapa leucomelanura minuta* (Hume) .. 172
 1425 Manipur Slaty Blue Flycatcher, *Muscicapa leucomelanura cerniiventris* (Sharpe) .. 173
 1426 Sapphireheaded Flycatcher, *Muscicapa sapphira* (Blyth) .. 175
 1427 Black-and-Orange Flycatcher, *Muscicapa nigronisa* (Jerdon) .. 176
 1428 Large Niltava, *Muscicapa grandis grandis* (Blyth) .. 178
 1429 Western Small Niltava, *Muscicapa macgrigorae macgrigorae* (Barton) .. 179
 1430 Eastern Small Niltava, *Muscicapa macgrigorae signata* (Horsfield) .. 180
 1431 Western Rufousbellied Niltava, *Muscicapa sundara whistleri* (Ticehurst) .. 181
 1432 Eastern Rufousbellied Niltava, *Muscicapa sundara sundara* (Hodgson) .. 182
 1433 Rufousbellied Blue Flycatcher, *Muscicapa virida oatesi* (Salvadori) .. 183
 1434 Whitetailed Blue Flycatcher, *Muscicapa concreta cyanea* (Hume) .. 184
 1435 Whitebellied Blue Flycatcher, *Muscicapa palipes* Jerdon .. 186
 1436 Western Brooks's Flycatcher, *Muscicapa poliogenys poliogenys* (Brooks) .. 188
 1437 Eastern Brooks's Flycatcher, *Muscicapa poliogenys cachariensis* (Madagascar) .. 188
 1438 Peninsular Brooks's Flycatcher, *Muscicapa poliogenys vernayi* (Whistler) .. 188

1439	Pale Blue Flycatcher, <i>Muscicapa unicolor unicolor</i> (Blyth)	189	1458	Whitespotted Fantail Flycatcher, <i>Rhipidura albicollis albugularis</i> (Lesson)	214
1440	Bluetheated Flycatcher, <i>Muscicapa ruberuloides ruberuloides</i> (Vigors)	190	1459	Dandakaranya Whitespotted Fantail Flycatcher, <i>Rhipidura albicollis remyi</i> (Whistler)	215
1441	Largebilled Blue Flycatcher, <i>Muscicapa berytina magnirostris</i> (Blyth)	192		Subfamily MONARCHINAE: Monarch Flycatchers	
1442	Tickell's Redbreasted Blue Flycatcher, <i>Muscicapa tickelliae tickelliae</i> (Blyth)	193	1460	West Himalayan Paradise Flycatcher, <i>Terpsiphone paradisi leucogaster</i> (Swainson)	216
1443	Ceylon Tickell's Flycatcher, <i>Muscicapa tickelliae jerdoni</i> (Holdsworth)	196	1461	Peninsular Indian Paradise Flycatcher, <i>Terpsiphone paradisi paradisi</i> (Linnaeus)	218
1444	Dusky Blue Flycatcher, <i>Muscicapa sordida</i> (Walden)	196	1462	Ceylon Paradise Flycatcher, <i>Terpsiphone paradisi ceylonensis</i> (Zarudny & Harms)	221
1445	Verditer Flycatcher, <i>Muscicapa thalassina thalassina</i> Swainson	198	1463	East Himalayan Paradise Flycatcher, <i>Terpsiphone paradisi saturator</i> (Salomonsen)	221
1446	Nilgiri Verditer Flycatcher, <i>Muscicapa albicaudata</i> Jerdon	199	1464	Nicobar Paradise Flycatcher, <i>Terpsiphone paradisi nicobarica</i> Oates	222
1447	Pygmy Blue Flycatcher, <i>Muscicapella hodgsoni hodgsoni</i> (Moore)	201	1465	Indian Blacknaped Monarch Flycatcher, <i>Monarcha azurea styani</i> (Harlaub)	223
1448	Northern Greyheaded Flycatcher, <i>Culicicapa ceylonensis calochrysea</i> Oberholser	202	1466	Ceylon Blacknaped Monarch Flycatcher, <i>Monarcha azurea ceylonensis</i> (Sharpe)	226
1449	Southern Greyheaded Flycatcher, <i>Culicicapa ceylonensis ceylonensis</i> (Swainson)	204	1467	Andaman Blacknaped Monarch Flycatcher, <i>Monarcha azurea tyleri</i> (Beavan)	226
1450	Yellowbellied Fantail Flycatcher, <i>Rhipidura hypoxantha</i> Blyth	206	1468	Car Nicobar Blacknaped Monarch Flycatcher, <i>Monarcha azurea idiochroa</i> (Oberholser)	227
1451	Northern Whitebrowed Fantail Flycatcher, <i>Rhipidura aureola aureola</i> Lesson	207	1469	Nicobar Blacknaped Monarch Flycatcher, <i>Monarcha azurea nicobarica</i> (Bianchi)	227
1452	Southern Whitebrowed Fantail Flycatcher, <i>Rhipidura aureola compressirostris</i> (Blyth)	209		Subfamily PACHYCEPHALINAE: Thickheads or Shrikebilled Flycatchers	
1453	Eastern Whitebrowed Fantail Flycatcher, <i>Rhipidura aureola burmanica</i> (Hume)	210	1470	Grey Thickhead or Mangrove Whistler, <i>Pachycephala griseola</i> (Blyth)	228
1454	Western Whitethroated Fantail Flycatcher, <i>Rhipidura albicollis canescens</i> (Koelz)	211			
1455	Eastern Whitethroated Fantail Flycatcher, <i>Rhipidura albicollis albicollis</i> (Vieillot)	213			
1456	NEFA Whitethroated Fantail Flycatcher, <i>Rhipidura albicollis stanleyi</i> Baker	213			
1457	Orissa Whitethroated Fantail Flycatcher, <i>Rhipidura albicollis orissa</i> Ripley	214			

VOLUME 8

Order PASSERIFORMES (cont.)

Family MUSCICAPIDAE (cont.)			centralasiensis Sushkin			89
Subfamily SYLVIINAE: Warblers			Blyth			89
1471	Yellowbrowed Ground Warbler, <i>Tesia cyanicenter</i> Hodgson	1	1544	Streaked Grasshopper Warbler, <i>Locustella lanceolata</i> (Temminck)	90	
1472	Slatybilled Ground Warbler, <i>Tesia olivacea</i> (McClelland)	3	1545	Eastern Grasshopper Warbler, <i>Locustella naevia straminea</i> Seeböhm	91	
1473	Chestnut-headed Ground Warbler, <i>Tesia castaneocoronata castaneocoronata</i> (Burton)	4	1546	Broadtailed Grass Warbler, <i>Scolecocera platyura</i> (Jerdon)	93	
1474	Indian Palefooted Bush Warbler, <i>Cettia pallidipes pallidipes</i> (Blanford)	6	1547	Bristled Grass Warbler, <i>Chazotornis striatus</i> (Jerdon)	94	
1475	Andaman Palefooted Bush Warbler, <i>Cettia pallidipes ornastoni</i> (Hartert)	8	1548	Striated Marsh Warbler, <i>Megalurur palustris tokleo</i> (Blyth)	96	
1476	Chinese Bush Warbler, <i>Cettia diphone canturians</i> (Swinhoe)	8	1549	Thicketbilled Warbler, <i>Phragmatoloba cedon cedon</i> (Pallas)	98	
1477	Pale Strongfooted Bush Warbler, <i>Cettia fortipes pallidus</i> (Brooks)	9	1550	Indian Great Reed Warbler, <i>Acrocephalus stentoreus brunneus</i> (Jerdon)	101	
1478	Strongfooted Bush Warbler, <i>Cettia fortipes fortipes</i> (Hodgson)	9	1551	Ceylon Great Reed Warbler, <i>Acrocephalus stentoreus meridionalis</i> (Legge)	104	
1479	Himalayan Large Bush Warbler, <i>Cettia major major</i> (Moore)	12	1552	Assam Great Reed Warbler, <i>Acrocephalus stentoreus ameyae</i> Baker	104	
1480	Assam Large Bush Warbler, <i>Cettia major cafer</i> (Koelz)	13	1553	Eurasian Great Reed Warbler, <i>Acrocephalus arundinaceus zarudnyi</i> (Hartert)	105	
1481	Himalayan Aberrant Bush Warbler, <i>Cettia flavolivacea flavolivacea</i> (Hodgson)	13	1554	Eastern Great Reed Warbler, <i>Acrocephalus orientalis</i> (Temminck & Schlegel)	106	
1482	Assam Aberrant Bush Warbler, <i>Cettia flavolivacea stresemanni</i> (Koelz)	14	1555	Blackbrowed Reed Warbler, <i>Acrocephalus bistrigiceps bistrigiceps</i> Swinhoe	107	
1483	Manipur Aberrant Bush Warbler, <i>Cettia flavolivacea alexanderi</i> Ripley	15	1555a	Asian Reed Warbler, <i>Acrocephalus scirpaceus fuscus</i> (Hemprich & Ehrenberg)	108	
1484	Hume's Bush Warbler, <i>Cettia acanthizoides brunneus</i> (Hume)	15	1556	Blyth's Reed Warbler, <i>Acrocephalus dumetorum</i> Blyth	109	
1485	Western Rufouscapped Bush Warbler, <i>Cettia brunifrons whistleri</i> (Ticehurst)	17	1557	Indian Paddyfield Warbler, <i>Acrocephalus agricola agricola</i> (Jerdon)	112	
1486	Eastern Rufouscapped Bush Warbler, <i>Cettia brunifrons brunifrons</i> (Hodgson)	17	1558	Northern Paddyfield Warbler, <i>Acrocephalus agricola capistrata</i> (Severtzov)	113	
1487	Arunachal Rufouscapped Bush Warbler, <i>Cettia brunifrons muroides</i> (Koelz)	18	1559	Kashmir Bluntwinged Paddyfield Warbler, <i>Acrocephalus concinens haringtoni</i> Witherby	114	
1488	Cetti's Warbler, <i>Cettia cetti albiventris</i> Severtzov	19	1560	Assam Bluntwinged Paddyfield Warbler, <i>Acrocephalus concinens sterceni</i> Baker	115	
1489	Western Spotted Bush Warbler, <i>Bradypterus thoracicus przewalskii</i> (Sushkin)	20	1561	Largebilled Reed Warbler, <i>Acrocephalus stentoreus orinus</i> Oberholser	115	
1490	Eastern Spotted Bush Warbler, <i>Bradypterus thoracicus thoracicus</i> (Blyth)	21	1562	Siberian Booted Tree Warbler, <i>Hippolais caligata caligata</i> (Lichtenstein)	117	
1491	Largebilled Bush Warbler, <i>Bradypterus major major</i> (Brooks)	22	1563	Indian Booted Tree Warbler, <i>Hippolais caligata rama</i> (Sykes)	118	
1492	Chinese Bush Warbler, <i>Bradypterus taczanowskii taczanowskii</i> (Swinhoe)	24	1564	Upcher's Tree Warbler, <i>Hippolais languida</i> (Hemprich & Ehrenberg)	119	
1493	Brown Bush Warbler, <i>Bradypterus luteocentris luteocentris</i> (Hodgson)	25	1564a	Barred Warbler, <i>Sylvia nisoria</i> (Bechstein)	121	
1494	Ceylon Bush Warbler, <i>Bradypterus pallieri</i> (Blyth)	26	1565	Eastern Orphean Warbler, <i>Sylvia hortensis jerdoni</i> (Blyth)	122	
1495	Moustached Sedge Warbler, <i>Luscinola melanocephala mimica</i> Madarász	27	1566	Indian Whitethroat, <i>Sylvia communis icterops</i> Menétrics	124	
1496	Redheaded Fantail Warbler, <i>Cisticola exilis erythrocephala</i> Blyth	30	1567	Siberian Lesser Whitethroat, <i>Sylvia curruca blythi</i> Ticehurst & Whistler	126	
1497	Yellowheaded Fantail Warbler, <i>Cisticola exilis tyleri</i> Jerdon	31	1568	Kirghiz Lesser Whitethroat, <i>Sylvia curruca halimodendri</i> Sushkin	128	
1498	Streaked Fantail Warbler, <i>Cisticola juncidis curvatus</i> (Franklin)	33	1569	Small Whitethroat, <i>Sylvia curruca minuta</i> Hume	128	
1499	Kerala Streaked Fantail Warbler, <i>Cisticola juncidis salimellii</i> Whistler	35	1570	Hume's Lesser Whitethroat, <i>Sylvia curruca althaea</i> Hume	129	
1500	Ceylon Streaked Fantail Warbler, <i>Cisticola juncidis omalura</i> Blyth	36	1571	Desert Warbler, <i>Sylvia nana nana</i> (Hemprich & Ehrenberg)	130	
1500a	Malay Streaked Fantail Warbler, <i>Cisticola juncidis malaya</i> Lynes	37	1572	Northern Leaf Warbler, <i>Phylloscopus trochilus acredula</i> (Linnaeus)	134	
1501	Rufous Wren-Warbler, <i>Prinia rufescens rufescens</i> Blyth	38	1573	Siberian Leaf Warbler, <i>Phylloscopus trochilus yakutensis</i> Ticehurst	135	
1502	Northern Ashy-grey Wren-Warbler, <i>Prinia hodgsonii rufula</i> Godwin-Austen	40	1574	European Chiffchaff, <i>Phylloscopus collybita collybita</i> (Vieillot)	136	
1503	Franklin's Ashy-grey Wren-Warbler, <i>Prinia hodgsonii hodgsonii</i> Blyth	42	1575	Brown Chiffchaff, <i>Phylloscopus collybita tristis</i> Blyth	137	
1504	Southern Ashy-grey Wren-Warbler, <i>Prinia hodgsonii albogularis</i> Walden	44	1576	Sind Chiffchaff, <i>Phylloscopus collybita sindicus</i> Brooks	138	
1505	Ceylon Ashy-grey Wren-Warbler, <i>Prinia hodgsonii pectoralis</i> Legge	45	1577	Plain Leaf Warbler, <i>Phylloscopus neglectus</i> Hume	139	
1506	Rufousfronted Wren-Warbler, <i>Prinia buchanani</i> Blyth	46	1578	Tyler's Leaf Warbler, <i>Phylloscopus tyleri</i> Brooks	141	
1507	Hodgson's Wren-Warbler, <i>Prinia cinereocapilla</i> Hodgson	48	1579	Tickell's Leaf Warbler, <i>Phylloscopus affinis affinis</i> (Tickell)	142	
1508	Indian Streaked Wren-Warbler, <i>Prinia gracilis lepida</i> Blyth	49	1580	Buffbellied Leaf Warbler, <i>Phylloscopus affinis arcuatus</i> Ripley	144	
1509	Eastern Streaked Wren-Warbler, <i>Prinia gracilis sterceni</i> Hartert	51	1581	Olivaceous Leaf Warbler, <i>Phylloscopus griseolus</i> Blyth	145	
1510	Northwestern Plain Wren-Warbler, <i>Prinia subflava terrioris</i> (Hume)	52	1582	Smoky Leaf Warbler, <i>Phylloscopus fulviger fulviger</i> (Hodgson)	146	
1511	Central India Plain Wren-Warbler, <i>Prinia subflava inornata</i> Sykes	53	1583	Tibetan Smoky Leaf Warbler, <i>Phylloscopus fulviger tibetanus</i> Ticehurst	147	
1512	Eastern Plain Wren-Warbler, <i>Prinia subflava fusca</i> (Hodgson)	55	1584	Szechuan Dusky Leaf Warbler, <i>Phylloscopus fuscatus weigoldi</i> Stresemann	148	
1513	Nilgiri Plain Wren-Warbler, <i>Prinia subflava franklinii</i> Blyth	56	1585	Manipur Dusky Leaf Warbler, <i>Phylloscopus fuscatus mariae</i> Ripley	148	
1514	Ceylon Plain Wren-Warbler, <i>Prinia subflava insularis</i> (Legge)	57	1586	Siberian Dusky Leaf Warbler, <i>Phylloscopus fuscatus fuscatus</i> (Blyth)	149	
1515	Northern Ashy Wren-Warbler, <i>Prinia socialis sterceni</i> Blyth	57	1587	Western Orangebarred Leaf Warbler, <i>Phylloscopus pulcher kangrae</i> Ticehurst	151	
1516	Assam Ashy Wren-Warbler, <i>Prinia socialis inglii</i> Whistler & Kinnear	59	1588, 1589	Eastern Orangebarred Leaf Warbler, <i>Phylloscopus pulcher pulcher</i> Blyth	152	
1517	Southern Ashy Wren-Warbler, <i>Prinia socialis socialis</i> Sykes	59	1590	Hume's Yellowbrowed Leaf Warbler, <i>Phylloscopus inornatus humei</i> (Brooks)	153	
1518	Ceylon Ashy Wren-Warbler, <i>Prinia socialis brevicauda</i> Legge	61	1591	Mandelli's Yellowbrowed Leaf Warbler, <i>Phylloscopus inornatus mandelli</i> (Brooks)	155	
1519	Gangetic Jungle Wren-Warbler, <i>Prinia sylvatica gangetica</i> (Blyth)	62	1592	Siberian Yellowbrowed Leaf Warbler, <i>Phylloscopus inornatus inornatus</i> (Blyth)	156	
1520	Northwestern Jungle Wren-Warbler, <i>Prinia sylvatica insignis</i> (Hume)	64	1593	Brooks's Leaf Warbler, <i>Phylloscopus subviridis</i> (Brooks)	157	
1521	Peninsular Jungle Wren-Warbler, <i>Prinia sylvatica sylvatica</i> Jerdon	64	1594	Western Pallas's Leaf Warbler, <i>Phylloscopus proregulus similis</i> Ticehurst	158	
1522	Orissa Jungle Wren-Warbler, <i>Prinia sylvatica mahendras</i> Koelz	65	1595	Nepal Pallas's Leaf Warbler, <i>Phylloscopus proregulus chloronotus</i> (Gray)	159	
1523	Ceylon Jungle Wren-Warbler, <i>Prinia sylvatica valida</i> (Blyth)	65	1596	Eastern Pallas's Leaf Warbler, <i>Phylloscopus proregulus newtoni</i> Gäcke	160	
1524	Sind Yellowbellied Wren-Warbler, <i>Prinia flaviventris sindiana</i> Ticehurst	66	1597	Western Greyfaced Leaf Warbler, <i>Phylloscopus maculipennis virens</i> Ticehurst	161	
1525	Assam Yellowbellied Wren-Warbler, <i>Prinia flaviventris flaviventris</i> (Delessert)	67	1598	Central Greyfaced Leaf Warbler, <i>Phylloscopus maculipennis centralis</i> Ripley	161	
1526	Sind Brown Hill Warbler, <i>Prinia criniger striatula</i> (Hume)	69	1599	Eastern Greyfaced Leaf Warbler, <i>Phylloscopus maculipennis maculipennis</i> (Blyth)	162	
1527	Himalayan Brown Hill Warbler, <i>Prinia criniger criniger</i> Hodgson	70	1600	Arctic Leaf Warbler, <i>Phylloscopus borealis borealis</i> (Blasius)	163	
1528	Assam Brown Hill Warbler, <i>Prinia criniger catharia</i> Reichenow	71	1601	Largebilled Leaf Warbler, <i>Phylloscopus magnirostris</i> Blyth	164	
1529	Himalayan Blackthroated Hill Warbler, <i>Prinia atrogularis atrogularis</i> (Moore)	72	1602	Western Greenish Leaf Warbler, <i>Phylloscopus trochiloides viridans</i> Blyth	166	
1530	Assam Blackthroated Hill Warbler, <i>Prinia atrogularis khasiana</i> (Godwin-Austen)	73	1603	Baltistan Greenish Leaf Warbler, <i>Phylloscopus trochiloides ludlowi</i> Whistler	168	
1531	Western Longtailed Grass Warbler, <i>Prinia burnesii burnesii</i> (Blyth)	74	1604	Eastern Greenish Leaf Warbler, <i>Phylloscopus trochiloides trochiloides</i> (Sunderwall)	169	
1532	Eastern Longtailed Grass Warbler, <i>Prinia burnesii cinerascens</i> (Walden)	76	1605	Bright Green Leaf Warbler, <i>Phylloscopus trochiloides nitidus</i> Blyth	170	
1533	Streaked Scrub Warbler, <i>Scotocerca inquieta striata</i> (Brooks)	77				
1534	Large Grass Warbler, <i>Gremicinia bengalensis bengalensis</i> Jerdon	78				
1535	Indian Tailor Bird, <i>Orthotomus sutorius guzeratus</i> (Latham)	81				
1536	Bengal Tailor Bird, <i>Orthotomus sutorius petio</i> Hodgson	84				
1537	Mishmi Tailor Bird, <i>Orthotomus sutorius luteus</i> Ripley	84				
1538	Ceylon Tailor Bird, <i>Orthotomus sutorius sutorius</i> (Pennant)	85				
1539	Ceylon Highland Tailor Bird, <i>Orthotomus sutorius fremdeni</i> Whistler	86				
1540	Blacknecked Tailor Bird, <i>Orthotomus atrogularis nitidus</i> Hume	86				
1541	Goldenheaded Tailor Bird, <i>Orthotomus cucullatus coreatus</i> Blyth	87				

1605a	Palelegged Leaf Warbler, <i>Phylloscopus tenellipes</i> Swinhoe	171	1634	Tibetan Tit-Warbler, <i>Leptopoeile sophiae obscura</i> Przevalski	202
1606	Large Crowned Leaf Warbler, <i>Phylloscopus occipitalis occipitalis</i> (Blyth)	172		Subfamily TURDINAE: Thrushes and Chats	
1607	Eastern Crowned Leaf Warbler, <i>Phylloscopus occipitalis coronatus</i> (Temminck & Schlegel)	174	1635		204
1608	Small Crowned Leaf Warbler, <i>Phylloscopus reguloides kashmirensis</i> Ticehurst	175	1636		205
1609	Blyth's Crowned Leaf Warbler, <i>Phylloscopus reguloides reguloides</i> (Blyth)	177	1637		206
1610	Assam Crowned Leaf Warbler, <i>Phylloscopus reguloides assamensis</i> Hartert	178	1638		206
1611	Yunnan Crowned Leaf Warbler, <i>Phylloscopus reguloides claudiae</i> (La Touche)	178	1639		207
1612	Blackbrowed or Yellowfaced Leaf Warbler, <i>Phylloscopus cantator cantator</i> (Tickell)	179	1640		209
1613	Allied Flycatcher-Warbler, <i>Seiurus affinis</i> (Hodgson)	180	1641	(Ménétries)	210
1614	Western Blackbrowed Flycatcher-Warbler, <i>Seiurus burkii whistleri</i> Ticehurst	182	1642	Persian Nightingale, <i>Eriothacus megarhynchus hafizi</i> (Severtzov)	214
1615	Eastern Blackbrowed Flycatcher-Warbler, <i>Seiurus burkii burkii</i> (Burton)	183	1643	Rubythroat, <i>Eriothacus calliope</i> (Pallas)	215
1615a	Burmese Blackbrowed Flycatcher-Warbler, <i>Seiurus burkii lephrocephalus</i> (Anderson)	184	1644	Northern Bluethroat, <i>Eriothacus svecicus svecicus</i> (Linnaeus)	217
1616	Western Greyheaded Flycatcher-Warbler, <i>Seiurus xanthoschistos albosuperciliaris</i> (Jerdon)	185	1645	Turkistan Bluethroat, <i>Eriothacus svecicus pallidigularis</i> (Zarudny)	218
1617	Nepal Greyheaded Flycatcher-Warbler, <i>Seiurus xanthoschistos xanthoschistos</i> (Gray)	186	1646	Ladakh Bluethroat, <i>Eriothacus svecicus abbotti</i> (Richmond)	220
1618	Mishmi Greyheaded Flycatcher-Warbler, <i>Seiurus xanthoschistos flavogularis</i> (Godwin-Austen)	187	1646a	Central Asian Bluethroat, <i>Eriothacus svecicus saturator</i> (Sushkin)	221
1619	Assam Greyheaded Flycatcher-Warbler, <i>Seiurus xanthoschistos tephrodia</i> Sick	187	1647	West Himalayan Rubythroat, <i>Eriothacus pectoralis pectoralis</i> (Gould)	221
1620	Greycheeked Flycatcher-Warbler, <i>Seiurus poliogenys</i> (Blyth)	188	1648	Eastern Rubythroat, <i>Eriothacus pectoralis confusus</i> (Hartert)	224
1621	Chestnut-headed Flycatcher-Warbler, <i>Seiurus castaneiceps castaneiceps</i> (Hodgson)	189	1649	Tibetan Rubythroat, <i>Eriothacus pectoralis tschebawicus</i> (Przevalski)	225
1622	Sikkim Yellowbellied Flycatcher-Warbler, <i>Abroscopus superciliaris flaviventris</i> (Jerdon)	190	1650	1651 Indian Blue Chat, <i>Eriothacus brunneus</i> (Hodgson)	226
1623	Arunachal Yellowbellied Flycatcher-Warbler, <i>Abroscopus superciliaris drastius</i> Deignan	191	1652	Firethroat, <i>Eriothacus pectoralis</i> (David)	228
1624	Nepal Blackfaced Flycatcher-Warbler, <i>Abroscopus schisticeps schisticeps</i> (Gray)	192	1653	Siberian Blue Chat, <i>Eriothacus cyane cyane</i> (Pallas)	229
1625	Assam Blackfaced Flycatcher-Warbler, <i>Abroscopus schisticeps flavimentalis</i> (Baker)	193	1654	Kashmir Redflanked Bush Robin, <i>Eriothacus cyanurus pallidior</i> (Baker)	230
1626	Whitethroated Flycatcher-Warbler, <i>Abroscopus albogularis albogularis</i> (Horsfield & Moore)	194	1655	Eastern Redflanked Bush Robin, <i>Eriothacus cyanurus rufilatus</i> (Hodgson)	232
1627	Broadbilled Flycatcher-Warbler, <i>Abroscopus hodgsoni hodgsoni</i> (Moore)	195	1656	Japanese Blue Chat, <i>Eriothacus cyanurus cyanurus</i> (Pallas)	233
1628	Turkistan Goldcrest, <i>Regulus regulus tristis</i> Pleske	196	1657	Western Golden Bush Robin, <i>Eriothacus chrysaeus whistleri</i> (Ticehurst)	234
1629	Himalayan Goldcrest, <i>Regulus regulus himalayensis</i> Bonaparte	197	1658	Eastern Golden Bush Robin, <i>Eriothacus chrysaeus chrysaeus</i> (Hodgson)	234
1630	Sikkim Goldcrest, <i>Regulus regulus sikkimensis</i> R. & A. Meinertzhagen	198	1659	Whitebrowed Bush Robin, <i>Eriothacus indicus indicus</i> (Vieillot)	236
1631	Yunnan Goldcrest, <i>Regulus regulus yunnanensis</i> Rippon	199	1660	Rufousbellied Bush Robin, <i>Eriothacus hyperythrus</i> (Blyth)	237
1632	Crested Tit-Warbler, <i>Leptopoeile elegans</i> Przevalski	199	1661	Indian Magpie-Robin, <i>Copsychus saularis saularis</i> (Linnaeus)	239
1633	Turkistan Tit-Warbler, <i>Leptopoeile sophiae sophiae</i> Severtzov	201	1662	Ceylon Magpie-Robin, <i>Copsychus saularis ceylonensis</i> Selater	242
			1663	Assam Magpie-Robin, <i>Copsychus saularis erimialis</i> Oberholser	243
			1664	Andaman Magpie-Robin, <i>Copsychus saularis andamanensis</i> Hume	243
			1665	Malabar Shama, <i>Copsychus malabaricus malabaricus</i> (Scopoli)	244
			1666	Ceylon Shama, <i>Copsychus malabaricus leggei</i> (Whistler)	245
			1667	Indian Shama, <i>Copsychus malabaricus indicus</i> (Baker)	246
			1668	Andaman Shama, <i>Copsychus malabaricus albiventris</i> (Blyth)	247
			1669	Eversmann's Redstart, <i>Phoenicurus erythronotus</i> (Eversmann)	249
			1670	Bluecheeked Redstart, <i>Phoenicurus caeruleocephalus</i> (Vigors)	251
			1671	Kashmir Black Redstart, <i>Phoenicurus ochurus phoenicuroides</i> (Moore)	253
			1672	Eastern Black Redstart, <i>Phoenicurus ochurus rufiventris</i> (Vieillot)	255
			1673	Whitethroated Redstart, <i>Phoenicurus phoenicurus phoenicurus</i> (Linnaeus)	256
			1674	Hodgson's Redstart, <i>Phoenicurus hodgsoni</i> (Moore)	257
			1675	Bluefronted Redstart, <i>Phoenicurus frontalis</i> (Vigors)	258
			1676	Whitethroated Redstart, <i>Phoenicurus schisticeps</i> (Gray)	260
			1677	Daurian Redstart, <i>Phoenicurus auroreus leucophrus</i> (Blyth)	262
			1678		264
			1679		266
			1680		269

VOLUME 9

Order PASSERIFORMES (cont.)

Family MUSCICAPIDAE (cont.)

Subfamily TURDINAE: Thrushes and Chats (cont.)					
1681	Whitetailed Blue Robin, <i>Cinclidium leucurus</i> (Hodgson)	1	1741	Smallbilled Mountain Thrush, <i>Zoothera dauma dauma</i> (Latham)	97
1682	Bluefronted Robin, <i>Cinclidium frontale frontale</i> Blyth	3	1742	Nilgiri Thrush, <i>Zoothera dauma nilgherrensis</i> (Blyth)	100
1683	Grandala, <i>Grandala coelestis</i> Hodgson	4	1743	Ceylon Scaly Thrush, <i>Zoothera dauma imbricata</i> Layard	100
1684	Little Forktail, <i>Enicurus scouleri scouleri</i> Vigors	7	1744	Golden Thrush, <i>Zoothera dauma aurea</i> (Holandre)	101
1685	Blackbacked Forktail, <i>Enicurus immaculatus</i> (Hodgson)	9	1745	Large Brown Thrush, <i>Zoothera monticola monticola</i> Vigors	104
1686	Slatybacked Forktail, <i>Enicurus schistaceus</i> (Hodgson)	10	1746	Lesser Brown Thrush, <i>Zoothera marginata</i> Blyth	106
1687	Leschenault's Forktail, <i>Enicurus leschenaulti indicus</i> Hartert	12	1747	Blackbreasted Thrush, <i>Turdus dissimilis dissimilis</i> Blyth	108
1688	Western Spotted Forktail, <i>Enicurus maculatus maculatus</i> Vigors	13	1748	Tickell's Thrush, <i>Turdus unicolor</i> Tickell	110
1689	Eastern Spotted Forktail, <i>Enicurus maculatus guttatus</i> Gould	15	1749	Whitethroated Blackbird, <i>Turdus albocinctus</i> Royle	110
1690	Purple Cochoa, <i>Cochoa purpurea</i> Hodgson	16	1750	Greywinged Blackbird, <i>Turdus boulboul</i> (Latham)	112
1691	Green Cochoa, <i>Cochoa viridis</i> Hodgson	18	1751	Turkistan Blackbird, <i>Turdus merula intermedia</i> (Richmond)	115
1692	Brown Rock Chat, <i>Cercomela fusca</i> (Blyth)	20	1752	Tibetan Blackbird, <i>Turdus merula maximus</i> (Seebom)	116
1693	Stoliczka's Bush Chat, <i>Saxicola macrorhynchos</i> (Stoliczka)	23	1753	Blackcapped Blackbird, <i>Turdus merula nigropilus</i> (Lafresnaye)	117
1694	Hodgson's Bush Chat, <i>Saxicola insignis</i> Gray	24	1754	Eastern Ghats Blackbird, <i>Turdus merula spenceri</i> Whistler & Kinnear	119
1695	West Siberian Collared Bush Chat, <i>Saxicola torquata maurea</i> (Pallas)	26	1755	Nilgiri Blackbird, <i>Turdus merula similis</i> Jerdon	120
1696	Tibetan Collared Bush Chat, <i>Saxicola torquata przewalskii</i> (Pleske)	27	1756	Bourdon's Blackbird, <i>Turdus merula bourdilloni</i> (Seebom)	121
1697	Indian Collared Bush Chat, <i>Saxicola torquata indica</i> (Blyth)	28	1757	Ceylon Blackbird, <i>Turdus merula kinneari</i> (Kelaart)	122
1698	East Siberian Collared Bush Chat, <i>Saxicola torquata stejnegeri</i> (Parrot)	29	1758	Western Greyheaded Thrush, <i>Turdus rubrocanus rubrocanus</i> G. R. Gray	124
1699	Whitetailed Bush Chat, <i>Saxicola leucura</i> (Blyth)	30	1759	Eastern Greyheaded Thrush, <i>Turdus rubrocanus gouldii</i> (Verreaux)	124
1700	Northern Pied Bush Chat, <i>Saxicola caprata bicolor</i> Sykes	32	1760	Kessler's Thrush, <i>Turdus kessleri</i> Przevalski	125
1701	Burmese Pied Bush Chat, <i>Saxicola caprata burmanica</i> Baker	34	1761	Fea's Thrush, <i>Turdus feai</i> (Salvadori)	126
1702	Nilgiri Pied Bush Chat, <i>Saxicola caprata nilgiriensis</i> Whistler	34	1762	Dark Thrush, <i>Turdus obscurus</i> Gmelin	126
1703	Ceylon Pied Bush Chat, <i>Saxicola caprata atrata</i> (Kelaart)	35	1763	Blackthroated Thrush, <i>Turdus ruficollis atrogularis</i> Jarocki	127
1704	Jerdon's Bush Chat, <i>Saxicola jerdoni</i> (Blyth)	36	1764	Redthroated Thrush, <i>Turdus ruficollis ruficollis</i> Pallas	129
1705	Dark-grey Bush Chat, <i>Saxicola ferrea</i> Gray	37	1765	Dusky Thrush, <i>Turdus naumanni eunomus</i> Temminck	130
1706	Isabelline Chat, <i>Oenanthe isabellina</i> (Temminck)	40	1766	Fieldfare, <i>Turdus pilaris</i> Linnaeus	131
1707	Redtailed Chat, <i>Oenanthe xanthopyrma kingi</i> (Hume)	42	1767	Redwing, <i>Turdus iliacus</i> Linnaeus	132
1708	Wheatear, <i>Oenanthe oenanthe</i> (Linnaeus)	44	1768	Mistle Thrush, <i>Turdus viscivorus bonapartei</i> Cabanis	133
1709	Tibetan Desert Wheatear, <i>Oenanthe deserti orophila</i> (Oberholser)	45		Family TROGLODYTIDAE: Wrens	135
1710	Central Asian Desert Wheatear, <i>Oenanthe deserti deserti</i> (Temminck)	47	1769	Magrath's Wren, <i>Troglodytes troglodytes magrathi</i> (Whitehead)	136
1711	Barnes's Chat, <i>Oenanthe finchii barnesi</i> (Oates)	48	1770	Kashmir Wren, <i>Troglodytes troglodytes neglectus</i> Brooks	137
1712	Pied Chat, <i>Oenanthe picaea</i> (Blyth)	50	1771	Nepal Wren, <i>Troglodytes troglodytes nipalensis</i> Blyth	137
1713	Hooded Chat, <i>Oenanthe monacha</i> (Temminck)	52		Family CINCLIDAE: Dippers	139
1714	Hume's Chat, <i>Oenanthe alboniger</i> (Hume)	53	1772	Whitebellied Dipper, <i>Cinclus cinclus leucogaster</i> Bonaparte	140
1715	Pleschanka's Chat, <i>Oenanthe pleschanka pleschanka</i> (Lepechin)	55	1773	Whitebreasted Dipper, <i>Cinclus cinclus cashmeriensis</i> Gould	141
1716	Whitethroated Redstart or River Chat, <i>Chaimarrornis leucocephalus</i> (Vigors)	57	1774	Eastern Whitebreasted Dipper, <i>Cinclus cinclus przewalskii</i> Bianchi	142
1717		60	1775		144
1718		61		Family PRUNELLIDAE: Accentors or 'Hedge Sparrows'	145
1719		62	1777	Turkistan Alpine Accentor, <i>Prunella collaris rufilata</i> (Severtzov)	146
1720	Blackbacked Indian Robin, <i>Saxicoloides fulicata fulicata</i> (Linnaeus)	62	1778	Garhwal Alpine Accentor, <i>Prunella collaris uhympieri</i> (Baker)	147
1721	Ceylon Black Robin, <i>Saxicoloides fulicata leucopetra</i> (Lesson)	65	1779	Eastern Alpine Accentor, <i>Prunella collaris nipalensis</i> (Blyth)	148
1722	Rock Thrush, <i>Monticola saxatilis</i> (Linnaeus)	66	1780	Altai Accentor, <i>Prunella himalayana</i> (Blyth)	150
1723	Bluecheeked Rock Thrush, <i>Monticola cinclorhynchus</i> (Vigors)	67	1781	Robin Accentor, <i>Prunella rubeculoides</i> (Moore)	152
1724	Chestnutbellied Rock Thrush, <i>Monticola rufiventris</i> (Jardine & Selby)	70	1782	Western Rufousbreasted Accentor, <i>Prunella strophata jerdoni</i> (Brooks)	154
1725	Iranian Blue Rock Thrush, <i>Monticola solitarius longirostris</i> (Blyth)	72	1783	Eastern Rufousbreasted Accentor, <i>Prunella strophata strophata</i> (Blyth)	155
1726	Indian Blue Rock Thrush, <i>Monticola solitarius pandoo</i> (Sykes)	73	1784	Turkistan Brown Accentor, <i>Prunella fulvescens fulvescens</i> (Severtzov)	156
1727	Ceylon Whistling Thrush, <i>Miyophobus blighi</i> (Holdsworth)	76	1785	Tibet Brown Accentor, <i>Prunella fulvescens sushkini</i> Collin & Hartert	157
1728	Malabar Whistling Thrush, <i>Miyophobus horsfieldii</i> (Vigors)	77	1785a	Radde's Accentor, <i>Prunella fulvescens ocularis</i> (Radde)	157
1729	Himalayan Whistling Thrush, <i>Miyophobus caeruleus temminckii</i> (Vigors)	79	1786	Turkistan Blackthroated Accentor, <i>Prunella atrogularis huttoni</i> (Moore)	158
1730	Burmese Whistling Thrush, <i>Miyophobus caeruleus eugenei</i> (Hume)	82	1787	Ural Blackthroated Accentor, <i>Prunella atrogularis atrogularis</i> (Brandt)	159
1731	Pied Ground Thrush, <i>Zoothera wardii</i> (Blyth)	83	1787a	Siberian Accentor, <i>Prunella montanella montanella</i> (Pallas)	160
1732	Whitebrowed Ground Thrush, <i>Zoothera sibirica sibirica</i> (Pallas)	85	1788	Maroonbacked Accentor, <i>Prunella immutata</i> (Hodgson)	160
1733	Orangeheaded Ground Thrush, <i>Zoothera citrina citrina</i> (Latham)	86		Family PARIDAE: Tits or Titmice	
1734	Whitethroated Ground Thrush, <i>Zoothera citrina cyanus</i> (Jardine & Selby)	89		Subfamily PARINAE: True Tits	162
1735	Andaman Ground	90	1789	Sultan Tit, <i>Melanochlora sultanica sultanica</i> (Hodgson)	163
1736	Nicobar Ground	90	1790	Baluchistan Grey Tit, <i>Parus major ziaratensis</i> Whistler	165
1737	Spottedwinged G	91	1791	Afghanistan Grey Tit, <i>Parus major decorans</i> Koelz	167
1738	Western Plainbacked Mountain Thrush, <i>Zoothera mollissima uhit-headi</i> (Baker)	92	1792	Kashmir Grey Tit, <i>Parus major cashmeriensis</i> Hartert	168
1739	Eastern Plainbacked Mountain Thrush, <i>Zoothera mollissima mollissima</i> (Blyth)	94	1793	Nepal Grey Tit, <i>Parus major nipalensis</i> Hodgson	169
1740	Longtailed Mountain Thrush, <i>Zoothera dixoni</i> (Seebom)	95	1794	Indian Grey Tit, <i>Parus major stupae</i> Koelz	170
			1795	Ceylon Grey Tit, <i>Parus major maharattarum</i> Hartert	171
			1796	Lakhimpur Grey Tit, <i>Parus major caurii</i> Ripley	171
			1797	Tibet Grey Tit, <i>Parus major tibetanus</i> Hartert	172
			1798	Whitewinged Black Tit, <i>Parus nuchalis</i> Jerdon	172

1799	Greenbacked Tit, <i>Parus monticolus monticolus</i> Vigors ..	174	1841	Indian Spotted Grey Creeper, <i>Salpormis spilnotus spilnotus</i> (Franklin)	229
1800	Yellowbreasted Blue Tit, <i>Parus cyanus flavipictus</i> Severtzov ..	176		Family CETHIIDAE: Tree Creepers	
1800a	Tien Shan Blue Tit, <i>Parus cyanus tianschanicus</i> (Menzies)	177	1842	Kashmir Tree Creeper, <i>Certhia familiaris hodgsoni</i> Brooks ..	232
1801	Blackbilled Tit, <i>Parus hypermelas</i> (Berezovsky & Bianchi)	177	1843	Mandelli's Tree Creeper, <i>Certhia familiaris mandelli</i> Brooks ..	233
1802	Crested Black Tit, <i>Parus melanophus</i> Vigors ..	178	1844	Tibetan Tree Creeper, <i>Certhia familiaris khamensis</i> Bianchi ..	234
1803	Himalayan Coal Tit, <i>Parus ater aemodius</i> Hodgson ..	179	1845	West Himalayan Tree Creeper, <i>Certhia himalayana limes</i> Meinertzhagen ..	234
1804	Simla Black Tit, <i>Parus rubidiventris rufonuchalis</i> Blyth ..	180	1846	Turkestan Tree Creeper, <i>Certhia himalayana taurina</i> Severtzov ..	236
1805	Rufousbellied Crested Tit, <i>Parus rubidiventris rubidiventris</i> Blyth ..	182	1847	Himalayan Tree Creeper, <i>Certhia himalayana himalayana</i> Vigors ..	237
1806	Sikkim Black Tit, <i>Parus rubidiventris beavoni</i> (Jerdon) ..	183	1848	West Nepal Tree Creeper, <i>Certhia himalayana infima</i> Ripley ..	237
1806a	Nagaland Black Tit, <i>Parus rubidiventris sarawatti</i> Ripley ..	184	1849	Sikkim Tree Creeper, <i>Certhia discolor discolor</i> Blyth ..	238
1807	Western Brown Crested Tit, <i>Parus dichrous kangrae</i> (Whistler) ..	184	1850	Manipur Tree Creeper, <i>Certhia discolor manipurensis</i> Hume ..	239
1808	Eastern Brown Crested Tit, <i>Parus dichrous dichrous</i> Hodgson ..	185	1851	Nepal Tree Creeper, <i>Certhia nipalensis</i> Blyth ..	240
1809	Northern Yellowcheeked Tit, <i>Parus xanthogenys xanthogenys</i> Vigors ..	186		Family MOTACILLIDAE: Pipits and Wagtails	
1810	Central India Yellowcheeked Tit, <i>Parus xanthogenys ophiolus</i> Blyth ..	188	1852	Indian Tree Pipit, <i>Anthus hodgsoni hodgsoni</i> Richmond ..	243
1811	Southern Yellowcheeked Tit, <i>Parus xanthogenys travancorensis</i> (Whistler & Kinnear) ..	189	1853	Siberian Tree Pipit, <i>Anthus hodgsoni yunnanensis</i> Uchida & Kuroda ..	245
1812	Himalayan Blackspotted Yellow Tit, <i>Parus spilnotus spilnotus</i> Bonaparte ..	190	1854	European Tree Pipit, <i>Anthus trichialis trichialis</i> (Linnaeus) ..	246
1812a	Burmese Blackspotted Yellow Tit, <i>Parus spilnotus subviridis</i> Blyth ..	191	1855	Wetherby's Tree Pipit, <i>Anthus trichialis haringtoni</i> Wetherby ..	248
1813	Simla Yellowbrowed Tit, <i>Syltiperus modestus simlaensis</i> Baker ..	192	1856	Meadow Pipit, <i>Anthus pratensis</i> (Linnaeus) ..	250
1814	Eastern Yellowbrowed Tit, <i>Syltiperus modestus modestus</i> Burton ..	193	1857	Richard's Pipit, <i>Anthus novaezealandiae richardi</i> Vieillot ..	251
	Subfamily REMIZINAE: Penduline Titmice		1858	Northwestern Paddyfield Pipit, <i>Anthus novaezealandiae waiti</i> Whistler ..	252
1815	Western Firecapped Tit, <i>Cephalopyrus flammiceps flammiceps</i> (Burton)	195	1859	Indian Paddyfield Pipit, <i>Anthus novaezealandiae rufus</i> Vieillot ..	253
1816	Eastern Firecapped Tit, <i>Cephalopyrus flammiceps olivaceus</i> Rothschild	197	1860	Malay Paddyfield Pipit, <i>Anthus novaezealandiae malayensis</i> Eyton ..	255
1817	Penduline Tit, <i>Remiz pendulinus coronatus</i> (Severtzov) ..	198	1861	Tawny Pipit, <i>Anthus campestris campestris</i> (Linnaeus) ..	256
	Subfamily AEGITHALINAE: Longtailed Titmice		1862	Siberian Tawny Pipit, <i>Anthus campestris kashtchenkoi</i> Johansen ..	258
1818	Western Redheaded Tit, <i>Aegithalos concinnus iredalei</i> (Baker) ..	200	1863	Blyth's Pipit, <i>Anthus godlewskii</i> (Taczanowski) ..	259
1819	Eastern Redheaded Tit, <i>Aegithalos concinnus rubricapillus</i> (Ticehurst)	202	1864	Redthroated Pipit, <i>Anthus cervinus</i> (Pallas) ..	260
1820	Manipur Redheaded Tit, <i>Aegithalos concinnus manipurensis</i> (Hume) ..	202	1865	Vinaceousbreasted Pipit, <i>Anthus roseatus</i> Blyth ..	261
1821	Whitecheeked Tit, <i>Aegithalos leucogenys</i> (Moore) ..	203	1866	Persian Rock Pipit, <i>Anthus similis decaepus</i> Meinertzhagen ..	263
1822	Whitethroated Tit, <i>Aegithalos niveogularis</i> (Gould) ..	204	1867	Brown Rock Pipit, <i>Anthus similis jerdoni</i> Finsch ..	265
1823	Rufousfronted Tit, <i>Aegithalos isochistos isochistos</i> (Hodgson) ..	206	1868	Rufous Rock Pipit, <i>Anthus similis similis</i> Jerdon ..	266
	Family SITTIDAE: Nuthatches and Creepers		1869	Kerala Rock Pipit, <i>Anthus similis travancorensis</i> Ripley ..	267
	Subfamily SITTINAE: Nuthatches		1870	Nilgiri Pipit, <i>Anthus nilgiriensis</i> Sharpe ..	267
1824	Kashmir Nuthatch, <i>Sitta europaea cashmirensis</i> Brooks ..	208	1871	Central Asian Water Pipit, <i>Anthus spinoletta coutellii</i> Audouin ..	269
1825	Chinese Nuthatch, <i>Sitta europaea montium</i> La Touche ..	210	1872	Japanese Water Pipit, <i>Anthus spinoletta japonicus</i> Temminck & Schlegel ..	270
1826	Naga Nuthatch, <i>Sitta europaea nagaensis</i> Godwin-Austen ..	211	1873	Upland Pipit, <i>Anthus sylvanus</i> (Hodgson) ..	271
1827	Western Chestnutbellied Nuthatch, <i>Sitta castanea almora</i> Kinnear & Whistler ..	212	1874	Forest Wagtail, <i>Motacilla indica</i> Gmelin ..	273
1828	Eastern Chestnutbellied Nuthatch, <i>Sitta castanea cinnamomeiventris</i> Blyth ..	213	1875	Greyheaded Yellow Wagtail, <i>Motacilla flava thunbergi</i> Billberg ..	276
1829	Naga Chestnutbellied Nuthatch, <i>Sitta castanea lalzi</i> Vaurie ..	215	1875a	Short-tailed Greyheaded Yellow Wagtail, <i>Motacilla flava similima</i> Hartert ..	277
1830	Peninsular Chestnutbellied Nuthatch, <i>Sitta castanea castanea</i> Lesson ..	215	1876	Blueheaded Yellow Wagtail, <i>Motacilla flava beema</i> (Sykes) ..	278
1831	Eastern Ghats Chestnutbellied Nuthatch, <i>Sitta castanea prateri</i> Whistler & Kinnear ..	216	1877	Yellowbacked Wagtail, <i>Motacilla flava lutea</i> (Gmelin) ..	279
1832	Western Whitecheeked Nuthatch, <i>Sitta leucopsis leucopsis</i> Gould ..	217	1878	Turkestan Blackheaded Wagtail, <i>Motacilla flava melanogrisea</i> (Hemeyer) ..	280
1833	Eastern Whitefaced Nuthatch, <i>Sitta leucopsis przewalskii</i> Berezovsky & Bianchi ..	219	1879	Whiteheaded Yellow Wagtail, <i>Motacilla flava leucocephala</i> (Przevalski) ..	280
1834	Himalayan Whitetailed Nuthatch, <i>Sitta himalayensis himalayensis</i> Jardine & Selby ..	219	1880	Greenheaded Yellow Wagtail, <i>Motacilla flava tairana</i> (Swinhoe) ..	281
1835	Assam Whitetailed Nuthatch, <i>Sitta himalayensis australis</i> Koelz ..	221	1881	Northern Yellowheaded Wagtail, <i>Motacilla citreola citreola</i> Pallas ..	282
1836	Eastern Rock Nuthatch, <i>Sitta tephronota tephronota</i> Sharpe ..	222	1882	Western Yellowheaded Wagtail, <i>Motacilla citreola uerae</i> (Butorlin) ..	283
1837	Beautiful Nuthatch, <i>Sitta formosa</i> Blyth ..	223	1883	Blackbacked Yellowheaded Wagtail, <i>Motacilla citreola calcarata</i> Hodgson ..	284
1838	Velvetfronted Nuthatch, <i>Sitta frontalis frontalis</i> Swainson ..	224	1884	Grey Wagtail, <i>Motacilla caspica caspica</i> (Gmelin) ..	285
	Subfamily TICHODROMADINAE: Wall Creepers		1885	Indian White Wagtail, <i>Motacilla alba dukhensis</i> Sykes ..	288
1839	Wall Creeper, <i>Tichodroma muraria nepalensis</i> Bonaparte ..	226	1886	Masked Wagtail, <i>Motacilla alba personata</i> Gould ..	291
	Subfamily SALPORNITINAE: Spotted Creepers		1887	Hodgson's Pied Wagtail, <i>Motacilla alba alboides</i> Hodgson ..	292
1840	Rajasthan Spotted Grey Creeper, <i>Salpormis spilnotus rajputanae</i> R. & A. Meinertzhagen ..	229	1888	Whitefaced Pied Wagtail, <i>Motacilla alba leucopsis</i> Gould ..	293
			1889	Streaked Pied Wagtail, <i>Motacilla alba ocellaris</i> Swinhoe ..	294
			1890	Swinhoe's Pied Wagtail, <i>Motacilla alba baicalensis</i> Swinhoe ..	295
			1891	Large Pied Wagtail, <i>Motacilla maderaspatensis</i> Gmelin ..	296

VOLUME 10

Order PASSERIFORMES (cont.)

	Family DICAEDAE: Flowerpeckers			Family ZOSTEROPIDAE: White-eyes	
1892, 1894	Indian Thickbilled Flowerpecker, <i>Dicaeum agile agile</i> (Tickell)	2	1933	Indian White-eye, <i>Zosterops palpebrosa palpebrosa</i> (Temminck)	57
1893	Ceylon Thickbilled Flowerpecker, <i>Dicaeum agile zeylonense</i> (Whistler)	4	1934	Andhra White-eye, <i>Zosterops palpebrosa salimalii</i> Whistler ..	59
1895	Yellowvented Flowerpecker, <i>Dicaeum chrysorrheum chrysorrheum</i> Blyth	5	1935	Nilgiri White-eye, <i>Zosterops palpebrosa nilgiriensis</i> Ticehurst ..	60
1896	Yellowbellied Flowerpecker, <i>Dicaeum melanoxanthum</i> (Blyth) ..	6	1936	Nicobar White-eye, <i>Zosterops palpebrosa nicobarica</i> Blyth ..	61
1897	Legge's Flowerpecker, <i>Dicaeum virens</i> (Sclater) ..	8	1937	Ceylon White-eye, <i>Zosterops ceylonensis</i> Holdsworth ..	60
1898	Orangebellied Flowerpecker, <i>Dicaeum trigonostigma rubrocygnum</i> Baker ..	9		Family PLOCEIDAE: Weaver Birds	
1899	Tickell's Flowerpecker, <i>Dicaeum erythrorhynchus erythrorhynchus</i> (Latham) ..	10		Subfamily PASSERINAE: House and Rock Sparrows	
1900	Ceylon Small Flowerpecker, <i>Dicaeum erythrorhynchus ceylonense</i> Babault ..	12	1938	Indian House Sparrow, <i>Passer domesticus indicus</i> Jardine & Selby ..	63
1901	Plaincoloured Flowerpecker, <i>Dicaeum concolor olivaceum</i> Walden ..	13	1939	Kashmir House Sparrow, <i>Passer domesticus parkini</i> Whistler ..	66
1902	Nilgiri Flowerpecker, <i>Dicaeum concolor concolor</i> Jerdon ..	14	1939a	Turkestan House Sparrow, <i>Passer domesticus baicalicus</i> Zarudny & Kudashev ..	67
1903	Andaman Flowerpecker, <i>Dicaeum concolor virens</i> Hume ..	15	1940	Spanish Sparrow, <i>Passer hispaniolensis transcaspicus</i> Tschusi ..	68
1904	Scarletbacked Flowerpecker, <i>Dicaeum cruentatum cruentatum</i> (Linnaeus) ..	15	1941	Afghan Tree Sparrow, <i>Passer montanus dilutus</i> Richmond ..	70
1905	Firebreasted Flowerpecker, <i>Dicaeum ignipictus ignipictus</i> (Blyth) ..	17	1942	Malay Tree Sparrow, <i>Passer montanus malaccensis</i> Dubois ..	71
	Family NECTARINIINAE: Sunbirds		1943	Tibetan Tree Sparrow, <i>Passer montanus tibetanus</i> Baker ..	72
1906	Rubycheck, <i>Anthreptes singalensis rubiginosus</i> (Baker) ..	19	1944	Mishmi Tree Sparrow, <i>Passer montanus hepaticus</i> Ripley ..	73
1907	Indian Purple-rumped Sunbird, <i>Nectarinia zeylonica sola</i> (Vieillot) ..	22	1945	Sind Jungle Sparrow, <i>Passer pyrrhonotus</i> Blyth ..	73
1908	Ceylon Purple-rumped Sunbird, <i>Nectarinia zeylonica zeylonica</i> (Linnaeus) ..	24	1946	Himalayan Cinnamon Tree Sparrow, <i>Passer rutilans cinnamomeus</i> (Gould) ..	75
1909	Small Sunbird, <i>Nectarinia minima</i> (Sykes) ..	25	1947	Yunnan Cinnamon Tree Sparrow, <i>Passer rutilans intensior</i> Rothschild ..	77
1910	Van Hasselt's Sunbird, <i>Nectarinia sperata brasiliensis</i> (Gmelin) ..	26	1947a	Afghan Cinnamon Tree Sparrow, <i>Passer rutilans intensior</i> (Hume) ..	77
1911	Indian Maroonbreasted Sunbird, <i>Nectarinia lotenia hindustanica</i> (Whistler) ..	27	1948	Sind ..	78
1912	Ceylon Maroonbreasted Sunbird, <i>Nectarinia lotenia lotenia</i> (Linnaeus) ..	30	1949	India ..	80
1913	Andaman Olivebacked Sunbird, <i>Nectarinia jugularis andamanica</i> (Hume) ..	31		(Burton)	
1914	Nicobar Olivebacked Sunbird, <i>Nectarinia jugularis klossi</i> (Richmond) ..	32	1950	Rock Sparrow, <i>Petronia petronia intermedia</i> Hartert ..	81
1915	Car Nicobar Olivebacked Sunbird, <i>Nectarinia jugularis proselia</i> (Oberholser) ..	33	[1951	Pallas's Snow Finch, <i>Montifringilla nivalis alpicola</i> (Pallas)] ..	83
1916	Sind Purple Sunbird, <i>Nectarinia asiatica brevirostris</i> Blanford ..	33	1952	Tibet Snow Finch, <i>Montifringilla adamsi adamsi</i> Adams ..	83
1917	Indian Purple Sunbird, <i>Nectarinia asiatica asiatica</i> (Latham) ..	35	1953	Mandelli's Snow Finch, <i>Montifringilla mandelli</i> (Pallas) ..	84
1918	Assam Purple Sunbird, <i>Nectarinia asiatica intermedia</i> (Hume) ..	37	1954	Rednecked Snow Finch ..	85
1919	Mrs Gould's Sunbird, <i>Aethopyga gouldiae gouldiae</i> (Vigors) ..	39	1955	Blanford's Snow Finch ..	85
1920	Manipur Yellowbacked Sunbird, <i>Aethopyga gouldiae isolata</i> Baker ..	40	1956	Père David's Snow Finch ..	86
1921	Dabry's Sunbird, <i>Aethopyga gouldiae dabryi</i> (Verreaux) ..	41		Subfamily PLOCEINAE: Weaver Birds, Bayas	
1922	Western Yellowbacked Sunbird, <i>Aethopyga nipalensis horsfieldi</i> (Blyth) ..	42	1957	Indian Baya, <i>Ploceus philippinus philippinus</i> (Linnaeus) ..	88
1923	Nepal Yellowbacked Sunbird, <i>Aethopyga nipalensis nipalensis</i> (Hodgson) ..	43	1958	Travancore Baya, <i>Ploceus philippinus travancorensis</i> Whistler ..	92
1924	Eastern Yellowbacked Sunbird, <i>Aethopyga nipalensis koelzi</i> Ripley ..	44	1959	Eastern Baya, <i>Ploceus philippinus burmanicus</i> Ticehurst ..	93
1925	Himalayan Blackbreasted Sunbird, <i>Aethopyga saturata saturata</i> (Hodgson) ..	44	1960	Finn's Baya, <i>Ploceus megarhynchus megarhynchus</i> Hume ..	94
1926	Assam Blackbreasted Sunbird, <i>Aethopyga saturata assamensis</i> (McClelland) ..	46	1960a	Eastern Finn's Baya, <i>Ploceus megarhynchus salimalii</i> Abdulali ..	96
1927	Indian Yellowbacked Sunbird, <i>Aethopyga siparaja seheriae</i> (Tickell) ..	47	1961	Blackthroated Weaver Bird, <i>Ploceus benghalensis</i> (Linnaeus) ..	96
1928	Assam Yellowbacked Sunbird, <i>Aethopyga siparaja tabacula</i> (Horsfield) ..	49	1962	Indian Streaked Weaver Bird, <i>Ploceus manyar flaviceps</i> Lesson ..	98
1929	Vigors's Yellowbacked Sunbird, <i>Aethopyga siparaja vigorsii</i> (Sykes) ..	49	1963	Burmese Streaked Weaver Bird, <i>Ploceus manyar peguensis</i> Baker ..	101
1929a	Nicobar Yellowbacked Sunbird, <i>Aethopyga siparaja nicobarica</i> Hume ..	50		Subfamily ESTRILINAE: Avadavat, Munias	
1930	Firetailed Yellowbacked Sunbird, <i>Aethopyga ignicauda ignicauda</i> (Hodgson) ..	50	1964	Red Munia or Avadavat, <i>Estrilda erythrura erythrura</i> (Linnaeus) ..	101
1931	Little Spiderhunter, <i>Arachnothera longirostris longirostris</i> (Latham) ..	52	1965	Green Munia, <i>Estrilda formosa</i> (Latham) ..	103
1932	Streaked Spiderhunter, <i>Arachnothera magna magna</i> (Hodgson) ..	54	1966	White-throated Munia, <i>Lonchura malabarica malabarica</i> (Linnaeus) ..	105
			1967	Whitebacked Munia, <i>Lonchura striata acuticauda</i> (Hodgson) ..	107
			1968	Southern Whitebacked Munia, <i>Lonchura striata striata</i> (Linnaeus) ..	108
			1969	Andaman Whitebacked Munia, <i>Lonchura striata fumigata</i> (Walden) ..	110
			1970	Nicobar Whitebacked Munia, <i>Lonchura striata semistriata</i> (Hume) ..	110
			1971, 1972	Jerdon's Rufousbellied Munia, <i>Lonchura kelaarti jerdoni</i> (Hume) ..	111
			1973	Ceylon Hill Munia, <i>Lonchura kelaarti kelaarti</i> (Jerdon) ..	112
			1974	Indian Spotted Munia, <i>Lonchura punctulata punctulata</i> (Linnaeus) ..	113
			1975	Burmese Spotted Munia, <i>Lonchura punctulata subundulata</i> (Godwin-Austen) ..	115

1976	Nepal Blackheaded Munia, <i>Lonechura malacca rubreniger</i> (Hodgson) ..	116
1977	Eastern Blackheaded Munia, <i>Lonechura malacca atricapilla</i> (Vieillot) ..	117
1978	Southern Blackheaded Munia, <i>Lonechura malacca malacca</i> (Linnaeus)	118
1978a	Java Sparrow, <i>Padda oryzivora</i> (Linnaeus)	119
 Family FRINGILLIDAE: Finches		
Subfamily FRINGILLINAE: Chaffinches		
1979	Chaffinch, <i>Fringilla coelebs coelebs</i> Linnaeus	121
1980	Brambling, <i>Fringilla montifringilla</i> Linnaeus	122
 Subfamily CARDUELINAE: Goldfinches and Allies		
1981	Hawfinch, <i>Coccothraustes coccothraustes humii</i> Sharpe	123
1982	Black-and-Yellow Grosbeak, <i>Mycerobas icteroides</i> (Vigors)	124
1983	Allied Grosbeak, <i>Mycerobas affinis</i> (Blyth)	126
1984	Persian Whitewinged Grosbeak, <i>Mycerobas carnipes speculigerus</i> (Brandt)	128
1985	Himalayan Whitewinged Grosbeak, <i>Mycerobas carnipes carnipes</i> (Hodgson)	129
1986	Scallopedwinged Grosbeak, <i>Mycerobas minckleyi</i> (Hodgson) ..	130
1987	" nswski	133
1988	" (Gloger)	134
1989	Greyheaded Goldfinch, <i>Carduelis carduelis caniceps</i> Vigors	135
1990	Himalayan Greenfinch, <i>Carduelis spinoides spinoides</i> Vigors ..	136
1991	Tibetan Greenfinch, <i>Carduelis spinoides taylori</i> (Kinnear)	138
1992	Mt Victoria Greenfinch, <i>Carduelis spinoides himrichi</i> Stresemann	139
1993	Tibetan Siskin, <i>Carduelis thibetana</i> (Hume)	139
1994	Eastern Linnet, <i>Acanthis cannabina bella</i> (Brehm)	141
1995	Stoliczka's Twite, <i>Acanthis flavovestris montanella</i> (Hume) ..	142
1996	Tibetan Twite, <i>Acanthis flavovestris rufostrigata</i> (Walton) ..	143
1997	Redbrowed Finch, <i>Callacanthus burloni</i> (Gould)	145
1998	Goldfronted Finch, <i>Serinus pusillus</i> (Pallas)	146
1999	Western Plaincoloured Mountain Finch, <i>Leucosticte nemoricola altaica</i> (Eversmann)	148
2000	Eastern Plaincoloured Mountain Finch, <i>Leucosticte nemoricola</i> <i>nemoricola</i> (Hodgson)	150
2001	Brandt's Mountain Finch, <i>Leucosticte brandtii brandtii</i> Bonaparte ..	151
2002	Pamirs Mountain Finch, <i>Leucosticte brandtii pamirensis</i> Severtsov ..	152
2003, 2004	Himalayan Mountain Finch, <i>Leucosticte brandtii haematopygia</i> (Gould)	153
2005	Kun Lun Mountain Finch, <i>Leucosticte brandtii pallidior</i> Bianchi ..	154
2006	Trumpeter Bullfinch, <i>Rhodopexys githagenea crassirostris</i> (Blyth) ..	155
2007	Mongolian Desert Finch, <i>Rhodopexys mongolica</i> (Swinhoe)	156
2008	Lichtenstein's Desert Finch, <i>Rhodopexys obsoleta</i> (Lichtenstein) ..	158
2009	Crimsonwinged Desert Finch, <i>Rhodopexys sanguinea sanguinea</i> (Gould)	159
2010	Turkistan Rosefinch, <i>Carpodacus erythrurus ferghanensis</i> (Kozlova) ..	163
2011	Indian Rosefinch, <i>Carpodacus erythrurus roseatus</i> (Blyth)	164
2012	Caucasian Rosefinch, <i>Carpodacus erythrurus kabanensis</i> Laubmann ..	166
2013	Common Rosefinch or Scarlet Grosbeak, <i>Carpodacus erythrurus</i> <i>erythrurus</i> (Pallas)	166
2014	Garhwil Dark Rosefinch, <i>Carpodacus nipalensis kangrae</i> (Whistler) ..	167
2015	Nepal Dark Rosefinch, <i>Carpodacus nipalensis nipalensis</i> (Hodgson) ..	168
2016	Blanford's Rosefinch, <i>Carpodacus rubescens</i> (Blanford)	169

2017	Pinkbrowed Rosefinch, <i>Carpodacus rhodochrous</i> (Vigors)	172
2017a	Vinaceous Rosefinch, <i>Carpodacus vinaceus vinaceus</i> Verreaux	172
2018	Redmantled Rosefinch, <i>Carpodacus rhodochlamys grandis</i> Blyth	173
2019	Spottedwinged Rosefinch, <i>Carpodacus rhodopeplus rhodopeplus</i> (Vigors)	175
2020	Kashmir Whitebrowed Rosefinch, <i>Carpodacus thura blythi</i> (Biddulph)	176
2021	Sikkim Whitebrowed Rosefinch, <i>Carpodacus thura thura</i> Bonaparte & Schlegel	177
2022	Yunnan Whitebrowed Rosefinch, <i>Carpodacus thura femininus</i> Rippon	178
2023	Himalayan Beautiful Rosefinch, <i>Carpodacus pulcherrimus pulcherrimus</i> (Moore)	179
2024	Tibet Beautiful Rosefinch, <i>Carpodacus pulcherrimus waltoni</i> (Sharpe)	181
2025	Sikkim Large Rosefinch, <i>Carpodacus edwardsii rubicunda</i> (Greenway)	181
2026	Threebanded Rosefinch, <i>Carpodacus trifasciatus</i> Verreaux	183
2027	Great Rosefinch, <i>Carpodacus rubicilla severizoni</i> Sharpe	183
2028	Eastern Great Rosefinch, <i>Carpodacus rubicilloides lucifer</i> R. & A. Meinertzhagen	185
2029	Kun Lun Redbreasted Rosefinch, <i>Carpodacus puniceus kilianensis</i> Vaurie	187
2030	Western Redbreasted Rosefinch, <i>Carpodacus puniceus humii</i> (Sharpe)	188
2031	Eastern Redbreasted Rosefinch, <i>Carpodacus puniceus puniceus</i> (Blyth)	189
2032	Crossbill, <i>Loxia curvirostra himalayensis</i> Blyth	190
2033	Redheaded Rosefinch, <i>Propyrrhula subhimachala</i> (Hodgson)	192
2034	Scarlet Finch, <i>Haematospiza sipahi</i> (Hodgson)	194
2035	Goldheaded Black Finch, <i>Pyrhophlectes epauleta</i> (Hodgson)	195
2036	Nepal Brown Bullfinch, <i>Pyrhula nipalensis nipalensis</i> Hodgson	197
2037	Chinese Brown Bullfinch, <i>Pyrhula nipalensis ricketti</i> La Touche	199
2038	Beavan's Bullfinch, <i>Pyrhula erythaca erythaca</i> Blyth	199
2039	Redheaded Bullfinch, <i>Pyrhula erythrocephala</i> Vigors	201
2040	Orange Bullfinch, <i>Pyrhula aurantiaca</i> Gould	202
Family EMBERIZIDAE : Buntings		
2041	Corn Bunting, <i>Emberiza calandra</i> Linnaeus	205
2042	Pine Bunting, <i>Emberiza leucocephala leucocephala</i> S. G. Gmelin	206
2043	Blackheaded Bunting, <i>Emberiza melanocephala</i> Scopoli	207
2044	Redheaded Bunting, <i>Emberiza hortulana</i> Linnaeus	209
2045	Blackfaced Bunting, <i>Emberiza hortulana</i> Linnaeus	211
2046	Whitethroated Bunting, <i>Emberiza hortulana</i> Linnaeus	213
2047	Blackfaced Bunting, <i>Emberiza spodocephala sordida</i> Blyth	215
2048	Whitethroated Bunting, <i>Emberiza stewarti</i> (Blyth)	216
2049	Oortolan Bunting, <i>Emberiza hortulana</i> Linnaeus	219
2050	Greynecked Bunting, <i>Emberiza buchanani buechanani</i> Blyth	219
2051	Transcasian Rock Bunting, <i>Emberiza cia par</i> Hartert	222
2052	Himalayan Rock Bunting, <i>Emberiza cia stracheyi</i> Moore	223
2053	Tibetan Rock Bunting, <i>Emberiza cia khamensis</i> Sushkin	224
2054	Yunnan Rock Bunting, <i>Emberiza cia yunnanensis</i> Sharpe	225
2055	Indian Greyheaded Bunting, <i>Emberiza fucata arcuata</i> Sharpe	227
2055a	Amur Greyheaded Bunting, <i>Emberiza fucata fucata</i> Pallas	228
2056	Little Bunting, <i>Emberiza pusilla</i> Pallas	229
2057	Great Bunting, <i>Emberiza hortulana</i> Linnaeus	230
2058	Blackfaced Bunting, <i>Emberiza hortulana</i> Linnaeus	232
2059	Blackfaced Bunting, <i>Emberiza hortulana</i> Linnaeus	232
2060	Blackfaced Bunting, <i>Emberiza hortulana</i> Linnaeus	232

LIST OF PLATES

Drawings by John Henry Dick

Plate 1

- 1 *Gavia arctica*, Blackthroated Diver (1)
- 2 *Gavia stellata*, Redthroated Diver (2)
- 3 *Podiceps cristatus*, Great Crested Grebe (3)
- 4 *Podiceps nigricollis*, Blacknecked Grebe (4)
- 5 *Podiceps grisegena*, Rednecked Grebe (3a)
- 6 *Podiceps ruficollis*, Little Grebe (5)
- 7 *Heliopais personata*, Masked Finfoot (351)

Plate 2

- 1 *Oceanites oceanicus*, Wilson's Storm Petrel (14)
- 2 *Oceanodroma leucorhoa*, Leach's, or Forktailed Storm Petrel (16)
- 3 *Oceanodroma matsudairae*, Matsudaira's Storm Petrel (SE)
- 4 *Fregata tropica*, Duskyvented Storm Petrel (15)
- 5 *Bulweria bulwerii*, Bulwer's Gadfly Petrel (13b)
- 6 *Bulweria fallax*, Jouanin's Gadfly Petrel (13a)
- 7 *Procellaria pacifica*, Wedgetailed Shearwater (9)
- 8 *Procellaria carinipes*, Pinkfooted Shearwater (8)
- 9 *Procellaria tenuirostris*, Short-tailed Shearwater (SE)
- 10 *Calonectris leucamelas*, Streaked Shearwater (SE)
- 11 *Pelagodroma marina*, Whitefaced Storm Petrel (SE)
- 12 *Deption cepensis*, Cape Petrel (6)
- 13 *Procellaria herminieri*, Audubon's Shearwater (11)

Plate 3

- 1 *Pelecanus philippensis*, Spottedbilled Pelican (21)
- 2 *Pelecanus orocrotalus*, Rosy or White Pelican (20)
- 3 ssp *crispus* of 21, Dalmatian Pelican (22)
- 4 *Fregata ariel*, Least Frigate Bird (32)
- 5 *Fregata minor*, Lesser Frigate Bird (31)
- 6 *Phoeniconaias minor*, Lesser Flamingo (74)
- 7 *Phoenicopterus roseus*, Flamingo (73)
- 8 *Cygnus cygnus*, Whooper Swan (86)
- 9 *Cygnus olor*, Mute Swan (87)
- 10 ssp *bericikii* of 86, Bewick's Swan (84)

Plate 4

- 1 *Phalacrocorax carbo*, Cormorant (26)
- 2 *Phalacrocorax fuscicollis*, Indian Shag (27)
- 3 *Phalacrocorax niger*, Little Cormorant (28)
- 4 *Phalacrocorax pygmaeus*, Pygmy Cormorant (28a)
- 5 *Anhinga rufa*, Darter (29)
- 6 *Botaurus stellaris*, Bittern (59)
- 7 *Egretta garzetta*, Little Egret (49)
- 8 *Gorsachius melanolephus*, Malay or Tiger Bittern (53)
- 9 *Ardeola grayii*, Pond Heron or Paddybird (42)
- 10 *Nycticorax nycticorax*, Night Heron (52)

Plate 5

- 1 *Phaethon rubricauda*, Redtailed Tropic-Bird (18)
- 2 *Phaethon aethereus*, Redbilled (or Short-tailed) Tropic-Bird (17)
- 3 *Sula dactylatra*, Masked Booby (23)
- 4 *Phaethon lepturus*, Longtailed Tropic-Bird (19)
- 5 *Sula sula*, Redfooted Booby (24)
- 6 *Sula leucogaster*, Brown Booby (25)

Plate 6

- 1 *Butorides stratus*, Little Green Heron (38)
- 2 *Ardea goliath*, Giant Heron (34)
- 3 *Ardea insignis*, Great Whitebellied Heron (33)
- 4 *Ardea cinerea*, Grey Heron (36)
- 5 *Ardea purpurea*, Purple Heron (37)
- 6 *Ardeola ralloides*, Squacco Heron (SE)
- 7 *Ardeola bacchus*, Chinese Pond Heron (43)
- 8 *Ardeola grayii*, Pond Heron or Paddybird (42)
- 9 *Ixobrychus cinnamomeus*, Chestnut Bittern (56)
- 10 *Ixobrychus sinensis*, Yellow Bittern (57)
- 11 *Ixobrychus minutus*, Little Bittern (55)
- 12 *Ixobrychus flavicollis*, Black Bittern (58)
- 13 *Botaurus stellaris*, Bittern (59)
- 14 *Nycticorax nycticorax*, Night Heron (52)
- 15 *Gorsachius melanolephus*, Malay or Tiger Bittern (53)

Plate 7

- 1 *Ardea alba*, Large Egret (46)
- 2 *Egretta intermedia*, Smaller Egret (47)
- 3 *Egretta garzetta*, Little Egret (49)
- 4 *Egretta alularis*, Indian Reef Heron (50)
- 5 *Butorides ibis*, Cattle Egret (44)
- 6 *Grus leucogeranus*, Siberian Crane (325)
- 7 *Grus antigone*, Sarus Crane (323)
- 8 *Anthropoides virgo*, Demoiselle Crane (326)
- 9 *Grus nigricollis*, Blacknecked Crane (321)
- 10 *Grus grus*, Common Crane (320)
- 11 *Grus ugonacha*, Hooded Crane (322)

Plate 8

- 1 *Ephippiorhynchus asiaticus*, Blacknecked Stork (66)
- 2 *Microna leucocephala*, Painted Stork (60)
- 3 *Ciconia ciconia*, White Stork (63)
- 4 *Ciconia nigra*, Black Stork (65)
- 5 *Anastomus osculator*, Openbill Stork (61)
- 6 *Ciconia erythrorhynchos*, Whiteneked Stork (62)
- 7 *Pseudibis papilion*, Black Ibis (70)
- 8 *Pseudibis leucorhynchos*, Spoonbill (72)
- 9 *Plegadis falcinellus*, Glossy Ibis (71)
- 10 *Leptoptilos dubius*, Adjutant (67)
- 11 *Threskiornis aethiopia*, White Ibis (69)
- 12 *Leptoptilos javanicus*, Lesser Adjutant (68)

Plate 9

- 1 *Anas platyrhynchos*, Mallard (100)
- 2 *Anas acuta*, Pintail (93)
- 3 *Anas poecilorhynchos*, Spotbill Duck (97)
- 4 *Anas penelope*, Wigeon (103)
- 5 *Anas gibberifrons*, Grey Teal (96)
- 6 *Anas clypeata*, Shoveller (105)
- 7 *Anas formosa*, Baikal Teal (95)
- 8 *Marmarometta angustirostris*, Marbled Teal (92)
- 9 *Anas crecca*, Common Teal (94)
- 10 *Anas querquedula*, Garganey (104)
- 11 *Anas falcata*, Falcated Teal (102)
- 12 *Anas strepera*, Gadwall (101)

Plate 10 (Ducks in flight)

- 1 *Anas platyrhynchos*, Mallard (100)
- 2 *Anas acuta*, Pintail (93)
- 3 *Anas poecilorhynchos*, Spotbill Duck (97)
- 4 *Anas penelope*, Wigeon (103)
- 5 *Anas gibberifrons*, Grey Teal (96)
- 6 *Anas clypeata*, Shoveller (105)
- 7 *Anas formosa*, Baikal Teal (95)
- 8 *Marmarometta angustirostris*, Marbled Teal (92)
- 9 *Anas crecca*, Common Teal (94)
- 10 *Anas querquedula*, Garganey (104)
- 11 *Anas falcata*, Falcated Teal (102)
- 12 *Anas strepera*, Gadwall (101)

Plate 11

- 1 *Tadorna ferruginea*, Ruddy Shelduck (90)
- 2 *Tadorna tadorna*, Common Shelduck (91)
- 3 *Dendrocygna bicolor*, Large Whistling Teal (89)
- 4 *Dendrocygna javanica*, Lesser Whistling Teal or Tree Duck (88)
- 5 *Netta rufina*, Redcrested Pochard (107)
- 6 *Aythya ferina*, Common Pochard (108)
- 7 *Aythya fuligula*, Tufted Duck (111)
- 8 *Aythya marila*, Scaup Duck (112)
- 9 *Aythya baeri*, Baer's Pochard (110)
- 10 *Aythya nyroca*, White-eyed Pochard or Ferruginous Duck (109)
- 11 *Mergus albellus*, Smew (119)
- 12 *Nettion coromandelianus*, Cotton Teal or Quacky-Duck (114)
- 13 *Rhodessa caryophyllata*, Pinkheaded Duck (106)

Plate 12

- 1 *Oxyura leucocephala*, Whiteheaded Stiffailed Duck (123)
- 2 *Bucephala clangula*, Goldeneye Duck (118)
- 3 ssp *caerulea* of 118, Old Squaw Duck (117)
- 4 ssp *melanotos* of 118, Common Merganser (119)
- 5 *Sarkidiornis melanotos*, Comb Duck (115)
- 6 *Cairma scutulata*, Whitewinged Wood Duck (116)
- 7 *Branta ruficollis*, Siberian Redbreasted Goose (75)
- 8 *Anser erythropus*, Lesser Whitefronted Goose (80)
- 9 *Anser fabalis*, Bean Goose (76)
- 10 *Anser albifrons*, Whitefronted Goose (79)
- 11 *Anser anser*, Greylag Goose (81)
- 12 *Anser indicus*, Barheaded Goose (82)

Plate 13 (Ducks in flight)

- 1 *Tadorna ferruginea*, Ruddy Shelduck (90)
- 2 *Tadorna tadorna*, Common Shelduck (91)
- 3 *Dendrocygna bicolor*, Large Whistling Teal (89)
- 4 *Dendrocygna javanica*, Lesser Whistling Teal or Tree Duck (88)
- 5 *Netta rufina*, Redcrested Pochard (107)
- 6 *Aythya ferina*, Common Pochard (108)
- 7 *Aythya fuligula*, Tufted Duck (111)
- 8 *Aythya nyroca*, White-eyed Pochard or Ferruginous Duck (109)
- 9 *Aythya marila*, Scaup Duck (112)
- 10 *Mergus albellus*, Smew (119)
- 11 *Mergus merganser*, Goosander or Common Merganser (121)
- 12 *Nettion coromandelianus*, Cotton Teal or Quacky-Duck (114)
- 13 *Oxyura leucocephala*, Whiteheaded Stiffailed Duck (123)

Plate 14

- 1 *Haliaeetus leucogaster*, Whitebellied Sea Eagle (173)
- 2 *Ichthyophaga ichthyoretus*, Greyheaded Fishing Eagle (175)
- 3 *Ichthyophaga nana*, Himalayan Greyheaded Fishing Eagle (177)
- 4 *Haliaeetus albicollis*, Whitetailed Eagle (172a)
- 5 *Haliaeetus leucorhynchus*, Pallas's Fishing Eagle (174)
- 6 *Pandion haliaetus*, Osprey (203)
- 7 ssp *gorinda* of 132, Pariah Kite (133)
- 8 *Milvus migrans*, Black Kite (132)
- 9 ssp *lineatus* of 132, Blackeared or Large Indian Kite (134)
- 10 *Milvus milvus*, Red Kite (131)
- 11 *Haliastur indus*, Brahminy Kite (135)
- 12 *Circus melanoleucos*, Pied Harrier (192)
- 13 *Circus macrourus*, Pale Harrier (190)
- 14 *Circus aeruginosus*, Marsh Harrier (193)

Plate 15

(Kites and Eagles in flight)

- 1 *Milvus milvus*, Red Kite (131)
- 2 ssp *lineatus* of 132, Blackeared or Large Indian Kite (134)
- 3 ssp *gorinda* of 132, Pariah Kite (133)
- 4 *Milvus migrans*, Black Kite (132)
- 5 *Ichthyophaga nana*, Himalayan Greyheaded Fishing Eagle (177)
- 6 *Haliaeetus leucogaster*, Whitebellied Sea Eagle (173)
- 7
- 8
- 9

Plate 16

- 1
- 2
- 3
- 4 *Gyps indicus*, Indian Longbilled Vulture (182)
- 5 *Gyps fulvus*, Griffon Vulture (180)
- 6
- 7
- 8

Plate 17

(Kites, Vultures and Eagles in flight)

- 1 *Milvus migrans gorinda*, Pariah Kite (133)
- 2 *Haliastur indus*, Brahminy Kite (135)
- 3 *Milvus milvus*, Red Kite (131)
- 4 *Neophron percnopterus*, Egyptian or Scavenger Vulture (186)
- 5 *Hieraaetus pennatus*, Booted Hawk-Eagle (164)
- 6 *Gypsaetus barbatus*, Bearded Vulture or Lämmergeier (188)
- 7
- 8
- 9
- 10 *Gyps fulvus*, Griffon Vulture (180)
- 11 *Gyps bengalensis*, Indian Whitebacked Vulture (185)
- 12 *Gyps indicus*, Indian Longbilled Vulture (182)

Plate 18

(Vultures in flight)

- 1 *Neophron percnopterus*, Egyptian or Scavenger Vulture (186)
- 2
- 3
- 4
- 5 *Gyps bengalensis*, Indian Whitebacked Vulture (185)
- 6 *Gyps himalayensis*, Himalayan Griffon (181)
- 7 *Gyps indicus*, Indian Longbilled Vulture (182)
- 8 *Gyps fulvus*, Griffon Vulture (180)

Plate 19

(Harriers in flight)

- 1 *Circus cyaneus*, Hen-Harrier (189)
- 2 *Circus macrourus*, Pale Harrier (190)
- 3 *Circus pygargus*, Montagu's Harrier (191)
- 4 *Circus melanoleucos*, Pied Harrier (192)
- 5 *Circus aeruginosus*, Marsh Harrier (193)
- 6 ssp *spilonotus* of 193, (Eastern) Marsh Harrier or Striped Harrier (194)

Plate 20

- 1 *Hieraaetus fasciatus*, Bonelli's Eagle (163)
- 2 *Hieraaetus pennatus*, Booted Hawk-Eagle (164)
- 3 *Hieraaetus kiennerii*, Rufousbellied Hawk-Eagle (165)
- 4 *Spizaetus nivalensis*, Hodgson's Hawk-Eagle (158)
- 5 ssp *limacatus* of 161, Changeable Hawk-Eagle (160)
- 6 *Spizaetus cirrhatus*, Crested Hawk-Eagle (161)
- 7 *Circus gallicus*, Short-toed Eagle (195)
- 8 *Spilornis cheela*, Crested Serpent Eagle (196)
- 9 ssp *divisioni* of 196, Andaman Pale Serpent Eagle (200)
- 10 ssp *rimurus* of 196, Nicobar Crested Serpent Eagle (201)
- 11 *Spilornis klossi*, Great Nicobar Serpent Eagle (202)
- 12 *Spilornis elgisi*, Andaman Dark Serpent Eagle (202a)

Plate 21

(Raptors in flight)

- 1 *Pandion haliaetus*, Osprey (203)
- 2
- 3
- 4
- 5
- 6 *Spilornis elgisi*, Andaman Dark Serpent Eagle (202a)
- 7 *Spizaetus cirrhatus*, Crested Hawk-Eagle (161)
- 8 *Ardea gerydoni*, Blyth's Baza (125)
- 9 ssp *limacatus* of 161, Changeable Hawk-Eagle (160)
- 10 *Spizaetus nivalensis*, Hodgson's Hawk-Eagle (158)

Plate 22

- 1 *Elaeus caruleus*, Blackwinged Kite (124)
- 2 *Arceea lephotes*, Blackcrested Baza (127)
- 3 *Arceea gerydoni*, Blyth's Baza (125)
- 4 *Accipiter badius*, Shikra (139)
- 5 *Accipiter trivirgatus*, Crested Goshawk (144)
- 6 *Accipiter solomonis*, Horsfield's Goshawk (143)
- 7 ssp *butleri* of 139, Car Nicobar Shikra (141)
- 8 *Accipiter virgatus besra*, Besra Sparrow-Hawk (151)
- 9 *Accipiter virgatus galari*, Eastern Besra Sparrow-Hawk (152)
- 10 *Accipiter gentilis*, Goshawk (136)
- 11 *Accipiter nisus nison-milis*, Sparrow-Hawk (147)
- 12 *Accipiter nisus melaschistos*, Sparrow-Hawk (148)

LIST OF PLATES

Plate 23
(Raptors in flight)

- 1 *Aviceda leuphotes*, Blackcrested Baza (127)
- 2 *Aviceda jerdoni*, Blyth's Baza (125)
- 3
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- 6 *Accipiter solensis*, Horsfield's Goshawk (143)
- 7 *Accipiter virgatus gularis*, Eastern Besra Sparrow-Hawk (152)
- 8 *ssp butleri* of 139, Car Nicobar Shikra (141)
- 9 *Accipiter virgatus berra*, Besra Sparrow-Hawk (151)
- 10 *Accipiter nirus*, Sparrow-Hawk (148)
- 11 *Accipiter gentilis*, Goshawk (136)

Plate 24

- 1 *Pernis ptilorhynchus*, Honey Buzzard (130)
- 2 *Buteo buteo japonicus*, Japanese Buzzard (156)
- 3 *Buteo buteo vulpinus*, Desert Buzzard (155)
- 4 *Buteo lagopus*, Roughlegged Buzzard (SE)
- 5 *Buteo hemilasius*, Upland Buzzard (154)
- 6 *Buteo rufinus*, Longlegged Buzzard (153)
- 7 Typical buzzard flight style

Plate 25

(Kites, Buzzards and Eagles in flight)

- 1 *Pernis ptilorhynchus*, Honey Buzzard (130)
- 2 *Haliastur indus*, Brahminy Kite (135)
- 3 *Butastur teesa*, White-eyed Buzzard-Eagle (157)
- 4 *Buteo buteo vulpinus*, Desert Buzzard (155)
- 5 *Buteo buteo japonicus*, Japanese Buzzard (156)
- 6 Typical buzzard flight style
- 7 *Buteo lagopus*, Roughlegged Buzzard (SE)
- 8 *Buteo rufinus*, Longlegged Buzzard (153)
- 9 *Buteo hemilasius*, Upland Buzzard (154)
- 10 *Hieraetus kienrii*, Rufousbellied Hawk-Eagle (165)
- 11 *Hieraetus pennatus*, Booted Hawk-Eagle (164)

Plate 26

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Plate 27
(Eagles in flight)

- 1
- 2
- 3
- 4 *Aquila rapax nipalensis*, Eastern Steppe Eagle (169)
- 5 *Aquila rapax vindhiana*, Tawny Eagle (168)
- 6 *Aquila chrysaetos*, Golden Eagle (166)
- 7 *Aquila heliaca*, Imperial Eagle (167)

Plate 28

(Baza, Kites, Buzzards & Eagles in flight)

- 1 *Aviceda leuphotes*, Indian Blackcrested Baza (127)
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Plate 29

- 1 *Microhierax melanocephalus*, Whitelegged Falconet (205)
- 2 *Microhierax caeruleus*, Redbreasted Falconet (204)
- 3 *Butastur teesa*, White-eyed Buzzard-Eagle (157)
- 4 *Falco naumanni*, Lesser Kestrel (221)
- 5 *Falco tinnunculus*, Redlegged Falcon (220)
- 6 *Falco tinnunculus*, Kestrel (222)
- 7 *Falco subbuteo*, Hobby (212)
- 8 *Falco chicquera*, Redheaded Merlin (219)
- 9 *Falco columbarius*, Merlin (217)
- 10 *Falco severus*, Oriental Hobby (215)
- 11 *Falco concolor*, Sooty Falcon (216)
- 12 *Falco peregrinus japonensis*, Peregrine Falcon (209)
- 13 *Falco peregrinus japonensis*, Shaheen Falcon (211)
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Plate 30

(Falcons in flight)

- 1 *Microhierax melanocephalus*, Whitelegged Falconet (205)
- 2 *Falco naumanni*, Lesser Kestrel (221)
- 3 *Microhierax caeruleus*, Redbreasted Falconet (204)
- 4 *Falco tinnunculus*, Kestrel (222)
- 5 *Falco tinnunculus*, Redlegged Falcon (220)
- 6 *Falco columbarius*, Merlin (217)
- 7 *Falco chicquera*, Redheaded Merlin (219)
- 8 *Falco concolor*, Sooty Falcon (216)
- 9 *Falco severus*, Oriental Hobby (215)
- 10 *Falco subbuteo*, Hobby (212)
- 11 *Falco biarmicus cherrug*, Saker or Cherrug (Lanner) Falcon (206)
- 12 *Falco peregrinus peregrinator*, Shaheen Falcon (211)
- 13 *Falco peregrinus japonensis*, Peregrine Falcon (209)
- 14 *Falco biarmicus jagger*, Laggat Falcon (208)

Plate 31

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- 9 *Amotopodius nigrocapillus*, Indochinese Partridge (270)
- 10 *ssp intermedia* of 270, (271)
- 11 *Galloperdix spadicea*, Red Spurrow (275)
- 12 *Galloperdix bicalcarata*, Ceylon Spurrow (279)
- 13 *Galloperdix lunulata*, Painted Spurrow (278)

Plate 32

- 1
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- 7 *Perdula erythrorhynchos*, Painted Bush Quail (262)
- 8 *Coturnix coromandelica*, Blackbreasted or Rain Quail (252)
- 9 *Perdula manipurensis*, Manipur Bush Quail (265)
- 10
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- 13 *Ammoperdix griseogularis*, Seesee Partridge (228)
- 14 *Lerua lerua*, Snow Partridge (227)
- 15
- 16
- 17
- 18 *Megapodius freycinet*, Megapode (225)

Plate 33

- 1 *Pavo cristatus*, Common Peafowl (311)
- 2 *Pavo multicus*, Burmese Peafowl (312)

Plate 34

- 1
- 2
- 3
- 4 *Tragopan temminckii*, Temminck's Tragopan (289)
- 5 *Tragopan blythii*, Blyth's or Greybellied Tragopan (288)
- 6 *Lophophorus impejanus*, Impeyan or Monal Pheasant (290)
- 7 *Lophophorus sclateri*, Sclater's Monal (291)
- 8 *Tetraogallus tibetanus*, Tibetan Snowcock (229)
- 9 *Tetraogallus himalayensis*, Himalayan Snowcock (232)
- 10 *Crossoptilon crossoptilon*, Eared Pheasant (292)

Plate 35

- 1 *Pucrasia macrolopha*, Koklas Pheasant (305)
- 2 *Catreus walliichii*, Chir Pheasant (307)
- 3
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- 7 *Symaticus humiae*, Mrs Hume's Barredback Pheasant (308)
- 8 *Gallus lafayetii*, Ceylon Junglefowl (302)
- 9 *Gallus sonneratii*, Grey or Sonnerat's Junglefowl (301)
- 10 *Polyplectron bicalcaratum*, Peacock-Pheasant (310)

Plate 36

- 1 *Rallus aquaticus*, Water Rail (327)
- 2 *Rallus striatus*, Bluebreasted Banded Rail (329)
- 3 *Rallina fasciata*, Redlegged Banded Crake (331)
- 4 *Porzana parva*, Little Crake (335)
- 5 *Rallina eurizonoides*, Banded Crake (332)
- 6 *Porzana pusilla*, Baillon's Crake (337)
- 7 *Crex crex*, Corn Crake (334)
- 8 *Porzana porzana*, Spotted Crake (338)
- 9 *Porzana fusca*, Ruddy Crake (339)
- 10 *Amaurornis akool*, Brown Crake (342)
- 11 *Amaurornis bicolor*, Elwes's Crake (341)
- 12 *Rallina canningi*, Andaman Banded Crake (333)
- 13 *Gallinix cinerea*, Water Cock (346)
- 14 *Gallinula chloropus*, Moorhen (347)
- 15 *Fulica atra*, Coot (350)
- 16 *Hydrophasianus chirurgus*, Pheasant-tailed Jacana (358)
- 17 *Amaurornis phoeniceus*, Whitebreasted Waterhen (343)
- 18 *Metopidius indicus*, Bronzewing Jacana (359)
- 19 *Porphyrio porphyrio*, Purple Moorhen (349)

Plate 37

- 1 *Otis tetrax*, Little Bustard (353)
- 2 *Otis tarda*, Great Bustard (352)
- 3 *Eupodotis bengalensis*, Bengal Florican (356)
- 4 *Chlamydotis undulata*, Houbara (355)
- 5 *Choriotis nigricaps*, Great Indian Bustard (354)
- 6 *Sypheotides indica*, Likh or Lesser Florican (357)

Plate 38

- 1 *Cursorius cursor*, Creamcoloured Courser (439)
- 2 *Cursorius coromandelicus*, Indian Courser (440)
- 3 *Cursorius bitorquatus*, Jerdon's or Doublebanded Courser (441)
- 4 *Glareola pratincola*, Collared Pratincole (443)
- 5 *Glareola lactea*, Small Indian Pratincole (444)
- 6 *Pluvialis squatarola*, Grey or Blackbellied Plover (371)
- 7 *Pluvialis dominica*, Eastern Golden Plover (373)
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Plate 39

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- 7 *Dromas ardeola*, Crab Plover (434)
- 8 *Himantopus himantopus*, Blackwinged Stilt (430)
- 9 *Numenius phaeopus*, Whimbrel (385)
- 10 *Limosa limosa*, Blacktailed Godwit (389)
- 11 *Limosa lapponica*, Bartailed Godwit (391)
- 12 *Limnodromus semipalmatus*, Snipe-billed Godwit or Asian Dowitcher (403)
- 13 *Numenius arquata*, Curlew (388)
- 14 *Burhinus oedicephalus*, Stone Curlew (436)
- 15 *Esacus magnirostris*, Great Stone Plover (437)
- 16 *Ibidorhyncha struthersii*, Ibisbill (433)

Plate 40

- 1
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- 8 *Calidris minuta*, Little Stint (416)
- 9 *Calidris temminckii*, Temminck's Stint (417)
- 10 *Calidris subminuta*, Longtoed Stint (418)
- 11 *Calidris acuminata*, Asian Pectoral Sandpiper (419)
- 12 *Calidris tenuirostris*, Eastern Knot (413)
- 13 *Calidris canuta*, Knot (412)
- 14 *Calidris alpina*, Dunlin (420)
- 15 *Calidris testacea*, Curlew-Sandpiper (422)
- 16 *Limicola falcinellus*, Broadbilled Sandpiper (424)
- 17 *Phalaropus lobatus*, Rednecked Phalarope (428)
- 18 *Euryorhynchus pygmaeus*, Spoonbilled Sandpiper (423)
- 19 *Calidris alba*, Sanderling (414)

Plate 41

(Waders in flight)

- 1
- 2
- 3
- 4 *Charadrius mongolus*, Lesser Sand Plover (381)
- 5 *Calidris alba*, Sanderling (414)
- 6 *Calidris alpina*, Dunlin (420)
- 7 *Calidris testacea*, Curlew-Sandpiper (422)
- 8 *Calidris minuta*, Little Stint (416)
- 9 *Calidris temminckii*, Temminck's Stint (417)
- 10 *Calidris canuta*, Knot (412)
- 11 *Calidris tenuirostris*, Eastern Knot (413)
- 12 *Phalaropus lobatus*, Rednecked Phalarope (428)
- 13 *Gallinago gallinago*, Fantail Snipe (409)
- 14 *Scolopax rusticola*, Woodcock (411)
- 15
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- 18 *Cursorius coromandelicus*, Indian Courser (440)

Plate 42

- 1 *Haematopus ostralegus*, Oystercatcher (360)
- 2 *Limnodromus semipalmatus*, Snipebilled Godwit or Asian Dowitcher (403)
- 3 *Ibidorhyncha struthersii*, Ibisbill (433)
- 4 *Numenius arquata*, Curlew (388)
- 5
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- 8 *Himantopus himantopus*, Blackwinged Stilt (430)
- 9 *Dromas ardeola*, Crab Plover (434)
- 10 *Recurvirostra avosetta*, Avocet (432)
- 11 *Burhinus oedicephalus*, Stone Curlew (436)
- 12 *Esacus magnirostris*, Great Stone Plover (437)

Plate 43

- 1
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- 9 *Tringa hypoleucos*, Common Sandpiper (401)
- 10 *Gallinago minima*, Jack Snipe (410)
- 11 *Gallinago gallinago*, Fantail Snipe (409)
- 12 *Philomachus pugnax*, Ruff and Reeve (426)
- 13 *Scolopax rusticola*, Woodcock (411)

Plate 44

(Waders in flight)

- 1 *Pluvialis squatarola*, Grey Plover (371)
- 2 *Glareola pratincola*, Collared Pratincole (442)
- 3 *ssp maldianum* of 422, (Oriental) Collared Pratincole (443)
- 4 *Glareola lactea*, Small Indian Pratincole (444)
- 5 *Pluvialis apricaria*, Golden Plover (372)
- 6 *Arenaria interpres*, Turnstone (402)
- 7 *Pluvialis dominica*, Eastern Golden Plover (373)
- 8
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- 10 *Tringa nebularia*, Greenshank (396)
- 11 *Tringa glareola*, Wood Sandpiper (398)
- 12
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Plate 45

- 1 *Catharacta skua antarctica*, Antarctic Skua (445)
- 2 *Stercorarius pomarinus*, Pomatorhine Skua or Jaeger (447)
- 3 *Rynchops albigollis*, Indian Skimmer (484)
- 4 *Catharacta skua macconnicki*, (Macconnick's Skua) Antarctic Skua (446a)
- 5 *Stercorarius parasiticus*, Parasitic or Richardson's Skua or Jaeger (448)
- 6 *Larus ichthyæetus*, Great Blackheaded Gull (453)
- 7 *Larus hemprichii*, Sooty Gull (449)
- 8 *Larus argentatus*, Herring Gull (450)
- 9 *Larus fuscus*, Lesser Blackbacked Gull (452)
- 10 *Larus minutus*, Little Gull (457)
- 11 *Larus ridibundus*, Blackheaded Gull (455)
- 12 *Larus genei*, Slenderbilled Gull (456)
- 13 *Larus brunnecephalus*, Brownheaded Gull (454)

Plate 46

- 1 *Chlidonias niger*, Black Tern (459a)
- 2 *Chlidonias leucopterus*, Whitewinged Black Tern (459)
- 3 *Chlidonias hybrida*, Whiskered Tern (458)
- 4 *Sterna albifrons*, Little Tern (475)
- 5 *Cygis alba*, Indian Ocean White Tern or Fairy Tern (483)
- 6 *Sterna dougallii*, Roseate or Rosy Tern (466)
- 7 *Sterna repressa*, Whitechecked Tern (467)
- 8 *Sterna hirundo*, Common Tern (464)
- 9 *Sterna aurantia*, Indian River Tern (463)
- 10 *Sterna bergii*, Common Tern (462)
- 11 *Sterna bergii*, Common Tern (478)
- 12 *Sterna bergii*, Common Tern (468)
- 13 *Sterna acuticauda*, Blackbellied Tern (470)
- 14 *Sterna bengalensis*, Indian Lesser Crested Tern (479)
- 15 *Gelochelidon nilotica*, Gullbilled Tern (460)
- 16 *Sterna fuscata*, Sooty Tern (474)
- 17 *Anous stolidus*, Noddy Tern (481)
- 18 *Sterna sandwicensis*, Sandwich Tern (480)
- 19 *Sterna anathetus*, Brownwinged Tern (471)

Plate 47

- 1 *P.*
- 2 *P.*
- 3 *P.*
- 4 *P.*
- 5 *Pterocles indicus*, Painted Sandgrouse (492)
- 6 *Pterocles senegallus*, Spotted Sandgrouse (488)
- 7 *Pterocles alchata*, Large Pintail Sandgrouse (486)
- 8 *Syrhaptes paradoxus*, Pallas's Sandgrouse (485a)
- 9 *Syrhaptes tibetanus*, Tibetan Sandgrouse (485)

Plate 48

- 1 *Columba livia*, Blue Rock Pigeon (517)
- 2 *Columba oenas*, Stock Pigeon (SE)
- 3 *Columba eversmanni*, Eastern Stock Pigeon (518)
- 4 *Columba rupestris*, Hill Pigeon (515)
- 5 *Columba livia*, Blue Rock Pigeon (517a)
- 6 *Columba livia*, Blue Rock Pigeon (517b)
- 7 *Columba livia*, Blue Rock Pigeon (517c)
- 8 *Columba livia*, Blue Rock Pigeon (517d)
- 9 *Columba livia*, Blue Rock Pigeon (517e)
- 10 *Columba livia*, Blue Rock Pigeon (517f)
- 11 *Columba livia*, Blue Rock Pigeon (517g)
- 12 *Columba livia*, Blue Rock Pigeon (517h)
- 13 *Columba livia*, Blue Rock Pigeon (517i)
- 14 *Columba livia*, Blue Rock Pigeon (517j)
- 15 *Columba livia*, Blue Rock Pigeon (517k)

Plate 49

- 1 *Treron sphenura*, Wedgetailed Green Pigeon (494)
- 2 *Treron phoenicoptera*, Yellowlegged Green Pigeon (503)
- 3 *Treron pompadora*, Pompadour or Greyfronted Green Pigeon (496)
- 4 *Treron curvirostra*, Thickbilled Green Pigeon (495)
- 5 *Treron apicauda*, Pintailed Green Pigeon (493)
- 6 *Treron curvirostra*, Thickbilled Green Pigeon (495a)
- 7 *Treron curvirostra*, Thickbilled Green Pigeon (495b)
- 8 *Treron curvirostra*, Thickbilled Green Pigeon (495c)
- 9 *Chalcophaps indica*, Emerald or Bronzewinged Dove (542)
- 10 *Macropygia rufipennis*, Andaman Cuckoo-Dove (527)
- 11 *Streptopelia tranquebarica*, Red Turtle Dove (535)
- 12 *Streptopelia decaocto*, Indian Ring Dove (534)
- 13 *Streptopelia senegalensis*, Little Brown or Senegal Dove (541)
- 14 *Streptopelia chinensis*, Spotted Dove (537)
- 15 *Streptopelia turtur*, Turtle Dove (529)
- 16 *Streptopelia orientalis*, Rufous Turtle Dove (532)

Plate 50

- 1 *Prittacula caniceps*, Nicobar Parakeet (553)
- 2 *Prittacula derbyana*, Lord Derby's Parakeet (554)
- 3 *Prittacula eupatria*, Alexandrine Parakeet (546)
- 4 *Prittacula finschii*, Eastern Slaty-headed Parakeet (563)
- 5 *Prittacula cyanocephala*, Blossomheaded Parakeet (558)
- 6 *Prittacula himalayana*, Slaty-headed Parakeet (562)
- 7 *Prittacula roseata*, Eastern Blossomheaded Parakeet (559)
- 8 *Prittacula longicauda*, Redchecked Parakeet (555)
- 9 *Prittacula krameri*, Roseringed Parakeet (550)
- 10 *Prittacula columboides*, Bluewinged Parakeet (564)
- 11 *Prittacula krameri*, Roseringed Parakeet (551)
- 12 *Prittacula krameri*, Roseringed Parakeet (551a)
- 13 *Prittacula krameri*, Roseringed Parakeet (551b)
- 14 *Prittacula krameri*, Roseringed Parakeet (551c)

Plate 51

- 1 *Cuculus sparverioides*, Large Hawk-Cuckoo (572)
- 2 *Cuculus fugax*, Hodgson's Hawk-Cuckoo (575)
- 3 *Cuculus varius*, Common Hawk-Cuckoo or Brainfever Bird (573)
- 4 *Chalcites maculatus*, Emerald Cuckoo (586)
- 5 *Cacomantis merulinus*, Rufousbellied Plaintive Cuckoo (585)
- 6 *Cacomantis sonneratii*, Indian Banded Bay Cuckoo (582)
- 7 *Chalcites xanthorhynchus*, Violet Cuckoo (587)
- 8 *Cacomantis passerinus*, Indian Plaintive Cuckoo (584)
- 9 *Cuculus poliocephalus*, Small Cuckoo (581)
- 10 *Cuculus micropterus*, Indian Cuckoo (576)
- 11 *Cuculus canorus*, The Cuckoo (578)

Plate 52

- 1 *Rhopodytes viridirostris*, Small Greenbilled Malkoha (595)
- 2 *Clamator jacobinus*, Pied Crested Cuckoo (571)
- 3 *Clamator coromandus*, Redwinged Crested Cuckoo (569)
- 4 *Rhopodytes tristis*, Large Greenbilled Malkoha (593)
- 5 *Taccocua leichenaultii*, Sirkeer Cuckoo (598)
- 6 *Centropus toulou*, Lesser Coucal (605)
- 7 *Phaenicepharus pyrrhophthalmus*, Redfaced Malkoha (599)
- 8 *Centropus sinensis*, Crow-Pheasant or Coucal (600)
- 9 *Centropus chlororhynchus*, Ceylon Coucal (604)
- 10 *Centropus (sinensis) andamanensis*, Andaman Crow-Pheasant (603)

Plate 53

- 1 *Bubo bubo*, Eagle-Owl or Great Horned Owl (627)
- 2 *Bubo nipalensis*, Forest Eagle-Owl (628)
- 3 *Bubo coromandus*, Dusky Horned Owl (630)
- 4 *Strix leptogramma*, Brown Wood Owl (659)
- 5 *Strix ocellata*, Mottled Wood Owl (657)
- 6 *Asio otus*, Longeared Owl (663)
- 7 *Asio flammeus*, Shorteared Owl (664)
- 8 *Bubo zeylonensis*, Brown Fish Owl (631)
- 9 *Strix aluco*, Himalayan Wood Owl (662)
- 10 *Strix butleri*, Hume's Wood Owl (654)
- 11 *Bubo flaviger*, Tawny Fish Owl (633)

Plate 54

- 1 *Otus brucei*, Striated, or Pallid, Scops Owl (614)
- 2 *Otus spilcephalus*, Spotted Scops Owl (612)
- 3 *Otus scops*, Scops Owl (617)
- 4 *Otus bakkamoena*, Collared Scops Owl (623)
- 5 *Otus castaneotum*, of 636. (638)
- 6 *Glaucidium cuculoides*, Barred Owlet (639)
- 7 *Glaucidium brodiei*, Collared Pigmy Owlet (635)
- 8 *Glaucidium radiatum*, Jungle Owlet (636)
- 9 *Aegolius funereus*, Tengmalm's Owl or Boreal Owl (665)
- 10 *Athene noctua*, Little Owl (648)
- 11 *Athene blueitii*, Forest Spotted Owlet (653)
- 12 *Athene brama*, Spotted Owlet (652)
- 13 *Otus obscura* of 642. (645)
- 14 *Ninox scutulata*, Brown Hawk-Owl (642)
- 15 *Phodius badius*, Bay Owl (609)
- 16 *Tyto alba*, Barn Owl (606)
- 17 *Tyto capensis*, Grass Owl (608)

Plate 55

- 1 *Pterodroma melanotos*, Common Frigatebird (666)
- 2 *Pterodroma melanotos*, Common Frigatebird (666a)
- 3 *Pterodroma melanotos*, Common Frigatebird (666b)
- 4 *Pterodroma melanotos*, Common Frigatebird (666c)
- 5 *Pterodroma melanotos*, Common Frigatebird (666d)
- 6 *Pterodroma melanotos*, Common Frigatebird (666e)
- 7 *Pterodroma melanotos*, Common Frigatebird (666f)
- 8 *Pterodroma melanotos*, Common Frigatebird (666g)
- 9 *Caprimulgus macrurus*, Longtailed Nightjar (663)
- 10 *Eurostodops macrotis*, Great Eared Nightjar (669)

Plate 56

- 1 *Chaetura sylvatica*, Whiterumped Spinetail (692)
- 2 *Collocalia brevirostris*, Himalayan Swiftlet (683)
- 3 *Collocalia esculenta*, Whitebellied Swiftlet (687)
- 4 *Apus affinis*, House Swift (703)
- 5 *Apus pallidus*, Pallid Swift (697)
- 6 *Apus apus*, The Swift (696)
- 7 *Apus pacificus*, Large Whiterumped Swift (699)
- 8 *Collocalia unicolor*, Indian Edible-nest Swiftlet (685)
- 9 *Apus acuticauda*, Darkbacked Swift (698)
- 10 *Chaetura gigantea*, Large Brownthroated Spinetail Swift (691)
- 11 *Chaetura cochinchinensis*, Cochinchina Spinetail Swift (690)
- 12 *Apus melba*, Alpine Swift (693)
- 13 *Cyprius parvus*, Palm Swift (707)
- 14 *Chaetura caudacuta*, Whitethroated Spinetail Swift (688)

Plate 57

- 1 *Coracias benghalensis*, Indian Roller (755)
- 2 *Eurostodops macrotis*, Broadbilled Roller (758)
- 3 *Eurostodops macrotis*, Broadbilled Roller (758a)
- 4 *Merops leichenaultii*, Lutescent-headed Bee-eater (744)
- 5 *Nyctornis albertoni*, Bluebearded Bee-eater (753)
- 6 *Merops superciliosus*, Bluecheeked Bee-eater (747)
- 7 *Merops superciliosus*, Bluecheeked Bee-eater (746)
- 8 *Merops superciliosus*, Bluecheeked Bee-eater (746a)
- 9 *Merops superciliosus*, Bluecheeked Bee-eater (746b)
- 10 *Merops superciliosus*, Bluecheeked Bee-eater (746c)
- 11 *Coracias benghalensis*, Indian Roller (755)
- 12 *Eurostodops macrotis*, Broadbilled Roller (758)

Plate 58

- 1 *Ceryle lugubris*, Himalayan Pied Kingfisher (717)
- 2 *Ceryle lugubris*, Himalayan Pied Kingfisher (717a)
- 3 *Ceryle rudis*, Lesser Pied Kingfisher (719)
- 4 *Ceryle rudis*, Lesser Pied Kingfisher (719a)
- 5 *Ceryle rudis*, Lesser Pied Kingfisher (719b)
- 6 *Ceryle rudis*, Lesser Pied Kingfisher (719c)
- 7 *Ceryle rudis*, Lesser Pied Kingfisher (719d)
- 8 *Ceryle rudis*, Lesser Pied Kingfisher (719e)
- 9 *Ceryle rudis*, Lesser Pied Kingfisher (719f)
- 10 *Ceryle rudis*, Lesser Pied Kingfisher (719g)
- 11 *Ceryle rudis*, Lesser Pied Kingfisher (719h)
- 12 *Ceryle rudis*, Lesser Pied Kingfisher (719i)
- 13 *Ceryle rudis*, Lesser Pied Kingfisher (719j)
- 14 *Ceryle rudis*, Lesser Pied Kingfisher (719k)

Plate 59

- 1 *Rhyticeros phacatus*, Narcondam Hornbill (773)
- 2 *Tockus birostris*, Common Grey Hornbill (767)
- 3 *Ptilolaemus tickelli*, Whitethroated Brown Hornbill (770)
- 4 *Buceros bicornis*, Great Pied Hornbill (776)
- 5 *Tockus griseus*, Malabar Grey Hornbill (768)
- 6 *Anthracoeros malabaricus*, Indian Pied Hornbill (774)
- 7 *Rhyticeros undulatus*, Wreathed Hornbill (772)
- 8 *Anthracoeros coronatus*, Malabar Pied Hornbill (775)
- 9 *Aceros nipalensis*, Rufousnecked Hornbill (771)

Plate 60

- 1 *Megalaima rubricapilla*, Crimsonthroated Barbet (791)
- 2 *Megalaima rubricapilla*, Crimsonthroated Barbet (791a)
- 3 *Megalaima rubricapilla*, Crimsonthroated Barbet (791b)
- 4 *Megalaima rubricapilla*, Crimsonthroated Barbet (791c)
- 5 *Megalaima rubricapilla*, Crimsonthroated Barbet (791d)
- 6 *Megalaima rubricapilla*, Crimsonthroated Barbet (791e)
- 7 *Megalaima rubricapilla*, Crimsonthroated Barbet (791f)
- 8 *Megalaima rubricapilla*, Crimsonthroated Barbet (791g)
- 9 *Megalaima rubricapilla*, Crimsonthroated Barbet (791h)
- 10 *Megalaima rubricapilla*, Crimsonthroated Barbet (791i)
- 11 *Megalaima rubricapilla*, Crimsonthroated Barbet (791j)
- 12 *Megalaima rubricapilla*, Crimsonthroated Barbet (791k)
- 13 *Megalaima rubricapilla*, Crimsonthroated Barbet (791l)
- 14 *Megalaima rubricapilla*, Crimsonthroated Barbet (791m)
- 15 *Megalaima rubricapilla*, Crimsonthroated Barbet (791n)
- 16 *Megalaima rubricapilla*, Crimsonthroated Barbet (791o)
- 17 *Megalaima rubricapilla*, Crimsonthroated Barbet (791p)
- 18 *Megalaima rubricapilla*, Crimsonthroated Barbet (791q)

Plate 61

- 1 *Dendrocopos moluccensis*, Browncrested Woodpecker (SE)
- 2 *Picumnus innominatus*, Speckled Piculet (798)
- 3 *Picoides cancapillus*, Grey-crowned Pigmy Woodpecker (850)
- 4 *Hemicircus canente*, Heartspotted Woodpecker (856)
- 5 *Sasia ochracea*, Rufous Piculet (800)
- 6 *Picoides auriceps*, Brownfronted Pied Woodpecker (842)
- 7 *Picoides tridactylus*, Threetoed Woodpecker (855)
- 8 *Picoides atratus*, Stripebreasted Pied Woodpecker (844)
- 9 *Picoides maharattensis*, Yellowfronted Pied Woodpecker (847)
- 10 *Picoides maci*, Fulvousbreasted Pied Woodpecker (845)
- 11 *Hypopicus hyperythrus*, Rufousbellied Woodpecker or Sapsucker (833)
- 12 *Picoides assimilis*, Sind Pied Woodpecker (835)
- 13 *Picoides cathaphanus*, Crimsonbreasted Pied Woodpecker (840)
- 14 *Picoides major*, Great Spotted, or Redcrowned Pied, Woodpecker (834)
- 15 *Picoides himalayensis*, Himalayan Pied-Woodpecker (837)
- 16 *Picoides albesens* of 837. (836)
- 17 *Dendrocopos leucopertus*, Whitemantled Woodpecker (SE)
- 18 *Picoides darjellensis*, Darjeeling Pied Woodpecker (838)

Plate 62

- 1 *Jynx torquilla*, Wrenneck (796)
- 2 *Picus chlorolophus*, Small Yellownaped Woodpecker (815)
- 3 *Picus chlorogaster* of 815. (816)
- 4 *Picus flavinucha*, Large Yellownaped Woodpecker (813)
- 5 *Picus canus*, Blacknaped Green Woodpecker (809)
- 6 *Picus squamatus*, Scalybellied Green Woodpecker (807)
- 7 *Picus myrmecophonus*, Little Scalybellied Green Woodpecker (808)
- 8 *Dryocopus javensis*, Indian Great Black Woodpecker (830)
- 9 *Picus hodgii* of 830. (831)
- 10 *Mulleripicus pulverulentus*, Himalayan Great Slaty Woodpecker (828)
- 11 *Picus vittatus*, Laced Woodpecker (SE)
- 12 *Geococcyx granta*, Paleheaded Woodpecker (827)
- 13 *Blythipicus pyrrhotis*, Red-eared Bay Woodpecker (857)
- 14 *Micropternus brachyurus*, Rufous Woodpecker (804)

Plate 63

- 1 *Pterinopus dalhousiae*, Longtailed Broadbill (865)
- 2 *Oriolus oriolus*, Golden Oriole (953)
- 3 *Serilophus lunatus*, Collared Broadbill (864)
- 4 *Oriolus xanthornus*, Blackheaded Oriole (958)
- 5 *Oriolus chinensis diffusus*, Blacknaped Oriole (954)
- 6 *Oriolus chinensis tenuirostris*, Slenderbilled Blacknaped Oriole (955)
- 7 *Oriolus trailii*, Maroon Oriole (961)
- 8 *Pitta cyanea*, Blue Pitta (871)
- 9 *Pitta sordida*, Hooded or Greenbreasted Pitta (869)
- 10 *Pitta nipalensis*, Bluenaped Pitta (866)
- 11 *Pitta malacensis*, Bluenaped Pitta (868)
- 12 *Pitta brachyura*, Indian Pitta (867)

Plate 64

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- 8 *Alarmon alaudipes*, Bifasciated, or Large Desert, Lark (884)
- 9 *Ammonanthes phoenixus*, Rufoustailed Finch-Lark (882)
- 10 *Ammonanthes sinensis*, Bristle-tailed Desert Lark (881)
- 11 *Melanocorypha bimaculata*, Eastern Calandra Lark (892)
- 12 *Melanocorypha calandra*, Calandra Lark (SE)
- 13 *Calandrella rufescens*, Lesser Short-toed Lark (888a)
- 14 *Calandrella cinerea*, Short-toed Lark (886)
- 15 *Calandrella raytal*, Sand Lark (891)
- 16 *Melanocorypha maxima*, Longbilled Calandra Lark (894)
- 17 *Eremophila alpestris*, Horned Lark (897)
- 18 *ssp albigula* of 897. (895)
- 19 *Galerida deva*, Sykes's Crested Lark (902)
- 20 *Galerida cristata*, Crested Lark (899)
- 21 *Galerida malabarica*, Malabar Crested Lark (901)
- 22 *Alauda gulula*, Eastern Skylark (907)
- 23 *Alauda arvensis*, Skylark (903)

Plate 65

- 1 *Hemiprocne longipennis*, Crested Tree Swift (709)
- 2 *Riparia riparia*, Collared Sand Martin (910)
- 3 *Riparia paludicola*, Plain Sand Martin (912)
- 4
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- 8 *Delichon dasypus*, Asian House Martin (SE)
- 9 *Hirundo smithii*, Wiretailed Swallow (921)
- 10 *Delichon urbica*, House Martin (931)
- 11 *Hirundo rustica*, Swallow (916)
- 12 *ssp tyleri* of 916. (918)
- 13 *Hirundo tahitica*, House Swallow (919)
- 14 *Hirundo daurica*, Striated or Redrumped Swallow (927)
- 15 *ssp hyperythra* of 927. (928)
- 16 *Artamus leucorhynchus*, Whitebreasted Swallow-Shrike (983)
- 17 *Hirundo fluvicola*, Indian Cliff Swallow (922)
- 18 *Artamus fuscus*, Ashy Swallow-Shrike (982)

Plate 66

- 1 *Hypothymus azurea*, Blacknaped Flycatcher (1465)
- 2 *Terpsiphone paradisi*, Paradise Flycatcher (1461)
- 3 *ssp albogularis* of 1455. (1458)
- 4 *Rhipidura aureola*, Whitebrowed Fantail Flycatcher (1451)
- 5 *Rhipidura albicollis*, Whitethroated Fantail Flycatcher (1455)
- 6 *Lanius vittatus*, Baybacked Shrike (940)
- 7 *ssp isabellinus* of 941. (943)
- 8 *ssp phoenicurus* of 941. (942)
- 9 *Lanius cristatus*, Brown Shrike (949)
- 10 *Lanius collunoides*, Burmese Shrike (938)
- 11 *Lanius minor*, Lesser Grey Shrike (937)
- 12 *Lanius excubitor*, Grey Shrike (933)
- 13 *Lanius collurio*, Redbacked Shrike (941)
- 14 *Lanius senator*, Woodchat Shrike (951)
- 15 *Lanius tephronotus*, Greybacked or Tibetan Shrike (945)
- 16 *Bombycilla garrulus*, Waxwing (1062)
- 17 *Lanius schach*, Rufousbacked Shrike (946)
- 18 *ssp tricolor* of 946. (948)
- 19 *Hypocolius ampelinus*, Grey Hypocolius (1063)

Plate 67

- 1 *Dicrurus adsimilis*, Black Drongo or King-Crow (963)
- 2 *Dicrurus remifer*, Lesser Racket-tailed Drongo (972)
- 3 *Dicrurus annectans*, Crowbilled Drongo (970)
- 4 *Dicrurus paradiseus*, Greater Racket-tailed Drongo (976)
- 5 *ssp lophorhinus* of 976. (979)
- 6 *Dicrurus aeneus*, Bronzed Drongo (971)
- 7 *Dicrurus hottentottus*, Haircrested or Spangled Drongo (973)
- 8 *Dicrurus leucophaeus*, Grey or Ashy Drongo (965)
- 9 *ssp salangensis* of 965. (966a)
- 10 *Dicrurus andamanensis*, Andaman Drongo (975)
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- 14 *Cinclus pallasi*, Brown Dipper (1773)

Plate 68

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- 8 *ssp blythi* of 987. (988)
- 9 *Sturnus pagodarum*, Blackheaded or Brahminy Myna (994)
- 10 *Sturnus sturninus*, Daurian Myna (995)
- 11 *Sturnus senex*, Ceylon Whiteheaded Myna or Starling (993)
- 12 *Sturnus erythropygius*, Whiteheaded Myna (991)
- 13 *Sturnus vulgaris*, Starling (997)
- 14 *Sturnus roseus*, Rosy Pastor (996)
- 15 *Sturnus contra*, Pied Myna (1002)
- 16 *Acridotheres tristis*, Common Myna (1006)
- 17 *Sturnus sinensis*, Chinese or Greybacked Myna (1005)
- 18 *Acridotheres ginginianus*, Bank Myna (1008)
- 19 *Acridotheres fuscus*, Jungle Myna (1009)
- 20 *Mina coronatus*, Goldcrested Myna (1014)
- 21 *Acridotheres albocinctus*, Collared Myna (1013)
- 22 *Acridotheres tristis*, Common Myna (1012)

Plate 69

- 1 *Garrulus lanceolatus*, Blackthroated Jay (1022)
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- 9 *Dendrocitta leucogastra*, Whitebellied Tree Pie (1036)
- 10 *Dendrocitta vagabunda*, Indian Tree Pie (1032)
- 11 *Dendrocitta frontalis*, Blackbrowed Tree Pie (1035)
- 12 *Dendrocitta bayleyi*, Andaman Tree Pie (1040)
- 13 *Nucifraga caryocatactes*, Nutcracker (1042)
- 14 *ssp hemispila* of 1042. (1043)
- 15 *Podoces humilis*, Hume's Ground Chough (1041)

Plate 70

- 1 *Eudynamis scolopacea*, Koel (590)
- 2 *Pyrhocorax graculus*, Yellowbilled or Alpine Chough (1045)
- 3 *Corvus monedula*, Jackdaw (1053)
- 4 *Pyrhocorax pyrrhocorax*, Redbilled Chough (1046)
- 5 *Corvus frugilegus*, Rook (1052)
- 6 *Corvus splendens*, House Crow (1049)
- 7 *Corvus macrorhynchos*, Jungle Crow (1057)
- 8 *Corvus corone*, Carrion Crow (1058)
- 9 *ssp sharpii* of 1058. (1058a)
- 10 *Corvus ruficollis*, Brown-necked Raven (1061)
- 11 *Corvus corax*, Raven (1059)

Plate 71

- 1 *Pericrocotus roseus*, Rosy Minivet (1089)
- 2 *Pericrocotus erythropygius*, Whitebellied Minivet (1096)
- 3 *Pericrocotus cinnamomeus*, Small Minivet (1093)
- 4 *Pericrocotus solaris*, Yellowthroated Minivet (1088)
- 5 *Pericrocotus brevirostris*, Shortbilled Minivet (1084)
- 6 *Pericrocotus ethologus*, Longtailed Minivet (1085)
- 7 *Pericrocotus disparicatus*, Ashy Minivet (1089a)
- 8 *Pericrocotus flammeus*, Scarlet Minivet (1081)
- 9 *ssp speciosus* of 1081. (1080)
- 10 *Tephrodornis pondicerianus*, Common Wood Shrike (1070)
- 11 *Coracina novaehollandiae*, Large Cuckoo-Shrike (1072)
- 12 *Hemipus picatus*, Pied Flycatcher-Shrike (1055)
- 13 *Tephrodornis virgatus*, Large Wood Shrike (1068)
- 14 *Coracina melanoptera*, Blackheaded Cuckoo-Shrike (1079)
- 15 *Coracina nigra*, Pied Cuckoo-Shrike (1079a)
- 16 *Coracina melaschistos*, Smaller Grey Cuckoo-Shrike (1077)
- 17 *Coracina striata*, Barred Cuckoo-Shrike (1076)

Plate 72

- 1
- 2
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- 5 *Chloropsis aurifrons*, Goldenfronted Chloropsis or Leaf Bird (1103)
- 6 *Chloropsis cochinchinensis*, Goldmantled Chloropsis or Leaf Bird (1108)
- 7
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- 11 *ssp leucotis* of 1125. (1123)
- 12 *Pycnonotus leucogenys*, Whitecheeked Bulbul (1125)
- 13 *Hypsipetes madagascariensis*, Black Bulbul (1148)
- 14 *Irena puella*, Fairy Bluebird (1109)

Plate 73

- 1 *Spizixos canifrons*, Finchbilled Bulbul (1111)
 - 2 *Pycnonotus striatus*, Striated Green Bulbul (1133)
 - 3 *Pycnonotus priocephalus*, Greyheaded Bulbul (1114)
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- Yellow Bulbul

Plate 74

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- 4 *Macronous gularis*, Yellowbreasted Babbler (1228)
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- 11 *ssp siccatus* of 1224. (1226)
- 12 *ssp formosus* of 1186. (1187)
- 13 *Pomatiorhinus ferruginosus*, Coralbilled Scimitar Babbler (1186)
- 14 *Xiphiirhynchus superciliiaris*, Slenderbilled Scimitar Babbler (1191)
- 15 *Pomatiorhinus hypoleucos*, Large Scimitar Babbler (1185)
- 16 *Pomatiorhinus ruficollis*, Rufousnecked Scimitar Babbler (1178)
- 17 *Pomatiorhinus ochraceiceps*, Longbilled Scimitar Babbler (1189)
- 18 *ssp schisticeps* of 1173. (1169)
- 19 *Pomatiorhinus horsfieldi*, Slatyheaded Scimitar Babbler (1173)
- 20 *Pomatiorhinus erythrogenys*, Rustycheeked Scimitar Babbler (1181)
- 21 *Pomatiorhinus erythronemius*, Spotbreasted Scimitar Babbler (SE)

Plate 75

- 1 *Troglodytes troglodytes*, Wren (1770)
- 2 *ssp nipalensis* of 1770. (1771)
- 3 *Phoenicogaster pusilla*, Brown, or Lesser Scalybreasted, Wren-Babbler (1199)
- 4 *Spelaeornis caudatus*, Tailed Wren-Babbler (1200)
- 5 *Budytes budytes*, Scalybreasted Wren-Babbler (1198)
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- 11 *Napothera epilepidota*, Small Wren-Babbler (1195)
- 12 *Napothera brevicaudata*, Streaked, or Short-tailed, Wren-Babbler (1194)
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- 16 *Pellorneum fuscicapillum*, Browncapped Babbler (1161)
- 17 *Trichastoma tickelli*, Tickell's Babbler (1166)
- 18 *Trichastoma abbotti*, Abbott's Babbler (1167)
- 19 *Pellorneum palustre*, Marsh Spotted Babbler (1160)
- 20 *Pellorneum ruficeps*, Spotted Babbler (1154)

Plate 76

- 1 *Garrulax subunicolor*, Plaincoloured Laughing Thrush (1320)
- 2 *Garrulax lineatus*, Streaked Laughing Thrush (1314)
- 3 *ssp nigrimentum* of 1324. (1326)
- 4 *Garrulax erythrocephalus*, Redheaded Laughing Thrush (1324)
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Plate 77

- 1 *Garrulax phoenixus*, Crimsonwinged Laughing Thrush (1331)
- 2 *Garrulax cachinnans*, Nilgiri Laughing Thrush (1307)
- 3 *Garrulax jerdoni*, Whitebreasted Laughing Thrush (1310)
- 4 *Garrulax cinereus*, Ashy Laughing Thrush (1291)
- 5 *Garrulax galbanus*, Yellowthroated Laughing Thrush (1286)
- 6 *Garrulax delesserti*, Yellowbreasted Laughing Thrush (1287)
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Plate 78

- 1 *Gampsorhynchus rufulus*, Whiteheaded Shrike-Babbler (1347)
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Plate 79

- 1 *Timalia pileata*, Redcapped Babbler (1229)
- 2 *Chrysomma sinense*, Yelloweyed Babbler (1231)
- 3 *Chrysomma altirostre*, Jerdon's Babbler (1233)
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Plate 80

- 1 *Leiothrix argentauris*, Silvercrested Mesia (1333)
- 2 *Leiothrix lutea*, Redbilled Leiothrix (1336)
- 3 *Cutia nipalensis*, Nepal Cutia (1339)
- 4 *Pteruthius ruficenter*, Rufousbelly Shrike-Babbler (1340)
- 5 *Pteruthius xanthochlorus*, Green Shrike-Babbler (1343)
- 6 *Pteruthius aenobarbus*, Chestnutfronted Shrike-Babbler (1346)
- 7 *Pteruthius melanotis*, Chestnut-throated Shrike-Babbler (1345)
- 8 *Pteruthius aenobarbus*, Chestnut-throated Shrike-Babbler (1341)
- 9 "
- 10 "
- 11 *Alcippe chrysotis*, Goldenbreasted Tit-Babbler (1376)
- 12 *Minla ignotincta*, Redtailed Minla (1357)
- 13 *Heterophasia capistrata*, Blackcapped Sibia (1396)
- 14 *Heterophasia annectens*, Chestnutbacked Sibia (1395)
- 15 *Heterophasia pulchella*, Beautiful Sibia (1400)
- 16 *Heterophasia picoides*, Longtailed Sibia (1401)
- 17 *Heterophasia gracilis*, Grey Sibia (1399)

Plate 81

- 1 *Pachycephala grisola*, Grey Thickhead or Mangrove Whistler (1470)
- 2 *Muscicapa parva*, Redbreasted Flycatcher (1411)
- 3 *ssp albicilla* of 1411. (1412)
- 4 *Muscicapa subrubra*, Kashmir Redbreasted Flycatcher (1413)
- 5 *Muscicapa striata*, Spotted Flycatcher (1403)
- 6 *Muscicapa multii*, Brownbreasted Flycatcher (1408)
- 7 *Muscicapa sibirica*, Sooty Flycatcher (1406)
- 8 *Muscicapa ruficauda*, Rufoustailed Flycatcher (1409)
- 9 "
- 10 "
- 11 "
- 12 *Muscicapa strophilata*, Orangeorgeted Flycatcher (1414)
- 13 *Rhinomyias brunneata*, Olive Flycatcher (1402)
- 14 *Muscicapa westermanni*, Little Pied Flycatcher (1419)
- 15 *Muscicapa supercilii*, Whitebrowed Blue Flycatcher (1421)
- 16 *Muscicapa macrogriar*, Small Niltava (1429)
- 17 *Muscicapa lucomelanura*, Slaty Blue Flycatcher (1423)
- 18 *ssp minuta* of 1423. (1424)
- 19 *Muscicapa grandis*, Large Niltava (1428)
- 20 *ssp leucops* of 1415. (1416)
- 21 *Muscicapa monileger*, Whiteorgeted Flycatcher (1415)

Plate 82

- 1 *Muscicapa tickelliae*, Tickell's Blue Flycatcher (1442)
- 2 "
- 3 "
- 4 "
- 5 *Muscicapa hyperythra*, Rufousbreasted Blue Flycatcher (1417)
- 6 *Muscicapa rubeculoides*, Bluethroated Flycatcher (1440)
- 7 *Muscicapa banyumas*, Largebilled Blue Flycatcher (1441)
- 8 *Muscicapa poliopteryx*, Brooks's Flycatcher (1436)
- 9 *Muscicapa pallipes*, Whitebelly Blue Flycatcher (1435)
- 10 *Muscicapa thalassina*, Verditer Flycatcher (1445)
- 11 *Muscicapa unicolor*, Pale Blue Flycatcher (1439)
- 12 *Muscicapa sordida*, Dusky Blue Flycatcher (1444)
- 13 *Muscicapa albicaudata*, Nilgiri Flycatcher (1446)
- 14 *Muscicapa sundara*, Rufousbelly Niltava (1432)
- 15 *Muscicapa concreta*, Whitetailed Blue Flycatcher (1434)
- 16 *Muscicapa virida*, Rufousbelly Blue Flycatcher (1433)

Plate 83

- 1 *Cettia pallidipes*, Palefooted Bush Warbler (1474)
- 2 *Cettia diphone*, Chinese Bush Warbler (1476)
- 3 *Cettia montana*, Strongfooted Bush Warbler (1478)
- 4 *Cettia flavolivacea*, Aberrant Bush Warbler (1481)
- 5 *Cettia brunnsfrons*, Rufouscapped Bush Warbler (1486)
- 6 *Cettia major*, Large Bush Warbler (1479)
- 7 *Cettia acanthizoides*, Verreaux's Bush Warbler (1484)
- 8 *Bradypterus luteocentris*, Brown Bush Warbler (1493)
- 9 *Bradypterus palliseri*, Palliser's Warbler (1494)
- 10 *Bradypterus thoracicus*, Spotted Bush Warbler (1490)
- 11 *Cettia cetti*, Cetti's Warbler (1488)
- 12 *Acrocephalus bistrigatus*, Blackbrowed Reed Warbler (1555)
- 13 *Bradypterus major*, Largebilled Bush Warbler (1491)
- 14 *Acrocephalus aedon*, Thickbilled Warbler (1549)
- 15 *Bradypterus tacsanovskius*, Central Asian Bush Warbler (1492)
- 16 *Acrocephalus dumetorum*, Blyth's Reed Warbler (1556)
- 17 *Acrocephalus agricola*, Paddyfield Warbler (1557)
- 18 *Acrocephalus scirpaceus*, Reed Warbler (1555a)
- 19 *Acrocephalus stentoreus*, Indian Great Reed Warbler (1550)

Plate 84

- 1 *Sylvia nisoria*, Barred Warbler (1564a)
- 2 *Sylvia communis*, Whitethroat (1566)
- 3 *Sylvia hortensis*, Orphean Warbler (1565)
- 4 *Sylvia curruca minula*, Lesser Whitethroat (1569)
- 5 *Sylvia curruca althata*, Lesser Whitethroat (1570)
- 6 *Sylvia curruca blythi*, Lesser Whitethroat (1567)
- 7 *Sylvia nana*, Desert Warbler (1571)
- 8 *Leptopoeile sophiae*, Stolizka's Tit-Warbler (1633)
- 9 *ssp obscura* of 1633. (1634)
- 10 *Regulus regulus*, Goldcrest (1629)
- 11 **Sylvia mystacea*, Menetries's Warbler (1571a)
- 12 *Leptopoeile elegans*, Crested Tit-Warbler (1632)
- 13 *Prinia socialis*, Ashy Wren-Warbler (1517)
- 14 *ssp steuarti* of 1517. (1515)
- 15 *Prinia cinereocapilla*, Hodgson's Wren-Warbler (1507)
- 16 *Prinia rufescens*, Rufous Wren-Warbler (1501)
- 17 *Prinia hodgsonii*, Franklin's Wren-Warbler (1503)

* This species is an addition to the Indian avifauna included in the second edition of the *Synopsis of the Birds of India and Pakistan* as No. 1571a on the basis of eight individuals sighted in the Sorkhab valley, c. 1650 m. Pishin district, 30°33' N., 67°12' E. A complete description of the bird will appear in the second edition of the *Handbook* Volume 8.

Plate 85

- 1 *Locustella certhiola*, Pallas's Grasshopper Warbler (1543)
- 2 *Schoeniola platyura*, Broadtailed Grass Warbler (1546)
- 3 *Locustella naevia*, Grasshopper Warbler (1545)
- 4 *ssp obscurior* of 1545. (RE)
- 5 *Megalurus platuris*, Striated Marsh Warbler (1548)
- 6 *Chaetornis striatus*, Bristled Grass Warbler (1547)
- 7 *Prinia gracilis*, Streaked Wren-Warbler (1508)
- 8 *Prinia buchanani*, Rufousfronted Wren-Warbler (1506)
- 9 *Locustella lanceolata*, Streaked Grasshopper Warbler (1544)
- 10 *Acrocephalus melanopogon*, Moustached Sedge Warbler (1495)
- 11 *Prinia atrogularis*, Blackthroated Hill Warbler (1529)
- 12 *Prinia subflava*, Plain Wren-Warbler (1511)
- 13 *Prinia sylvatica*, Jungle Wren-Warbler (1521)
- 14 *ssp sindiana* of 1521. (1524)
- 15 *Prinia flaticentris*, Yellowbelly Wren-Warbler (1525)
- 16 *ssp cnerascens* of 1531. (1532)
- 17 *Prinia burnesii*, Longtailed Grass Warbler (1531)
- 18 *Scolecera inquieta*, Streaked Scrub Warbler (1533)
- 19 *Prinia crinigera*, Brown Hill Warbler (1527)
- 20 *Cisticola juncidis*, Streaked Fantail Warbler (1498)
- 21 *Graminicola bengalensis*, Large Grass Warbler (1534)
- 22 *Cisticola exilis*, Fantail Warbler (1497)

Plate 86

- 1 *Phylloscopus tyleri*, Tyler's Leaf Warbler (1578)
- 2 "
- 3 "
- 4 "
- 5 *Phylloscopus tyleri*, Tyler's Leaf Warbler (1578)
- 6 *Phylloscopus affinis*, Tickell's Leaf Warbler (1579)
- 7 *ssp arcanus* of 1579. (1580)
- 8 *Phylloscopus griseolus*, Olivaceous Leaf Warbler (1581)
- 9 *Phylloscopus subviridis*, Brooks's Leaf Warbler (1593)
- 10 *Phylloscopus inornatus*, Plain, or Yellowbrowed, Leaf Warbler (1592)
- 11 *Phylloscopus fuscatus*, Dusky Leaf Warbler (1586)
- 12 *Phylloscopus fulgicenter*, Smoky Willow Warbler (1582)
- 13 *Phylloscopus schazarzi*, Radde's Leaf Warbler (SE)
- 14 *Phylloscopus pulcher*, Orangebarred Leaf Warbler (1588)
- 15 "
- 16 "
- 17 "
- 18 "
- 19 *ssp coronatus* of 1606. (1607)
- 20 *Phylloscopus reguloides*, Blyth's Leaf Warbler (1609)
- 21 *Phylloscopus trochiloides*, Dull Green Leaf Warbler (1605)
- 22 *Phylloscopus magnirostris*, Largebilled Leaf Warbler (1601)

Plate 87

- 1 *Rhipidura hypoxantha*, Yellowbelly Fantail Flycatcher (1450)
- 2 *Seicercus burkii*, Blackbrowed Flycatcher-Warbler (1615)
- 3 *Abroscopus albugularis*, Whitethroated Flycatcher-Warbler (1626)
- 4 *Abroscopus schisticeps*, Blackfaced Flycatcher-Warbler (1624)
- 5 *Seicercus affinis*, Allied Flycatcher-Warbler (1613)
- 6 *Abroscopus supercilii*, Yellowbelly Flycatcher-Warbler (1622)
- 7 *Seicercus xanthoschistos*, Greyheaded Flycatcher-Warbler (1617)
- 8 *Callicircus cydonensis*, Greyheaded Flycatcher (1448)
- 9 *Seicercus poliopteryx*, Greychecked Flycatcher-Warbler (1620)
- 10 *Abroscopus hodgsoni*, Broadbilled Flycatcher-Warbler (1627)
- 11 *Orthotomus sutorius*, Tailor Bird (1535)
- 12 *Orthotomus cucullatus*, Goldenheaded Tailor Bird (1541)
- 13 *Seicercus castaneiceps*, Chestnut-headed Flycatcher-Warbler (1621)
- 14 *Orthotomus atrogularis*, Blacknecked Tailor Bird (1540)
- 15 *Tesia cyanenter*, Dull Slatybelly Ground Warbler (1471)
- 16 *Tesia olivea*, Slatybelly Ground Warbler (1472)
- 17 *Tesia castaneocoronata*, Chestnut-headed Ground Warbler (1473)

Plate 88

- 1 *Brachypteryx stellata*, Gould's Shortwing (1635)
- 2 "
- 3 "
- 4 "
- 5 "
- 6 "
- 7 *Erithacus pectoralis*, Himalayan Rubythroat (1647)
- 8 *Erithacus stercus*, Bluethroat (1644)
- 9 *Erithacus pectoralis*, Firethroat (1652)
- 10 *Erithacus brunneus*, Blue Chat (1650)
- 11 *Erithacus cyane*, Siberian Blue Chat (1653)
- 12 *Erithacus indicus*, Whitebrowed Bush Robin (1659)
- 13 *Erithacus cyanurus*, Orangebacked Bush Robin (1655)
- 14 *Erithacus chrysaeus*, Golden Bush Robin (1658)
- 15 *Irania gutturalis*, Whitethroated Robin (SE)
- 16 *Erithacus hyperythrus*, Rufousbelly Bush Robin (1660)

Plate 89

- 1 *Erythropygia galactotis*, Rufous Chat (1641)
- 2 *Phoenicurus erythronotus*, Eversmann's Redstart (1669)
- 3 *Phoenicurus ochruros ruficentris*, Black Redstart (1672)
- 4 *Phoenicurus ochruros phoenicuroides*, Black Redstart (1671)
- 5 *Phoenicurus caeruleocephalus*, Blueheaded Redstart (1670)
- 6 *Phoenicurus phoenicurus*, Redstart (1673)
- 7 *Phoenicurus hodgsoni*, Hodgson's Redstart (1674)
- 8 *Phoenicurus frontalis*, Bluefronted Redstart (1675)
- 9 *Phoenicurus schisticeps*, Whitefronted Redstart (1676)
- 10 *Phoenicurus erythrogaster*, Guldenstadt's Redstart (1678)
- 11 *Phoenicurus auroreus*, Daurian Redstart (1677)
- 12 *Rhyacornis fuliginosus*, Plumbeous Redstart (1679)
- 13 *Hodgsonius phoenicuroides*, Hodgson's Shortwing (1680)

Plate 90

- 1 *Coppychus malabaricus*, Shama (1665)
- 2 *ssp albicentris* of 1665. (1668)
- 3 *Grandala coelicolor*, Hodgson's Grandala (1683)
- 4 *Coppychus saularis*, Magpie-Robin (1661)
- 5 *Enicurus scouleri*, Little Forktail (1684)
- 6 *Enicurus schistaceus*, Slatybacked Forktail (1685)
- 7 *Enicurus immaculatus*, Blackbacked Forktail (1685)
- 8 *Enicurus maculatus*, Spotted Forktail (1688)
- 9 *Enicurus leschenaulti*, Leschenault's Forktail (1687)
- 10 *Cochoa viridis*, Green Cochoa (1691)
- 11 *Cochoa purpurea*, Purple Cochoa (1690)
- 12 *Atalapha blythi*, Chestnut-bellied Thrush (1727)
- 13 "
- 14 "

Plate 91

- 1 *Saxicola macrorhyncha*, Stolizka's Bush Chat (1693)
- 2 *Saxicola torquata*, Stone Chat or Collared Bush Chat (1697)
- 3 *ssp przewalskii* of 1697. (1696)
- 4 *Saxicola insignis*, Hodgson's Bush Chat (1694)
- 5 *Saxicola caprata*, Pied Bush Chat (1701)
- 6 *Saxicola jerdoni*, Jerdon's Bush Chat (1704)
- 7 *Saxicola leucura*, Whitetailed Stone Chat (1699)
- 8 *Saxicola ferrea*, Dark-Grey Bush Chat (1705)
- 9 *Oenanthe oenanthe*, Wheatear (1708)
- 10 *Oenanthe isabellina*, Isabelline Chat (1706)
- 11 *Oenanthe xanthopygma*, Redtailed Chat (1707)
- 12 *Oenanthe deserti*, Desert Wheatear (1710)
- 13 *Oenanthe pleschanka*, Pleschanka's Pied Chat or Wheatear (1715)
- 14 *Oenanthe alboniger*, Hume's Chat (1714)
- 15 *Oenanthe finschi*, Barnes's Chat (1711)
- 16 *Oenanthe monacha*, Hooded Chat (1713)
- 17 *Oenanthe picata*, Pied Chat (1712)

Plate 92

- 1 *Monticola rufiventris*, Chestnutbelly Rock Thrush (1724)
- 2 *Zoothera atrina*, Orangeheaded Ground Thrush (1733)
- 3 *ssp cyanus* of 1733. (1734)
- 4 *Monticola solitarius*, Blue Rock Thrush (1726)
- 5 *Monticola cinclorhynchus*, Blueheaded Rock Thrush (1723)
- 6 *Turdus unicolor*, Tickell's Thrush (1748)
- 7 *Monticola saxatilis*, Rock Thrush (1722)
- 8 *Turdus boulboul*, Greywinged Blackbird (1750)
- 9 *Turdus albocinctus*, Whitecollared Blackbird (1749)
- 10 *ssp kinnisii* of 1752. (1757)
- 11 *ssp nigropileus* of 1752. (1753)
- 12 *ssp similis* of 1752. (1755)
- 13 *Turdus merula*, Blackbird (1752)
- 14 *Turdus feai*, Fea's Thrush (1761)
- 15 *Turdus kessleri*, Kessler's Thrush (1760)
- 16 *Turdus rubrocanus*, Greyheaded Thrush (1758)
- 17 *ssp gouldii* of 1758. (1759)

Plate 93

- 1 *Zoothera wardii*, Pied Ground Thrush (1731)
- 2 *Zoothera spiloptera*, Spottedwinged Ground Thrush (1737)
- 3 *Zoothera sibirica*, Siberian Ground Thrush (1732)
- 4 *Zoothera mollissima*, Plainbacked Mountain Thrush (1739)
- 5 *Zoothera marginata*, Lesser Brown Thrush (1746)
- 6 *Zoothera dixoni*, Longtailed Mountain Thrush (1740)
- 7 *Zoothera monticola*, Large Brown Thrush (1745)
- 8 *Zoothera dauma*, Golden, or Smallbilled, Mountain Thrush (1741)
- 9 *Turdus naumanni*, Dusky Thrush (1765)
- 10 *Turdus dissimilis*, Blackbreasted Thrush (1747)
- 11 *Turdus obscurus*, Dark Thrush (1762)
- 12 *Turdus ruficollis*, Redthroated Thrush (1764)
- 13 "
- 14 "
- 15 "
- 16 *Turdus cisticorvus*, Mistle Thrush (1768)

Plate 94

- 1 *Prunella collaris*, Alpine Accentor (1779)
- 2 *Prunella strophilata*, Rufousbreasted Accentor (1783)
- 3 *Prunella rubeculoides*, Robin Accentor (1781)
- 4 *Prunella umaculata*, Maroonbacked Accentor (1788)
- 5 *Prunella himalayana*, Altai Accentor (1780)
- 6 *Prunella atrogularis*, Blackthroated Accentor (1787)
- 7 *ssp ocellaris* of 1784. (1785a)
- 8 *Prunella montanella*, Siberian Accentor (1787a)
- 9 *Prunella fulvescens*, Brown Accentor (1784)
- 10 "
- 11 "
- 12 "
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- 14 "
- 15 *Leucosticte nemoralis*, Hodgson's Mountain Finch (1953)
- 16 *Montifringilla rusticola*, Rednecked Snow Finch (1954)
- 17 *Leucosticte brandii*, Brandi's Mountain Finch (2003)
- 18 *Montifringilla theresae*, Bartailed Snow Finch (SE)

Plate 95

- 1 *Argythos leucogenys*, Whitecheeked Tit (1821)
2 *Argythos leucogenys*, Whitecheeked Tit (1822)
3 *Argythos leucogenys*, Whitecheeked Tit (1823)
4 *Argythos leucogenys*, Whitecheeked Tit (1818)
5
6 *Cephaloporus flammeiceps*, Firecapped Tit (1815)
7 *Remiz pendulinus*, Penduline Tit (1817)
8 *ssp nigricans* of 1817. (RE)
9 *Parus dichrous*, Brown Crested Tit (1808)
10 *Parus ater*, Coal Tit (1803)
11 *Parus ater*, Coal Tit (1803)
12 *Parus ater*, Coal Tit (1803)
13 *Parus ater*, Coal Tit (1803)
14 *Parus ater*, Coal Tit (1803)
15 *Parus cyanus flaypectus*, Yellowbreasted Blue Tit or Azure Tit (1800)
16 *Parus cyanus transchanicus* (Tien Shan) Yellowbreasted Blue Tit (1800a)
17 *Parus monticolus*, Greenbacked Tit (1799)
18 *Parus major*, Grey Tit (1794)
19 *Parus nuchalis*, Whitewinged Black Tit (1798)
20 *Parus nuchalis*, Whitewinged Black Tit (1799)
21 *Parus nuchalis*, Whitewinged Black Tit (1799)
22
23 *Parus bokharensis*, Blue-Grey Tit (SE)

Plate 96

- 1 *Sitta europea nagaensis*, European Nuthatch (1826)
2 *Sitta himalayensis*, Whitetailed Nuthatch (1834)
3 *Sitta castanea*, Chestnutbellied Nuthatch (1830)
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8 *Sitta formosa*, Beautiful Nuthatch (1837)
9 *Tichodroma murina*, Wall Creeper (1839)
10 *Certhia familiaris*, Tree Creeper (1843)
11 *Certhia himalayana*, Himalayan Tree Creeper (1847)
12 *Certhia nipalensis*, Nepal Tree Creeper (1851)
13 *Certhia discolor*, Sikkim Tree Creeper (1849)
14 *Salpornis spilonotos*, Spotted Grey Creeper (1841)
15 *Panurus biarmicus*, Bearded Tit-Babbler or Reedling (1235)
16 *Paradoxornis gularis*, Greyheaded Parrotbill (1249)
17 *Paradoxornis gularis*, Greyheaded Parrotbill (1251)
18 *Paradoxornis gularis*, Greyheaded Parrotbill (1252)
19 *Paradoxornis gularis*, Greyheaded Parrotbill (1247)
20 *ssp ontes* of 1246 (1245)
21 *Paradoxornis atrovsuperillaris*, Lesser Redheaded Suthora or Parrotbill (1246)
22 *Paradoxornis nipalensis humis*, Orange Suthora (1241)
23 *Paradoxornis nipalensis poliots*, Orange Suthora (1242)
24 *Paradoxornis fulvifrons*, Fulvousfronted Suthora or Parrotbill (1238)

Plate 97

- 1 *ssp richards* of 1859 (1857)
2 *Anthus novaeseelandiae*, Paddyfield Pipit (1859)
3 *Anthus campestris*, Tawny Pipit (1861)
4 *Anthus similis*, Brown Rock Pipit (1868)
5 *Anthus pratensis*, Meadow Pipit (1856)
6 *Anthus cervinus*, Redthroated Pipit (1864)
7 *Anthus roseatus*, Vinaceousbreasted Pipit (1865)
8 *Anthus hodgsoni*, Indian Tree Pipit (1852)
9 *Anthus trivialis*, Tree Pipit (1854)
10 *Anthus spinoletta*, Water Pipit or Alpine Pipit (1871)
11 *Anthus nilghiriensis*, Nilgiri Pipit (1870)
12 *Anthus sylvanus*, Upland Pipit (1873)
13 *Motacilla alba personata*, Pied or White Wagtail (1886)
14 *Motacilla alba dukhunensis*, Pied or White Wagtail (1885)
15 *Motacilla alba dukhunensis*, Pied or White Wagtail (1874)
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Plate 98

- 1 *Dicaeum agile*, Thickbilled Flowerpecker (1892)
2 *Dicaeum melanoanthum*, Yellowbellied Flowerpecker (1896)
3 *Dicaeum melanoanthum*, Yellowbellied Flowerpecker (1899)
4
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6 *Dicaeum vinctus*, Legge's Flowerpecker (1897)
7 *Dicaeum trigonostigma*, Orangebellied Flowerpecker (1898)
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12 *Lonchura malacca*, Blackheaded Munia (1978)
13 *Estrilda formosa*, Green Munia (1965)
14 *Lonchura punctulata*, Spotted Munia (1974)
15 *ssp jerdoni* of 1973. (1971)
16 *Lonchura kelaarti*, Rufousbellied Munia (1973)
17 *Lonchura malabarica*, Whitethroated Munia (1966)
18 *Padda oryzivora*, Java Sparrow (1978a)
19 *Lonchura striata*, Whitebacked Munia (1968)

Plate 99

- 1 *Zosterops palpebrosa*, White-eye (1933)
2 *Zosterops ceylonensis*, Ceylon White-eye (1937)
3 *Antheptes singalensis*, Rubycheek (1906)
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7 *Nectarinia minima*, Small Sunbird (1909)
8 *Aethopyga gouldiae*, Mrs Gould's Sunbird (1919)
9 *Nectarinia lotenia*, Loten's Sunbird (1911)
10 *Nectarinia asiatica*, Purple Sunbird (1917)
11 *Aethopyga nipalensis*, Nepal Yellowbacked Sunbird (1923)
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Plate 100

- 1 *Passer ammodendri*, Saxaul Sparrow (SE)
2 *Passer domesticus*, House Sparrow (1938)
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6 *Passer rutilans*, Cinnamon Tree Sparrow (1946)
7 *Passer montanus*, Tree Sparrow (1942)
8 *Petronia petronia*, Rock Sparrow (1950)
9 *Petronia xanthocolis*, Yellowthroated Sparrow (1949)
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13 *Ploceus philippinus*, Baya (1957)
14 *ssp burmanicus* of 1957. (1959)

Plate 101

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5 *Carduelis chloris*, European Greenfinch (SE)
6 *Carduelis spinoides*, Himalayan Greenfinch (1990)
7 *Carduelis ambigua*, Blackheaded Greenfinch (SE)
8 *Acanthis cannabina*, Linnet (1994)
9 *Acanthis flavirostris*, Twite (1996)

- 10 *Carduelis carduelis*, Goldfinch (1989)
11 *Rhodospiza obsoleta*, Lichtenstein's Desert Finch (2008)
12 *Callacanthus sanguinea*, Crimsonwinged Desert Finch (2009)
13 *Carpodacus githagineus*, Trumpeter Bullfinch (2006)
14 *Carpodacus mongolicus*, Mongolian Trumpeter Bullfinch (2007)
15 *Carpodacus synotus*, Sinai Rosefinch (SE)

Plate 102

- 1 *Carpodacus rubescens*, Blanford's Rosefinch (2016).
2 *Carpodacus rubicillides*, Eastern Great Rosefinch (2028)
3 *Carpodacus erythrinus*, Common Rosefinch or Scarlet Grosbeak (2011)
4 *Carpodacus rhodochrous*, Pinkbrowed Rosefinch (2017)
5 *Carpodacus pulcherrimus*, Beautiful Rosefinch (2023)
6 *Carpodacus edwardsii*, Large Rosefinch (2025)
7 *Carpodacus vinaceus*, Vinaceous Rosefinch (2017a)
8
9
10
11 *ssp blythi* of 2021. (2020)
12 *Carpodacus rubicillides*, Eastern Great Rosefinch (2028)
13 *Carpodacus rhodochlamys*, Redmantled Rosefinch (2018)
14 *Propyrrhula subhimachala*, Redheaded Rosefinch (2033)
15 *Carpodacus rubicilla*, Great Rosefinch (2027)
16 *Carpodacus puniceus*, Redbreasted Rosefinch (2031)
17 *Loxia curvirostra*, Crossbill (2032)

Plate 103

- 1 *Indicator xanthonotus*, Honeyguide (794)
2 *Haematospiza sipahi*, Scarlet Finch (2034)
3 *Callacanthus burtoni*, Redbrowed Finch (1997)
4 *Pyrrhula nipalensis*, Brown Bullfinch (2036)
5 *Pyrrhula aurantiaca*, Orange Bullfinch (2040)
6 *Pyrrhula erythrocephala*, Redheaded Bullfinch (2039)
7 *Pyrrhula erythaca*, Beavan's Bullfinch (2038)
8 *Coccothraustes coccothraustes*, Hawfinch (1981)
9 *Coccothraustes icteroides*, Black-and-Yellow Grosbeak (1982)
10 *Coccothraustes affinis*, Allied Grosbeak (1983)
11 *Coccothraustes melanoanthos*, Spottedwinged Grosbeak (1986)
12 *Pyrrhoplectes epauletta*, Goldheaded Black Finch (2035)
13 *Coccothraustes carripes*, Whitewinged Grosbeak (1985)
14 *Melophus lathami*, Crested Bunting (2060)

Plate 104

- 1 *Emberiza calandra*, Corn Bunting (2041)
2 *Emberiza citrinella*, Yellowhammer (SE)
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6 *Emberiza cia*, Rock Bunting (2052)
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INTRODUCTION

Good historical accounts of ornithology and ornithologists in India, chiefly since the beginning of the nineteenth century, and the more important contributions to the science up to the publication of the last volume of Stuart Baker in 1930 are chronicled progressively in the introductory portions of all the standard books on Indian ornithology of that period — Jerdon's *Birds of India*, and the two editions of the Fauna of British India series on *Birds*. They call for no more than a brief reference here. The first six decades of the nineteenth century, up till the publication of the former in 1862, were dominated by the virtual founders of Indian ornithology, T. C. Jerdon, Brian Hodgson and Edward Blyth; but this pioneering period was marked also by a number of other active field workers among whom deserving mention are Adams, Franklin, Hutton, McClelland, Sykes, Tickell, and Tytler in India, and Kelaart and Layard in Ceylon. *Birds of India* epitomizes the knowledge up to that date, based on the vast collections of Hodgson (chiefly from Nepal), and of Blyth and Jerdon themselves and their many protégés and correspondents, including the above named, in various parts of the Indian Peninsula. 'Jerdon' contains some excellent field notes on habits and ecology which is a refreshing feature for a period when the main accent was, understandably, on amassing large numbers of skins — often through the help of local shikaris — and classifying them. Some of these accounts, particularly relating to the rarer species, have not been added to or improved upon since, and as a whole they still remain the hard core of our knowledge of certain aspects of bird study. The book continued as the standard work on Indian ornithology for many years and is of considerable usefulness even today. Unfortunately it covers only a portion of our area, leaving out practically the whole of the present West Pakistan and Kashmir, as well as Assam, Manipur, East Pakistan, the Andaman and Nicobar islands, and Ceylon. Nevertheless the appearance of such a handy comprehensive manual embodying all the hitherto more or less scattered and region-wise information available only in learned journals — such as *Proceedings of the Zoological Society* of London, and the journals of the Linnaean and Asiatic Societies — at once gave a marked impetus to bird study. It found new devotees who in turn were soon to become prominent names in Indian ornithology. The period thence, and right up to the publication of the first edition of the government-sponsored Fauna of British India series on *Birds*¹ was completely dominated by A. O. Hume, who had meanwhile appeared on the scene. Hume, who by the way is memorable also as being one of the founders of the Indian National Congress while still in active civil service, was a truly remarkable man. He has with good justification been called 'The Father' — and as a dubious compliment by those who were sometimes irked by his seeming dogmatism 'the Pope' — of Indian ornithology. Hume collected methodically and very intensively himself and with the help of his numerous band of competent colleagues and protégés and correspondents widely scattered over the country, chiefly between about 1870 and 1885. His collection totalled over 60,000 bird skins and large numbers of nests and eggs, all of which he later presented to the British Museum, where a large part of Hodgson's Nepal collection of over 20,000 skins had already found its way. Little wonder then that, together with the other vast collections such as those of Col. Sykes, the Marquis of Tweeddale (Viscount Walden), Mr John Gould, and the many others continually acquired since, the British Museum collection of Indian birds has come to be the most complete to be found under a single roof anywhere in the world.

Hume founded and edited '*Stray Feathers*' — *A journal of ornithology for India and dependencies* between 1872 and 1888. Its eleven volumes are a veritable gold-mine for the ornithologist and an eloquent memorial to the zeal, industry and erudition of their editor who by constant goading, advice and encouragement so ably contrived to get the best out of his tentacular band of correspondents and collaborators. The most notable of these were Anderson, Ball, Barnes, Beavan, Biddulph, Blanford, Brooks, Davison, Godwin-Austen, Hutton, Legge, Mandelli, McMaster, Oates, Scully, Sharpe, Stoliczka, Tweeddale, Vidal, Wardlaw-Ramsay, and others.

For the serious worker in Indian ornithology, *Stray Feathers* is an absolutely indispensable source. During the period of its existence this journal was the principal repository of the most important papers on Indian birds. When it ceased publication, after December 1888, many of its former contributors, as well as other workers who had gained prominence meanwhile, diverted their writings to *The Ibis* — the journal of the British Ornithologists' Union, and to the *Journal of the Bombay Natural History Society*. The last, which made its initial appearance in January 1886, has maintained unbroken publication since then. It has become increasingly important as a medium for disseminating knowledge of Indian birds and is now in its 65th volume. The *Journal* has grown progressively in international reputation and scientific stature since the turn of the century, and it is true to say that no work on Indian ornithology can be complete, or is indeed possible, without constant delving into its contents. Many significant contributions on birds have appeared in the pages of the *Journal* during the last 60 years. Even up to as recently as 1925 almost all the writers have been British — chiefly Government officials from all branches of the services — Army, Police, Civil, Forest, and others — with a sprinkling of business and professional men. The more prominent of these have already been named in the introductory chapters

of the Fauna, 2nd edition. Many of them continued to make significant contributions in the years subsequent to the completion of that work in 1930. This chronicle takes up the thread chiefly from that period on.

Bird study in India had received its second great boost by the publication between 1889 and 1898 of the four bird volumes by Eugene W. Oates and W. T. Blanford in the Fauna of British India series. As in the case of its predecessor, Jerdon's *Birds of India*, it brought together and up to date all the advances in knowledge due to the extensive work in the field and in the museum during the intervening twenty-seven years, from scattered sources including the most important — Hume's *Stray Feathers*. It took count of the areas omitted from Jerdon's manual, together with Burma, thus covering the entire British Indian Empire as it then stood, with the addition — on biological considerations — also of Ceylon. The inclusion of the extra territory increased the number of species described by more than half, and with the replacement of Jerdon's archaic nomenclature and obsolete system of classification by the more rational and progressive one that had since emerged from the anatomical researches of men like Huxley, Garrod, and Forbes, the Fauna gave a new look to Indian ornithology. It represented a marked improvement over its predecessor in every sense but one. Owing to limitations of space it was unhappily deemed fit to curtail drastically the descriptions of habits, migration etc. or omit them altogether, thus reducing very considerably the appeal and usefulness of the publication for the non-technical bird lover. This was a distinctly retrograde step.

Nevertheless the renewed filip that the volumes gave to Indian bird study was clearly responsible for the eruption of the notable crop of outstanding field ornithologists that distinguished the next thirty-three years up to the publication of Vol. 1 of the 'New Fauna', including its author E. C. Stuart Baker himself.

A feature of the period between the two World Wars, and more particularly since the end of the Second, is the increasing popularity enjoyed by bird watching and field study as discrete from specimen collecting. This may be said to have given a new dimension to the study of Indian birds. The development and perfection of precision instruments such as field-glasses, cameras, and telephoto lenses, fast films, colour photography and sound recording have contributed not a little to this. They have helped to produce an ever-widening circle of competent bird watchers whose photographic records and penetrating observations of habits and nidification have added immensely to our knowledge, not only of the ecology but also of the systematics of Indian birds.

Thus, one of the more refreshing features of the 2nd edition of the Fauna by Stuart Baker (the 'New Fauna' for short) is the section on habits under each bird, in addition to fuller notes on nidification than in its predecessor. To Baker must also go the credit for introducing trinomials, officially as it were, into Indian ornithology although this system had been increasingly in vogue in Europe for almost two decades previously, and especially since the publication of Ernst Hartert's great work *Die Vögel der paläarktischen Fauna* began in 1910.

With the innovation of trinomials in Indian ornithology, a certain amount of disagreement and conflict of opinion was inevitable among ornithologists who had concerned themselves specially with its related problems; and indeed controversies have not ceased forty years after its introduction. No sooner was the first volume of the New Fauna published (in 1922) than the criticisms and arguments began. Whistler and Ticehurst in particular joined issue with Baker on a number of his statements and dicta. Many of their objections derived from the fact that large tracts of the country had as yet not been sufficiently explored ornithologically and there remained considerable gaps in our knowledge of the geographical distribution of many 'resident' birds — knowledge which is crucial for a proper application of the subspecies concept.

Nevertheless it must be conceded that by and large the New Fauna represented a distinct advance on its predecessors, though here and there it might suffer from obvious defects and inaccuracies of fact and geography. Among the many workers on Indian birds prominent during the period between the two World Wars (c. 1917 to 1943), and the years that followed, perhaps the most significant were E. C. Stuart Baker, Hugh Whistler, Dr Claud B. Ticehurst, Sir Norman Kinnear, Frank Ludlow, B. B. Osmaston, A. E. Jones, Charles M. Inglis, Sálím Ali, W. W. A. Phillips, R. S. P. Bates, and E. H. N. Lowther.

Besides these there are numerous others who made important contributions to Indian ornithology and whose names constantly recur in the *Journal of the Bombay Natural History Society* and other scientific periodicals. Foremost among them all must certainly rank Hugh Whistler, who had not only collected birds diligently during his seventeen years in the Imperial Police Service in the Punjab, but also amassed copious notes on every aspect of Indian bird life. These data were intended for a handbook of Indian birds which he and his close friend and collaborator Dr Ticehurst had commenced to write jointly. It was indeed a tragic blow for Indian ornithology when both these men — two of the most meticulous workers we have ever had — died before the manuscript had made much progress, Ticehurst in 1941 and Whistler in 1943.* A portion of Whistler's manuscript notes and files, relating particularly to the Passeres, passed into the hands of one of us (SA) through the friendly offices of the Honourable Mrs Joan

¹ Vols. 1 (1889) and 2 (1890) by Eugene W. Oates under the editorship of W. T. Blanford, Vols. 3 (1895) and 4 (1896) by Blanford himself.

* Obituaries CBT, *Ibis* 1941: 321; HW, *Ibis* 1943: 524.

Whistler. This material will be of the greatest usefulness when that section of the present *Handbook* is reached. It has proved invaluable to the second author (SDR) in the preparation of his *Synopsis* which forms the groundwork of this book.

It was in order to rectify the deficiencies in our knowledge, chiefly of geographical distribution within the country pin-pointed by the publication of the new Fauna, that, at the instigation of Whistler, the Bombay Natural History Society with the financial sponsorship of Mr Arthur Vernay — an American business magnate and patron of Natural History — undertook, in 1929, a well-planned survey of the birds of the Eastern Ghats, at that time one of the least known areas in the Peninsula. The extensive survey collections, most excellently prepared by V. S. Lapersonne, the Society's field collector, were studied in England by Messrs Whistler and Kinnear with the collaboration of Dr Ticehurst. The scientific report of the Eastern Ghats Survey, in sixteen parts spread over several volumes of the *Journal* of the Bombay Natural History Society, graphically highlighted the gaps in our knowledge and supplied the incentive for a series of similar investigations in other poorly known parts of the country. These later surveys covered Jodhpur, Hyderabad, Travancore, Cochin, Gwalior, Indore, Bhopal, Mysore, Bahawalpur, Gujarat, Kutch, Bastar and Kankar (eastern Madhya Pradesh), and Orissa, in that order. All the field work, except in Jodhpur, was carried out by Sálím Ali chiefly with funds donated by the rulers of the States concerned and others, and supplemented from his own resources — and in close liaison with Hugh Whistler up to the time of the latter's death. The then newly introduced air mail service between India and the U.K. enabled running contact to be maintained from the field, and the rapid exchanges proved invaluable in the elucidation of many problems that required prompt collection of material and ancillary data. This close coordination between field and museum greatly enhanced the scientific worth of the surveys. Besides, Sálím Ali being more particularly interested in the living bird, devoted special attention to ecology and habits, and was able to accumulate a considerable amount of new data on these aspects in the course of his field work, adding substantially to what was recorded before. The late Dato Loke Wan Tho of Malaya, an exceptionally keen ornithologist and generous patron of ornithology, financed a bird survey of Sikkim during three separate field seasons between 1955 and 1957. The field work was again carried out by Sálím Ali, once with the active participation of Loke himself, and resulted in the publication by the former of the book *Birds of Sikkim* (1962). A few years earlier, in 1948, Loke had also made it financially possible for Sálím Ali to undertake a joint ornithological expedition to the Mishmi Hills of north-east Assam (now Luhit Frontier Division, NEFA) with S. Dillon Ripley, the results of which were reported in the *JBNHS* (1948, 48: 1-37). Incidentally it was on the Mishmi expedition that the idea of the present *Handbook* was first mooted between the authors. All these newly accumulated data soon made it plain that Stuart Baker's Fauna left much room for correction, addition and improvement in many respects, and emphasized the need for an early revision. Added to all the wealth of material procured by these regional bird surveys, mention must be made of the very fruitful collecting expeditions of Ripley himself in Nepal, and the Naga Hills of Assam (now Nagaland), during the post-war years. Further, during the war period Ripley had found opportunities for selective collecting in Ceylon while on duty with the American armed forces in that island, thus supplementing the excellent work zealously carried on there by W. W. A. Phillips over a long series of years. A major contribution to bird collections from India was made by another American, Walter Koelz, during an extended sojourn of some fourteen years (c. 1939-53) in the subcontinent and neighbouring countries. While collecting specimens of grains on behalf of the U.S. Department of Agriculture, he managed also to amass a stupendous collection of some 40,000 bird skins — partly in Iran and Afghanistan, but mainly in Pakistan, Nepal, Assam, and various other insufficiently worked areas of the Indian Subregion. Koelz was an indefatigable field collector. By dint of unsparing effort and fanatical industry he managed to procure large series of many birds poorly represented even in the foremost world collections, including some of the rarest forms. Unfortunately he does not seem to have kept field notes on habits, ecology, etc. He certainly never published any, nor have we been privileged to see them in MS. — thus depriving Indian ornithology of what could undoubtedly have been his greatest contribution to it. Unfortunately also the vast Koelz collection was broken up and dispersed among a number of museums in the U.S.A., a circumstance which has deprived students of the convenience of having all this material available for study in one central institution.

The standard manuals of ornithology mentioned earlier were excellent in their own way, but they presumed a basic familiarity with birds and were difficult to use by the uninitiated layman. Besides, it was widely realized that now — over thirty years since their publication — Stuart Baker's Fauna volumes were outmoded in many respects and stood in urgent need of revision. What was obviously needed at this stage was not merely the Fauna in its old format brought up to date, but a work which combined strict scientific accuracy with non-technical language and popular appeal — concise accounts of life history and habits and, above all, good coloured illustrations supplemented by simple clues to field identification. Since the change in the political set-up in India (in 1947) and the departure of British officials, among whom were to be found some of the keenest and most knowledgeable bird-watchers, field activity suffered a noticeable setback. A serious impediment to the development of scientific ornithology in India, where bird-watching as a hobby has never been very popular even among the more affluent and educated classes, was certainly the lack of illustrated literature

on the birds of the country. The stimulus given to purposeful bird-watching as a first step to deeper study by the publication in recent years of illustrated books like Whistler's *Popular Handbook of Indian Birds* and Sálím Ali's *Book of Indian Birds* clearly pointed to the need of a more comprehensive work on the same lines.

Our inspiration was derived from the admirable *Handbook of British Birds* by Witherby and others, which combines all the desired features in a manner that has seldom been excelled. But though our book is so entitled as a tribute to its British original, we are only too conscious of the loss it suffers by comparison since our information on most topics of the life history and ecology of Indian birds — even of distribution — is as yet quite elementary compared with that in the British handbook. Nevertheless it seems desirable to record whatever is known if only to show the extent of its incompleteness, so that the deficiencies may in time be rectified.

The first essential, before a beginning with such a book could be made, was an up-to-date checklist as basis for the descriptive volumes to follow, a need admirably fulfilled by Ripley's *A Synopsis of the Birds of India and Pakistan* published by the Bombay Natural History Society in 1961. It lists some 1,200 species in nearly 2,100 forms within the above limits, with which is also included Ceylon from biological considerations.

In the past the greater part of the ornithological work in India consisted of specimen or egg collecting, sometimes rather haphazardly. Within recent years these activities have been increasingly replaced by bird-watching at various levels of scientific competence. Most of the observers have been government officials or tea, coffee or rubber planters, fortuitously stationed for varying periods in different parts of the country. Few of them possessed any formal biological background, and though a number contributed substantially to our knowledge such were, for the size of the country, too few and far between. For us — the present authors — difficulty lay in assessing the authenticity of the distributional and other records by observers of unproved competence in field identification especially where they rested solely on sight, or related to topics of a controversial nature. There is no doubt that in the past many unwarranted records and observations have been uncritically accepted in this way. The need for caution has doubled in recent years because of the expanding circle of casual bird-watchers of vastly divergent expertness, and the decline in the vogue of shooting specimens to support identification. Thus it is possible that in exercising our judgement in this regard we may sometimes have erred on the side of overcaution.

Even after suitable compression of the available data, meagre as they are on the whole, a coverage of this magnitude is estimated to require 10 volumes of approximately 400 pages each, and many years to complete. Such a work must inevitably be a compilation to a large extent, collating our own notes with the sifted publications and MSS. of a large number of field observers and museum workers. In view of the coloured illustrations, 'feather by feather' descriptions of plumages, as in the Fauna, were considered redundant. The pictures, supplemented by the Keys and the paragraphs on Field Characters and Museum Diagnosis, should suffice to identify a bird in the field as well as in the hand.

The New Fauna has already listed active workers in Indian ornithology up to the time of its completion in 1930; that account now merely needs carrying forward to the publication of the present volume. In addition to the persons named below there are others who have made minor but significant contributions and who will appear in the text. During the progress of these volumes it is hoped that further names will also need to be added. The major continuing contributors as well as new ones since the completion of the second edition of the Fauna have been Humayun Abdulali, Sálím Ali, E. C. Stuart Baker, R. S. P. Bates, F. N. Betts, Biswamoy Biswas, F. S. Briggs, P. T. L. Dodsworth, E. A. D'Abreu, R. S. Dharmakumarsinhji, C. H. Donald, K. R. Eates, R. L. Fleming (Sr.), J. C. Higgins, Charles M. Inglis, A. E. Jones, N. B. Kinnear, Walter Koelz, Satya Churn Law, Loke Wan Tho, E. H. N. Lowther, Frank Ludlow, R. Meinertzhagen, B. B. Osmaston, W. W. A. Phillips, Mrs Desirée Proud, S. Dillon Ripley, Claud B. Ticehurst, H. W. Waite and Hugh Whistler. Foremost among those active in Burma up to the time of its fall to the Japanese invaders in the war (1941) were P. F. Garthwaite, T. R. Livesey, H. C. Smith, B. E. Smythies, and J. K. Stanford. Since the end of hostilities little work seems to have been done in that country, or since the partition (1947) in Pakistan.

ACKNOWLEDGEMENTS

To all the above and the many more on whom we have drawn freely we feel greatly beholden. Particular mention must be made of Dr Biswamoy Biswas who has been associated with the preparation of the MS. in various ways and whose critical comments and suggestions on various matters have always been most valuable.

We have to express our indebtedness to the National Institute of Sciences of India and its then President, the late Dr Sunder Lal Hora, for the award of a Research Fellowship to one of us (SA) for two years (1952-3) to forward the extraction of relevant material from the literature. The Bombay Natural History Society, under whose sponsorship this book is being produced, has provided facilities at every stage, especially the use of its excellent collection of Indian bird skins and ornithological library. We wish to express our appreciation of the unflinching cooperation we have received from its staff at all times.

Without the substantial grant-in-aid from the Government of India, Ministry of Scientific Research, for the preparation of the four-colour blocks, and for secretarial assistance to one of us (SA) in preparing the MS., it is doubtful if such an ambitious project could have been entertained or carried through. Likewise would it have been im-

possible to find the foreign exchange needed for payment of the artists' fees, since most of these are of necessity European, but for the generous underwriting by friends in the United States of America of the substantial amount needed for the purpose.

The dichotomous keys to genera, species, and subspecies have been constructed by one of us (SDR) with the most valuable aid of his research assistant Mr Gorman M. Bond, Museum Specialist of the Smithsonian Institution, Washington, to whom warm thanks are due. We are indebted to Mr Bertram E. Smythies and Messrs Oliver & Boyd Ltd, the author and publishers respectively of *The Birds of Burma*, for their generous permission to use a number of the coloured plates painted for that book by Commander A. M. Hughes. A few of the figures on these depict a different subspecies to that found within Indian limits, but the differences are mostly minor enough to be reconciled by a short verbal correction. We have been similarly privileged to use the coloured plates from *The Birds of Travancore and Cochin* (now *Birds of Kerala*) and *The Birds of Sikkim* by courtesy of the sponsors of those books, the University of Kerala and the Government of Sikkim respectively, and of the publishers, the Oxford University Press.¹

Most of the line drawings in the text are the same as appeared in the first edition of the *Fauna of British India: Birds*, and again in the second edition of that work by E. C. Stuart Baker (Taylor & Francis, for the Government of India). In addition, Messrs H. F. & G. Witherby

¹ The plates used in the second edition of the *Compact Handbook* have been drawn by John Henry Dick. See Publisher's Note to the Second Edition, p.xi

have generously permitted us to reproduce some of the very useful text figures from their *Handbook of British Birds*. All this considerate cooperation has not only helped to cut down costs, especially of painting the extra coloured plates and block-making, but also resulted in a considerable saving of time.

The distribution maps have been constructed or adapted from a number of different sources the chief of which are *Atlas of European Birds* by K. H. Voous (Nelson), *Waterfowl of the World* by Jean Delacour (Country Life), and *Birds of the Soviet Union* by G. P. Dementiev, H. Gladkov *et al.*

Lastly, our particular and grateful appreciation is due to the staff of the Oxford University Press. But for their running bombardment of queries and suggestions many more inaccuracies, inconsistencies and ambiguities would have persisted in this volume than the reader is perhaps still likely to discover.

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GENERAL

ORNITHOLOGISTS conditioned to the sequence of Orders and Families in Stuart Baker's *Fauna* volumes may experience some initial inconvenience and confusion by the arrangement in the present handbook. In the main this represents the scheme proposed by Wetmore (*Proc. U.S. Nat. Museum*, 76, Art. 24, 1930, pp. 1-8) now used more or less internationally with minor shufflings chiefly in the Passeriform ('Song bird') families. This system was formally introduced into Indian ornithology by the publication in 1961 of *A Synopsis of the Birds of India and Pakistan* by S. Dillon Ripley, our latest authentic checklist, which virtually forms the index volume and basis of the present work. Superficially this system is little more than the old one in reverse. Whereas the *Fauna* began with the Order Passeriformes as containing the putatively highest developed forms and worked down to the lowest, namely to the Gaviiformes (Loons and Divers), we now begin at the bottom of the evolutionary tree and work up to the highest evolved forms.

The sequence of Orders and Families followed in the second editions of Vols. 1-4 and the first editions of Vols. 5-10 is as under. Some taxonomic changes made in the second editions of the *Handbook* volumes are in accordance with the second edition of the *Synopsis*.

Volume 1 (Nos. 1-224)

- Order GAVIIFORMES
 Family Gaviidae: Divers, Loons
 Order PODICIPITIFORMES
 Family Podicipedidae: Grebes
 Order PROCELLARIIFORMES
 Family Procellariidae: Petrels, Shearwaters
 Hydrobatidae: Storm Petrels
 Order PELECANIFORMES
 Family Phaethontidae: Tropic-birds
 Pelecanidae: Pelicans
 Sulidae: Boobies
 Phalacrocoracidae: Cormorants and Darter
 Fregatidae: Frigate Birds
 Order CICONIIFORMES
 Family Ardeidae: Herons, Egrets, Bitterns
 Ciconiidae: Storks
 Threskiornithidae: Ibises, Spoonbill
 Phoenicopteridae: Flamingos
 Order ANSERIFORMES
 Family Anatidae: Ducks, Geese, Swans
 Order FALCONIFORMES
 Family Accipitridae: Hawks, Vultures, etc.
 Falconidae: Falcons

Volume 2 (Nos. 225-434)

- Order GALLIFORMES
 Family Megapodiidae: Megapodes
 Phasianidae: Pheasants, Partridges, Quails
 Order GRUIFORMES
 Family Turnicidae: Bustard-Quails
 Gruidae: Cranes
 Rallidae: Rails, Coots
 Heliornithidae: Finfoots
 Otidae: Bustards
 Order CHARADRIIFORMES
 Family Jacanidae: Jacanas
 Haematopodidae: Oystercatchers
 Charadriidae:
 Subfamily Charadriinae: Plovers
 Scolopacinae: Curlews, Sandpipers, Snipe, Woodcock
 Phalaropinae: Phalaropes
 Family Rostratulidae: Painted Snipe
 Recurvirostridae: Stilts, Avocets, Ibisbills
 Dromadidae: Crab Plovers

Volume 3 (Nos. 435-665)

- Family Burhinidae: Stone Curlews, Thick-knees
 Glareolidae: Coursers, Pratincoles
 Stercorariidae: Skuas, Jaegers
 Laridae: Gulls, Terns
 Order COLUMBIFORMES
 Family Pteroclididae: Sandgrouse
 Columbidae: Pigeons, Doves
 Order PSITTACIFORMES
 Family Psittacidae: Parrots
 Order CUCULIFORMES
 Family Cuculidae: Cuckoos
 Order STRIGIFORMES
 Family Strigidae:
 Subfamily Tytoninae: Barn Owls
 Striginae: Owls

Volume 4 (Nos. 666-871)

- Order CAPRIMULGIFORMES
 Family Podargidae: Frogmouths
 Caprimulgidae: Nightjars or Goatsuckers
 Order APODIFORMES
 Family Apodidae:
 Subfamily Apodinae: Swifts
 Hemiprocninae: Crested Swifts
 Order TROGONIFORMES
 Family Trogonidae: Trogons
 Order CORACIIFORMES
 Family Alcedinidae: Kingfishers
 Meropidae: Bee-eaters
 Coraciidae: Rollers or Blue Jays
 Upupidae: Hoopoes
 Bucerotidae: Hornbills
 Order PICIFORMES
 Family Capitonidae: Barbets
 Indicatoridae: Honeyguides
 Picidae:
 Subfamily Jynginae: Wrynecks
 Picumninae: Piculets
 Picinae: Woodpeckers
 Order PASSERIFORMES
 Family Eurylaimidae: Broadbills
 Pittidae: Pittas

Volume 5 (Nos. 872-1063)

- Family Alaudidae: Larks
 Hirundinidae: Swallows
 Laniidae: Shrikes or 'Butcher Birds'
 Oriolidae: Orioles
 Dicruridae: Drongos
 Artamidae: Swallow-Shrikes or Wood Swallows
 Sturnidae: Starlings, Mynas
 Corvidae: Crows, Magpies, Jays, etc.
 Bombycillidae:
 Subfamily Bombycillinae: Waxwings
 Hypocoliinae: Hypocolius

Volume 6 (Nos. 1064-1271)

- Family Campephagidae: Cuckoo-Shrikes, Minivets
 Irenidae: Fairy Bluebirds, Ioras, Leaf Birds
 Pycnonotidae: Bulbuls
 Muscicapidae:
 Subfamily Timaliinae: Babbler (part)

Volume 7 (Nos. 1272-1470)

- Family Muscicapidae (cont.):
 - Subfamily Timaliinae: Babbblers (cont.)
 - Muscicapinae: Flycatchers
 - Pachycephalinae: Thickheads or Shrikebilled Flycatchers

Volume 8 (Nos. 1471-1680)

- Family Muscicapidae (cont.):
 - Subfamily Sylviinae: Warblers
 - Turdinae: Thrushes, Robins, Chats

Volume 9 (Nos. 1681-1891)

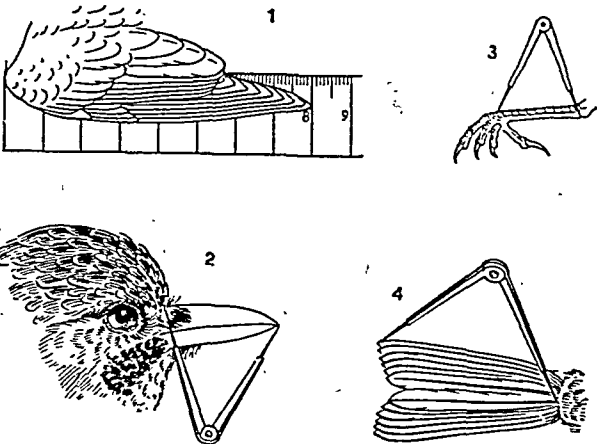
- Subfamily Turdinae: Thrushes, Robins, Chats (cont.)
- Family Troglodytidae: Wrens
- Family Cinclidae: Dippers
 - Prunellidae: Accentors or 'Hedge Sparrows'
 - Paridae:
- Subfamily Parinae: True Tits
 - Remizinae: Penduline Titmice
 - Aegithalinae: Longtailed Titmice
- Family Sittidae:
 - Subfamily Sittinae: Nuthatches
 - Tichodromadinae: Wall Creepers
 - Salpornitinae: Spotted Creepers
- Family Certhiidae: Tree Creepers
 - Motacillidae: Pipits, Wagtails

Volume 10 (Nos. 1892-2060)

- Family Dicaeidae: Flowerpeckers
- Nectariniidae: Sunbirds, Spiderhunters
- Zosteropidae: White-eyes
- Ploceidae:
 - Subfamily Passerinae: House and Rock Sparrows
 - Ploceinae: Weaver Birds or Bayas
 - Estrildinae: Munias
- Family Fringillidae:
 - Subfamily Fringillinae: Chaffinches
 - Carduelinae: Goldfinches and allies
- Family Emberizidae: Buntings

Measurements. At the head of each description, before **FIELD CHARACTERS**, is given an indication of **SIZE**, first as compared with some well-known and familiar bird (the signs + and - denoting larger or smaller than, and ± more or less equal to), and then by length in centimetres and inches. This refers to the length from tip of bill to tip of tail of a freshly killed bird laid on its back, unstretched, or of a similarly made up museum skin. This measure is purely as a matter of convenience in field identification since it is easy enough for anyone to hold his two hands apart and visualize what 'about 15 cm. or 6 inches' means. It has no scientific value.

Under **MUSEUM DIAGNOSIS** the measurements given for wing, bill, tarsus, and tail are those taken by the standard methods as shown in the Explanatory Figures. It must be mentioned, however, that in all of Stuart Baker's measurements quoted from the Fauna, the bill has been measured from the *forehead feathers* to the tip (i.e. culmen), and not from the *skull* as is now the accepted practice. Wing measurement in particular can be more satisfactorily taken in the flesh — either on a freshly killed bird or a living one — while the joints are still flexible and easy to manipulate. There is some slight shrinkage on drying which can largely be compensated for by not pressing and straightening out the fresh wing on the rule too much (as when measuring a dry skin) but merely leaving it in a fully extended natural position. This precaution is necessary in order to make the wing comparable



STANDARD METHOD OF MEASURING BIRDS

- 1 **Wing** Pressed out on the rule until it is quite flat, giving the longest measurement obtainable. For very large birds (e.g. eagles and swans), a measuring tape is stretched from the carpal joint to the longest feather along the upper side of the wing. This is known as the chord measurement.
- 2 **Bill** From skull. One end of the dividers is slid along the culmen and pressed to the skull, which is usually concealed by feathers. This gives a more consistent measurement than from the end of feathering to the tip ('culmen' or 'bill from feathers').
- 3 **Tarsus** One end of the dividers is pressed to the tibiotarsal or 'knee' joint, the other passed to the joint at the base of the middle toe.
- 4 **Tail** One end of the dividers is slid between the central tail feathers and pressed to the body while the other is passed to the tip of the longest feather.

with dry museum skins later.

Weight. Field collectors have paid little attention to this detail in the past except perhaps in the case of some game birds. Apart from being a record of sexual differences in many species, fluctuations in weight due to seasonal physiological changes and deposition of body fat have an important bearing for the study of bird migration; therefore, wherever possible weights should be accurately recorded. With small birds like most passerines this is easily done by slipping the bird, dead or alive, into a plastic bag and hooking it on to a suitable spring balance, the tare having been previously ascertained. With large live birds some device to prevent them from fluttering during weighing is necessary.

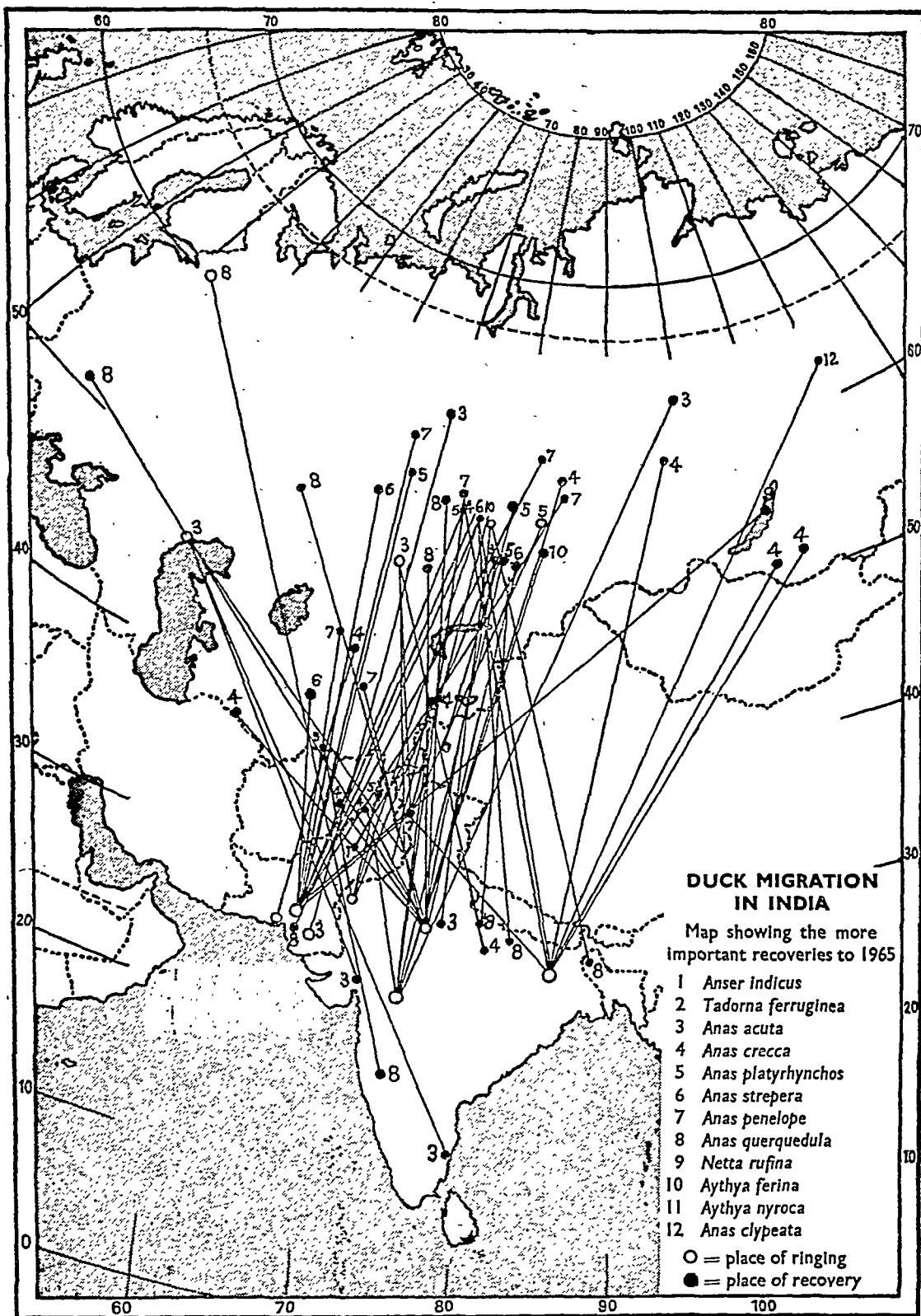
NOTE. Much of our information relating to nesting has been culled from Stuart Baker, either from FBI or from his *Nidification of Birds of the Indian Empire*. Though these are authentic sources by and large, it needs to be emphasized that some of this author's data concerning clutch sizes, and even his identifications of certain eggs, are suspect or demonstrably erroneous. Baker, although an experienced oologist himself, often collected his eggs and information vicariously with the help of local shikaris and hired jungle people, or purchased them in lots from minor professional collectors whose testimony was not always dependable. Therefore any of his published data that differ widely from those of other workers or from personal experience must be treated with caution since they are more than likely to have been vitiated in this manner. Every effort has here been made to weed out all palpably doubtful records.

MIGRATION

THE 2100 odd species and subspecies of birds that comprise the avifauna of the Indian subcontinent and Ceylon include land birds as well as pelagic forms such as petrels, shearwaters, frigate birds, boobies, and skuas normally found only out at sea but which get blown in sporadically on our seaboard during heavy monsoon gales. Roughly about 350 forms are extralimital seasonal immigrants, meaning that they breed outside our territory, mostly in the Palaearctic Region beyond the Himalayas — in central and northern Asia, and eastern and northern Europe. The most abundant and regular winter migrants are the ducks and geese (Anatidae), Wading or Shore birds (Charadriidae) especially of the subfamilies Charadriinae and Scolopacinae, Cranes (Gruidae), and the passerine families Hirundinidae (Swallows), Muscicapidae especially Muscicapinae (Flycatchers), Sylviinae (Warblers), Turdinae (Thrushes and Chats), Motacillidae (Pipits and Wagtails), Fringillidae (Finches), and Emberizidae (Buntings). But many other families are represented among the migrants as well. Moreover, every gradation of migration is met with, from local movements of no more than a few kilometres, or a few hundred metres altitudinally in the Himalayas or peninsular mountains, to enormous trans-Himalayan journeys involving several thousand kilometres each way.

Besides the large number of extralimital migrants, there are numerous others whose palaearctic breeding range just encroaches our boundaries from the Afghanistan-West Pakistan border, and also into Gilgit, Ladakh, Garhwal, Nepal, Sikkim, Bhutan, and NE. Assam. Many of these species spread over northern India in winter, and many

over the rest of the Peninsula as well. In all respects they behave like the true migrants from beyond, arriving with them and spreading out over the country in autumn, chiefly between September and November, and leaving again for their northern breeding grounds before our hot weather commences in March/April. Considering the hundreds of species and the millions of individuals involved in these biannual journeys, year after year, it is amazing how little precise information we possess concerning the provenance, routes and goals, and other factual details of the migrants. Practically all that is known is based on somewhat scrappy and haphazard observations, chiefly of British army and civil service personnel who happened to be stationed along the strategic Indo-Afghan border within the last 100 years. Some of these men were excellent field naturalists and have contributed vastly to our basic knowledge of Indian ornithology. The names of Scully, Biddulph, the two Marshall brothers, Magrath, Whitehead and Donald stand out from amongst the many others in this connexion. Their observational data, though primarily relating to sporting birds such as ducks, geese, and cranes, form the hard core of practically all that is known of trans-Himalayan bird migration. They outlined the broad pattern of the seasonal movements and indicated that the main migration route between Siberia and central Asia on the one hand and the Indian peninsula on the other was the Indus Valley in the northwest. Similar though even more fragmentary bits of information from the northeastern outposts of India suggest that from NE. Asia the Tsangpo or Brahmaputra river and its affluents constitute the principal flyway. The two migrational streams enter from either



end of the Himalayan mountain chain in a pincer movement and converge on the tip of the Peninsula, weakening as they advance southward and trickle over into Ceylon which virtually forms the terminus. However, increasing evidence is being procured by mountaineers in recent years that migrants also fly directly across the Himalayas, even over some of the highest sections of the mountain barrier, thereby in effect shortening their journeys very considerably. Not only have many migrating geese, waders and passerine birds been visually recorded during daytime¹ and heard passing over the high altitude camps at night, but climbers have also come across remains of migratory birds such as ducks, cranes, waders, and eagles² strewn on high glaciers in the Himalayas and Karakoram which had evidently perished in storms and blizzards. At Dehra Dun geese have been observed through a telescope flying northward in spring at a height of c. 29,500 feet (8830 m.) across the face of the moon. Indeed there is now sufficient evidence of this kind to suggest that a far greater amount of passage must take place directly over the High Himalayas than had hitherto been credited. Recent migration studies by radar in Europe and America have shown that, contrary to older beliefs, even small passerine birds may travel at unsuspected heights of 6000 metres or more, which lends colour to this probability. Nevertheless it is true that a large proportion of the migratory birds, especially ducks and geese, that enter the subcontinent from the northwest in autumn — when the journey is more leisurely performed — sweep down the valley of the Indus river. One arm of the migrational tide branches off early in a SE. direction and debouches into the north Indian plains through Hazara, Kashmir, and the Punjab. The Kagan and Kurram Valleys on the northwest frontier of Pakistan have been specifically named in this connexion (Whitehead, Magrath). The other arm continues southward down the Indus and, avoiding the inhospitable expanse of the Thar or Indian Desert to the east, veers further south in a southeasterly direction to cross the Great Rann of Kutch, northern Gujarat and Saurashtra and enter the Indian peninsula. This stream is augmented in its course by migrants travelling SSE. from W. Asia — from the Caspian-Aral region through Iran, Afghanistan, Baluchistan, and Lower Sind. This, in broad outline, is the general picture that emerges from a consideration of the data available. But it is largely conjectural and hypothetical and needs verifying by more intensive studies. There is reason to believe that for many species the pattern of the spring migration, which is usually more hurried and direct, with fewer stopovers and also at higher altitudes, is very different. Kutch also lies on the extreme eastern fringe of a broad stream of through migration that sweeps down from central and northern Asia in a southwesterly direction in autumn. This current passes over Afghanistan and the former NW. Frontier Province, down through Baluchistan and Sind, then across the Arabian Sea and the tip of southern Arabia into Somalia, Abyssinia, and further south in the African continent. Such species as the Kashmir Roller (*Coracias garrulus semenowi*), European Nightjar (*Caprimulgus europaeus univini*), European and Bluechecked Bee-eaters (*Merops apiaster* and *M. s. persicus*), Redbacked Shrike (*Lanius collurio*), Rock Thrush (*Monticola saxatilis*), Greybacked Chat (*Erythropygia galactotes familiaris*), Indian Whitethroat (*Sylvia communis ictorophis*), Spotted Flycatcher (*Muscicapa striata neumanni*), and others, travel regularly by this route. From the absence of Indian records on spring passage it is evident that most of them, at any rate, take a different route for the return journey north.

Far less is known about bird migration across our northeastern frontiers. This is largely due to the uninhabited, rugged and mostly inaccessible nature of the terrain in the eastern Himalayas, and to the fact of this frontier having been considered of too little strategic importance in the past to necessitate the stationing of British military personnel such as have provided most of our data for the northwest. The recent Chinese incursions in that quarter have dictated greater vigilance and logistic developments, and with the opening up of the North-east Frontier Agency tracts (NEFA) to 'civilizing' influences it is to be hoped that our knowledge of bird migration in that area will profit.

In so far as Ceylon is concerned there is some evidence for the presumption that not only do both the western and eastern arms of the palaearctic migration into the Indian peninsula cross over into the island, but also of a third route that brings NE. Asiatic migrants

through Indochina and Thailand via the Andamans. So far, however, direct proof of this has been provided by ring recoveries (Phillips 1956).

Our knowledge of Indian bird migration has so far consisted of fragmentary records, often of a subjective and conjectural nature. The first attempt to rectify this deficiency was a modest scheme of bird-ringing initiated in 1926 by the Bombay Natural History Society with the active cooperation of the then Maharaja of Dhar (Sir U. Puar) and the rulers of a few other Indian States, as well as some larger zamindars of Sind. Considering the meagreness and nature of that experiment, which virtually petered out by 1934, lack of funds, the results proved unexpectedly gratifying. Those ring recoveries constituted our first positive confirmation that our migratory ducks are in fact derived from Siberia and from and northeastern Asia, often over distances of 3000 to 5000 km. more. In addition to Indian-ringed birds recovered in the U.S.S. some highly significant recoveries of European-ringed birds in India were also obtained during the same period: a Green Sandpiper (*Tringa ochropus*) ringed near Moscow, in Kerala; a White Stork (*Ciconia ciconia*) ringed in western Germany, in Rajasthan; and a Ring-billed Gull (*Larus argentatus*) ringed in Hungary, in the Punjab.

It was not till the year 1960 that a more comprehensive project for bird-ringing in India became possible through the cooperation of various scientific organizations interested in the problem of possible dissemination of arthropod-borne viruses by migrating birds. During the seven years of operation of this scheme nearly a hundred thousand migratory birds have been ringed, chiefly waders (Motacillidae) and of several other passerine families, in addition to ducks (Anatidae) and waders (Charadriidae). So far all the work has been done departmentally by the Bombay Natural History Society in a few selected localities, but it is proposed to expand the programme with the cooperation of individual ornithologists and naturalists' associations into a coordinated network of ringing field stations giving the widest possible coverage over the subcontinent. The intensive ringing of migratory birds, combined with visual records and other data regularly maintained by competent observers and over prolonged periods of time, and supplemented by modern migration study techniques and mechanical devices such as radar, can alone provide an unequivocal picture of the situation in our area. Of all these, perhaps large-scale bird-ringing is the most immediately important.

The aluminium rings used by the Society are of several appropriate sizes. They bear the inscription INFORM BOMBAY NAT. HIST. SOCIETY together with a serial number prefixed by a letter of the alphabet denoting size. In order to coordinate all ringing activities in the subcontinent and minimize dissipation of effort and data, it is desirable that only the Bombay Natural History Society's rings should be used, as is being done in Ceylon. All recoveries, whether of these rings or foreign ones in India, should be reported (preferably accompanied by the actual ring) to the Society as the central organization in this part of the world for ringing and maintaining records and furnishing up-to-date information.

Very little has been published on Indian bird migration, and that largely as haphazard parochial arrival and departure dates of random species in random parts of the country. Most of these records are scanty and irregular. They are, moreover, buried away among regional bird papers published from time to time chiefly in the *Journal of the Bombay Natural History Society* or *The Ibis*, and difficult to unearth and collate.

The map indicates the pattern of Anatid migration as revealed by the recoveries of ringed ducks in and from the subcontinent to date. This, in general, is the pattern gradually developing in the case of other palaearctic migrants as well, but it may be a long time before we have sufficient authentic data to deduce satisfactory specific conclusions. Details of a few significant recoveries will be found under the species concerned.

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ZOOGEOGRAPHY OF THE INDIAN SUBREGION

The 'Oriental Region' (or Indian Region as he called it) was first proposed as one of the six zoogeographic regions of the world by Philip Lutley Sclater in 1858. His subdivisions were based on the study of birds for he was an ornithologist. In spite of the century of discussion and research that has ensued, his arrangement is still followed today. A more specific discussion of the zoogeography of India followed in the paper of Blanford (1901).

Broadly speaking the Oriental Region encompasses most of what is today known politically as India, excluding the higher reaches of the Himalayan mountains although the Oriental fauna and flora extend up to 11,000 feet in some cases (Ripley, 1961). Nepal, Ceylon and adjacent islands, East Pakistan, and large areas of southeast Asia are included in the Oriental Region.¹ West Pakistan is a much drier area

and belongs to a transition zone of southern Eurasia, partly Palaearctic Region so-called, with drier, more temperate climate partly trending towards the hot dry Somali arid zone of Chapman (1932), as described for Arabia (Ripley, 1954).

In his excellent general book on zoogeography, Darlington (1954) has pointed out that the interpretation and study of the pattern of distribution of animals which makes the subject of zoogeography consists of a number of subpatterns. The first and broadest of these is limitation, the final limits of a species or a larger grouping — a family or class of animal. Within geographical limits certain classes of animals exhibit roughly parallel distributions. The assembling of animals according to the limits then to which cold-adapted or warm-adapted animals proceed, tends to bring into rough focus the concept of zoogeographical regions of the world. Thus the Oriental Region besides

¹ For a fuller account see Salim Ali 1964, Article 'Oriental Region' in Thomson, A. L. (ed.), *New Dict. Birds* (London & New York).

a geographic part of the land and fresh waters of the world, has a certain limit imposed on it by climate and temperature within which groupings of animals find their preferred home.

A second subpattern is *zonation*, implying climate, and it is fundamental to the land divisions of the Oriental Region that it falls primarily within the tropical zone with fingers extending up into the mountains. Mountains of course in tropical latitudes serve as islands. By proceeding upwards and gaining altitude the tropical zone is lost gradually and at a steady rate. Gradually the subtropical, then the temperate zones are encountered, and finally at the greatest heights, the alpine zone may be reproduced as it were, duplicating conditions found in the tundras of the far north or the subantarctic.

A third pattern is that of *geographical radiation*, of spreading outwards of a particular group of animals from some geographic centre. A powerful world centre for animal evolution has apparently been the old-world tropics so-called, the heartland of which is the Oriental Region. Thus in the case of birds, the dominant families of birds in India belong to what is sometimes called the 'Indochinese' fauna, the birds adapted to life in warm, moist tropical southeast Asia, birds primarily of jungle or heavy forest. The geographical ramifications of southeast Asia, the tangled patterns of mountain chains, river drainage systems and a long period of stable climate seem to have been ideal for the evolution of a wide array of species of birds.

A fourth subpattern is that of *differentiation of faunas*. Here in the tropics of the Oriental Region this is well illustrated in birds where there is great diversity. Over sixty per cent of all the endemic species of Indian birds (endemic meaning restricted to a particular place) are of the 'Indochinese' subregion so-called, confined to the Oriental Region.

Darlington's fifth subpattern is that of *concentration in the largest, most favourable areas*. Here again this phenomenon is well-illustrated in the response of the bird fauna of India which, being predominantly tropical, occurs in greatest concentration in the largest areas of rainfall in eastern India, East Pakistan, along the mountain chains wherever the monsoon shadow occurs, especially in southwest India, in parts of Ceylon and in the Andaman and Nicobar Islands.

Of all the zoogeographical regions of the world, perhaps the Oriental is the least limited by barriers, but at the same time it is one of the principal if not the principal one from the point of view of evolution and of having acted as a centre of dispersal. Only northern South America has a richer fauna, only tropical America, and some of the most isolated areas like New Zealand, have a higher rate in proportion of species formation and evolutionary response.

A brief review of geological origins may be appropriate here. In Permian times, more than two hundred million years ago, the peninsula of India and an inter-connected Ceylon, all the area south of the Ganges river basin, was part of a continental region. This massif is composed of ancient rocks which to the geologist are representative of a continent. These rocks are known as the Gondwana formation and the outlines of this ancient continent can be traced up to northwestern India on the west, towards Calcutta on the east, with the edges of marine sediments marking old coastlines, and old river beds emptying into areas of former seas. The special fossil shells of this rock show that the continent was rimmed by far cooler seas than today. What the continent of Gondwanaland consisted of may never be known, but there are clues from the presence of similar rock formations. It may have spread south as far as the Seychelles Islands to Madagascar, east to western Australia, and perhaps even farther south and west. Whatever the connexions of this ancient past, we do know that the continents were presumably closer together many aeons ago. Recent studies of oceanographers and geophysicists show systems of ridges deep in the oceans which parallel the continental masses and may well indicate a gradual expansion of the earth's exterior surface by the process of internal connexion or the transfer of rock materials under great heat and pressure. The continents thus may be drifting apart under the slow convection of the earth's interior at a rate of perhaps one centimetre a year. But from the point of view of the distribution of warm-blooded vertebrates these ancient connexions have little if any influence.

Between Palaeozoic times (including the Permian) and Recent time comes the vast stretch of the Mesozoic or Age of Reptiles, occupying more than one hundred thirty million years. Birds probably had their origin during the middle of this Era but it is the Cenozoic or Recent Era of the last seventy million years which has seen the evolution of birds as we know them today, warm-blooded, with feathers, untoothed bills and the other physical features of their class.

Large parts of the northern Oriental Region were under water until well on in the Recent, the Cenozoic Era. The northern fringes of the Himalayas were under the water of the great central Eurasian sea, the Sea of Tethys which continued into Pliocene times, less than twenty million years ago, gradually drying and retreating to leave behind the Mediterranean, the Black, Caspian and Aral seas. The former boundaries of the Tethys Sea extend south to West Pakistan and central India and included the drainage basin lowlands of the Indus and Ganges river systems. As the seas gradually disappeared and land rose, violent stresses in the outer layers of the earth produced foldings of the mantle to raise up mountain chains from the Alps east to the Pamirs and the Himalayas and the north-south systems of ridges of eastern Assam, Burma and southwest China.

The most recent geological period has been the Pleistocene or Ice Age, marked by four successive cold periods with cycles of glaciation, lowered climate and increased rainfall alternating with milder, drier intervening times. During these alternations, the locking up of water in the form of ice lowered the sea surface to connect many continental shelf islands such as Ceylon with the mainland. Our present climate of relative warmth and unlocking of ice with rising seas has persisted for approximately ten thousand years.

In terms of climatic history, India and the related components of the Oriental Region have been stable for a very long time. The recent

ice ages of the Pleistocene may well have coincided with increased rainfall or pluvial periods in the tropics. Greater humidity and accompanying cloud cover help to create cooler average temperatures. All these conditions would suffice to lower temperatures sufficiently on mountain ranges or highlands so that temporary avenues or highways for mountain stepping-stone-hopping can be provided for species of animals and plants adapted to cooler climates. Much of the spread then of mountain-adapted or cool climate-adapted species into the highlands of the tropical zones and their later isolation and evolution in time into a radiating network of related species can be postulated as a result of one's knowledge of the changes in the climate cycles in the Pleistocene. Thus geographical isolation could combine with small climate changes to promote adaptive changes in species. Subsequent climatic events bringing together former isolated populations a second or third time would serve as the testing ground to determine if genetic isolation had been achieved. If so, new species had been born in the process.

One of the most noted current zoogeographers of India was the late Dr Sunder Lal Hora of the Zoological Survey who developed an important thesis of the distribution of torrential river fish. His Satpura Hypothesis (1950) postulates that by middle Eocene times at the beginning of the Recent or Cenozoic Era, the Himalayan mountains began to erupt, rising up and starting the cutting off of the Tethys Sea. This rising has been slow and continuous down through the Pleistocene. South of the Himalayas in the northern Indian Peninsula volcanic action occurred in late Cretaceous and early Eocene times covering some 20,000 square miles of land with a thick series of volcanic layers known as the Deccan traps. The result was that formerly continuously distributed tropical climate species of plants, insects and vertebrates became isolated in south India and Ceylon, separated from related populations in eastern India and east to China. These upheavals, traced by geologists, affected the drainage of rivers and the distribution of related fish. Originally, peninsular Indian streams up to the Miocene Epoch had drained north into the Sea of Tethys or its related river systems. The Deccan explosives and the Himalayan rise turned peninsular Indian drainage systems to the east. Contemporary rivers of southern China and southeast Asia changed their courses from east to south and west enabling their fish species to reach Burma. Dr Hora believed that these fish from southern China eventually populated the Himalayas from the east, spreading very gradually westwards. Fossils of the Pliocene Epoch just before the Pleistocene show that fish species were becoming distributed west along the feeders of the great river called by geologists the Indobrahm, which drained the enormous marshes left by the disappearance of the Sea of Tethys.

South of the Indobrahm at the edge of the Deccan traps arose an elevated series of hills running from east to west from the southern edge of the Himalayas in Bengal and Bihar nearly to the sea at Bombay. Hora explained the distribution of the hill-stream fish along these Satpura Hills from the eastern Himalayas to western peninsular India and eventually gradually south to Kerala, and, in a few cases of related forms of higher vertebrates and plants, aided by the climate cycles, south into Ceylon.

By Pliocene times the Ganges system of today began to form, draining the Himalayas and flowing south and east instead of west as had the Indobrahm. A recent feature of this system has been the capture of the Tsangpo, the eastward-flowing river of Tibet, through the penetration by climatic erosion of the upper Assam gorges by the Brahmaputra, a tributary of the Ganges system. Presumably the Brahmaputra did not manage to erode its way north into the Tibetan gorges to capture the Tsangpo, turning it away from the Yellow River and Yangtse systems very recently. But in a relative sense it must have been rather recently in the Pleistocene Epoch.

Even though much of this history is old, as far back as Pleistocene or late Miocene times, the resulting evolution, the resulting patterns of distribution of the avifauna of India as it is understood today, show distinct traces of these events. Salim Ali (1949) has pointed out the importance of the Satpura Hills as an ornithogeographical highway, as has Ripley (1949).

In regard to the great marshes of late Pliocene time, aftermath of the Sea of Tethys, it would appear that several bird species in their peculiar evolution and adaptation mark the long persistence of this phenomenon. They can be thought of as living relics of a past epoch. The preference of these species is for marshes of large extent along the remains of the system, the 'Indobrahm system'. That they remain today means only that the resulting river and marsh habitats have not been too unsuitable, although one of the species has unfortunately very likely become extinct in the last thirty years. This is the Pink-headed Duck, *Rhodonessa caryophyllacea*, a relict species of the present Ganges river drainage area (Ripley, 1953).

Two other species of local distribution in marshy areas in the central and northwestern parts of the subcontinent are: 1) the Bristled Grass Warbler, *Chalornis striatus*, and 2) the Sind Jungle Sparrow, *Passer pyrrhonotus*, the latter found as far west as eastern Iran.

Indian zoogeography shows evidence for two of the well-known zoogeographic theories. The first of these is Gloger's theory, which states that in areas of increased humidity warm-blooded animals tend to have darker surfaces than their immediate relatives living in drier areas. Many species of birds and mammals which live in the forests along the foot of the Himalayas, in the Western Ghats, or in Ceylon tend to substantiate Gloger's theory. Such small forest birds as partridges, babblers, flycatchers, warblers and sunbirds have paler populations—geographical subspecies so-called—living to the west in areas of decreased rainfall. Along the sweep of the Himalayas where the monsoon rains fall more heavily in the east, east of eastern Nepal, this phenomenon shows as a break, a discontinuity in the continuous gradual progression of colour tones of the bird populations. West of this break in the climate,

bird populations tend to be paler, to the east darker.

Another theory is that of Bergmann. Bergmann's hypothesis states that warm-blooded animals tend to become larger than their nearest relatives, in areas of increased cold climate. This genetic selection is in response to the physical fact that a larger animal has a diminished exposure of surface in relation to its internal volume than a smaller animal. Thus a mouse, for example, has a greatly increased surface area compared to its internal volume than has a larger rat. The theory implies, however, that only closely related geographical subspecies of the same species be compared. Certain bird species in the Himalayas appear to respond to this hypothesis as their high-altitude populations are larger than their plains relatives. Some warblers, magpies, bush chats, robins, mynas and a nuthatch seem to show size differences. Again throughout the Indian plains there seems to be a similar correlation with degrees of latitude. Many species of birds living year-round in the plains south of 20–22° N. latitude tend to average smaller in overall proportions than the populations of the same species living farther north. Examples of this may be found in the pigeons, parakeets, trogons, drongos, mynas and bulbuls among others.

Zoogeography is certainly not a static study, for one of its major principles is that no climatic zone, no set of physical circumstances connected with a geographic area, none of these, are ever stable or immutable. The dry zone areas from Egypt and the Red Sea countries north to the mountains of northern Iraq and Iran and east into West Pakistan have had much the same climate for the last eight thousand years, but overall desiccation has been progressive during this period, greatly speeded up perhaps in the last fifteen hundred years, and galloping indeed in the last three hundred years. This area has become the arena in which sheep and goats are triumphant. The pastoral flocks and herds have prevented the acacia and thorn scrub which once covered the land from perpetuating itself. With the scrub has gone the grass, and eventually the decline of streams, resulting in all the forced counter-measures at enormous expense and effort which from time to time have been invented to stop the relentless march of desert created by man's domestic helpmates.

Records of the seventeenth century in India tell of the Mughal court and the hunting exploits of emperors like Jehangir who personally killed 3203 large mammals between the age of twelve and forty-eight.¹ These records show a strikingly different environmental pattern from our own. Rhinoceros, found today in India in two limited areas in the northeast, in West Bengal and Assam, and in the central Nepal terai, then occurred north to Peshawar on the northwest frontier of West Pakistan. Northwestern India and much of West Pakistan are semi-deserts today. Heavy swampy undergrowth and savannah forest suitable for rhino must have been continuous in extent in the seventeenth century at least eight hundred miles to the northwest of where it occurs at present. And here climate itself has not been a factor. It is worth remembering in the context of zoogeography that human beings can affect the habitat rapidly and irreversibly through overgrazing and fires, and eventually animal distribution itself. The discipline of zoogeography thus has much to teach conservationists. Certain species of animals which are on the lists of threatened species made up by various international organizations today are in this perilous state directly as a result of long-range changes in the environment brought on by overgrazing or over-cultivation or similar land-use habits which have become an almost immemorial pattern in many cases.

In this context it is vital to recall that birds, just as other animals, are pinned to that environment for which genetic selection and adaptation have suited them just as surely as other animals. Though mobile and air-borne, birds select the habitat whether on migration or through cycles of wandering in search of food, or through protracted residence, which most nearly suit their special, their own adaptations for food-gathering, roosting and nesting, for protection from predators or for adaptations to climate. It is worth considering some of the fifteen or so forest types found in India and pointing out how closely birds are related to these environmental conditions. These types have been delineated by Champion (1936) and are described and illustrated in *Synopsis* (1961), pp. ix-xvi. Here certain species of birds may be seen, and only here.

A) Tidal Forest can be described as an evergreen forest of species of mangrove trees reaching c. 30 m. in height, found usually on soil covered at high tide, with an undergrowth of *Pandanus*, canes, some grasses, and many low-height mangrove species, especially nearer the sea. The mean annual temperature is 27° C. with an annual rainfall of about 270 cm. The soil is entirely river-borne silt, often with a coating of overlying sand. This type of forest is found along creeks on the west coast of India and West Pakistan (near the mouths of the Indus), and on the east coast at the mouths of the Mahanadi, Krishna and Godavari rivers, in the Sunderbans of India and East Pakistan, along brackish creeks in Ceylon, and in the offshore islands, particularly the Andamans and Nicobars.

Certain species of birds are primarily only to be found in this habitat:

1) Brownwinged Kingfisher, *Pelargopsis amauroptera* (No. 729 of *Synopsis*). East Pakistan and southeastern West Bengal.

2) Blackcapped Kingfisher, *Halcyon pileata* (739), more likely to occur in tidal forest than anywhere else, although wanders inland in the cold weather.

3) Whitecollared Kingfisher, *Halcyon chloris* subspecies (740–743), southern Maharashtra, Sunderbans, and offshore islands.

4) Bluewinged Pitta, *Pitta moluccensis megarhyncha* (868), tidal forest and adjacent semi-evergreen forest in the Sunderbans of East Pakistan.

5) Grey Thickhead or Mangrove Whistler, *Pachycephala cinerea* (1470), Calcutta east through the Sunderbans, mostly in tidal forest, but also inland in semi-evergreen forest; Andaman Islands.

6) Orangebellied Flowerpecker, *Dicaeum trigonostigma* (1898), tidal forest in Sunderbans and adjacent semi-evergreen and moist deciduous forest.

In addition certain hawks, eagles or rails may be found in tidal forest but these species have a wider tolerance for a variety of conditions.

Related to the tidal forest in space and in food supply are the sea beaches themselves, where characteristic migrant shore birds, gulls and terns can be found. Some of these species prefer the open pure salt water and adjacent beach, others the tidal mudflats and brackish reaches of water, and many of these forms, particularly the terns, nest in the mangroves. The Reef Herons, *Egretta gularis schistacea* and *Egretta sacra* (50, 51), are found only on brackish or salt water, along tidal mudflats or reefs, the Crab and Great Stone Plovers *Dromas ardeola* and *Esacus magnirostris* (434, 437, 438) are found only on sea beaches, though the latter may occur on sandy river beds of the largest rivers, an *ersatz* or substitute biotope as it were.

In contrast to the tidal forest zone, the birds of which show affinities with species of Indonesia and the China coast — the Indochinese subregion as it has been termed by zoogeographers — consider for a moment another zone which recalls the Somali arid zone of east Africa. This is

B) Tropical Thorn Forest. This is a low open forest, characterized by *Acacia* species, reaching 6–9 m. in height, desert-like undergrowth with sparse grass, thick, woody weeds, succulents, a so-called xerophytic type of vegetation, mean temperature annually 25° C., reaching a maximum of c. 40° C., and a minimum of c. 4° C. The annual rainfall varies from 48 to 76 cm. and is sometimes as low as c. 25 cm. The soil is shallow, often alkaline. This zone occurs from sea level to c. 600 m. altitude. Thorn forest occurs in non-desert parts of West Pakistan, south of the frost line, large parts of western India, in East Punjab, Rajasthan, Kutch and Saurashtra and southwest Madhya Pradesh running south in Maharashtra to East Khandesh, Aurangabad, south to northern Mysore and east in Andhra to Guntur district; also in the Jaffna area and other parts of northern Ceylon, Rameswaram Island and the adjacent southeast Indian coast. In central peninsular India the heart of this zone occurs in the Deccan plateau, site of much of the Deccan trap rock-formations mentioned earlier.

The birds of this zone show distinct affinities with those of eastern Africa as pointed out by Meinertzhagen (1951), and emphasize that Africa itself has been a centre of dispersal as shown by Moreau (1952) and noted in one case by Husain (1958). Typical of these are:

1) Grey Partridge, *Francolinus pondicerianus* (244–246), West Pakistan and India.

2) Likh-or Lesser Florican, *Sypheotides indica* (357), tropical thorn, scrub, grassland, and cultivation in southern West Pakistan and western and central India.

3) Jerdon's Courser, *Cursorius bitorquatus* (441), perhaps extinct, Deccan tropical thorn forest.

4) The Bee-eaters have two species which suggest strongly a preference for this zone, though their more wandering habits and wider distribution make them less good examples. These are the Bluechecked, *Merops superciliosus* (747) which breeds in West Pakistan and India and winters in Africa, and the Green, *Merops orientalis* (749–752), which occurs in tropical thorn forest from Iran to Ceylon, although one population of the species reaches Assam and Burma.

5) Two Finch-larks of the genus *Eremopterix*, namely *grisea* and *nigriceps*, the Ashycrowned and the Blackcrowned (878, 879), are Ethiopian in their affinities and live in thorn scrub and the edges of desert in tropical thorn areas.

6) Sykes's Crested Lark, *Galerida deva* (902), is found in parts of northern India and the Deccan on rather dark soils.

7) Yellowthroated Bulbul, *Pycnonotus xantholaemus* (1135), peninsular India, perhaps ranging too high in altitude to be completely in this zone.

8) Common Babbler, *Turdoides caudatus* and its relatives, Large Grey Babbler, *T. malcolmi*, and Whiteheaded Babbler, *T. affinis* (1253, 1254, 1258, 1267, 1268), West Pakistan, peninsular and northern India and Ceylon.

9) Rufousfronted Longtail Warbler, *Prinia buchanani* (1506), West Pakistan and northern and central India to the Deccan.

10) Three of the Whitethroats, the Lesser, *Sylvia curruca*, the Small, *S. minula*, and Hume's Lesser, *S. althaea* (1567, 1569, 1570), breed or winter in tropical thorn forest in West Pakistan and India.

11) Two of the Leaf Warblers, the Brown or Chiffchaff in its Indian subspecies, and the Plain, *Phylloscopus collybita sindianus* and *P. neglectus* (1576, 1577), occupy this habitat in West Pakistan and northern India.

12) Brown Rock Chat, *Ceromela fusca* (1692), West Pakistan and northern India.

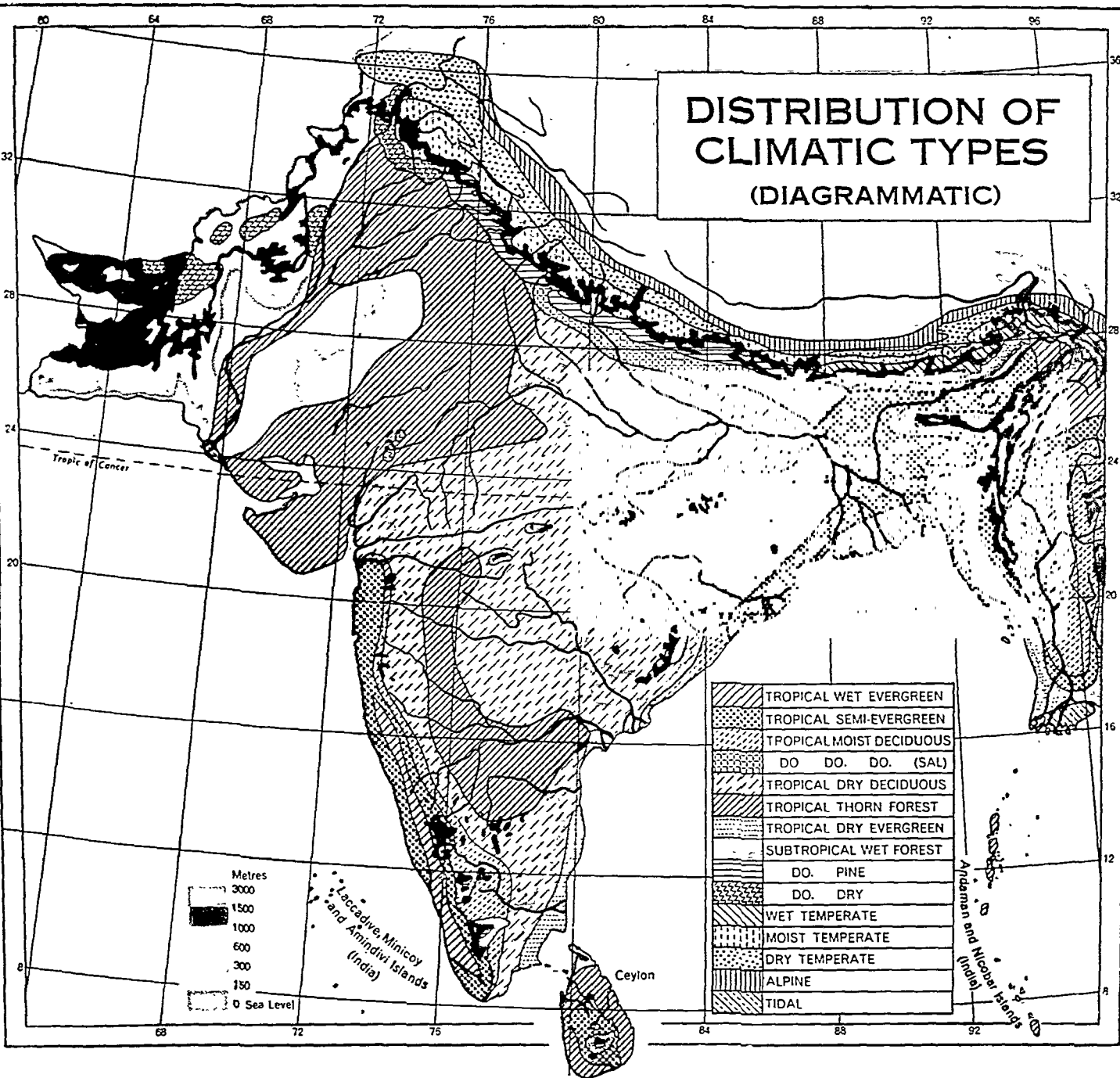
13) Whitewinged Black Tit, *Parus nuchalis* (1798), India.

14) The Spanish Sparrow, *Passer hispaniolensis* (1940), winters in tropical thorn forest. Some other sparrows have ranges suggestive of a preference for the tropical thorn biotope, but have spread out into cultivation or into reed-beds and tamarisk groves.

With the exception of the warblers, virtually all of these species are related most closely to Ethiopian (= African in the zoogeographical sense) species, suggesting an origin from a former continuously distributed population or a common ancestor in some form.

As was pointed out in more detail in the *Synopsis*, there are certainly 176 endemic (local) species of Indian birds (confined to the zoogeographic subregion of the Indian Peninsula and its environs) and of these the following affinities appear:

DISTRIBUTION OF CLIMATIC TYPES (DIAGRAMMATIC)



TROPICAL WET EVERGREEN
TROPICAL SEMI-EVERGREEN
TROPICAL MOIST DECIDUOUS
DO. DO. DO. (SAL)
TROPICAL DRY DECIDUOUS
TROPICAL THORN FOREST
TROPICAL DRY EVERGREEN
SUBTROPICAL WET FOREST
DO. PINE
DO. DRY
WET TEMPERATE
MOIST TEMPERATE
DRY TEMPERATE
ALPINE
TIDAL

(1) (a) related to Palaearctic species (i.e. Europe and Asia)		
number 30	Percentage of total 17	
(b) questionable, perhaps Palaearctic	2	1
(2) related to Indochinese (i.e. SE. Asian species)	109	62
(3) (a) related to Ethiopian species	30	17
(b) questionable, perhaps Ethiopian	1	1
(4) relict species, discussed earlier (Pinkheaded Duck etc.)	4	2

Thus the overwhelming proportion of Indian bird species are related to species of the eastern, tropical Orient, with almost an equal minor share being related proportionally either to African or to European-northern Asian (Palaearctic) species. This is important as a

principle of Indian ornithobiography. The Himalayas have served as a barrier, encouraging the spread of tropical, Indochinese-related bird species into the Indian habitat, preventing the invasion of Eurasian-related species as much more than winter migrants. The entomological and botanical evidence, such as it is, suggests that in spite of glaciation in the Himalayas during the Pleistocene, climatically conditions were not too severe and that indeed the southern flanks of the mountains served as a refugium for relict species related to cold-climate adapted northern species, rather than serving as a continuous chain of contact along which dominant northern species could infiltrate. The habitats to the south of the Himalayas thus being continuously occupied, very few invaders could wage successful competition or find empty niches and room to spread out.

India's avifauna is one of the most interesting in the world and provides ample opportunity for further significant research in zoogeography and its related aspects of ecology.

SYSTEMATICS OF BIRDS OF THE INDIAN SUBREGION

BIRDS from the 'Indies', the areas now encompassed by Pakistan, India, Ceylon and east to Java, have been known to zoologists for as long as there has been an organized science of zoology. Travellers and explorers of both the eastern and the western worlds have collected colourful birds from the countries which they visited since the chronicles of these travels have existed. These creatures, brought back to the courts of emperors and kings, inspired wonderment as well as scientific curiosity. Attempts to list the products of nature are apparently a natural phenomenon of man's orderly and tidy mind. Man is instinctively an arranger. Subjectively man strives to create a rational order out of what otherwise he assumes to be chaos. Religion demands it. Science requires it.

The literature of these attempts at organization is classical, extending back to the philosophers, Hippocrates, Aristotle and Plato, at least to the fifth century B.C. Systematics, or taxonomy as it is often interchangeably called, is the science of classification of animals. It is built up out of the basic study of the anatomy or morphology of an animal, as well as its physiology, or the living interactions of the organ systems and structure of the animal. Modern taxonomy also includes a compilation of evidence obtained from genetics, the study of the breeding of animals including the cellular phenomena associated with the union of components from egg and sperm. An additional requirement is a knowledge of the environment and its effect upon animals, or ecology, as that study is called, as well as environmental and animal history derived from the study of geology. Thus a modern taxonomist becomes perforce an evolutionist, and an evolutionist should properly be one of the most widely trained of all zoologists, proficient in genetics, morphology, zoogeography, systematics, embryology, physiology, ecology and palaeontology.

Present-day systematics developed in the eighteenth century with the attempts to create 'systems' of nature. A number of authors such as John Ray (1627-1705) pioneered attempts to characterize the genus, or *genos*, and species, or *eidos*, of Aristotle, but it is the Swedish naturalist, Carolus Linnaeus (1707-78), who laid the foundation of systematic zoology. The tenth edition of his *Systema Naturae* (1758) is considered the fundamental work and the date, the foundation date for species names. Each animal then known to the scientific world could be given, under the Linnaean concept, a binomial name: Genus, a name including all forms considered to be related to one another, and Species, the distinctive or specific name which in a sense separated that animal from all others. All ducks belonged to the genus *Anas* for example, and the different ducks had different specific names, *anata* for the pintail, *crecca* for the common teal, *penelope* for the widgeon, *ferina* for the common pochard or diving duck. Above these categories was the Order, and above this of course the Class, which in the case of birds, involved all birds in one animal class, AVES. The great merit of the Linnaean volume is that the class and the orders and genera are characterized by keys, groups of characters which give them uniqueness and distinction one from the other.

This arrangement then, this attempt at the creation of order from chaos, immediately won general recognition and has persisted down to the present. Subsequent modifications of the system have derived more from man's understanding of the evolutionary process and the resultant interpretation of what is meant, than from any tampering with the mechanics. In essence the philosophy of arrangement has changed with the influence on scientific thought of the Darwinian school of evolutionists. In Linnaeus's concept, each species was a distinct act of Creation, immutable and set apart. The Lord had created the world and all that lay within it in six days and on the seventh he rested. Darwin and related scientists of the mid-nineteenth century were able to show that species were not immutable, that changes occurred dating back through the panorama of geologic time and continuing on into the present and future. Species could arise out of other species, by a process involving physical isolation and the gradual accretion of small differences.

Over the years the acceptance of a dynamic rather than a static concept for species formation broadened and modified systematics. As knowledge of a wide spectrum of variations in populations of biological species increased, new terms came to be used for these differences. Linnaeus himself used the word 'variety' to describe a specimen that appeared to be atypical. Later nineteenth-century

authors like Kleinschmidt began to use the word 'race'. Gradually the concept began to be refined as it became generally understood that what scientists were trying to characterize were not individuals, aberrations that is to say, individual variants, but rather groups or populations all members of which, in interaction with each other, were expressing an evolutionary trend. Thus the concept of subspecies was evolved. The definition of this category was not really refined until the twentieth century when a number of authors particularly in ornithology, such as Rensch and Mayr, reached a consensus. Two great principles are involved here. The names typifying these evolutionary categories are applied to a type specimen certainly, but they refer to an interbreeding population of common genetic inheritance. In addition a subspecies must have some geographic locus and some complex of external mechanisms which allow it to maintain genetic isolation. A subspecies must also have some essentially morphological characters in order to allow it to be recognizable. Morphological rather than physiological or behavioural characters are still more acceptable to taxonomists than any others as they are more feasibly preserved in specimens.

All of this history of description and characterization of species has resulted in an elaborate series of rules of nomenclature over which systematic biologists have laboured for many years. The rules, after meetings and international congresses, eventually become codified into a Code for Zoological or Botanical Nomenclature. The latest official International Code of Zoological Nomenclature was published in 1961, reissued with some amendments and corrections in 1964 and will undoubtedly be reissued again and yet again. For it has become apparent over the past fifty years that man approaches his own attempts at systematizing the affairs of nature in an essentially subjective manner. Science has not yet afforded us visions of illimitable truth. Many of the essential facts of nature still elude us, and so even man's rules for order and precedence are finite. At least in the meantime we reach towards stability as we attempt to order nature.

The first bird from India to reside in the stable nomenclature of Linnaeus in 1758 was the Brown Shrike, *Lanius cristatus*, which appears on page 93 of *Systema Naturae*, the 10th edition, and is described thus: having a 'wedge-shaped tail', a 'crested head', a 'reddish body' etc. and, as with all proper names a type locality must be supplied, in this case 'Benghala' or Bengal. There is a citation to an illustration, plate 54, in George Edwards's volumes, published 1743-51, *A Natural History of Birds*. And so the type was established, a specimen figured in a published book and with a locality. The second species from 'Benghala', named by Linnaeus on page 95, is *Lanius caeruleus*, which is also illustrated in Edwards and which is now understood to be the Whitebellied Drongo, *Dicrurus caeruleus*, belonging to a different family. Linnaeus's name as author is suffixed to both *Lanius cristatus* and *Lanius caeruleus* when these names are used formally in citations in ornithological literature. But for the second bird it is placed in parentheses, as *Dicrurus caeruleus* (Linnaeus), to express the fact that the genus name has been changed or shifted subsequent to Linnaeus's original description of the species.

The third mention of Bengal in Linnaeus is *Psittacus alexandri*, whose habitat was said to be 'China, Benghala, Aethiopia', named after Alexander the Great, through whose expeditions the Redbreasted Parakeet had come to the notice of Pliny. The type of the species has subsequently been restricted to Java. Subsequently a larger subspecies has been recognized as occurring on the Asian mainland. A name for this was available, *fasciatus* of P. L. S. Müller, 1776. Consequently when subspecies are arranged in linear form, the parakeet of India becomes *Psittacula alexandri fasciatus* (P. L. S. Müller)¹, and *Psittacula alexandri alexandri* (Linnaeus) is found in parts of Indonesia, the type locality being Java. And so zoology proceeded apace. Thomas Pennant's *Indian Zoology* 1791 (1790), incorporating the work of J. R. Forster and Loten's notes on new birds of south India and Ceylon, was succeeded by the really masterful work of T. C. Jerdon, whose *Birds of India*, 1862-4 in two volumes, was the first thorough work on the subcontinent.

¹ The author's initials are used in some cases as in this, because several Müllers have written on zoology.

Allan O. Hume added greatly to Jerdon's work by expanding the areas covered, particularly in the east in Assam and East Pakistan and describing many new birds for science. He also prepared the first checklist, in 1879, taken from Volume VIII of the random journal *Stray Feathers*, which he had organized and published himself. Hume's list included Pakistan, India, Ceylon and Burma east to northern Malaya, and comprised over 1700 species. He attempted to codify the rules of nomenclature as involving birds of the area by using the rules for nomenclature adopted at a meeting of the British Association in 1842. Wisdom was not infinite even then.

Hume says (p. 7): 'I say "based on the Code" because it must be clearly understood that I am not prepared to re-argue points definitely settled by that Code. I do not personally agree with many of its *dicta*, but I consider uniformity of such paramount importance as to render it the plain duty of every British naturalist to abide strictly by *all* its *dicta*.' Worthy ambition indeed; the Code is still venerated, but still manages to alter itself occasionally.

Oates and Blanford's great *Handbook* volumes of 1889-98 again included Burma, and again, like all preceding volumes, dealt only with the classification of birds down to the species level. It remained for E. C. Stuart Baker first to add subspecies names, or trinomials as they are sometimes called, to the Indian subregion avifauna. In this he followed Ernst Hartert, whose fundamental *Vögel der paläarktischen Fauna*, of 1910-22, reflected much of that changing philosophy of systematics which had been evolving since the close of the nineteenth century. The ideas, essentially held in America and in Germany at this time, produced the present concept of the polytypic species, a species consisting of a group of populations, closely related to each other, separated only by geographic boundaries, which could presumably interbreed should the barriers separating them break down, and which were far more closely related among themselves than in the case of any other separate species. At first these ideas presented considerable difficulty but by 1910 Hartert had been won over, and by 1920, Baker's *Handlist of the Birds of the Indian Empire* had begun to appear in serial parts in the *Journal of the Bombay Natural History Society*. This nomenclature has continued to the present day, with minor variations. The greatest changes perhaps appear between the publication of Baker's handbook, *The Fauna of British India including Ceylon and Burma*, 1922-30, and the publication of *A Synopsis of the Birds of India and Pakistan together with those of Nepal, Sikkim, Bhutan and Ceylon* in 1961. As one of us (Ripley) said in the Introduction to that volume, 'It is perhaps unfortunate but true that no such listing as this or Baker's earlier work is ever final'. We can only attempt to fill in additional small gaps in the nomenclatorial picture, at the subspecific level for the most part in systematics, or in chinks or wider gaps in the understanding of the habits of birds themselves as living things.

Naturalists, environmental biologists, epidemiologists and others including amateur bird-watchers, all tend to be highly impatient of changes in the nomenclature of birds or related vertebrates as they

know them. Systematists in ornithology are particularly liable to attack if changes in established or current bird scientific names are made as a result of evolutionary study. There is a good deal to be said on both sides. On the one hand the users of names want stability and a sense of ultimate finality to be maintained at all costs. On the other, evolutionists, with whom some ecologists are today beginning to be aligned, are continually seeking for the truth of the phenomena of evolution. If in the process of delineating living and organic processes, nomenclatorial stability suffers, then suffer it must. Both sides deplore pedantic name-shufflers who collect scientific names of organisms like postage stamps and are said to extract personal prestige therefrom. These days actually would seem to be gone for ever in ornithology. Only rational trained biologists tend to be concerned with systematics nowadays, and in certain areas such as botany and entomology, *alpha* taxonomy, or the mere descriptions of natural living objects, is still a responsibility of paramount importance. In birds certainly there are few surprises around the corner. New species may continue to be found at a diminishing rate in remote corners of the globe and a few new subspecies may turn up almost anywhere. But where they do, and where they are described as *new*, it is for a secondary reason, an attempt to express reality, to show that organic processes are occurring around the clock at an appreciable rate and that change is the order of the day.

Two of the most recent subspecies of birds of our subregion have been described in 1960: *Chalcophaps indica salimalii* Mukherjee, and *Ardeola grayii phillipsi* Scheer. Additional subspecies from islands of the Bay of Bengal may appear shortly.

A more depressing corollary to our changing world is that subspecies as well as species are probably disappearing today at an accelerated rate. In some areas, particularly in the tropics, and particularly in plants and in such classes of animals as the invertebrates, many of these species and subspecies may disappear before they have even been described as new to science, leaving no ascertainable ripple in man's time to mark their passing. Only the world's pool of genetic recombination is deprived here, not man's recording of it by ascribed names. Let us hope that biologists of the future will not know many species of the great subcontinent of southern Asia only by names as we today, by accident, commemorate the lost Dodo of Mauritius or the Solitaire. For all that they have gone, they were seen by knowing men, recorded, and their bony remnants described. In India the Pink-headed Duck was described as locally tolerably common in Oates and Blanford's day; as 'most shy and secretive' by Baker thirty-one years later; and as probably extinct by ourselves thirty-six years later still. And so in two generations, within the lifetime of many people, one of the most curious species of birds in the world has vanished. 'What's in a name?' indeed. Meanwhile the science and order of systematics continues, a service, a function to those who would use it knowledgeably, an attempt to delineate forces of nature in progress both now and *in statu nascendi*.

GLOSSARY OF TERMS FOR PHYSICAL UNITS

particularly as used in this book

bhābār	The zone or belt of alluvial loamy soil stretching along the northern edge of the dun or terai and up to c. 600 metres in the Himalayan foothills, from Kumaon in Uttar Pradesh to Assam (known as duar in northern Bengal and Assam). Supports a type of high dense forest usually containing sāl (<i>Shorea robusta</i>), sheesham (<i>Dalbergia sissoo</i>), and simul (<i>Salmalia malabarica</i>).
biotope	A broad physiographical unit epitomizing the interaction of diverse physical factors, chiefly temperature, rainfall, and humidity. Examples: Evergreen biotope, Desert biotope.
duār	The easternmost section of the bhabar found in northern West Bengal, Bhutan, and adjacent Upper Assam.
dūn	Hummocky broken country, often broad valleys within the outer ranges of the Himalayas, that in some sections intervenes between the bhabar and terai.
facies	A smaller but easily recognized division of a biotope, e.g. the Sandy facies, or Rocky facies, of Desert biotope.
jheel	A shallow lake in a low-lying natural depression produced by rain or floods, or spillage from a river, usually with floating and underwater vegetation and reed-beds, and partially submerged trees.
mohālla	A special quarter of a town or village where different communities or professional groups live in virtual segregation, such as harijans, silver-smiths, and bead-sellers.
nullah	Watercourse or ravine, usually dry. In Hindi, <i>nālā</i> .
shola	A patch of montane evergreen wet temperate forest, usually in a sheltered nullah or hill stream valley amongst rolling grassy hills (or downs), from c. 1500 metres up, in South India and Ceylon.
terāi	The undulating alluvial, often marshy, strip of country stretching along the southern edge of the bhabar and dun south to the Gangetic Plain. The terai extends through U.P., Nepal, and northern W. Bengal to Assam. It supports 'seas' of tall elephant grass interspersed with tracts of dense forest. Large parts of it have now been cleared and drained for cultivation. ¹

¹ The descending order in which the different zones occur is: Himalayan foothills → bhabar (or duars) → dun → terai → Gangetic Plain.

CHANGES IN TERRITORIAL NAMES

The *Handbook* relies on observations made during the last hundred years, during which period many areas have changed their names and boundaries. The authors have striven to keep up with changes which have taken place during the writing and publication of the ten volumes, and hope the following notes will be helpful in interpretation. They should be supplemented by reference to atlases.

ANDHRA PRADESH. Until 1953 the northern half of Madras State, including the deltas of the Krishna and Godavari rivers and the arid hills of the Eastern Ghats, and the former Hyderabad State.

ARUNACHAL PRADESH. 'The Province of the Dawn.' The Himalayas east of Bhutan, including the Daffa, Abor, Miri and Mishmi hills. Before 1972 this area was the North-East Frontier Agency (NEFA), comprising the Kameng, Subansiri, Siang and Luhit frontier divisions.

ASSAM. Before 1947 this province included Arunachal Pradesh, Meghalaya, Mizoram and Nagaland (qq.v.). In 1972 it was restricted to the Brahmaputra Valley.

BANGLADESH. Constituted in 1971, formerly East Pakistan. Besides the Brahmaputra plains it includes the Chittagong Hill Tracts in the south.

BENGAL. Prior to 1947 the Ganges-Brahmaputra delta area, later divided into Bangladesh (q.v.) and West Bengal.

HARYANA. The fertile plains area north and west of Delhi, formerly part of the Punjab (q.v.).

HIMACHAL PRADESH. 'The Snowy Province.' The Himalayan hill States were united under this name in 1948, and in 1966 the area was enlarged by the hill regions of the Punjab.

KARNATAKA. The official name of Mysore since 1973.

LAKSHADWEEP. The official name of the Laccadive Islands group since 1973.

MEGHALAYA. 'Cloud-land.' The Garo, Jaintia, Khasi and Cachar hill districts, constituted a separate State in 1972.

MIZORAM. The Lushai or Mizo Hills area, constituted a separate State in 1972.

NAGALAND. The Naga Hills area, constituted a separate State in 1962.

NEFA. Now Arunachal Pradesh, q.v.

ODUH (= Awadh). The eastern Gangetic plains, now part of Uttar Pradesh ('Northern Province'), the name given in 1950 to the United Provinces (of Agra and Oudh).

PAKISTAN. Before 1972 West Pakistan, including Sind, Baluchistan, Punjab (q.v.), the North-West Frontier Province and Bahawalpur.

PUNJAB. Prior to 1947 the whole of the northern plains area watered by the Indus, and its five tributaries namely Jhelum, Chenab, Ravi, Beas and Sutlej. Divided in 1947 into West Punjab (Pakistan) and East Punjab (India). In 1966 East Punjab was further divided into Punjab, Haryana and Himachal Pradesh (qq.v.).

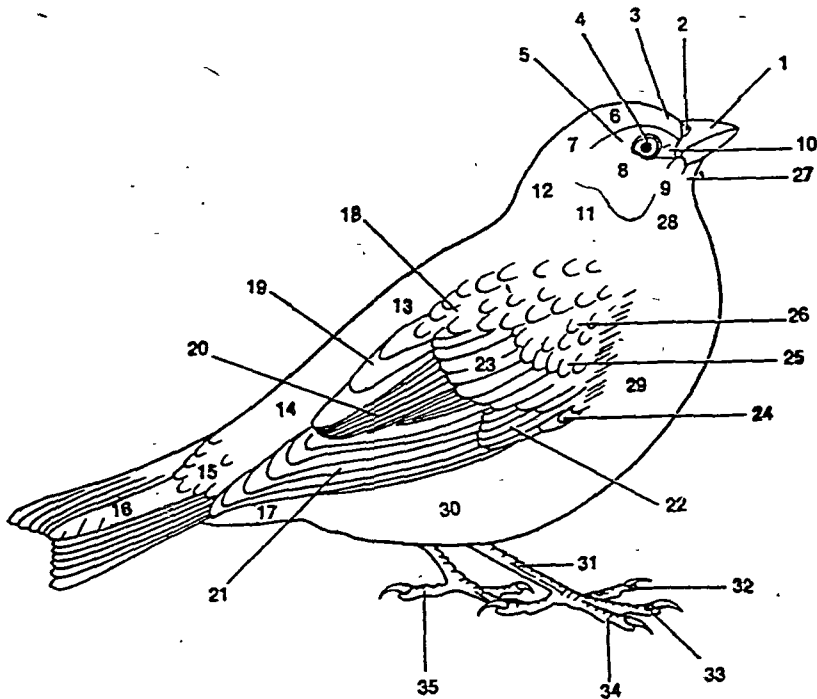
SAURASHTRA. The union of States was merged with Bombay in 1956 and since 1960 has been part of Gujarat.

SRI LANKA. The official name of Ceylon since 1972.

TAMIL NADU. The name given to Madras State in 1969.

Terms used in the description of a bird's plumage and parts

Topography of a sparrow



- | | |
|---|-------------------------|
| 1 Culmen | 18 Scapulars |
| 2 Nostril | 19 Tertials |
| 3 Forehead | 20 Secondaries |
| 4 Iris | 21 Primaries |
| 5 Supercilium | 22 Primary coverts |
| 6 Crown | 23 Greater coverts |
| 7 Nape | 24 Bastard wing (alula) |
| 8 Ear-coverts | 25 Median coverts |
| 9 Malar region (malar stripe,
moustache) | 26 Lesser coverts |
| 10 Lores | 27 Chin |
| 11 Side of neck | 28 Throat |
| 12 Hindneck | 29 Breast |
| 13 Back | 30 Belly (abdomen) |
| 14 Rump | 31 Tarsus |
| 15 Upper tail-coverts | 32 Inner toe |
| 16 Tail (rectrices) | 33 Middle toe |
| 17 Under tail-coverts | 34 Outer toe |
| | 35 Hind toe (hallux) |

ABBREVIATIONS

Bull. BOC	<i>Bulletin of the British Ornithologists' Club</i>
CBCN	<i>Ceylon Bird Club Newsletter</i>
Dementiev	<i>Birds of the Soviet Union</i>
FBI	<i>Fauna of British India, Birds</i>
INB	<i>Newsletter for Birdwatchers, India</i>
Ind. Hb.	<i>Handbook of the Birds of India and Pakistan</i>
J. Orn.	<i>Journal für Ornithologie, Berlin</i>
JBNHS	<i>Journal of the Bombay Natural History Society</i>
PZS	<i>Proceedings of the Zoological Society, London</i>
SF	<i>Stray Feathers</i>
SZ	<i>Spolia Zeylanica</i>
Witherby	<i>The Handbook of British Birds</i>

Abbreviated references to persons frequently quoted

Abdulali or HA	Humayun Abdulali
Alexander or HGA	Horace G. Alexander (in vols. 8-10)
Alexander	W. B. Alexander (in vol. 1)
Amadon	Dean Amadon
Baker	E. C. Stuart Baker
Bates	Lt Col. R. S. P. Bates
Biswas or BB	Biswamoy Biswas
Blanford	W. T. Blanford
Delacour	Jean Delacour
Desfayes or MD	Michel Desfayes
Diesselhorst or GD	Gerd Diesselhorst
Donald	C. H. Donald
Gibson-Hill	C. A. Gibson-Hill
Hartert	Ernst Hartert
Henry	G. M. Henry
Hume	A. O. Hume
Inglis	C. M. Inglis
Jerdon	T. C. Jerdon
Jones	A. E. Jones
Kinnear or NBK	Sir Norman B. Kinnear
Legge	Col. W. Vincent Legge
Lowther	E. H. N. Lowther
Ludlow	Frank Ludlow
Magrath	Major H. A. F. Magrath
Marshall	Cols. C. H. T. & G. F. L. Marshall
Mayr	Ernst Mayr
Meinertzhagen	Col. R. Meinertzhagen
Murphy	R. C. Murphy
Osmaston or BBO	B. B. Osmaston
Paynter or RAP	R. A. Paynter
Peters	J. L. Peters
Phillips	W. W. A. Phillips
Ripley or SDR	S. Dillon Ripley
Sálim Ali or SA	Sálim Ali
Scully	John Scully
Stevens	Herbert Stevens
Stresemann or Stres	Erwin Stresemann
Ticehurst or CBT	Claud B. Ticehurst
Whistler or HW	Hugh Whistler
Whitehead	Lt C. H. T. Whitehead

DESCRIPTIVE TEXTS, REFERENCES
CITED AND APPENDICES

Order GAVIIFORMES

Family GAVIIDAE: Divers, Loons

Aquatic birds superficially like grebes but differing in a number of characters and probably not very closely related to them. Toes fully webbed like duck's, not lobed or scalloped. Wing of 11 primaries, the outermost minute. Rectrices 18 or 20, short but well developed. Plumage dense, compact and rather harsh, not silky as in grebes. Tarsi reticulate, laterally compressed. Legs short and set far back, almost at end. Wings short, narrow, and tapering; set well back as in a Boeing jet plane. Sexes alike.

For other anatomical characters see Stresemann 1927-34, Aves: 779-80; Witherby *et al.* 1940, 4: 111; Palmer 1962, 1: 20.

Genus GAVIA J. R. Forster

Gavia J. R. Forster, 1788, Enchirid. Hist. Nat.: 38. Type, by subsequent designation, *Colymbus immer* Brünich

Characters as of the Family. Genus northern Holarctic.

Key to the Species

	Page
A Bill straight	1
B Bill upturned	2
1 Upperparts uniformly dark	<i>G. arctica</i> (winter) 1
Upperparts 'scaly'	<i>G. arctica</i> (juvencal) 1
2 Upperparts sprinkled with white spots	<i>G. stellata</i> (winter) 2

1. Blackthroated Diver. *Gavia arctica suchkini* (Zarudny)

Urinator arcticus suchkini Zarudny, 1912, Orn. Mitt. 3: 11 (Russian Turkestan)

Baker, FBI No. 2293, Vol. 6: 485

Plate 1, fig. 1

LOCAL NAMES. None recorded.

SIZE. Domestic duck \pm ; length c. 65 cm. (25 in.).

FIELD CHARACTERS. A practically tailless aquatic bird, in winter dark grey above white below without black throat. Pointed straight bill. Overall aspect that of Little Grebe or Dabchick, but much larger and heavier. Neck stouter and proportionately shorter than grebe's. Confusable only with the commoner Crested Grebe, but larger size, stouter neck, and absence of ruff of elongated feathers below head diagnostic. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. A rare vagrant in winter. Only once recorded: a single specimen on flooded land bordering the W. Jumna Canal at Jagadhri, Ambala District, Punjab — 19 February 1922 (A. E. Jones 1922, JBNHS 28: 1134).

EXTRALIMITAL. Breeding from the Ural Mts to Lake Baikal and the Yenisey, Turkestan, and Kirghiz Steppes.

MIGRATION. ?

1

GREBES

	Page
2 Needle-like bill with slightly upturned appearance.....a	
Bill rather thick and straight.....b	
a Head and neck black, tufts of golden brown feathers on sides of head.....	5
Head and neck dark greyish black; white of throat extending around nape.....	5
b Checks and lower throat chestnut, cap and back of neck greyish black, upper throat black.....	6
Sides of head and foreneck pale rufous, cap darker, upper throat white.....	6

3. Great Crested Grebe. *Podiceps cristatus cristatus* (Linnaeus)

Colymbus cristatus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 35 (Sweden)

Baker, FBI No. 2290, Vol. 6: 477

Plate 1, fig. 3

LOCAL NAME. *Shira-hin* (Assam).

SIZE. Domestic duck —; length c. 50 cm. (c. 19 in.).

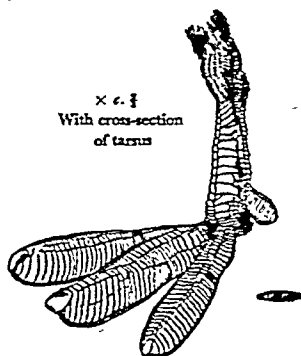
FIELD CHARACTERS. A tailless aquatic bird dark greyish brown above, silky white below, with slender longish neck and pointed bill. Two up-standing, backwardly directed blackish ear-tufts above head and a frill or ruff (looking like puffed-out throat) of chestnut-and-black elongated feathers below the head, conspicuous and diagnostic; less developed in female than male. In winter (non-breeding plumage) these 'ears' much reduced; in young birds absent. A white wing patch (secondaries) and white leading edge of wing concealed at rest, conspicuous in flight, when humpbacked profile is reminiscent of Merganser. Sexes alike. Singly, pairs, and small scattered parties on jheels and littoral waters.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor in small numbers to northern India from Sind (where it is commoner at sea along the coast) to NE. Assam and Manipur; south through Rajasthan (Bharatpur) to Gujarat on the west (Kutch, Porbandar, Jasadn, Viramgam, Bhavnagar), and Orissa on the east (near Puri — sight record, H. G. Alexander). Affects jheels and littoral waters.

EXTRALIMITAL. The Palaearctic Region — Europe to China and Japan, south to our limits in Ladakh, Kashmir and Nepal.

MIGRATION. No specific information.

GENERAL HABITS. Usually seen in separated pairs or scattered parties on vegetation-covered reed-bordered jheels swimming about with neck



2

PODICIPITIFORMES

GENERAL HABITS. Swims low, often only with the head showing. Rises from water with effort, running long distances on surface with quick-flapping short wings, but is a swift and powerful flier once air-borne. Hunchbacked merganser-like profile in flight with legs projecting behind distinctive. Hits water with chest when landing; cannot take off from dry land. Expert deep-water diver and submarine swimmer, using feet as propellers and wings to turn and twist. Keeps to inland lakes.

FOOD. Mainly fish.

VOICE AND CALLS. ?

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. For plumage etc. see Witherby *et al.* 1940, 4: 119. This race, *suehikini*, differs only in details from the nominate race there described.

The Ambala specimen, a first-year female, had a wing measuring 290 mm. Hartert (1920: 1461) gives the wing measurements of this race as 291-337 mm.

[2. The Redthroated Diver, *Gavia stellata* (Pontoppidan), has been recorded once from the Makran Coast (Baker 1931, 8: 703). It conceivably may occur again as a vagrant in West Pakistan.]

Order PODICIPITIFORMES

Family PODICIPEDIDAE: Grebes

Aquatic birds with soft rudimentary tail, very small wings, and compressed sharply pointed bill. Legs placed far back, especially adapted for swimming and diving. Tarsi scutellated in front, laterally compressed. Front toes with broad lateral vane like lobes. Hind toe small, raised, vertically lobed. Nails broad and flattened. Plumage dense and silky. Primaries 12, the 1st from the outside (= ascendant) being rudimentary. Sexes alike. Downy young boldly striped blackish and white.

For further anatomical details see Witherby *et al.* 1940, 4: 84; Stresemann 1927-34 Aves: 780-82; Palmer 1962, 1: 62.

Genus PODICEPS Latham

Podiceps Latham, 1787, Gen. Syn. Bds.; Suppl., 1: 294. Type, by subsequent designation, *Colymbus cristatus* Linnaeus

Characters as of the Family. Genus cosmopolitan; represented within our limits by three species.

Key to the Species

	Page
A Size of duck (c. 50-60 cm. = 19.5-23.5 in.)	1
B Smaller than duck (c. 23-35 cm. = 9-13 in.)	2
1 Long slender neck with straight bill, head ornamented with backward pointing tufts above and a frill or ruff of black chestnut feathers below	3
Head ornamentation reduced or lacking, white above eye conspicuous, bill pinkish	3

4

PODICIPITIFORMES

erect. When alarmed, disappears smoothly or with a little leap and swims away under water; surfaces then dives again, and so on till it gains the safety of distance and open water. Is loth to fly, rising with effort, pattering along the surface for long stretches, half running half flying till airborne. But is capable of covering long distances on migration or when shifting from one jheel to another. Flight swift though seemingly laboured, with rapid flaps of the short wings. Seldom seen on land, where the backwardly placed legs enable it merely to shuffle along clumsily with breast on ground. Courtship display, first described by J. S. Huxley (1914, PZS: 491-562), consists of the pair facing each other with rigid neck, ear-tufts erect and ruff expanded, both birds diving and coming up with water weeds in their bills, suddenly rising upright breast to breast and swaying — and variations of this theme.

FOOD. Fish, tadpoles, frogs, water insects, etc., with some vegetable matter. Stomachs of three specimens collected by Meinertzhagen in Ladakh contained exclusively freshwater shrimps (*Gammarus*). A quantity of feathers has frequently been reported among the stomach contents.

VOICE AND CALLS. Described as a harsh *krek-krek* and a variety of discordant barks and shrill trumpeting expressive of different emotions.

BREEDING. Within our limits recorded from Khushdil Khan lake in Baluchistan (alt. c. 1750 m.) and from the high-elevation lake Tso Kar in Rupshu, Ladakh (alt. c. 5200 m.). In W. Tibet SA found it nesting on Ding Tso lake (alt. c. 5300 m.) NE. of Manasarovar. *Season*, chiefly June to August. *Nest*, a conspicuous mass of water weeds c. 45 to 60 cm. in diameter with a depression in the middle, on floating mounds of grass and rubbish 20 to 100 metres from the bank, loosely anchored to growing weeds. Often clusters of several nests together, from a few metres apart to almost touching one another. *Eggs*, 3 to 5, very pale sea-green with an overlay of chalky white calcium deposit, usually becoming stained brown by contact with the soggy nest. Fourteen eggs taken by Ludlow on the Kala Tso in Tibet average 54.50 x 25.00 mm. Compared with the average size of 100 British-taken eggs as given by Witherby (54.8 x 36.7 mm.) they are considerably narrower. Both parents incubate. Ludlow observed that the male frequently sat on the nest alongside of the brooding female. The incubation period is recorded as 28 days. When leaving the nest to feed, or on alarm, the sitting bird usually covers up the eggs with loose nest material.

From the fact that a few pairs may usually be seen on the great swamps north of the Brahmaputra river in Assam during the breeding season every year, Baker (1932-5, 4: 518) surmises that they breed there sporadically and maybe even regularly. Bulkley (JBNHS 6: 501) found a nest near Kharaghoda, Gujarat, in August 1891, and there is some indirect evidence that odd pairs may also breed irregularly in Gujarat and Saurashtra.

MUSEUM DIAGNOSIS. For description of plumage etc. see Witherby 1940, 4: 91.

MEASUREMENTS. Three specimens collected by Meinertzhagen in Ladakh measure:

	Wing	Bill (from feathers)
2 ♂♂	202, 203	43, 45 mm.
1 ♀	192	41 mm.

GREBES

5

Baker, loc. cit., gives range for ♂ ♀ W. 176-211; Culm. 45-53; Tar. 52-64 mm. COLOURS OF BARE PARTS. Iris carmine-red, crimson with a narrow inner ring of orange, or orange with an inner ring of pale yellow; bill dark brown, the tip paler and slaty grey, the extreme base suffused with crimson, obsolete in winter; legs and feet olive-green externally, yellowish-green inside; webs yellowish, the nails bluish.

3a. Rednecked Grebe. *Podiceps griseigena* (Boddaert). See Appendix.

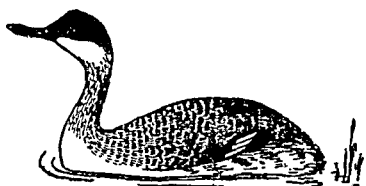
4. Blacknecked Grebe. *Podiceps nigricollis nigricollis* Brehm

Podiceps nigricollis Brehm, 1831, Handb. Naturg. Vog. Deutschl.: 963 (E. Germany) Baker, FBI No. 2291, Vol. 6: 480 Plate 1, fig. 4

LOCAL NAMES. Unrecorded.

SIZE. Dabchick+; length c. 33 cm. (13 in.).

FIELD CHARACTERS. Distinguished from the familiar Dabchick or Little Grebe in winter by larger size and the silvery white flanks, flashing in good light. Sexes alike.



Winter plumage, x c. 4

Adult (winter). Above, dark brown with darker (blackish) cap to below eyes. Below, chin and throat mixed black and white, foreneck dark brown, rest of underparts white. No dusky brown on flanks. Bill slender, pointed, slightly upturned in profile. In summer plumage has black head and neck and lengthened rufous-golden feather tuft from below eye.

STATUS, DISTRIBUTION AND HABITAT. Uncommon winter visitor, sporadically recorded in Baluchistan (nr. Quetta), Sind (Karachi, Makran Coast littoral, Manchar Lake), Punjab (Bahawalpur), Uttar Pradesh (Pyagpur), Maharashtra (near Poona), Nepal (R. L. Fleming, 1957, *Fieldiana*, Zool. 41(1): 48). Possibly occurs more generally in northern India than is identified. Recently (winter 1964-5) reported on Khabakki lake, W. Pakistan Salt Range, in gatherings of 300 to 600 individuals, vastly outnumbering *Podiceps ruficollis* (C. D. W. Savage, in *epist.*). On duck-shooting jheels.

Extralimital. Breeds in the Palearctic Region from Europe to China and Japan, south to Turkestan.

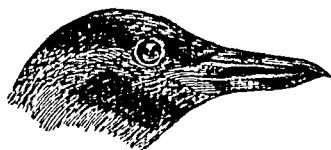
MIGRATION. ?

GENERAL HABITS. Frequents reed-bordered jheels with floating vegetation interspersed with expanses of open water, in company with dabchicks. Prefers reedbeds in the shallows to open water, and is inclined to segregation. Otherwise very similar to the dabchick.

GREBES

7

possibly also migratory. Common throughout the Indian subcontinent, east to Assam and Manipur, south into Ceylon, from the plains to c. 1800 m. altitude (in Kashmir). Absent in the Andaman and Nicobar islands. Frequents all types of inland waters with or without floating vegetation or reeds — irrigation reservoirs, village tanks, ponds, moats of ancient forts, etc., even flooded roadside ditches and borrow-pits. Hardly ever rivers or the sea.



x c. 1

Extralimital. Our race *capensis* occurs in much of N. Africa, Madagascar Middle East, and SE. Asia.

MIGRATION. Unknown, but an exhausted specimen picked up on Jakko Hill, Simla (c. 1500 m.) — quite out of its normal range — on 17 September 1942 (A. E. Jones, JBNHS 43: 661) seems clearly suggestive of migratory movement.

GENERAL HABITS. Usually keeps in separated pairs or small scattered parties. Enormous gatherings of hundreds strong may commonly be met with on the bigger jheels such as the Manchar lake in Sind, and the Logtak in Manipur (Assam). Also on the 'Salt Lakes' near Calcutta. An excellent diver and underwater swimmer. Disappears smoothly below the surface without leaving a ripple, or takes a little upward leap to plunge vertically with astonishing suddenness. After being fired at once, will often vanish before the charge of shot can reach it a second time! The birds are fond of disporting themselves at sunset, chasing one another, pattering on the surface half running half flying with rapid flapping (vibrating) of the diminutive wings, to the accompaniment of shrill tittering or trilling duets and choruses. They are loth to fly, and when alarmed will either dive for safety or patter along and fly a short distance close to the surface presently to flop down again. Once properly airborne, however, they can fly incredibly well and strongly, and often travel long distances.

FOOD. Fish, frogs, tadpoles, crustacea, molluscs, aquatic insects, etc. As in other grebes some feathers also swallowed. Food mostly procured by diving, but also on surface from under floating vegetation by swift spurts forward, neck outstretched, to seize escaping quarry.

VOICE AND CALLS. In addition to the runs of shrill, rather musical trilling, a sharp monosyllabic *click* is uttered repeatedly when agitated, as on approach of nest by intruder; and also sharp squeaks like an unrolled bicycle wheel.

BREEDING. Season varies in different parts of the country depending on rainfall and availability of suitable breeding waters; chiefly April to October in northern and peninsular India, December to February in the

6

PODICIPITIFORMES

FOOD. Fish, tadpoles, shrimps, aquatic insects, etc., with which a quantity of feathers (its own?) is usually taken.

VOICE AND CALLS. Unrecorded in India.

BREEDING. Within our limits recorded only from Baluchistan (Khushdill Khan lake near Quetta) where Meinertzhagen found over 70 nests with eggs on 20 June 1913. Season, June-July. Nest, a floating pad of weed stalks, c. 37-43 cm. across, firmly attached to the bottom as shown by all the above nests drowning on rise of water level in flood. Sited in reedbed, not open water as with Crested Grebe. Eggs, 3-5, like the latter's but smaller. Average size c. 44 x 32 mm. Both parents brood. Incubation period recorded as 19-20 days. Small striped downy young often carried on swimming parent's back, cradled between slightly raised wings, sometimes even when parent dives. Newly hatched young often nestled in fluffy plumage of back of incubating parent to keep away from soggy nest, and fed by other parent in this position (W. Wüst, *J. Orn.*, 1934: 311-18).

MUSEUM DIAGNOSIS. For description of plumages etc. see Witherby 1940, 4: 105-6.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus
♂ ♀	123-137	39-43	c. 20-26, generally 21-24 mm. (Baker)

Wing of a ♂ from Poona in BNHS Coll. 142 mm.

COLOURS OF BARE PARTS. Iris reddish brown to orange-pink with silvery inner ring round pupil. Bare loreal skin, brownish flesh. Bill bluish plumbeous, black on ridge of culmen, whitish at tip. Legs and feet blackish and greenish to bluish.

MISCELLANEOUS. Longevity (from ringing data) 6+ years (Ring, 1962, 33: 148).

5. Little Grebe or Dabchick. *Podiceps ruficollis capensis* Salvadori

Podiceps capensis Salvadori, 1884, Ann. Mus. Civ. Genova (2), I: 252 (Shoa, Africa) Baker, FBI No. 2292, Vol. 6: 481

Plate 1, fig. 6

LOCAL NAMES. Pāndubi, Pānti, Dūdbūbi, Churaka (Hindi); Dūdbūbi, Pāndūbi, Dūbiri (Bengal); Muvu-gudi-kodi (Telugu); Mūkkūlippān, Tānni pūllū (Tamil); Pind (Kashmir); Tūbino (Sind)

SIZE. Tailless pigeon ±; length c. 23 cm. (9 in.).

FIELD CHARACTERS. A small squat tailless aquatic bird with short pointed bill and backwardly placed legs specially adapted for swimming and diving. Rides on the water with rear end raised and fluffed out producing a bluntly rounded effect.

Adult. Above, dark brown, the crown darker; sides of head, throat and neck chestnut. Below, silky smoky white with the flanks dusky brown (contra P. n. *nigricollis*). A white patch on wing (secondaries) conspicuous only in flight. Base of bill and swollen fleshy gape yellowish green, prominent. In non-breeding plumage, mostly in winter, a drab brown bird with whitish chin, pale rufous neck and whitish underparts. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Chiefly resident, but shifting locally and long distances dependent on drought and flood. Part of populations

8

PODICIPITIFORMES

south and in Ceylon. Nest, a rough pad of sodden weeds and rushes, c. 30 cm. across the top of the shallow central depression. Floating or bedded on water weeds, and usually anchored to the reeds or substrate; often in clusters or colonies partly submerged and liable to drown by flood. It has been noted (Williams, JBNHS 33: 619) that the temperature of the water round the eggs within a half-submerged nest is higher than that of the lake, perhaps as a result of the fermentation of the soggy nest material. This may prevent chilling of the eggs and account for the birds being able to leave them unattended for long periods. Copulation usually takes place on the nest when the female is sitting on it. Eggs, 4 or 5, sometimes 3 or 6, rather pointed at both ends, chalky white, becoming stained dirty brownish during incubation by contact with the sodden nest. Average size c. 36 x 25 mm. The birds cover up the eggs with loose nest material every time they leave the nest. Both sexes incubate, and tend the young. Incubation period recorded as 19-20 days. Two (or more?) broods are raised in succession. When the female is incubating the second clutch, the care of the first brood of downy young devolves entirely on the male.

The downy striped and spotted hatchlings can swim almost as soon as hatched, but dive when a day (?) old clumsily with a splash, remaining submerged only for a short time. When first venturing forth from the nest they hold on with the bill to the parent's flank feathers at the rear and are thus towed along. On scenting danger the parent gives the tittering alarm note, at the same time partly raising its wings and dipping its posterior. The chicks clamber up the incline and ensconce themselves between the scapulars and are carried away to safety.

MUSEUM DIAGNOSIS. For details of plumages of the nominate race *ruficollis* see Witherby 1940, 4: 109-11. Our race *capensis* differs from it in having white bases to the primaries and more white on the secondaries.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	94-109	18-22	30-35 (Baker)	c. 23-33 mm. (SA)

COLOURS OF BARE PARTS. Iris reddish brown or deep red, or orange yellow, with a circle of fine brown spots round pupil. Bill in adult black, the extreme tip pale and the base and gape (swollen) yellow or greenish yellow; in downy young cherry red. Legs and feet greenish black or black.

Order PROCELLARIIFORMES

Key to the Petrels, Shearwaters and Storm Petrels (Procellariidae and Hydrobatidae) recorded in Indian waters

	Page
A Large-sized (c. 50 cm. = 19½ in.), dark above and below, bill pale fleshy white.....	11
B Large-sized (c. 40-48 cm. = 15½-19 in.), dark above and white below.....	1
C Medium-sized (c. 36 cm. = 14 in.), with dark head, chequered upperparts, and white underparts.....	10

PETRELS, SHEARWATERS

9

Page

- Medium-sized (c. 33-36 cm. = 13-14 in.), dark above and below 2
- Small-sized (c. 17-28 cm. = 7-11 in.), dark above and below 3
- Small-sized (c. 19-31 cm. = 7½-12 in.), generally dark above with some white in plumage 4
- 1 White face streaked with black, upperparts scale-like in appearance, (c. 40-48 cm. = 15½-19 in.) *Procellaria leucomelana* 11
- Uniformly dark above, white below (light phase) or all dark (dark phase), tail cuneate (c. 42-48 cm. = 16½-19 in.) *Procellaria pacifica chlororhyncha* 12
- 2 Bill dark brown, body feathers paler below than above, tail short and rounded (c. 33 cm. = 13 in.) *Procellaria tenuirostris* 13
- Bill very stout and black (c. 36 cm. = 14 in.) *Bulweria etterima* 15
- 3 Bill short (c. 29 mm.), tail long, wedge-shaped, feet flesh-coloured *Bulweria fallax* 15
- Dark all over, wedge-shaped tail, pale legs (c. 25-28 cm. = 10-11 in.) *Bulweria bulwerii* 16
- Dark all over, smaller, forked tail (c. 17-19 cm. = 7-7½ in.) *Oceanodroma leucorhoa monothitis* 21
- 4 Sooty black above with white underparts, dark colour of back extending to sides of breast (c. 29-31 cm. = 11½-12½ in.) *Procellaria thermisterei bailloni* 13
- Sooty black above with white rump, underparts white with black band running longitudinally along middle of belly through under tail-coverts (c. 20-25 cm. = 8 in.) *Fregetta tropica melanogaster* 20
- Dark all over with white rump, pale wing-bar, square tail, and yellow webs of toes (c. 19 cm. = 7½ in.) *Oceanites oceanicus oceanicus* 17

Family PROCELLARIIDAE: Petrels, Shearwaters

Sea birds of very diverse sizes and coloration, almost from goose to myna, and white, grey, brown, or black plumage or combinations of these. Bill short and stout to lengthy and slender, covered with horny plates, hooked at tip. Nostrils tubular. Wings narrow, long, and pointed with first primary longest, and secondaries short. Tarsus short to medium, slender, laterally compressed, reticulated. Feet webbed, with strong hindclaw. Tail short, rounded. Sexes alike.

Genus DAPTION Stephens

Daption Stephens, 1826, in Shaw's Gen. Zool. 13(1): 239. Type, by original designation, *Procellaria capensis* Linnaeus

Bill short, stout, gonys angulate near the end, and the extremity inclined upward. Nostrils divided within the tube but terminating in a single orifice. Wings long: 1st quill (as.) longest; secondaries short. Tail of 14 feathers rather short, slightly rounded at end. Tarsus slender, reticulated, somewhat compressed and shorter than the middle or outer toe; hindclaw stout. Contains only a single species.

PETRELS, SHEARWATERS

11

7. Whitefronted or Streaked Shearwater. *Procellaria leucomelana* Temminck

Procellaria leucomelas Temminck, 1835, Planch. Col. d'Ois. livr. 99: 597
(Seas of Japan and Nagasaki Bay)
Baker, FBI No. 2199, Vol. 6: 306

SIZE. Brownheaded Gull ±; length c. 48 cm. (c. 19 in.).

FIELD CHARACTERS. Pelagic. Recognized by its white face streaked with black.

Adult. Above, dark brown with black wings and tail. Below, white, including under surface of wings. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. North Pacific Ocean from Korea and Japan south in winter to Philippine Is., Borneo, Moluccas and New Guinea. Breeds in colonies on small offshore islands, e.g. in Japan, in burrows excavated in earthen hillsides.

Only one record for our area — a specimen taken at Mt Lavinia, Ceylon, in 1884. (Skin in British Mus.)

MUSEUM DIAGNOSIS. For details of plumage, breeding etc. see Hachisuka 1932: 252; breeding biology Austin and Kuroda 1953: 304.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	305-339	48-53	46-54	131-150 mm. (Baker)

COLOURS OF BARE PARTS. Iris dark brown. Bill dark horn-colour. Legs and feet flesh-colour, the outer toe darker (Baker).

8. Pinkfooted Shearwater. *Procellaria carneipes* (Gould)

Puffinus carneipes Gould, 1844, Ann. & Mag. Nat. Hist. 13: 365
(small islands off Cape Leeuwin, West Australia)
Baker, FBI No. 2193, Vol. 6: 305
Plate 2, fig. 8

SIZE. Brownheaded Gull ±; length c. 50 cm. (c. 20 in.).

FIELD CHARACTERS. Pelagic.

Adult. Above and below dark sooty brown or chocolate-black; sides of head and neck paler greyish brown. Pale fleshy bill and feet. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Indian and Pacific oceans from the Australian seas north in the (southern) winter to Ceylon, Japan, California.... (Alexander 1955: 23-4). Breeds on islands off southwestern Australia and northern New Zealand, and at Lord Howe Island. Within our area two specimens taken in Ceylon, one in 1879 (Wait 1931: 413), the other in 1945 (Osman Hill 1945, JBNHS 45: 239-40). More recently small numbers observed in the Maldivé Islands in July (Phillips 1958, JBNHS 55: 216).

MUSEUM DIAGNOSIS. For description of plumage, biology, etc. see Murphy 1936: 658.

10

PROCELLARIIFORMES

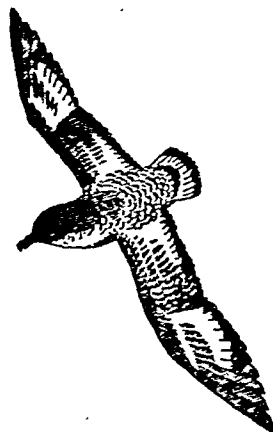
6. Cape Petrel. *Daption capensis* (Linnaeus)

Procellaria capensis Linnaeus, 1758, Syst. Nat., ed. 10, 1: 32 (Cape of Good Hope)
Baker, FBI No. 2201, Vol. 6: 307
Plate 2, fig. 12

OTHER NAME. Cape Pigeon.

SIZE. Pigeon; length c. 36 cm. (c. 14 in.).

FIELD CHARACTERS. A black and white pelagic petrel with a dark head, conspicuously chequered back, and two large roundish white patches on upper surface of each wing.



× c. 1/10

MUSEUM DIAGNOSIS. For description of plumage, measurements, moults and biology, see Murphy 1936: 601-10.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	240-268	29-32	42-46	92-108 mm.

COLOURS OF BARE PARTS. Iris brown. Bill black, the skin between the rami red. Legs and feet black.

Genus PROCELLARIA Linnaeus

Procellaria Linnaeus, 1758, Syst. Nat., ed. 10, 1: 131. Type, by subsequent designation, *Procellaria aequinoctialis* Linnaeus (Gray, 1840, cf. *Ibis*, 1949: 512)

Cf. Phillips, W.W.A. 1951, *Spolia Zeylanica* 26(2): 151-3.

Bill long, slender, compressed, much hooked at the point and with both mandibles turning down at tip. Nostrils tubular ending in two distinct oblique orifices ('double-barrelled') directed forward and upward, with a broad division between them. Wings long and pointed: 1st primary (as.) longest. Tail of 12 feathers, rather long and graduated. Tarsus reticulated, compressed and sharp in front; shorter than the middle and outer toes which are subequal. A small hindclaw.

Oceanic birds of moderate size.

12

PROCELLARIIFORMES

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	299-316	41-46	c. 52-56	137-148 mm.

COLOURS OF BARE PARTS. Iris brown. Bill, feet and legs flesh colour, the tip of both mandibles dusky and darker (Baker).

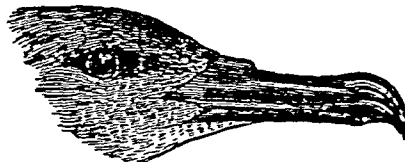
9. Wedgetailed Shearwater. *Procellaria pacifica chlororhyncha* (Lesson)

Puffinus chlororhynchus Lesson, 1831, Traité d'Orn., Livr. 8: 613
(Sharks Bay, Western Australia)

Baker, FBI No. 2196, Vol. 6: 303 (= *Puffinus pacificus hamiltoni* Mathews)
Plate 2, fig. 7

SIZE. Brownheaded Gull ±; length c. 48 cm. (c. 19 in.).

FIELD CHARACTERS. Pelagic. Above, dark chocolate-brown, primaries and wedge-shaped tail black. Face and throat dark brownish grey. Below, dimorphic, greyish brown (dark phase), or white (light phase). Sexes alike.



× c. 1

STATUS, DISTRIBUTION AND HABITAT. Warmer parts of the Indian and Pacific oceans. Breeding at Seychelles, Mauritius, Fouquet, and Rodriguez; ranging widely over the western Indian Ocean. From within our area 4 specimens, all taken on the W. coast of Ceylon, are in the Colombo Museum. An old sight record at Trincomalee by Col. Legge (Wait 1931: 412) and another by W. W. A. Phillips at Colombo in 1949 (1950, JBNHS 49: 289). According to the latter this shearwater is probably a regular summer visitor to coastal Ceylon. He found it (presumably this same race, *chlororhyncha*, plentiful in the Maldivé Islands in early July (1958, JBNHS 55: 216). Cumming's record from the Makran Coast of Baluchistan was shown by Ticehurst (1940, JBNHS 32: 89) to be erroneous, but this shearwater may well turn up along the coast of West Pakistan.

BREEDING. For breeding biology see Murphy 1936, and Murphy, Niedrach & Bailey 1954: 30.

MUSEUM DIAGNOSIS. For details of plumage, races, etc. see Murphy 1951: 1-21; Hachisuka 1932: 253.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	274-290	c. 36-39	c. 45-48	149-161 mm.

COLOURS OF BARE PARTS. Iris dark brown. Bill dull fleshy or dusky greenish. Legs and feet fleshy white (Baker).

PETRELS, SHEARWATERS

13

10. Slenderbilled or Short-tailed Shearwater. *Procellaria tenuirostris* Temminck*Procellaria tenuirostris* Temminck, 1835, Pl. Col., livr. 99: text to pl. 587

(Seas north of Japan and shores of Korea = Japan)

Baker, FBI No. 2197, Vol. 6: 304 [= *Puffinus tenuirostris tenuirostris* (Temminck)]

OTHER NAMES. Mutton-bird, Whale-bird.

SIZE. Pigeon; length c. 33 cm. (13 in.).

FIELD CHARACTERS. Pelagic.

Adult. Above, dark sooty brown, crown and primaries nearly black. Below, paler and greyer with grey chin and throat and greyish under wing-coverts.

STATUS, DISTRIBUTION and HABITAT. Once obtained near Ormara on the Makran Coast, Baluchistan, in May 1889 mistakenly reported (JBNHS 12: 767) as *P. chlororhynchus* (cf. above). Another example picked up dead on the south coast of Ceylon in May 1949 (Phillips 1951, SZ 26: 151). Both these doubtless blown in by SW. Monsoon gales. Breeds on islands in the neighbourhood of Tasmania and southeastern Australia. Ranges northward to Korea and Japan, and to Behring Straits and western coasts of North America.

MUSEUM DIAGNOSIS. For description of plumages, biology, etc. see Murphy 1936: 673-6.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	258-280	31-34	49-52	80-85 mm. (Baker)

COLOURS OF BARE PARTS. Iris brown. Bill blackish brown, tinged with olive. Legs and feet purplish black, with outer toes and outer side of tarsus black.

11. Mauritius Shearwater. *Procellaria therminieri bailloni* Bonaparte*Procellaria nugax a. bailloni* Bonaparte, 1857, Cons. Av., 2: 205(ex *Insula Franciae* = Mauritius)

Not in Baker, FBI

Plate 2, fig. 13

LOCAL NAME. Hoogula (Maldives).

SIZE. Pigeon —; length c. 30 cm. (12 in.).

FIELD CHARACTERS. Pelagic.

Adult. Above, sooty black with greyish neck, the grey extending to sides of breast. Below, white; under tail-coverts black or black-and-white. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Breeds in the Maldive Islands. Extraliminally also in Mauritius, Réunion, Rodriguez, Seychelles, etc. Ranges in the tropical Indian Ocean, but strangely enough not yet obtained in coastal Ceylon or western India.

MIGRATION. ?

GENERAL HABITS. Like other petrels, spends most of the non-breeding season at sea. Glides swiftly close to the surface skimming over the waves

PETRELS, SHEARWATERS

15

Two specimens (Wing 201 and 212 mm.) have been taken on the Bombay Coast in the SW. monsoon season, doubtless storm-blown, and one in Kerala (JBNHS 16: 14). The racial identity of the last is undetermined.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	185-209	c. 38	31-33	87-103 mm. (Baker)

COLOURS OF BARE PARTS. Iris brown. Bill dusky brown, bluish at the base and most of lower mandible. Legs and feet pinkish white; outer part of tarsus and outer toe including web black, variable in extent.

Genus BULWERIA Bonaparte

Bulweria Bonaparte, 1843 (1842), Nouv. Ann. Sci. Nat. Bologna 8: 426.Type, by monotypy, *Procellaria bulwerii* Jardine & SelbyVery closely allied to *Procellaria* but considerably smaller and of a more or less uniformly slate colour. Feet weaker; tail comparatively longer. Nostrils on top of culmen forming two quite separate round holes, this portion somewhat soft.13. Mascarene Black Petrel. *Bulweria aterrima* (Bonaparte)*Procellaria aterrima* 'Verr.' = Bonaparte, 1857, Cons. Av., 2: 191(ex *Insula Borbonica*, Afr. occ. = Réunion)

Not in Baker, FBI

OTHER NAMES. Réunion Petrel, Mascarene Gadfly Petrel.

SIZE. Pigeon +; length c. 36 cm. (c. 14 in.).

FIELD CHARACTERS. Pelagic.

Adult. Above and below dark grey-brown or sooty black, with wedge-shaped tail. Bill short, stout, black. Feet dark reddish flesh colour; outer toe and webs black (Alexander 1955). Dimorphic: dark and light colour phases. Has been likened to a huge swift flying low and fast over the surface of the sea.

STATUS, DISTRIBUTION and HABITAT. Indian Ocean from the Mascarene Islands north to the Gulf of Aden. Doubtfully breeding on Réunion Island c. 21°0'S., 55°30'E.

A live specimen (storm-blown?) taken by fishermen at Bombay, 15 June 1940, identified at Colombo Museum (JBNHS 42: 193). Unfortunately the skin cannot be traced for rechecking; therefore the record must stand unconfirmed till fresh specimens come to hand.

13a. Jouanin's Gadfly Petrel. *Bulweria fallax* Jouanin*Bulweria fallax* Jouanin, 1955, L'Oiseau 27: 160

(at sea, approximately 12°30'N., 55°E.)

Not in Baker, FBI

Plate 2, fig. 6

OTHER NAME. Jouanin's Black Petrel.

14

PROCELLARIIFORMES

in a wandering course on extended motionless wings interrupted by a few rapid strokes, often lowering legs and paddling or 'walking' along the water. Turns and twists from side to side in flight flashing the white breast intermittently, like sand plovers in a flock. Ranges widely over vast expanses of ocean, returning at the appointed season to its specific breeding islands.

FOOD. Small fish, squids, and other surface-floating animals; refuse thrown overboard, etc.

VOICE and CALLS. Unrecorded in India.

BREEDING. Gregarious. Season, in Maldives apparently between October and January, or later; said by the islanders to continue throughout the year. Burrows were found to contain eggs and young on 29 December (Gadow in Gardiner 1903); also between 26 and 31 January (1958, Phillips & Sims, JBNHS 55: 201). Nest, a burrow excavated in sand beneath roots of scrub, within six metres of the shore; particularly numerous on small uninhabited islets. The birds visited the burrows only at night, between midnight and 4 a.m. Eggs, white; one measured 49 x 35 mm. Clutch size? Incubation period? (Both the incubation and nestling periods are inordinately protracted in shearwaters and petrels.) Presumably, as in other petrels, both sexes incubate.

MUSEUM DIAGNOSIS. For description of plumages etc. of nominate race *therminieri* see Murphy 1936: 684-7. *Bailloni* differs from it only in details. It differs from the more northerly occurring race *persica* (see below) in being somewhat smaller with a shorter bill, and in the greyish of the neck extending to sides of breast. (See also Palmer 1962, 1: 198.)MEASUREMENTS. Specimens from Maldives, Seychelles, Réunion measure: 7 ♂ ♀ Wing 181-198 (av. 191.7); bill (nostril to tip) 21-23 (av. 21.6) mm. Specimens collected at Aden, and on the Makran and western India coasts (*P. l. persica*) measure: 4 ♂ ♀ Wing 199-210 (av. 204.5); 5 ♂ ♀ bill (nostril to tip) 25-27 (av. 25.6) mm.

COLOURS OF BARE PARTS. Iris dark brown. Bill slate, ridge of culmen and tip black. Legs and feet slate-blue (livid flesh in juv.), back of tarsus and outer toe black, middle of webs and joints dusky (Witherby).

12. Persian Shearwater. *Procellaria therminieri persica* (Hume)*Puffinus persicus* Hume, 1873, Stray Feathers, 1: 5

(at sea between Gwadar and Muscat)

Baker, FBI No. 2200, Vol. 6: 306

SIZE. Pigeon —; length c. 31 cm. (12 in.).

FIELD CHARACTERS. Similar to *P. l. bailloni* but somewhat larger and with a longer bill. Less grey on neck and with a narrow white ring round eye and a white streak behind it. Difficult to distinguish unless in the hand. (See measurements under *P. l. bailloni*.)

STATUS, DISTRIBUTION and HABITAT. Arabian Sea coasts between Aden and Karachi. Common and abundant in the Persian Gulf and the Gulf of Oman, and on the Makran Coast. Breeding stations unknown; may lie off the Makran Coast or the Straits of Hormuz as suggested by Meinertzhagen (1954: 441).

16

PROCELLARIIFORMES

SIZE. Pigeon —; length c. 29-30 cm. (12 in.).

FIELD CHARACTERS. Pelagic.

Adult. Above and below brownish black with long wedge-shaped tail and a short, thick bill. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Probably breeds in burrows on islands such as Kuria Muria off eastern Aden, Socotra, or Abd-el-Kuri. Found commonly in the Arabian Sea and the Gulf of Aden throughout the year. Bailey and Bourne (1963, JBNHS 60: 258) report that they handled several examples of this species that came aboard an aircraft carrier at 16°49'N., 55°15'E. and 18°50'N., 57°50'E. on 14 February 1960, and 11°24'N., 57°05'E. on 25 May in the central Arabian Sea off the mouth of the Gulf of Aden.

GENERAL HABITS. Unknown, but has been observed feeding alone far from land.

FOOD. One of the birds handled by Bailey (Bailey & Bourne, loc. cit.) vomited a small squid.

BREEDING. Unknown, but probably some time between October and March.

MUSEUM DIAGNOSIS

MEASUREMENTS

Wing	Bill	Tarsus	Tail	Wingspan
240	29	32	125	790 mm.

COLOURS OF BARE PARTS. Bill black. Feet flesh-coloured with black outer edges to the legs and toes.

13b. Bulwer's Gadfly Petrel. *Bulweria bulwerii* (Jardine & Selby)*Procellaria bulwerii* Jardine & Selby, 1828, Ill. Orn., 2. pl. 65 (Maddira)

Not in Baker, FBI

Plate 2, fig. 5

OTHER NAMES. Bulwer's Petrel, Bulwer's Black Petrel.

SIZE. Pigeon —; length c. 26-5-28 cm. (10½-11 in.).

FIELD CHARACTERS. A small brownish black gadfly petrel, rather paler on chin and edges of greater wing-coverts, with a short, slim bill, short legs, and a long, wedge-shaped tail.

PETRELS, SHEARWATERS

17

STATUS, DISTRIBUTION and HABITAT. Pelagic. Breeds on islands off the coast of China; the Bonin Islands, Vulcan Islands, the western Hawaiians and Marquesas Islands in the Pacific Ocean. Also breeds on Madeira, the Salvages, Canary and Cape Verde Islands in the Atlantic. Phillips (1959, Bull. BOC, 79: 100-101) has reported upon the occurrence of this species in the Indian Ocean, having secured a specimen in the Maldives in August, 1958.

FOOD. Probably squid, small fish, and zooplankton.

BREEDING. Eggs are known from May to July.

Bill of *Bulweria bulwerii*, $\times c. 1$

MUSEUM DIAGNOSIS

MEASUREMENTS

Wing	Bill	Tarsus	Tail
200	21	27	110 mm.

COLOURS OF BARE PARTS. Bill black. Legs mainly pink; feet flesh-colour, outer toes and webs black.

Family HYDROBATIDAE: Storm Petrels

The smallest sea birds, closely related to Shearwaters, up to about Myna size (c. 25 cm. or 10 in.), of blackish or greyish plumage, mostly with a white rump. Wings long; tail medium to long; neck short. Bill slender, of medium length, grooved, hooked at tip. Nostrils tubular with a single orifice. Legs slender, medium to long; feet webbed, mostly black. Webs black or particoloured. Sexes alike.

Genus OCEANITES Keyserling & Blasius

Oceanites Keyserling and Blasius, 1840, Wirbelth. Eur. 1: xciii, 131, 238. Type, by subsequent designation, *Procellaria wilsonii* Bonaparte = *Procellaria oceanica* Kuhl. Exc. small. Bill slight, and shorter than head: the orifice of the combined nostrils single. Wings very long and narrow: 2nd primary (as.) longest. Tail moderate, slightly forked. Tibia partly naked; tarsi smooth, much longer than toes. Hind toe only represented by a minute claw. Basal phalanx of middle toe not flattened; shorter than the other phalanges plus claw. Claws sharp, spatulate, but little flattened.

The genus ranges through the southern oceans and into the North Temperate zone.

14. Wilson's Storm Petrel. *Oceanites oceanicus oceanicus* (Kuhl)

Procellaria oceanica Kuhl, 1820, Beitr. Zool. Abth., 1: 136 pl. 10, .1.

(No type locality. South Georgia designated by Murphy,

1918, Bull. Am. Mus. Nat. Hist., 38: 128)

Baker, FBI No. 2194, Vol. 6: 300

Plate 2, fig. 1

OTHER NAMES. Mother Carey's Chicken, Yellow-webbed Storm Petrel.

SIZE. Bulbul; length c. 19 cm. (7½ in.).

PETRELS, SHEARWATERS

19

STATUS, DISTRIBUTION and HABITAT. Claimed to be one of the most numerous bird species in the world, and is certainly the most wide-ranging of the storm petrels. Breeds on Antarctic and subantarctic islands wandering north in the Atlantic, Pacific and Indian oceans in summer, to Europe, Arabia, India, New Guinea, Japan, California, etc. Not uncommon along the coasts of the Persian Gulf, Makran and Sind. Also visits coastal Ceylon chiefly during the SW. Monsoon, and has been taken at Kanyakumari (Kerala). Sinclair (1888, JBNHS) mentions it as 'known but rare' on the Konkan coast (W. India). A specimen¹ was collected within two miles of Bombay docks on 22.10.1947 when also a number of scattered birds were observed

in coastal waters a few miles southward (Abdulali, JBNHS 47: 550). This is possibly a regular seasonal occurrence but curiously enough unrecorded. H. G. Alexander noted it about 150 miles out of Bombay towards Aden on 10 September (*Ibis*, 1929: 43). Not recorded from northern parts of the Bay of Bengal, but several from the neighbourhood of Malaya.

MIGRATION. The meagre authentic records for the Indian Ocean suggest that probably the main body of birds from the Antarctic breeding grounds reaches north to Socotra and the Arabian coast in May-June, returning by way of the waters off Ceylon between September and November (Gibson-Hill 1948, JBNHS 47: 445).

GENERAL HABITS. Keeps in scattered ones and twos or small parties — sometimes large gatherings of 200 or more. Often met far out at sea flying swift-like (alternate glides and fluttering) close over the water even in a choppy sea, or riding buoyantly on the wave crests. Picks up floating animalcules from the comparatively calm troughs between the waves, getting hidden now and again behind the swell. Feeds by 'walking' or 'hopping' on the water with wings fluttering and held slightly above line of back — strangely reminiscent of a flock of jungle babblers hopping in active search of food — long legs dangling, feet paddling, head bent low and bill touching the surface.

FOOD. Mainly zooplankton.

BREEDING. In the south polar and subpolar zones in the southern summer, November to January. Nests in crevices in cliffs, under and amongst stones of screes, etc.

MUSEUM DIAGNOSIS. For details of plumage etc. see Murphy 1936, 2: 749; Baker 1929, 6: 300.

MEASUREMENTS

Wing	Bill	Tarsus	Tail
	(from feathers)		
♂ ♀	12-14	32-36	72-84 mm.
			(Baker)

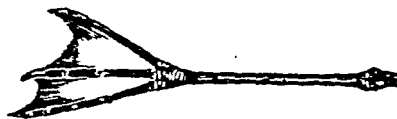
COLOURS OF BARE PARTS. Iris blackish. Bill dull black. Legs and feet black, with a conspicuous pale yellow patch in the centre of each web.

¹Dr. C. A. Gibson-Hill who examined this specimen suggested that it might be of the Kerguelen breeding race *parvus*. But the differences between the races are so slight and the overlap in the measurements so considerable that he could not be definite. The bird measured: Wing 145; bill 18.5; tarsus 35; tail 59 mm.

18

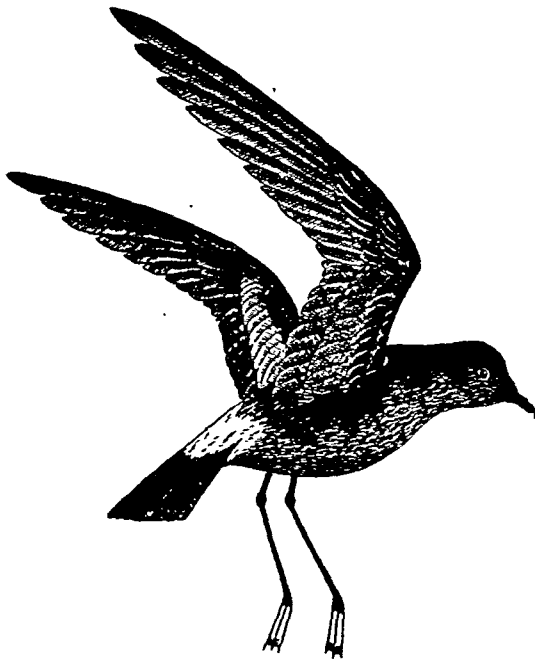
PROCELLARIIFORMES

FIELD CHARACTERS. Pelagic. A small sooty black storm petrel with a conspicuous white patch above tail (coverts) and a pale wing-bar. Longish slender black legs with distinctive lemon-yellow webbed toes which characteristically project behind the short square tail in flight. Sexes alike.



Foot, $\times 1$

Dark coloration and white rump, as well as flight, superficially reminiscent of house swift. The only storm petrel with white rump and dark underparts occurring regularly in the Indian Ocean.



$\times c. 1$

20

PROCELLARIIFORMES

Genus FREGETTA Bonaparte

Fregetta Bonaparte, 1855, Comp. Rend. Acad. Sci. Paris 41: 1113. Type, by original designation, *Thalassidroma leucogaster* Gould

Very close to *Oceanites*. Differs from it in having the first phalanx of the middle toe greatly flattened and longer than the other phalanges plus claw. Claws flattened, broad, spade-shaped and pointed at end.

The genus is chiefly found in the southern oceans.

15. Duskyvented Storm Petrel. *Fregetta tropica melanogaster* (Gould)

Thalassidroma melanogaster Gould, 1844, Ann. & Mag. Nat. Hist., 13: 367

(Southern Indian Ocean)

Baker, FBI No. 2195, Vol. 6: 302

Plate 2, fig. 4

OTHER NAMES. Gould's Storm Petrel; Mother Carey's Chicken.

SIZE. Bulbul \pm ; length c. 20 cm. (8 in.).

FIELD CHARACTERS. Pelagic. Like Wilson's Storm Petrel sooty black above with white rump, but with underside including middle of under wings white. A black band along middle of belly through under tail-coverts. Legs shorter, all black, including webs of toes. The longitudinal dark band on the belly, with conspicuous white areas on either side, distinguish this storm petrel from its congeners. It is, however, surprisingly difficult to differentiate in life as it follows a ship or dances upon the ocean' (Murphy 1936, 2: 764). Flight weaker, more fluttering and bat-like; otherwise habits more or less the same as last.

STATUS, DISTRIBUTION and HABITAT. Accidental straggler. Breeds in colonies on islands in the Antarctic and subantarctic zone, e.g. Kerguelen and South Orkney. Only a single old record from our area — a specimen collected in the Bay of Bengal (c. 1895) by or for the Marquis of Tweeddale, now in the British Museum. The bird ranges in the seas south of Australia, but has apparently not been seen elsewhere in the Indian Ocean.

Jerdon 1864 (3: 827), mentioned that a storm petrel was not of unfrequent occurrence near the mouths of the Ganges in stormy weather, as well as in the Bay of Bengal. The species was not established, and no recent authentic identification is available.

MUSEUM DIAGNOSIS. For description of plumages, also biology, see Murphy 1936, 2: 764-7.

MEASUREMENTS

Wing	Bill	Tarsus	Tail
	(from feathers)		
♂ ♀	14-15	c. 40-43	73-81 mm.
			(Baker)

COLOURS OF BARE PARTS. Iris brown. Bill, legs and toes (including webs) black.

Genus OCEANODROMA Reichenbach

Oceanodroma Reichenbach, 1853 (1852), Av. Syst. Nat.: iv. Type, by original designation, *Procellaria furcata* Gmelin

Cf. Austin, O. L., Jr., 1952, Bull. Mus. Comp. Zool., Harvard, 107: 399-401

PETRELS, SHEARWATERS

21

Rather close to *Fregetta* and *Oceanites* but with deeply forked tail of 12 feathers. Tarsus about equal to middle toe plus claw. 1st primary (as.) concealed, minute and pointed; 3rd primary longest.

16. Forktailed Storm Petrel. *Oceanodroma leucorhoa monorhis* (Swinhoe)

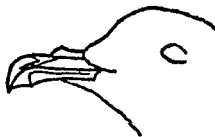
Thalassidroma monorhis Swinhoe, 1867, Ibis: 386 (Amoy, China)
Not in Baker, FBI
Plate 2, fig. 2

OTHER NAME. Leach's Storm Petrel.
SIZE. Bulbul ±; length c. 17-19 cm. (c. 7-7½ in.).
FIELD CHARACTERS. Pelagic. Similar in size to Wilson's but appearing a fairly uniform sooty brown, including underwing. Slightly greyer on neck and underparts, and with dark rump instead of white. Differs also in its distinctly forked tail, and shorter black legs and black feet. Flight similarly swallow-like but stronger than in whiterumped species described. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Rare vagrant. Breeds on islets from Korea and coastal Japan south to Quelpart Island, and islets off Formosa. Winters south to Singapore. In our area only a single specimen obtained in Ceylon — an exhausted storm-driven male at Mutwal near Colombo, 3 July 1927. This was apparently misidentified by Stuart Baker as of the Californian race *socorroensis*. Also a fairly reliable identification (H. H. Tomlinson) of one that came on board ship a little west of Colombo, 10 June 1923, and was examined in the hand (Gibson-Hill 1948, JBNHS 47: 447-8).

MUSEUM DIAGNOSIS. For description of plumage, measurements and other details, see Austin, 1952.

COLOURS OF BARE PARTS. Iris brownish. Bill, legs, and feet black (Palmer 1962, 1: 226).



Bill of *Oceanodroma leucorhoa*, x c. 1

Order PELECANIFORMES

Family PHAETHONTIDAE: Tropic-Birds

Wide-ranging tropical sea birds similar in size and superficial appearance to terns but morphologically closer to cormorants and frigate birds. Plumage in adults chiefly white and black. Head large; neck short; bill yellow or orange-red, longish, stout, slightly decurved, pointed. Wings long and pointed. Tail wedge-shaped with the middle pair of feathers in adults narrow, ribbonlike, much elongated as in the Paradise Flycatcher (*Terpsiphone*). Legs extremely short; feet webbed (connecting all 4 toes). Sexes alike. Young hatch from the egg with down. Eggs curiously like those of the raptors especially the Scavenger Vulture (*Neophron*). (For details of anatomy etc. see Baker 1929, 6: 290.)

TROPIC-BIRDS

23

FIELD CHARACTERS. Pelagic. A predominantly white tern-like sea bird with two greatly elongated ribbons in the wedge-shaped tail as in the Paradise Flycatcher's.



x c. ½

horizontal patch on posterior flanks. Bright coral red bill diagnostic. Sexes alike.

Young (immature). Black-spotted crown and nape, heavier black barring on back, and no ribbons in tail.

STATUS, DISTRIBUTION and HABITAT. Northern parts of Indian Ocean. Breeds on islands off the Somali coast, and in the Straits of Bab-el-Mandeb and the Persian Gulf. Ranges widely over the ocean in the off season. Recorded at sea off the Makran coast (February), between Karachi and Gulf of Kutch (March), Bombay (February, May and July — Navarro, Rauf Ali, JBNHS 59: 649; 63: 437); also from the Laccadive Islands. A specimen secured on 3 February 1956 west of southern Ceylon (7°52' N., 77°26' E.) is apparently the first authentic record in Ceylon waters, and also the southernmost in our area (Phillips 1958, SZ 28: 184). Recorded again in July 1972 (A. E. Butler, CBCN).

GENERAL HABITS. Flight tern-like but stronger and more direct with steady powerful flapping of the long, pointed wings, each flap perceptibly raising and lowering the bird in the air. Resembling the flight of a pigeon and punctuated with bouts of gliding. Usually unafraid, flying inquisitively quite close around ships far out at sea. The birds hover over a promising spot as if to take aim, and plunge headlong from a height of 30 or 40 metres on their prey, like the sea terns and boobies.

FOOD. Mainly fish and squids. Flying fish have often been taken from crops of specimens.

VOICE and CALLS. Loud, monosyllabic, rather finch-like (Phillips); 'incessant screams while circling around ship' (E. H. Aitken).

BREEDING. Season. March/April recorded in the Persian Gulf. A single egg laid under shelter of a ledge of rock or in a crevice. Often nests gregariously. Incubation period c. 28 days.

For breeding biology of the species see Stonehouse 1962: 124-61.

MUSEUM DIAGNOSIS. For details of plumage etc. see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail (including streamers)
♂ ♀	281-301	55-60	25-28	215-301 mm.

COLOURS OF BARE PARTS. Iris dark brown. Bill orange-red to dusky red, the tip, edge of commissure and narial groove blackish. Legs and feet yellow or yellowish white, the anterior toes and webs between them black (Baker).

Adult. Above, white finely barred with black. A black upright crescentic band in front of and through eye on each side of head. A black wing-bar conspicuous in flight. Outer primaries largely black. Below, including underside of wing, white with a black

horizontal patch on posterior flanks. Bright coral red bill diagnostic. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Breeds on islands off the Somali coast, and in the Straits of Bab-el-Mandeb and the Persian Gulf. Ranges widely over the ocean in the off season. Recorded at sea off the Makran coast (February), between Karachi and Gulf of Kutch (March), Bombay (February, May and July — Navarro, Rauf Ali, JBNHS 59: 649; 63: 437); also from the Laccadive Islands. A specimen secured on 3 February 1956 west of southern Ceylon (7°52' N., 77°26' E.) is apparently the first authentic record in Ceylon waters, and also the southernmost in our area (Phillips 1958, SZ 28: 184). Recorded again in July 1972 (A. E. Butler, CBCN).

GENERAL HABITS. Flight tern-like but stronger and more direct with steady powerful flapping of the long, pointed wings, each flap perceptibly raising and lowering the bird in the air. Resembling the flight of a pigeon and punctuated with bouts of gliding. Usually unafraid, flying inquisitively quite close around ships far out at sea. The birds hover over a promising spot as if to take aim, and plunge headlong from a height of 30 or 40 metres on their prey, like the sea terns and boobies.

FOOD. Mainly fish and squids. Flying fish have often been taken from crops of specimens.

VOICE and CALLS. Loud, monosyllabic, rather finch-like (Phillips); 'incessant screams while circling around ship' (E. H. Aitken).

BREEDING. Season. March/April recorded in the Persian Gulf. A single egg laid under shelter of a ledge of rock or in a crevice. Often nests gregariously. Incubation period c. 28 days.

For breeding biology of the species see Stonehouse 1962: 124-61.

MUSEUM DIAGNOSIS. For details of plumage etc. see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail (including streamers)
♂ ♀	281-301	55-60	25-28	215-301 mm.

COLOURS OF BARE PARTS. Iris dark brown. Bill orange-red to dusky red, the tip, edge of commissure and narial groove blackish. Legs and feet yellow or yellowish white, the anterior toes and webs between them black (Baker).

22

PELECANIFORMES

Genus PHAETHON Linnaeus

Phaethon Linnaeus, 1758, Syst. Nat., ed. 10, 1: 134. Type, by subsequent designation,

Phaethon aethereus Linnaeus

Cf. Gibson-Hill, C. A., 1950, JBNHS 49: 67-80

Characters as of the Family. The genus is represented throughout the tropical seas of the world.

Key to the Species

		Page
A	With elongated tail streamers.....	1
B	Without elongated tail streamers.....	2
1	Streamers red.....	21
	Streamers white.....	a
a	Upper and lower parts white, black wing-bar, bill yellow to orange.....	21
	.....<i>P. lepturus</i> (adult)	
	Upperparts barred with black, black wing-bar, bill red.....	22
	.....<i>P. aethereus</i> (adult)	
2	Upperparts barred with black, bill black.....	21
	.....<i>P. rubricauda</i> (juvenile)	
	Upperparts barred with black, bill yellow.....	b
b	With black nuchal crescent.....	21
	.....<i>P. aethereus</i> (juvenile)	
	Without black nuchal crescent.....	21
	.....<i>P. lepturus</i> (juvenile)	

17. Short-tailed Tropic-bird. *Phaethon aethereus indicus* Hume

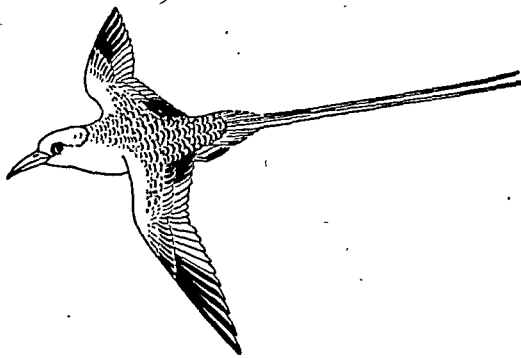
Phaethon indicus Hume, 1876, Stray Feathers, 4: 481, 483 (Makran Coast)

Baker, FBI No. 2188, Vol. 6: 291

Plate 5, fig. 2

OTHER NAMES. Boatswain or Bos'n bird; Redbilled Tropic-bird.

SIZE. Blackheaded Gull or large tern; length c. 40 cm. (16 in.) + tail ribbons c. 30 cm. (12 in.).



x c. ½

PELECANIFORMES

24

18. Redtailed Tropic-bird. *Phaethon rubricauda rubricauda* Boddaert

Phaethon rubricauda Boddaert, 1783, Table Pl. enlum.: 57 (Mauritius)

Baker, FBI No. 2189, Vol. 6: 292

Plate 5, fig. 1

SIZE. Blackheaded Gull ± or large tern; length c. 36 cm. (14 in.) + tail with streamers c. 48 cm. (19 in.).

FIELD CHARACTERS. Pelagic. A tern-like sea bird, predominantly silky white, with black streak through eye, black shafts to wing and tail feathers, and two long, somewhat stiff narrow bright red streamers in wedge-shaped tail which project spike-like rather than trail ribbon-like in flight. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Breeds on Mauritius, Assumption, and the Aldabra group of islands. Ranges widely in the tropical western Indian Ocean. Vagrants reported from the Bay of Bengal several times, but not collected and determined racially. May belong to the Christmas Island and Cocos-Keeling breeding population *westralis* Mathews.

GENERAL HABITS. Like other tropic-birds, usually met far out at sea, singly or in pairs — not gregariously. Does not follow ships for scraps, but often circles round close above them inquisitively and unafraid, and then moves on. Flight more buoyant than of the Short-tailed species. For feeding ecology see Ashmole & Ashmole, 1967, Peabody Mus. Bull. 24: 19

MUSEUM DIAGNOSIS. For details of plumages etc. see Baker, loc. cit.; Mathews and Iredale 1921: 80.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail (including streamers)
♂ ♀	330-339	66-69	30-33	360-428 mm. (Baker)

COLOURS OF BARE PARTS. Iris dark brown; eyelids black. Bill bright orange-red, paler or slightly brownish at the base, with a small black bar on the plane of the nostril. Legs and proximal one-third of the toes pale mauve or bluish white, with the distal two-thirds of the web black' (Gibson-Hill 1950).

19. White Tropic-bird. *Phaethon lepturus lepturus* Daudin

Phaethon lepturus Daudin, 1802, Buffon Hist. Nat., ed. Didot, Quadr. 14: 319

(Mauritius)

Baker, FBI No. 2190, Vol. 6: 293

Plate 5, fig. 4

OTHER NAME. Yellowbilled Tropic-bird.

SIZE. Blackheaded Gull ± or large tern; length c. 38 cm. (c. 15 in.) + tail with streamers c. 45 cm. (18 in.).

FIELD CHARACTERS. Pelagic. A white tern-like sea bird with orange-yellow bill and upright crescentic black spot in front of eye continued behind as a black streak through it to nape. In flight, a broad black band from shoulder to shoulder across upper surface of wings conspicuous, interrupted in the middle by the white back. Black wing tips. Two very long white streamers (central tail-feathers) broader and more pliant (ribbon-like) than in the red-tailed species. At close range adult distinguishable from adult *indicus* by unbarred back. Sexes alike.

PELICANS

25

STATUS, DISTRIBUTION and HABITAT. The typical race breeds in the Mascarene, Seychelles, Maldiva, Andaman, and Cocos-Keeling islands. Sight records for seas off Ceylon; 4 specimens taken on the island's west coast in Colombo Museum (Phillips 1953, Checklist: 3). Ranges over the tropical Atlantic, Pacific, and Indian oceans in several races.

GENERAL HABITS. Like other tropic-birds usually met with singly on the high seas. Has the same pigeon-like flight. Only seldom settles on water. For an excellent account of its biology see Murphy 1936: 802-7.

BREEDING. Season, in the Red Sea and Persian Gulf islands (?) May, June, and July (Baker); in the Maldiva Islands apparently the cool months November to January (adult, nestling, and eggs collected on Mahlosmadulu Atoll in November, and full-fledged juveniles on Tuladu Island in January — Phillips & Sims 1958, JBNHS 55 (2): 202).

For breeding biology see Stonehouse 1962: 124-61.

MUSEUM DIAGNOSIS. For description of plumages etc. see Murphy 1936: 802-3.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	252-282	44-51	21-23	Central feathers up to 575, generally c. 450 mm. (Baker)

COLOURS OF BARE PARTS. '♂ ♀ Iris dark brown; eyelids black. Bill yellowish grey, almost grey at the base with a dark grey line through the nostril. Legs and feet jet black, except for the inner toe and a small patch in the inner web which are a very light blue-grey, almost white;' (Gibson-Hill 1950).

Family PELECANIDAE: Pelicans

LOCAL NAMES (for all species): *Hārdil* (Hindi); *Bellua*, *Birwa* or *Bherwa* (Bihar); *Ganggya*, *Gaganter*, *Gorapolo* or *Gorapullo* (Bengal); *Chinkabatu* (Telugu); *Dhakias*, *Dhara*, *Bhela* (Assam); *Uphong* (Manipur); *Pas boruwa*, *Parbara* (Sinhala); *Kūlkāda* (Tamil, Ceylon); *Pen* (Sind; Kutch); *Kotumpannam* (Malayalam).

Large gregarious clumsy-looking birds with short stout legs and large fully webbed feet. Tarsus compressed, reticulate in front. 2nd longest, heavy, the upper mandible flattened and hooked at tip, the lower consisting of two narrow flexible arches, underhung throughout its length by a capacious gular pouch of loose naked skin. Nostrils obsolete, concealed in grooves running the whole length along either side of culmen. Wings large and broad, 2nd primary (as.) longest. Tail short, square, soft. The extensible pouch serves as a dip- or landing net for scooping up fish, and when nesting on the ground or in trees in the hot sun as a cooling device for dissipating moisture and promoting evaporation by constant pulsation. The skeleton of hollow bones is particularly light weighing less than a kilogram to the total body weight of about 12 kilograms. Thus in spite of some little effort in the initial take-off from the surface, particularly in a following wind, the birds can fly strongly and for long distances to and from their fishing grounds, and when migrating. They fly with the neck bent back in a flat S, head drawn in between the shoulders, the large broad wings beating the air powerfully and steadily with a whistling sound. The flat-keeled underside of the body is beautifully streamlined for buoyant flight and is reminiscent of the float of a flying boat. When alighting on the water the birds

PELICANS

27

20. White or Rosy Pelican. *Pelecanus onocrotalus* Linnaeus

Pelecanus onocrotalus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 132. (Africa, Asia)
Baker, FBI No. 2176, Vol. 6: 270

Plate 3, fig. 2

LOCAL NAMES. See under Family.

SIZE. Vulture ±; length c. 183 cm. (72 in.).

FIELD CHARACTERS.

'Adult. Plumage mostly white, tinged with rose colour, with a tuft of yellowish feathers on the breast; primaries and some of the secondaries black; slight crest on the back of the head; feathers of the forehead ending in a point above the bill. Sexes alike; female smaller.



Feathers of forehead of (A) *P. onocrotalus* and (B) *P. philippensis* × c. 1/18

'Young (immature). Pale buffish brown above, somewhat mottled; primaries brown; underparts white with no rosy tinge' (Alexander 1955: 174).

STATUS, DISTRIBUTION and HABITAT. Resident, at least in part; first discovered breeding in the Great Rann of Kutch in 1960 (Sālim Ali 1960, JBNHS 57: 414). Mainly winter visitor to W. Pakistan (Baluchistan, Sind) and N. India from the Punjab to Assam (U.P., Rajasthan, Kutch, Saurashtra N. Gujarat). Andhra (Visakhapatnam?), and 'Madras' (?). Often vast congregations on large jheels and lagoons.

Extrolimital. Breeding from Hungary to the lakes of central Asia, south to Iraq and the Persian Gulf (Bubiyan Island off Fao). Wintering in N. Africa, Asia and through Burma, Malaysia to E. China.

BREEDING. Season. February to April in the Great Rann of Kutch where several hundred pairs were first found in 1960 nesting among old worn-down flamingo nests on the periphery of the occupied 'City'. Nest, a skimpy to fairly substantial bed of large white feathers (the birds' own, and flamingos') close together, about one nest per square metre. On 21 March most nests contained two eggs or young each (some 3 or 4), from naked newly hatched chicks to hefty squabs in down, a fortnight or more old. Eggs, ivory white with a smooth gloss, not chalky-textured like flamingo eggs, about the same size but slightly broader. Average of 25 Kutch eggs

26

PELECANIFORMES

make full use of their wings and tail to check momentum, at the same time throwing out their broadly webbed feet well forward to act as friction brakes against the water. Pelicans fly either in the characteristic V-shaped echelons of geese, or in long straggly ribbons with a wide front. The birds are much given to soaring on thermals, and flocks may commonly be seen in the middle of a hot day sailing on outspread motionless wings with upturned tips, in graceful circles high up in the blue, by themselves or in company with storks and vultures.

The birds frequent large freshwater lakes and jheels, and brackish lagoons. Their food consists almost exclusively of fish, some of considerable size being taken. A single bird is estimated to consume as much as 2 kg. per day. While the greater part of the fish perhaps consist of species of small economic worth, which are always in the majority, pelicans occasionally do some damage to commercial fisheries also. The method of fishing is by cooperative effort, a flotilla of birds swimming in a semicircle, or from bank to bank across an arm of a lake, vigorously splashing on the water with their large wings to drive a school of fish into the shallows. They do not dive for their prey like cormorants, but merely sail or rush into the shoal with bills open and lower mandible trailing in the water, or head completely submerged, the enormous skin bag acting as a landing net for the quarry which is swallowed by an upward jerk of the bill. Only the American Brown Pelican normally plunges from the air on fish like the sea terns or gannets. When satiated the birds waddle on to the shore to rest and preen and digest, before resuming the hunt.

The oil obtained from pelicans' fat is highly valued in Indian medicine as an embrocation for rheumatism and similar ailments.

DISTRIBUTION. Temperate and tropical America, Africa, Asia, Europe, Australia. Some species migratory.

VOICE. Syringeal muscles responsible for true voice-production, lacking. Adults usually silent; rarely uttering throaty grunts or croaks likened to the grunt of a buffalo. Young have a variety of groans, yelps and chattering.

Genus PELECANUS Linnaeus

Pelecanus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 132. Type, by subsequent designation, *Pelecanus onocrotalus* Linnaeus

Characters as of the Family.

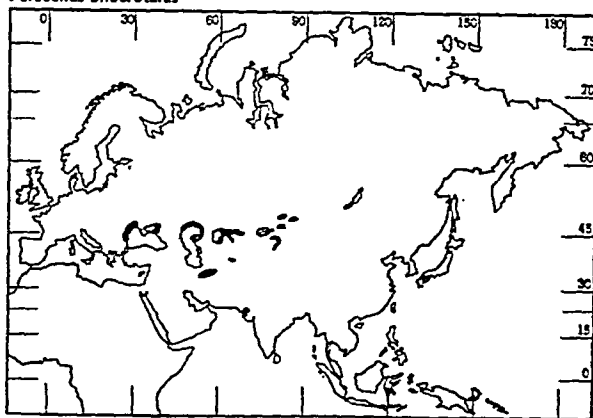
Key to the Indian forms

	Page
A White with black primaries, bill and pouch yellow to orange.....1	
B General coloration grey, no black in wings, bill flesh with blue spots, pouch dull purple..... <i>P. p. philippensis</i> (adult)	29
C Pale brown above, white below..... <i>P. p. philippensis</i> (juvinal)	29
D Brown to dingy white, irregularly speckled with brown.....2	
1 Feathers of forehead end in a point..... <i>P. onocrotalus</i> (adult)	27
Feathers of forehead end in a transverse concave line.....	
..... <i>P. p. crispus</i> (adult)	30
2 Feathers of forehead end in a point.....	
..... <i>P. onocrotalus</i> (juvinal)	27
Feathers of forehead end in a transverse concave line.....	
..... <i>P. p. crispus</i> (juvinal)	30

28

PELECANIFORMES

95.56 × 61.65 mm.; of 14 from Persian Gulf, *sic* Baker, 88.3 × 57.5 mm. Chicks when newly hatched, naked glossy-skinned, dark flesh-coloured, changing to blackish in 3 or 4 (?) days. Turn blacker when feather papillae appear and the down and quills sprout. Bill, bill-pouch, and legs funereal black. Down of the larger squabs dull sooty black in striking contrast with the snowy white of the tree-nesting *P. philippensis* (q.v.). The larger squabs are enormously fat and ugly; when approached they herd together and waddle off with an ungainly, unsteady gait. On fright the Kutch chicks disgorged an astonishing quantity of fish (mainly *Cyprinodon dispar*) some fully 25 cm. long and weighing 500 to 600 gm. each.

Pelecanus onocrotalus

■ Breeding range

MUSEUM DIAGNOSIS. See Hartert 1912-22, 2: 1402.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	700-730	430-450	c. 130-140	190-210 mm.
♀♀	640-680	390-400		

COLOURS OF BARE PARTS. Iris red to crimson. Bill plumbeous blue, mottled with whitish along the centre, with the nail and edges of both mandibles red; lower mandible blue on the basal, yellow on the terminal half. Pouch, face and orbital skin yellow, brighter in the breeding season. Legs and feet fleshy pink; webs yellow (Baker).

[Details of a freshly killed specimen, Bharatpur, 2. 1. 1952.

Ad. ♂ Wing 745; bill (from skull) 435; tarsus 152; tail 163(?) mm.

Weight 11 kg. Iris yellow. Facial skin pale magenta-flesh (pink). Bill: a plumbeous-blue stripe along ridge of culmen, c. 2.5 cm. (1 in.) wide at forehead, narrowing

PELICANS

29

to c. 1.25 cm. (½ in.) near tip. Similar tapering lateral bands on either side of culmen and lower mandible for c. 25 cm. (10 in.) from gape; tip of bill (nail) pale cherry-red paling to a yellowish horn point. Pouch lemon-yellow. Legs and feet pale creamy grey. Pouch held c. 4 kg. of fish, some 25 cm. long.]

21. Spottedbilled or Grey Pelican. *Pelecanus philippensis philippensis* Gmelin

Pelecanus philippensis Gmelin, 1789, Syst. Nat. 1(2): 571 (Philippines = Manila, vide Stresemann 1952, Ibis 94: 514)

Pelecanus roseus Gmelin, 1789, Syst. Nat. 1(2): 570. (Manila, P.I.)
Baker, FBI No. 2179, Vol. 6: 274

Plate 3, fig. 1

LOCAL NAMES. See under Family.

SIZE. Vulture +; slightly smaller than White Pelican. Length c. 152 cm. (60 in.).

FIELD CHARACTERS. Without black in wings.

Adult. Head, neck, and upperparts grey; underparts greyish white, the under tail-coverts mottled with brown; under wing-coverts and under tail-coverts tinged with vinaceous in summer; lower back, rump, and flanks tinged vinaceous in winter; a crest on the back of the head, composed of elongated brown feathers tipped with white; bill flesh-coloured with blue spots on the upper mandible; pouch dull purple with bluish black markings; feet dark brown. Sexes alike.

'The grey colouring which includes wings and tail, at once distinguishes this species' (Alexander 1955: 176).

Young (immature), pale brown above, white below.

STATUS, DISTRIBUTION and HABITAT. Resident and locally migratory, in well watered tracts in both Pakistans, all India, and Ceylon. Breeds in Ceylon, Madras (Tirunelveli and Chingleput districts), Andhra (West Godavari district), Assam (Kaziranga Wildlife Sanctuary) and doubtless elsewhere in suitable localities. Nicobar Is. (accidental. Abdulali, JBNHS 61: 500).

GENERAL HABITS, etc. See under Family.

BREEDING. Gregarious, often in traditional sites in mixed colonies with egrets, cormorants, etc. Season, in Ceylon December to March/April, at Aredu-Sarepalle, a few miles from Kolleru Lake in Andhra—the largest pelicanry known in India—chiefly October to March. Nest, a massive structure 60–75 cm. across, roughly circular, 30 cm. or more thick, on branches of *Pithecellobium*, mango, and other large trees, or on palmyra (*Borassus*) and coconut (*Cocos*) palms. On a thick foundation of twigs are bedded large quantities of rice straw from nearby newly harvested fields making the finished nest appear as though entirely made of that material. Sodden decaying water weeds and reed stems also used along with or instead of straw. Nests on palms built at base of the more or less horizontal stems of lowest leaves, the nests touching one another in a continuous untidy ring platform. Pilfering of material from neighbouring nests common. Nests constantly added to most of the time. Eggs, 3 or 4, chalky white becoming

BOOBIES

31

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	720–800	400–450	116–122	220–230 mm. (Baker)
♀♀	680–720	360–380		

COLORS OF BARE PARTS. Iris white or yellowish white. Bill plumbeous grey, the nail and edges of both mandibles yellow over the apical half. Cheeks, orbital skin, and pouch, pale yellowish or creamy flesh-colour, the last deepening into orange-red in the breeding season. Legs and feet pale bluish grey or plumbeous.

MISCELLANEOUS. In Sind the Mohanas or inland fishermen use captive tethered pelicans as decoys. They also use the skin stretched over a frame as a helmet for stealthily approaching ducks and coots in water with bodies submerged, and capturing them by pulling them under by their legs one by one.

Family SULIDAE: Boobies

Sea birds of the size of large ducks, e.g. Brahminy, to larger than geese. Body stout, neck of moderate length, wings long and pointed, tail rather long and wedge-shaped. Bill stout, conical, pointed, and slightly downcurved at tip, but not hooked. Nostrils obsolete. Legs short and stout, feet large and fully webbed. Plumage typically white in adults with the primaries or entire wing black; also the tail in some species. Bill, and bare facial and gular skin, brightly coloured. Sexes alike or nearly so.

The majority of species live in the tropical seas. Boobies can be readily identified in the distance by their characteristic habit, shared with tropic-birds and sea terns, of plunging headlong into the water from a height of 8 to 17 metres in the air for fish. The large size and absence of streamers in the tail distinguishes them from both the others. That they are capable of very deep dives in pursuit of fish is shown by the fact that a booby was found entangled in a fishing net set 27 metres below the surface. They breed on oceanic islands, on the ground or in stick nests in trees.

For further details see Murphy 1936: 827–9; Witherby 1940, 4: 14; Palmer 1962, 1: 280.

Genus SULA Brisson

Sula Brisson, 1760, Orn. 1: 60; 6: 494. Type, by tautonymy, *Sula* Brisson = *Pelecanus piscator* Linnaeus

Characters as of the Family.

Key to the Indian forms

	Page
A Plumage white above and below, primaries black.....1	
B Lower breast and belly lighter than rest of plumage.....2	
C Plumage uniformly dull brown above, paler below, with faint dark band across chest..... <i>S. sula rubripes</i> (juvinal)	33
D Head, neck, wings, and foreparts dark; belly and tail white..... <i>S. sula rubripes</i> (brown phase)	33
1 Trailing edge of wing broadly edged with black, tail black..... <i>S. dactylatra melanops</i> (adult)	32

30

PELECANIFORMES

stained and dirty in course of incubation; long to moderate oval, nearly equal at both ends. Average size of 50 eggs 78.8 × 53.4 mm. (Baker). Both sexes incubate and also feed the young. In contrast with the White Pelican, the chicks when a few days old are covered with snow-white down. A great deal of noise prevails in a colony with groaning and yelping by the hungry chicks and throaty grunts and bill-clapping by the adults. Chicks feed by thrusting complete head into capacious bill-pouch of parent, flapping their wings ecstatically. Incubation period c. 30 days (Lamba 1963, Part 1: 110–19). Period from laying of egg to flying of young about five months. (For an excellent account of the Aredu-Sarepalle pelicanry in Andhra see K. K. Neelakantan 1949, JBNHS 48 (4): 656–66, and for photos E. P. Gee 1960, *ibid.* 57: 245–51.)

MUSEUM DIAGNOSIS. See Baker, loc. cit.; Robinson and Chasen 1936: 239.
MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	530–607	324–355	86–98	168–196 mm.
♀♀	525–550	285–308	75–86	

COLORS OF BARE PARTS. Iris white to pale yellow, clouded with brown. Bill pinkish flesh or yellowish flesh with a row of bluish black spots on each side near the edge; the nail and terminal half of both mandibles orange, the lower mandible with bluish blotches near the centre. Pouch dull purple blotched with bluish black. Naked (facial) skin orange-yellow, livid in front of the eye. Legs and feet very dark brown or blackish (Baker).

Weight 1 ♂? imm. 5 kg. (BNHS).

22. Dalmatian Pelican. *Pelecanus philippensis crispus* Bruch

Pelecanus crispus Bruch, 1832, Isis, Col. 1109 (Dalmatia)

Baker, FBI No. 2179, Vol. 6: 273

Plate 3, fig. 3

LOCAL NAMES. See under Family.

SIZE. Vulture +; same as White Pelican. Length c. 183 cm. (72 in.).

FIELD CHARACTERS.

Adult. Very similar to White Pelican, also mainly white with black primaries, and difficult to distinguish from it in the distance. Colour of legs and feet dark grey instead of pink; and forehead feathers ending in a *crescent* line instead of a pointed wedge, best diagnostic clues. In flight dusky-white undersurface of wings distinguishes it from White Pelican. Sexes alike.

Young (immature) brownish grey above; white below. Pouch greyish.

STATUS, DISTRIBUTION and HABITAT. Breeds in SE. Europe, Asia Minor, Iran, N. China, SE. Mongolia. Winter visitor to N. Africa and our area: recorded in Baluchistan, Sind, Punjab, Kutch, Rajasthan (?), Saurashtra, N. Gujarat, Oudh, Bihar, Orissa (?), Bengal, Assam. Not in the Deccan, S. India or Ceylon. Flocks on large rivers, jheels, and coastal lagoons.

GENERAL HABITS, etc. See under Family.

MUSEUM DIAGNOSIS. For plumages see Naumann 1905, 11: 24.

PELECANIFORMES

32

Page

Trailing edge of wing narrowly edged with black, tail white..... <i>S. sula rubripes</i> (adult)	33
2 Lower breast, belly, and under tail-coverts pure white; head, neck, and rest of upperparts deep brownish black; under wing-coverts with broad white stripe..... <i>S. leucogaster plotus</i> (adult)	34
Lower breast, belly, and under tail-coverts whitish mixed with brown; head, neck, and rest of upperparts dull chocolate to fuscous; under wing-coverts with or without pale stripe..... <i>S. leucogaster plotus</i> (juvinal)	34
a Under wing-coverts with pale stripe..... <i>S. dactylatra melanops</i> (juvinal)	32
Under wing-coverts without pale stripe..... <i>S. dactylatra melanops</i> (juvinal)	32

23. Masked Booby. *Sula dactylatra melanops* Heuglin

Sula melanops Heuglin, 1859, Isis, 351, pl. 10, f. 2 and 3
(Burda-Rebschi, Somali Coast)

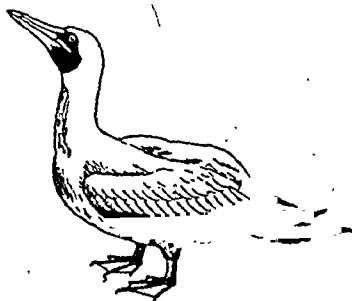
Baker, FBI No. 2187, Vol. 6: 288 (*personata* ?)

Plate 5, fig. 3

OTHER NAMES. Bluefaced Booby; White Booby.

SIZE. Barheaded Goose +; length c. 80 cm. (32 in.).

FIELD CHARACTERS. The largest of the boobies.



Adult. Mainly white: wing quills, greater wing-coverts, and tail-feathers chocolate-brown; bill blue-grey, greenish yellow, yellow, or red; naked skin of face and throat (the mask) blue-black; feet yellow, orange, greenish blue, or slaty blue.

BOOBIES

33

Young (immature). 'Head and neck dark brown; upperparts greyish brown' (Alexander 1955: 182).

STATUS, DISTRIBUTION and HABITAT. Common out at sea off the Sind and Makran coasts, at Ormara Head and elsewhere (Ticehurst, 1923, *Ibis*: 460). Occasionally blown in on the western seaboard during the monsoon gales. Obtained thus at Karachi, Bombay, Cannanore, and Ceylon (Kalutara and Putalam, on west coast). Once as far inland as Nasik, 112 km. NE. of Bombay (Salim Ali 1958, JBNHS 55: 358). The Ceylon specimens have been recorded as of the Australasian race *personata*; but the races are not readily distinguished, especially in brown juvenile plumage, and geographically they are more likely to belong to this, the SW. Indian Ocean population. Sight record from the Maldives Islands (Phillips & Sims, 1958). Breeds on Socotra, Mait, and other islands off the Somali Coast, on Rodriguez and Farquhar islands near Mauritius, and on Seychelles, etc. Perhaps also in the Kuria Muria group off the Oman coast (Arabian Sea).

GENERAL HABITS. The plunging habit needs clear water in which prey can be spotted at some depth, therefore the birds usually avoid the muddy littoral. During the plunge the conspicuous dark tail is fanned out as a rudder. For breeding biology of the species see Dorward 1962: 174-200.

FOOD. Chiefly squids and flying fish.

MUSEUM DIAGNOSIS. See Murphy 1936: 846-7.

MEASUREMENTS. (*personata*)

	Wing	Bill	Tarsus	Tail
♂ ♀	419-452, nearly always over 430	103-114	c. 54-58	c. 180-200 mm. (Baker)

COLOURS OF BARE PARTS. Iris yellow; for rest see Field Characters (above).

24. Redfooted Booby. *Sula sula rubripes* Gould

Sula rubripes Gould, 1838, Syn. Bds. Austr., app. pt. 4: 7
(New South Wales, Raine Island, northern Queensland)
Baker, FBI No. 2185, Vol. 6: 285
Plate 5, fig. 5

OTHER NAME. Redlegged Gannet.

SIZE. Large gull; length c. 41 cm. (26 in.).

FIELD CHARACTERS.

'Adult. Plumage mainly white, tinged with buff; primaries blackish brown; tail pale greyish brown; under wing-coverts mostly grey; bill light blue with brown tip and red base; naked skin of face blue, of throat black; feet red.'

'Young (immature). Plumage generally dull brown. In intermediate plumage, in which the bird often breeds, the head and underparts are lighter brown than the back and wings, whilst the rump, tail, and upper and under tail-coverts are white.' (Alexander 1955: 181-2.) Many other puzzling colour phases besides, not entirely explainable by age.

Adult distinguishable from adult Masked Booby by small size, whitish tail *contra* chocolate-brown, and red feet *contra* slaty.

STATUS, DISTRIBUTION and HABITAT. Breeds on many tropical islands in the Indian Ocean, e.g. Christmas Island, and in the western and central

CORMORANTS

35

in the Bay of Bengal. Recorded in the Arabian Sea off the Oman coast, 19°41'N., 59°38'E. and 23°29'N., 64°44'E. in December (A. O. Gross, 1960, *Audubon Magazine*, Nov.-Dec.). A specimen has been taken on 'the Malabar Coast'. Recorded several times from the west coast of Ceylon during the NE. monsoon. Also on the Maldives and Laccadive islands.

GENERAL HABITS. Usually seen singly or in small groups of up to a dozen birds or so. Rather more solitary in its hunting than the Redfooted Booby. Like others of the family catches its food — mainly flying fish and squids (cephalopods) — by diving from 25 to 35 metres up in the air and subsequent underwater pursuit. Nests on the ground in the open, on sea cliffs etc.

For an excellent account of its bionomics see Gibson-Hill 1947: 109-15.

MUSEUM DIAGNOSIS. For plumages etc. see Murphy 1936: 854 for the nominate race *leucogaster* from which *plotus* differs only in details. Also Gibson-Hill 1947, 1950.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
5 ♂♂	392-398 (av. 395.2)	96-101	41-45	198-210 mm.
4 ♀♀	406-426 (av. 417.5)	102-107	44-45.5	204-227 mm.

COLOURS OF BARE PARTS. Iris (both sexes) grey; eyelids dull blue. Bill: ♂ light greenish grey, ♀ slightly paler with tip almost white. Facial, ramal, and gular skins: ♂ dark purple, ♀ light greenish yellow often with a slightly darker patch in front of and below the eye. Legs and feet: ♂ pale arsenic green, ♀ pale yellowish green (Gibson-Hill 1950: 235).

Family PHALACROCORACIDAE: Cormorants and Darter

Gregarious, fish-eating, colonial-nesting water birds. All our Indian species are characterized by black plumage, whence collectively known in Hindi as *phalacrocorak* or *jil-korra* (water-crow).

Bill laterally compressed, rather long, slender and pointed; hooked at tip in cormorants, stiletto-like in the darter or snake-bird. Nostril obsolete. A gular pouch in cormorants, naked anteriorly. Neck and body long, rather spindle-shaped; wings of moderate length. Tail long and stiff. Legs short; feet large, peleciform, with all four toes united in a web for swimming; claws much curved. Sexes alike. Stance of bird when perched on tree or rock more or less upright.

Plumage less dense or resistant to water than in ducks and many other swimming and diving birds. Becomes permeated by prolonged immersion and requires constant drying out.

Further morphological details in Stressemann 1927-34, Aves: 804, 875; Van Tyne & Berger 1959: 401; Witherby 1940, 4: 1-2.

Within our area found mainly on inland waters — jheels, rivers, irrigation reservoirs, etc. Rarely also on brackish lagoons and tidal creeks. Expert divers. Unlike grebes, swimming under water with use of wings, literally flying beneath the surface, in pursuit of fish. The flight of cormorants, with neck stretched out in front, is powerful, sustained, and rather goose-like in profile as well as head-on, but the birds rise with some difficulty, flapping heavily along the surface to get airborne. When alighting on the water, the long stiff tail is first to break the surface and helps to check momentum.

34

PELECANIFORMES

Pacific. Ranges widely over the warm seas in these areas. Hume identified a flock on the Laccadive Islands (Baker 1929, 6: 287). A specimen (storm-blown?) taken in Ceylon in July (1936) in the neighbourhood of Colombo. According to Jerdon, 1864, occasionally seen in the Bay of Bengal, where Blyth later described it as 'common'. However in the British Museum there is only a single specimen actually collected in the Bay of Bengal.

GENERAL HABITS. The flight resembles that of a large shearwater. The birds hunt in groups of five to fifteen strung out in single file, flying with strong regular wing strokes low over the surface, plunging from the air and chasing the quarry under water. Most fishing done in the evening or early hours of the night. Sometimes gatherings of three or four hundred birds over a large shoal of fish. Unlike other boobies, nests chiefly in bushes and trees.

FOOD. Mainly squids (cephalopods), and fish. For more details of bionomics see Murphy 1936: 861-70; Gibson-Hill 1947: 115-19.

MUSEUM DIAGNOSIS. See Murphy 1936: 861-2.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	403-421	90-97, once 83	c. 40-43	219-228 mm. (Baker)

COLOURS OF BARE PARTS. Iris dark brown; rest as under Field Characters. Further details in Gibson-Hill, 1947: 116.

25. Brown Booby. *Sula leucogaster plotus* (Forster)

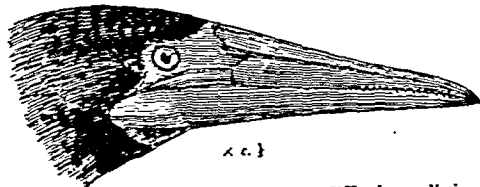
Pelecanus plotus Forster, 1844, Descr. Anim., ed. Licht.: 278 (near New Caledonia)
Baker, FBI No. 2184, Vol. 6: 285
Plate 5, fig. 6

OTHER NAMES. Brown Gannet; Common Booby.

SIZE. Large gull; length c. 76 cm. (30 in.).

FIELD CHARACTERS. The commonest booby in most tropical seas.

Adult. Above, dark chocolate-brown; primaries blackish. Below, neck and upper breast chocolate-brown; rest white including undersurface of black-margined wings. Sexes alike; male somewhat smaller.



Young (immature) largely dusky brown; difficult to distinguish from other species in immature plumage.

STATUS, DISTRIBUTION and HABITAT. Breeds on islands in the Indian and Pacific oceans, e.g. Christmas and North Keeling. Occurs uncommonly

36

PELECANIFORMES

BREEDING. In mixed colonies or heronries with storks, egrets, herons, ibises, etc. Nests, skimpily to fairly substantial stick platforms lined with water weeds in trees, rarely on rocks. Eggs, 2 to 6, pale blue or pale green overlaid by a chalky layer. Incubation by both sexes. Young nidicolous, naked at hatching, down-covered later; extraordinarily ugly throughout. Fed by both sexes by regurgitation, the chick inserting its head into the parent's gullet, wrestling vigorously with its wings flapping, and not letting go till the parent breaks off with an effort. Nestlings beg excitedly by shaking and swaying their upraised scrawny necks from side to side and tickling the parent's bill to induce disgorgement.

Adults commute long distances to forage for the voracious insatiable young, flying out and back all together in goose-like V-shaped echelons or wavy diagonal lines — a common sight at heronries in the mornings and evenings.

Cormorants are notorious for their prodigious appetites, and their depredations on local fish populations can be potentially devastating. Nevertheless, the wholesale indiscriminate persecution of the birds on this account, without a proper scientific inquiry, is unjustified. Investigations on the food and feeding habits of these and other piscivorous birds elsewhere have shown that the majority of fishes taken are of low economic worth, or which themselves often constitute a far greater menace to the spawn and fry of valuable food fishes than the birds.

Key to the Indian forms

	Page
A Large (c. 80 cm. = 32 in.); glossy black above and below, flanks white..... <i>Phalacrocorax carbo sinensis</i> (breeding)	37
B Mostly smaller; glossy black above and below, flanks not white....1	
C Plumage darker above than below.....2	
D Plumage lighter above than below.....3	
1 Throat speckled, head and neck black, yellow gular skin, head not crested (c. 57-63 cm. = 23-25 in.)..... <i>P. fuscicollis</i> (winter)	39
Throat black, patches of white feathers or plumes on head, with or without yellow gular skin, head noticeably crested.....a	
Throat white, no markings on sides of head, with or without yellow gular skin.....b	
a Pure white tufts of feathers on each side of neck behind ear-coverts, yellow gular skin (c. 57-63 cm. = 23-25 in.)..... <i>P. fuscicollis</i> (breeding)	39
Scattered silky white plumes on forecrown and sides of head, no yellow gular skin (c. 51 cm. = 20 in.)..... <i>P. niger</i> (breeding)	41
b Yellow gular skin (c. 80 cm. = 32 in.)..... <i>P. carbo sinensis</i> (winter)	37
Yellow gular skin lacking (c. 51 cm. = 20 in.)..... <i>P. niger</i> (winter)	41
2 Brown above and paler brown or whitish below.....c	
c Dull brown above, more or less white below, yellow gular skin, wing over 310 mm..... <i>P. carbo sinensis</i> (juvenile)	37
Sandy brown above, whitish below, flanks mottled brown and white, chin and throat white, foreneck brown with white streaks,	

CORMORANTS

37

Page

wing over 250 mm. but under 300 mm.....	39
..... <i>P. fuscicollis</i> (juvenile)	
3 Snake-like neck, straight pointed bill, pale brown head and neck, blackish feathers of upperparts streaked with silver brown, underparts dark brown or blackish.....	43
..... <i>Anhinga rufa melanogaster</i> (adult)	
Underparts paler.....	43
..... <i>A. rufa melanogaster</i> (juvenile)	

Genus PHALACROCORAX Brisson

Phalacrocorax Brisson, 1760, Orn. 1: 60. Type, by tautonymy, *Phalacrocorax* Brisson = *Pelecanus carbo* Linnaeus

General characters as of the Family. Bill moderately long, rather slender and compressed; culmen rounded and sharply hooked at end, with a narrow groove on each side, bifurcating at the dertrum or nail, the lower branch running down to the commissure. A gular pouch, naked anteriorly. Wing of moderate length: 2nd primary (as.) usually longest. Tail rounded or wedge-shaped, of 12 or 14 very stiff feathers. Tarsus short and compressed; toes flattened; claws much curved.

Genus cosmopolitan; represented within our limits by three species. (See Key, above.)

26. Large Cormorant. *Phalacrocorax carbo sinensis* (Shaw)

Pelecanus sinensis Shaw, 1801, Nat. Misc. 13: p. 1. 529, text (China)

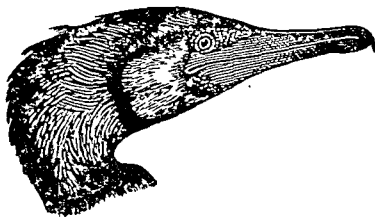
Baker, FBI No. 2180, Vol. 6: 277

Plate 4, fig. 1

LOCAL NAMES. Ghogur, Pân-kowwa, Jâl-kowwa (Hindi); Wādā silli (Sind); Neîâr (Kashmir); Bontakâki (Telugu); Di dao-kwa in Cachar, Pâni kaori—all cormorants—in Nowgong (Assam); Pân-kauri, for cormorants and shag (Bengal).

SIZE. Large duck; length c. 80 cm. (32 in.).

FIELD CHARACTERS. A thick-set duck-like black water bird with a slender bill, hooked at tip, and longish stiff tail. Swims low on water with only the longish neck and a thin slice of the back showing. Settles on rocks, sandbanks, and trees with an upright carriage. Often seen thus with wings and tail spread out to dry.



x c. 1

Adult (breeding). Above and below black with metallic bluish or greenish sheen, with a broad white patch on posterior flanks. Head, crest, and neck.

CORMORANTS

39

central Province), December. Nest. An untidy, comparatively massive deepish platform of twigs about 50 cm. in diameter, lined with water weeds etc. Built colonially, often in mixed heronries cheek by jowl with its own species and other water birds, the nests sometimes touching one another. Usually, however, a tendency to segregation into discrete *mohallas* is noticeable. Normally in trees standing partially submerged, but an unusual colony of hundreds of nests on ledges of rocks flanking the Subansiri river in Assam is described by Baker 1935 (4: 425-8). Eggs, 3 to 5, sometimes 6, long ovals, more or less equal at both ends, pale blue-green in colour, overlaid with a white chalky layer, becoming stained and dirty during incubation. Average size of 100 eggs 60.6 x 39.3 (Baker). Incubation period 23-24 days. Both sexes partake in incubation and feeding the young. As in all cormorants, the hatching is extraordinarily ugly—naked at first, covered with black down a few days later. According to Heinroth five weeks in nest; full fledged at two months. Nestlings demand food from incoming parent by violently worrying and tickling—'attacking'—its yellow throat-patch to the accompaniment of a persistent wheezy *chooe, chooe, chooe*—almost a whistle.

MUSEUM DIAGNOSIS. For details of plumages, moults, etc. of the nominate race see Witherby 1940, 4: 5-7, 10.

In breeding plumage our race *sinensis* differs from the above (of the northern Holarctic Region) by its head and neck being much whiter. In winter plumage the two are indistinguishable in the field.

MEASUREMENTS. Dr C. B. Ticehurst gives for birds from India and Muscat:

	Wing	Bill	Tarsus	Tail
♂ ♀	319-364	57-72 mm.	[62-71	140-155 mm.

(Baker)]

COLOURS OF RARE PARTS. Iris green; eyelids dusky yellow. Bill dark horny brown, the lower mandible except the tip pinkish- or yellowish-white. Skin of pouch black and yellow, patched in varying degree, occasionally all yellow. Legs and feet black.

MISCELLANEOUS. Longevity (*P. c. carbo*), 18+ years (Ring, 33: 148—1962).

27. Indian Shag. *Phalacrocorax fuscicollis* Stephens

Phalacrocorax fuscicollis Stephens, 1826, in Shaw's Gen. Zool. 13 (1): 91 (Bengal)

Baker, FBI No. 2181, Vol. 6: 279

Plate 4, fig. 2

LOCAL NAMES. Same as for the preceding, often with a prefix meaning small.

SIZE. Duck +; length c. 63 cm. (25 in.).

FIELD CHARACTERS. Smaller than the preceding. Distinguished from Little Cormorant (28) by longer, slenderer bill and sloping forehead.

Adult (breeding). Above, glistening bronze-black. Below, shiny jet black. A pure white tuft of feathers on each side of neck behind ear-coverts, and a few white specks on head. On closer view, in good light scalloped or scaly effect on back and wings (produced by darker edging to the feathers) perceptible. In non-breeding plumage distinguished from Large Cormorant chiefly on size; from Little Cormorant by bigger size, yellow gular skin, and white-speckled throat. Sexes alike.

38

PELECANIFORMES

more or less mixed with silky white feathers. Facial skin and throat white; gular pouch bright yellow.

Large size, white sides of face, yellow gular pouch, and white oval thigh patches diagnostic at rest as well as in flight.

In winter (non-breeding) plumage the hoariness of the head and neck, and the white thigh patches disappear; the yellow gular pouch becomes less bright. Then differentiated from our other cormorants chiefly on size.

Young (1st year). Dull brown above; more or less white below, progressively becoming browner and then blacker everywhere. Fully adult breeding plumage apparently attained in the fourth year.

STATUS, DISTRIBUTION AND HABITAT. Resident and locally migratory, practically throughout our area. In Kashmir, Ladakh and Nepal on lakes at considerable elevations (e.g. Satpur in Balistan, 11,300 ft. (c. 3450 m.) Meinertzhagen), and on the rivers debouching into the plains, and far up their gorges. Right across the Gangetic Plain to eastern Assam, south through the Peninsula, and in Ceylon. Ticehurst's observations at Karachi (*Ibis* 1923: 458) suggest that there may be a regular seasonal influx of extralimital migrants in winter, augmenting the resident population.

Frequents large inland waters—Himalayan torrents and lakes, and lowland rivers, jheels, irrigation reservoirs, etc. Also tidal lagoons and salt pans.

Extralimital. From Holland through central and southern Europe to central Asia; Burma, Thailand, Indochina and Malaysia to China. The species, in several geographical races, is found in North America, Europe, Asia, northern Africa, and Australia.

GENERAL HABITS. Usually met with in ones and twos, or small flocks of up to 8 to 10; seldom bigger. But very large congregations collect to breed at traditional heronries such as Keoladeo Ghana in Bharatpur (Rajasthan). Hunts fish by diving and underwater pursuit. From the surface, where the bird swims low down on the water, only the neck showing and the body almost completely submerged, it takes a little upward leap before plunging to dive, often remaining below for many seconds at a time. Sometimes joins in the concerted community hunts of its smaller relatives. When satiated, has been observed to dive and catch a catfish about 15 cm. long and play with it as a cat does with a mouse. The bird swam ashore with the fish, dropped it struggling on the bank, picked it up again and carried it back into the water, released it and dived after it, caught it again and brought it ashore, then leisurely repeated the whole performance several times before swallowing it. Normally silent in the non-breeding season. See also under Family.

For courtship display and general bionomics see Witherby 1940, 4: 2-10. FOOD. Almost exclusively fish.

BREEDING. Gregoriously in many localities throughout the country, the larger heronries becoming traditional and resorted to year after year. Season, mainly between September and February dependent on the monsoons, the filling up of jheels, and the availability of fish supply for the young. Recorded as follows: Sind (Eastern Narra dist.), November; N. India (Bharatpur), September-December; Madras (Vedanthangal), January-February; Assam (Subansiri river), December; Ceylon (North-

40

PELECANIFORMES.

Young (immature). Above, scaly bronze-brown, tail and primaries blacker. Below, chiefly white, with the flanks mottled brown and white.

The three species are difficult to distinguish in the field in non-breeding plumage, without size comparison, and sometimes liable to be confused *inter se*.

STATUS, DISTRIBUTION AND HABITAT. Resident, moving locally with conditions of water and fish supply, throughout the subcontinent from Sind in W. Pakistan to eastern Assam, south through the Peninsula, and in Ceylon. Not in the Himalayas except in the foothills where the larger rivers debouch into the plains. May occur in the peninsular and South Indian hills on the newly constructed dammed reservoirs among the Small Cormorants usually present there.

Frequents jheels, rivers, irrigation tanks, tidal estuaries, etc. by itself or in company with either or both the other cormorants. Abundant in Karachi harbour at certain times of the year.

Extralimital. Burma south to Tenasserim.

FOOD. Mainly fish.

GENERAL HABITS. As of the Family (q.v.). More gregarious than the Large Cormorant, oftener seen in flocks of large size and in association with its smaller relative, the two species frequently hunting together. The communal hunt, or battue, consists of a party of the birds hemming in a shoal of fish, or intercepting it as it gushes from the sluice gate of an irrigation reservoir, diving feverishly with little upward leaps and chasing the fish under water. Great havoc is wrought amongst the quarry as one bird after another plunges after them with energy, each to reappear presently with a struggling silvery form held crosswise in the bill. This is quickly shifted into position and swallowed head foremost with an upward jerk of the bill; presently the bird dives once more. The manoeuvre is repeated again and again till the birds are sated, when they will sit about on a sandbank or on rocks or trees in the characteristic upright posture, wings and tail spread open to dry, preening themselves and waiting for appetite to return.

BREEDING. Season, overall July to February; as in the preceding and in allied water birds generally, depending on early or late monsoon rainfall and local water conditions. Usually August to October in northern India; November to February in the south and in Ceylon. Nest, an untidy platform of twigs, rather like a crow's nest, sometimes scantily lined with grass roots and water weeds. Built in trees either in small colonies of its own or—as in Keoladeo Ghana (Rajasthan)—in enormous mixed heronries or 'rookeries' covering an extensive area of swamp with the partially submerged trees loaded down with thousands of nests and hundreds of thousands of water birds of numerous species—all three cormorants, darters, storks, herons, etc. There are often 30 to 50 nests of cormorants and other species in a single moderate-sized tree, closely packed and tier upon tier, the lower ones soon getting fouled and caked with the rain of excreta from above. Eggs, 3 to 5 or 6, pale bluish green with a chalky surface, smaller replicas of the Large Cormorant's. Average size of 100 eggs 51.3 x 33.2 mm. (Baker). Both sexes incubate. Incubation period not recorded. Chicks naked at hatching, soon becoming clothed in sooty black down.

MUSEUM DIAGNOSIS. See Key (above) and Baker, loc. cit.

CORMORANTS

41

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	257-276	50-61 generally 54-58*	c. 47-52	132-144 mm.

Weight 5 ♂ ♀ 600-790 g. (av. 706) — BNHS.

COLOURS OF BARE PARTS. Iris green or blue-green. Bill dark brown, base of lower mandible reddish horny, gular skin yellow; naked skin of face black-purplish in the breeding season, yellowish at other times. Legs and feet black (Baker).

28. Little Cormorant. *Phalacrocorax niger* (Vieillot)

Hydrocorax niger Vieillot, 1817, Nouv. Dict. Hist. Nat. 8: 88 (East Indies=Bengal)
Baker, FBI No. 2182, Vol. 6: 280
Plate 4, fig. 3

LOCAL NAMES. *Pān kaurica*, *jagrābi* (Hindi); *Pān kauri* also for shag (Bengal); *Narikāki* (Telugu); *Kādāl kāgām*, *Nēr kāgām* (Tamil); *Diya kara* (Sinhala); *Kādiādrācu* (Malayalam).

SIZE. Jungle Crow +; length c. 51 cm. (20 in.).

FIELD CHARACTERS. Smaller size, comparatively shorter, stouter bill, domed forehead, longer tail, and absence of yellow on gular skin distinguish it from the Shag. Size difference perceptible only when the two seen together.

Adult (breeding). Black overall with a bluish or greenish sheen. Upper back and wing-coverts dark silvery grey, scalloped with black. A short crest on occiput and nape and a few scattered silky white feathers and plumes on forehead and sides of head. In non-breeding plumage crest and white feathers in head disappear, and throat becomes white. Sexes alike.

Young (immature). Above, brown, the back with paler scalloping. Below, paler, with throat and centre of abdomen white.

Chick (c. one week old). Head bald shiny livid red, with naked scrawny neck. Body covered with dingy black down.

STATUS, DISTRIBUTION and HABITAT. Resident, with local movements depending on water conditions. Found through the subcontinent and in Ceylon. Absent in the Himalayas and northern West Pakistan. Affects jheels, rivers, irrigation reservoirs and canals, village tanks, tidal estuaries, etc.

Extralimital. Burma, Thailand, Indochina, Malaysia, Indonesia east to the Greater Sunda Islands.

GENERAL HABITS. As of the Family (q.v.) and very similar to the preceding, with which it commonly associates and is frequently confused. Solitary birds, or twos and threes on village tanks and tidal estuaries, to great flocks on the larger inland waters, and enormous congregations at the traditional rookeries, e.g. Keoladeo Ghana in Rajasthan and Vedanthangal in Madras State. When not on water, usually seen perched upright on trees, stakes, or rocks, sunning themselves, wings and tail spread open. In the feverish jostling during the communal hunts, in which densely packed rabbits participate, the birds often leap-frog over their fellows in their eagerness to plunge after a shoal of fish—manoeuvres reminiscent of starlings at a swarm of grasshopper nymphs.

DARTER

43

STATUS, DISTRIBUTION and HABITAT. Rare vagrant (?) to West Pakistan. A single specimen in the BNHS collection (o? 3. ix. 1917, Gujar, Mashki, 165 m. SSW. of Kalat, Baluchistan—J. E. B. Hotson) is the only record for our area (JBNS 62(3): 553).

Extralimital. SE. Europe, Black and Caspian Seas, Middle East, Afghanistan, Russian Turkestan, Algeria, Tunisia.

GENERAL HABITS. Similar to Little Cormorant.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. As for Little Cormorant, but feathers of scapulars and upper wing-coverts graphite grey, fringed or scalloped with black. Winter, glistening black with white throat and rusty brownish breast. Summer (breeding), head dark rusty brown.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	200-207	28-31	c. 36	140-117 mm.

Outer toe with claw c. 53-56 mm.

(Hartert)

COLOURS OF BARE PARTS. Iris dark brown (not green), sometimes almost blue-black. Legs and feet black.

Genus ANHINGA Brisson¹

Anhinga Brisson, 1760, Orn. 1: 60, 6: 476. Type, by tautonymy and monotypy
Anhinga Brisson = *Plotos anhinga* Linnaeus

Bill slender, straight, very sharp-pointed with both margins of commisure toothed near tip. No lateral groove; nostrils small, basal and linear. Neck very slender with a bend or kink at the 8th and 9th vertebrae. Wing pointed: 3rd primary (as.) longest. Scapulars elongate and lanceolate. Tail long, cuneate in shape, of 12 stiff feathers.

29. Darter or Snake-bird. *Anhinga rufa melanogaster* Pennant

Anhinga melanogaster Pennant, 1769, Indian Zool.: 13, p. 12 (Ceylon and Java)
Baker, FBI No. 2183, Vol. 6: 282
Plate 4, fig. 5

LOCAL NAMES. *Pānca*, *Pān dāhi* (Hindi); *Silli* (Sind); *Goyār* (Bengal); *Pānābātā* (Telugu); *Chakari* (Southern Gonds); *Pānābittāra* (Tamil, Ceylon); *Diya kara*, *Belli kara* (Sinhala); *Maniori*, *Begigir* (Assam).

SIZE. Duck +; length c. 90 cm. (36 in.).

FIELD CHARACTERS. A black water bird like the cormorant, with longer, slenderer snake-like neck, narrow head, and straight, pointed stiletto-shaped bill. Tail long, stiff, fan-shaped.

Adult. Above black, the back and wings longitudinally streaked and speckled with silver-grey; head and neck velvety chocolate-brown

¹ Treated by some authors under a separate family, Anhingidae, by others in a subfamily of Phalacrocoracidae (Anhinginae), or merely a genus as here.

PELECANIFORMES

42

FOOD. Mainly fish; to a lesser extent also tadpoles, frogs, and crustaceans.

BREEDING. Season, chiefly July to September in W. Pakistan and N. India; November to February in the south; December to May in Ceylon. Nest, an untidy stick platform about 25 cm. in diameter indistinguishable from that of the Shag, as also are the eggs though somewhat smaller. Average size of 100 eggs 44.8 × 29.0 mm. (Baker). Normal clutch 3 to 5. The nest is too small to contain the full complement of young when fairly grown. When an observer approaches a nest-tree these crowded youngsters, as well as brooding birds from adjoining nests, tumble plumb down into the water beneath, scraping through the thorny branches. The adults dive, or flap and patter along the surface to take off with the usual effort. The young soon manage to clamber back into the nest-tree using their pliant feet with the sharp hooked claws, the chin, and the stumpy wings to support and pull themselves up the branches. In addition to nesting in enormous mixed colonies at swamps, sometimes in multitudes dense enough to blacken acres of denuded trees, the Little Cormorant also nests singly and in smaller numbers on trees standing high and dry in the midst, or on the outskirts, of inhabited villages at considerable distances from water, in the usual company of Cattle and White egrets. Baker found an exceptional breeding colony in a swampy reed-bed in Assam. Here the nests were placed about 1.5 metres above the water on masses of broken-down elephant grass, the colony being completely screened from view by the tall growth. Both sexes partake in nest-building, incubation and care of the young. Incubation period not recorded. The marked disparity in growth of chicks of the same brood suggests that the eggs are laid at longer intervals than 24 hours and that incubation commences with the first egg. Brooding from the first egg must also serve to protect the clutch from nest marauders like the House Crow which is a very serious menace at heronries all over the country.

MUSEUM DIAGNOSIS. For plumages see Baker, loc. cit.; Robinson and Chasen 1936, 3: 246.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	181-205 (once 212)	29-34	35-40	133-146 mm.

Weight 5 oo? 360-525 g. (av. 427) — BNHS.

COLOURS OF BARE PARTS. Iris green. Bill horny brown, blackish at tip, livid purple at base. Gular and orbital skin black (non-breeding), purple (breeding). Legs and feet blackish, tinged with purple flesh colour when breeding (Baker).

28a. Pygmy Cormorant. *Phalacrocorax pygmaeus* (Pallas)

Pelecanus pygmaeus Pallas, 1773, Reise versch. Prov. Russ. Reich, 2: 712, pl. G
(Caspian Sea)
Not in Baker, FBI
Plate 4, fig. 4

LOCAL NAMES. None recorded.

SIZE. Little Cormorant ±.

FIELD CHARACTERS. In winter doubtfully distinguishable from Little Cormorant, see Museum Diagnosis.

PELECANIFORMES

44

with white chin, throat, and a narrow white line from behind eye halfway down each side of neck. Below, shiny black. Sexes alike.

Young (immature). Above, dark brown, head and neck paler (whitish), mantle narrowly and dully streaked with rufous and silver-grey. Below, brown; tail tipped paler.

STATUS, DISTRIBUTION and HABITAT. Resident, with local movements depending on water conditions. Found throughout the subcontinent from W. Pakistan to E. Assam (from c. 300 m. in the Himalayas), southward through the Peninsula, and in Ceylon.

Frequents inland waters—swamps, jheels, rivers, irrigation reservoirs, village ponds, etc.

Extralimital. Burma, Thailand, Indochina, Malaysia, Celebes (Sulawesi). Other races in Africa, Madagascar, Middle East.

GENERAL HABITS. Keeps singly, in scattered twos and threes, or large congregations, depending on living conditions. More individualistic than cormorants, and does not hunt in cooperative bands. Swims with body submerged, only the snake-like head and neck showing above the surface, constantly turning from side to side. An expert diver and underwater swimmer using the feet to propel itself in pursuit of prey, wings held half open. Unlike cormorants (and grebes) does not leap upward before plunging to dive; merely stretches neck horizontally and quietly vanishes below surface leaving hardly a ripple. When chasing fish under water, sways neck back and forth like a javelin-thrower poised to throw. A special structure in the vertebrae of the neck enables the sharp bill to be shot out as by a powerful spring. The quarry is transfixed on the stiletto-like mandibles. It is jerked off smartly when the bird surfaces, shaken into position, and swallowed head foremost. Though needing some initial effort in the take-off, flies strongly with quick flaps punctuated with sailing, tail spread fanwise, and slender neck with the characteristic kink in the middle stretched in front. When satiated perches upright on a tree-top or snag like cormorants, sunning itself with outspread wings and tail. As in cormorants, and strangely enough for such specialized aquatic birds, the plumage is permeable to water and needs constant drying. Occasionally spirals up on a thermal to lofty heights and circles on motionless wings along with storks and pelicans, obviously for fun.

When a tree on which darters are resting is approached, the birds hurl themselves into the water below, dragging through the intervening tangle of thorny branches as if shot dead. They go right under, but presently the snake-like necks reappear one by one in the distance. It is possible that some of such birds may be moulting their wing quills and temporarily flightless (see Moulting).

VOICE. Seldom heard except when nesting, a loud disyllabic *chigi*, *chigi*, *chigi*, etc. recalling the beginning of a guinea-fowl's cackle: and various grunts and croaks besides. Nestlings also very noisy when begging food.

FOOD. Almost exclusively fish, including some seemingly much too large for the bird's slender bill and gullet.

BREEDING. Season. June/July to December in W. Pakistan and N. India; November to February in the south; January to March in Ceylon. Nest, a largish twig platform built on trees standing in or near water, often

gregariously, among large mixed heronries, e.g. Keoladeo Ghana, Rajasthan, the nests almost touching one another on the overcrowded trees. Eggs, 3 to 6, elongated, spindle shaped, pale greenish blue with a whitish chalky coating, becoming soiled and dirty during incubation. Average size of 80 eggs 52.9 × 33.5 mm. (Baker). Both sexes partake in incubation and feeding the young. Incubation period unrecorded. As in the Little Cormorant, there is great disparity between nestlings in the same brood. Incubation commencing with the first egg is of survival value against nest-robbers like House Crows, and also against the fierce midday sun. Chicks blind and naked when hatched, except for some straggly down on head. White down acquired in a few days, persists on head, neck, and underparts even after wing and tail quills sufficiently grown for chicks to fly. Feeding by regurgitation, the bill and head of chick being thrust violently into parent's gullet.

On arrival of foraging parent at nest, the chicks jostle for food, upstretching neck, vigorously shaking and swaying it in a kind of St Vitus's dance, and tickling the parent's throat. Parent lowers and opens bill wide, allowing chick to thrust its entire head into the elastic gullet. The irritation within apparently induces a retching effect, helping parent to bring up food. The swaying and tugging extraction process lasts for several seconds, the parent having to back away forcibly from the importunate young. Several visits by both parents needed to satisfy the voracious brood. Nest young also require frequent quenching of thirst. Water is squirted in jets from parent's bill into gullet of chick, sometimes spilling outside in the process. On fright chicks, even when quite small, disgorge the food they have eaten into the water below like hailstones, sometimes even hurling themselves bodily as well. Many of the smaller chicks perish through inability to swim and to clamber back to the nest. Adolescents usually manage to do so, using their pliant feet and sharp-hooked claws, chin and neck, and the stumpy forelimbs to haul themselves up the trunk and branches, becoming gory in the process if the nest tree happens to be a thorny one such as babool or *Prosopis*.

At the Keoladeo heronry in Rajasthan heavy predation of nestlings is caused by Pallas's Eagle (*Haliaeetus leucorhynchus*), a few pairs of which are permanently established there. They appear to specialize in darter squabs particularly when half to three-quarters grown.

MUSEUM DIAGNOSIS. See Baker, loc. cit.; Van Tyne & Berger 1959: 402; Stresemann 1927-34, Aves (morphology).

MOULT. Like most Anseriformes and some other groups, the Darter moults all its wing quills simultaneously after breeding and is flightless for some weeks till these have been replaced by new feathers.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	331-357	74-90	42-47	202-240 mm. (Baker)

Weight 400? 1160-1500 gm. (av. 1340) — BNHS.

COLOURS OF BARE PARTS. Iris, inner ring white, outer yellow. Bill dark horny brown; terminal half black, lower mandible yellowish. Legs and feet black.

MISCELLANEOUS. Darters are regularly employed by local wandering tribes in parts of Assam and Bengal for catching fish in swamps and small

FRIGATE BIRDS

47

Genus *FREGATA* Lacépède

Fregata Lacépède, 1799, Tabl. Ois.: 15. Type, by subsequent designation, *Pelecanus aquilus* Linnaeus

Characters as of the Family.

30. Christmas Island Frigate Bird. *Fregata andrewsi* Mathews

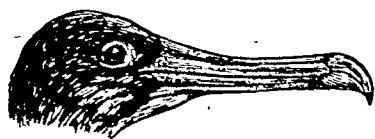
Fregata andrewsi Mathews, 1914, Austr. Av. Rec., 2: 120
(Christmas Island, Indian Ocean)
Baker, FBI No. 2191, Vol. 6: 295

SIZE. Kite +; length ♂ c. 97 cm. (38 in.); ♀ c. 102 cm. (40 in.).

FIELD CHARACTERS.

Male (adult, breeding). Above, glossy metallic black. Below, throat and breast black, only the belly white.

Female (adult). Larger than male. Above, same as ♂. Below, only throat black, rest of underparts white, the white spreading up as a collar on sides of neck (to clavicular region), not across hindneck.



× c. 1

STATUS, DISTRIBUTION and HABITAT. Vagrant; possibly storm-driven. Breeds on Christmas Island (Indian Ocean) south of Java, c. 11°S. The record from Kerala (Prater, JBNHS 33: 446, and *Synopsis*: 11) proves on a re-examination of the specimen to relate not to this species but to *Fregata minor* (Abdulali, JBNHS 57: 667-8). Similarly the only Ceylon specimen in the Colombo Museum, hitherto recorded as *F. andrewsi*, has been shown to be *F. minor aldbarensis* (Phillips 1953). Therefore it must be emphasized that so far no authentic record of *Fregata andrewsi* in Indian waters exists.

MUSEUM DIAGNOSIS**MEASUREMENTS**

Wing ♂ 600-625; ♀ 635-643 mm. (Baker). Average of wing of 10 mature specimens ♂ 610; ♀ 650 mm. (Gibson-Hill 1947).
(For an excellent and complete biography of this species see C. A. Gibson-Hill 1947.)

31. Lesser Frigate Bird. *Fregata minor aldbarensis* Mathews

Fregata minor aldbarensis Mathews, 1914, Austr. Av. Rec., 2: 199 (Aldabra Island)
Baker, FBI No. 2192, Vol. 6: 297

Plate 3, fig. 5

OTHER NAME. Great Frigate Bird (!).

lakes (Stonor, JBNHS 47: 746). The practice is not widespread and far dying out.

Family *FREGATIDAE*: Frigate Birds or Mart-of-war Hawks

Rather large, gregarious, dark coloured or black-and-white oceanic birds with long, pointed, streamlined wings, deeply forked tails, and flight resembling that of raptors. Bill long and strongly hooked, rounded in cross-section, the culmen convex. Nostrils obsolete. Throat bare; bright coloured gular pouch occasionally inflated like a balloon to ridiculous proportions by courting male, even in flight. Tarsus very short, stout, feathered. Feet small, all four toes united by a web near their base; claws long, strong, much curved; middle claw pectinate as in tropic-birds and cormorants.

Sexes dimorphic; female larger than male. For anatomical details see Baker 1929, 6: 295; Palmer 1962, 1: 365-6.

RANGE. Pan-tropical. Oceanic islands and adjacent seas. Non-migratory.

GENERAL HABITS and FOOD. Chiefly fish and squids (cephalopods) neatly picked up from surface shoals with an inward flick of the strongly hooked bill while hovering close above the water. Sometimes flying fish chased and captured in the air. More usually food procured by pirating — attacking and chasing boobies, tropic-birds, etc. and forcing them to give up what they have caught. The booty is swooped off in mid-air before it reaches the water, or scooped up from the surface as it falls. They also swoop and carry off the young of colonial-nesting birds such as terns.

Frigate birds are magnificent fliers and capable of soaring and sailing for hours at a stretch high up in the heavens. Owing to their short legs and long wings they cannot take off from a flat surface, therefore they hardly ever alight on a calm sea, spending almost all day on the wing. They roost at night on trees and bushes, and also build their stick nests in similar situations, and on rocks. Eggs, usually 1 (or 2), chalky white. Incubated by both sexes. Incubation period about 6 weeks. Chick blind and naked at hatching; covered with white down later.

Key to the Indian forms

	Page
A Upperparts uniformly dark except for white band across hindneck ... 1	
B Upperparts uniformly dark, no white band across hind neck 2	
C Head, neck, and underparts white or rusty white, rest of upperparts dark. Brown or rusty markings of neck sometimes becoming darker and forming broad band across chest.....	
..... Juvenal plumage of all three species	
1 Throat black, breast and abdomen white..... <i>F. andrewsi</i> (female)	47
Throat black, breast white, abdomen black.....	
..... <i>F. ariel iredalei</i> (female)	49
2 Underparts uniformly dark..... <i>F. minor aldbarensis</i> (male)	47
Underparts not uniformly black.....	
a Throat, breast, and abdomen black, flanks white.....	
..... <i>F. ariel iredalei</i> (male)	49
Throat whitish, breast white, abdomen black.....	
..... <i>F. minor aldbarensis</i> (female)	47
Throat black, breast black, abdomen white.....	
..... <i>F. andrewsi</i> (male)	47

48

PELECANIFORMES

SIZE. Kite +; length c. 87-102 cm. (34-40 in.).

FIELD CHARACTERS.

Male (adult). Above, glossy black with a brown band on wings across the median wing-coverts and innermost secondaries. Below, brownish black.

Female (adult). Larger than male. Above, including head and neck, black with a brown hind collar and light brown band on wings. Below, throat and foreneck greyish white (or mottled brown and white); lower neck, breast and sides white; flanks and abdomen black. 'The female is the only frigate bird with white underparts and whitish throat' (Alexander 1955).

STATUS, DISTRIBUTION and HABITAT. Rare straggler (storm-driven) in the monsoon. Breeds on Seychelles and Aldabra Islands (Indian Ocean) lying between the equator and 15°S., and 45° to 60°E.

The only Indian specimen (♂, BNHS Coll.) is a storm-blown example, entangled in a fishing net in a rough sea at the onset of the SW. monsoon near Quilon (Kerala), originally misidentified as *F. andrewsi* (q.v.). But there are three independent SW. monsoon sight records from Bombay by reliable observers (Taylor, JBNHS 51: 939) and two specimens from Ceylon, both females — one in the Colombo Museum (also recorded as *F. andrewsi* but since corrected), the other from the Tweeddale Collection in the British Museum. Phillips's sight record (JBNHS 55: 203) of large all-black frigate birds in the Maldives Islands in December and January presumably also relates to this form.

HABITS, FOOD, etc. See under Family.

MUSEUM DIAGNOSIS**MEASUREMENTS**

	Wing	Bill (from feathers)	Middle toe	Tail
♂ ♂	585-603	116-130	48-57	392-410 mm.
♀ ♀	605-621	130-150		395-430 mm. (Baker)

COLOURS OF BARE PARTS (in nominate *minor* of Christmas Is. etc.) Iris (♂ ♀) dark brown; a white spot on lower lid. Eyelids: ♂ black; ♀ crimson or madder pink. Bill (♂ ♀) variable slaty, steel, or blue grey, often darker or brownish at tip; usually a pinkish area at base of lower mandible in ♀. Internasal and throat skin: ♂ pale scarlet, ♀ dull crimson. Gular pouch in ♂ light scarlet (non-breeding) to crimson-scarlet (breeding). Feet: ♂ dark, or reddish brown with pale pinkish white soles; ♀ flesh white (Gibson-Hill 1947).

FRIGATE BIRDS

49

32. Least Frigate Bird. *Fregata ariel* *iredaldi* Mathews

Fregata ariel iredaldi Mathews, 1914, Austr. Av. Rec., 2: 121 (Aldabra Island)
Baker, FBI No. 2193, Vol. 6: 298
Plate 3, fig. 4

OTHER NAME. Mascarene Frigate Bird.

SIZE. Kite +; length c. 80 cm. (32 in.).

FIELD CHARACTERS. The smallest frigate bird. 'Adults are distinguished from all other species by the conspicuous white patch on the side under the wing' (Alexander 1955).

Male (adult). Above, glossy metallic black. Below, browner with a white patch on each side of abdomen (lower flank).

Female (adult). Larger than male. Above, mainly glossy black with a chestnut collar on hindneck and a brownish patch on the wing-coverts. Below, throat and abdomen black; breast buffy white. Young (immature). Upperparts brownish black; head, neck, breast and abdomen white streaked with rusty, the head sometimes brown (Alexander).

STATUS, DISTRIBUTION and HABITAT. Occasional straggler, doubtless often storm-blown in the monsoon. Breeds on Aldabra Island, near Madagascar, 9°30'S., 46°30'E. Reportedly also on the more northerly atolls in the Maldives c. 4°N., 72°E. (Phillips & Sims, JBNHS 55: 203, 1958). Apart from sight records there are at least six examples taken on the west coast of Ceylon, in June, July, August, September, and one near Jaffna, Northern Province, in April. A storm-driven male on 23 June (1955) near Colombo was in fresh plumage with 'testes enlarged' (Phillips 1953, 1956). Only two records from India: a young bird taken near Trivandrum (Kerala) in c. 1904 (Ferguson, JBNHS 16: 13) — specimen not now available — and 1 (♂) at Bombay in July 1960 (Abdulali, JBNHS 57: 668). A young bird ringed as pullus on Aldabra I., Indian Ocean, 9°22'S., 46°28'E., 18.iv.1969, found storm-blown on Malad beach, Bombay, c. 18°55'N., 72°50'E., 4.vi.1970 — c. 4500 km NE.

GENERAL HABITS, FOOD, etc. See under Family.

MUSEUM DIAGNOSIS

MEASUREMENTS. Gibson-Hill (1950) gives for adults from Cocos-Keeling Is. (subspecies?) as follows:

	Wing	Bill	Tarsus	Tail
4♂♂	518-550 (533.5)	79-85 (82.2)	22-23.5 (22.75)	307-331 mm. (316.5)
5♀♀	534-562 (547.0)	86-93 (89.4)	24-25.5 (24.9)	314-324 mm. (318.4)

A ♂ from Ceylon measures: Wing 520; bill 81; tarsus 21; tail 304 mm. (Phillips 1958); and the Bombay ♂ measures Wing 520; bill (from skull) 82; tail 325 mm. (SA).

COLOURS OF BARE PARTS. ♂ Bill grey, gular pouch red; feet black or reddish brown. ♀ Bill bluish; skin of throat red; feet red (Alexander, 1955).

Order CICONIIFORMES

Family ARDEIDAE: Herons, Egrets, Bitterns

Cf. Curry-Lindahl, K., 1971, *Ostrich*, suppl. No. 9: 52-70

Long-legged, lanky wading birds, from body size of village hen to vulture, with long slender flexible necks in most species. A kink in the middle (as in the Darter) enables the neck to be retracted into a flat S in flight as is characteristic of the family.

HERONS, EGRETS

51

Throat glistening white, crest of two long feathers (63 cm. = 25 in.)

Page

D Small- to medium-sized. Plumage mainly various shades of greenish- or bluish-black, white, and grey.

74

4 Plumage generally white and grey, with greenish black crest and mantle, wings paler than back (58 cm. = 23 in.).

78

Nyticorax nycticorax (adult)

Smaller (46 cm. = 18 in.). Plumage generally grey with greenish-black crest, mantle streaked with pale greenish grey, wings darker than back

59-62

Butorides striatus (adult)

E Wings and upperparts dark sooty brown glossed with metallic green, wing-coverts spotted with white, sides of neck and underparts streaked with slaty brown.

5

5 Crown and crest brown (58 cm. = 23 in.).

78

Nyticorax nycticorax (juvenile)

Crown and crest black (46 cm. = 18 in.).

59-62

Butorides striatus (juvenile)

F Small- to medium-sized. Wings, tail, and underparts white; head, neck, breast, and back variable.

63, 65

6 Head, neck, and breast pale ochre. Back dark rusty or maroon-brown (46 cm. = 18 in.).

63, 65

Ardeola grayii (breeding)

Head dark rusty brown, breast purplish, back deep blue-black (52 cm. = 21 in.).

65

Ardeola bacchus (breeding)

Head, neck, and breast pale ochre heavily streaked with dark brown, back pale ashy brown.

63, 65

Ardeola grayii (non-breeding)

Similar to above but back darker.

65

Ardeola bacchus (non-breeding)

G Medium-sized. Plumage generally light buff or rich chestnut.

7

7 Top of head black, sides of head, neck, and upperparts rich chestnut-brown, back finely vermiculated with black, underparts pale buffy white streaked with black and chestnut. Under wing-coverts white barred with black, primaries black tipped with chestnut and white. Bill short and stout (51 cm. = 20 in.).

80, 82

Gorsachius melanolephus

Top of head and mustache black, rest of plumage pale yellowish buff, upperparts heavily streaked with blackish, underparts streaked with chestnut, primaries black barred with pinkish brown (71 cm. = 28 in.).

89

Botaurus stellaris

H Generally small-sized with underparts predominantly brown, buff, or chestnut

8

8 Colour and pattern of upperparts sharply differentiated on crown, back of neck, and mantle

a

Colour and pattern of upperparts less sharply differentiated on crown, back of neck, and mantle

b

Colour of upperparts with no sharp differentiation of crown, back of neck, or mantle

c

a Top of head, upperparts and primaries black; large greyish buff patch on wing; underparts pale buff with dark lanceolate feathers across upper breast (36 cm. = 14 in.).

83

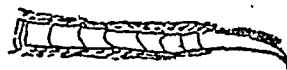
Ixobrychus minutus (male)

b Crown black, back of neck pale chestnut, mantle dark brown (in value, almost as dark as primaries). Buffy patch on wing (36 cm.

50

CICONIIFORMES

Bill long, straight, sharp-pointed, dagger-like. Nostrils oval, close to the base. Tarsi very long; toes long and slender, the middle and outer toes united by a small web at their base. Claw of middle toe pectinate or comb-like. Hind-toe well developed; on same plane as the other toes.



Middle toe and claw of adult

Grey Heron showing pectinations, X c. 1

Most species have curious powder-down patches on each side of rump and breast providing a sort of dry shampoo for degreasing soiled feathers. Plumage soft and loose-textured, usually white, grey, purple, or brown; in some species speckled, barred, or streaked above and/or below. Sexes alike or nearly so. In many species filamentous ornamental plumes acquired during the breeding season, for the trade in which (as 'aigrettes') the birds were greatly persecuted and in some places nearly exterminated (see Little Egret).

DISTRIBUTION and HABITAT. Throughout the tropical and temperate zones, except on some oceanic islands. Marshes, jheels, rivers, tidal estuaries.

FOOD. Fish, frogs, insects, molluscs, rodents, young birds.

BREEDING. Colonial; usually in mixed heronries of several species in association. Nests, shallow stick platforms normally on trees. Eggs, normally 3 to 6, bluish white or pale greenish blue; unmarked in Indian species. Young, nidicolous.

ANATOMICAL DETAILS. Witherby 1939, 3: 125. Stresemann 1927-1934, Aves: 810.

Key to the Indian forms

Page

- A Large-sized. Plumage grey above, varied below.....1
- 1 Crown and crest vinous-chestnut, neck rufous-cinnamon (length 142-152 cm. = 56-60 in.).....*Ardea goliath* (adult) 53
- Crown and neck dull rufous, foreneck streaked with black (slightly smaller than above).....*Ardea goliath* (juvenile) 53
- Crown black, crest grey-tipped (127 cm. = 50 in.).....*Ardea insignis* (adult) 53
- Crown white, occipital crest black, neck smoky white (98 cm. = 39 in.).....*Ardea cinerea* (adult) 54, 55
- Crown grey, crest black, neck grey (slightly smaller than above).....*Ardea cinerea* (juvenile) 54, 55
- Crown black, neck ferruginous striped with black and buff (97 cm. = 38 in.).....*Ardea purpurea* (adult) 57
- B Large-sized. Plumage dark brown to cinnamon brown above, head and neck rufous.....2
- 2 Dark brown above, head and neck pale rufous-brown streaked with white (127 cm. = 50 in.).....*Ardea insignis* (juvenile) 53
- Head and neck rufous-brown. Lower foreneck streaked with black, rest of plumage uniform cinnamon-brown in distance as result of broad cinnamon-brown edges masking the purplish slaty feathers (97 cm. = 38 in.).....*Ardea purpurea* (juvenile) 57
- C Medium-sized. Plumage mainly dark slaty blue above and below.....3
- 3 Throat and breast streaked with chestnut and white (58 cm. = 23 in.).....*Ixobrychus flavicollis* (adult) 88
- Throat glistening white, bushy nuchal crest (58 cm. = 23 in.).....*Egretta sacra* (breeding — dark phase) 77

CICONIIFORMES

52

= 14 in.).....*Ixobrychus minutus* (female)

Page

Crown blackish, back of neck pale buff, feathers of mantle dark brown broadly edged with pale buff, buffy patch on wing.....

83

.....*Ixobrychus minutus* (juvenile)Crown streaked with black and chestnut, back of neck chestnut, mantle chestnut streaked with darker brown and buff, no buffy patch on wing, chestnut streak down throat pronounced (38 cm. = 15 in.).....*Ixobrychus sinensis* (juvenile)

86

Similar to above but crown darker, back of neck chestnut, mantle brown streaked with buff, wing patch buffy, streak down throat not pronounced.....*Ixobrychus sinensis* (female)

86

Crown, primaries, and tail black, back of neck rufous, mantle brownish buff, wing patch buffy, underparts pale buff with dark lanceolate feathers across breast.....*Ixobrychus sinensis* (male)

86

c Upperparts dark brown, underparts paler and unstreaked, middle of throat chestnut streaked with black and white, tail black (58 cm. = 23 in.).....*Ixobrychus flavicollis* (female)

83

Upperparts dark brown speckled with yellowish buff, underparts yellowish white with blackish streaks on throat and breast, tail brown (38 cm. = 15 in.).....*Ixobrychus sinensis* (juvenile)

84

Similar to above but paler and more chestnut.....*Ixobrychus sinensis* (female)

84

Upperparts bright chestnut, underparts paler, median streak of blackish on throat and breast.....*Ixobrychus sinensis* (male)

84

I Plumage pure white throughout.....9

9 Neither crest nor breast plumes, but lacy plumes on back.....

63, 69

No crest but full plumes on back and breast.....*Ardea alba* (breeding)Crest of two long feathers; full plumes on back and breast; feet particularly coloured; bill black.....*Egretta garzetta* (breeding)

72

Crest of two long feathers; full plumes on back and breast; feet particularly coloured; bill yellow.....*Egretta gularis* (breeding — light phase)

74

Crest of thick, rather hairy feathers.....*Egretta sacra* (breeding — light phase)

77

Feathers of head and neck orange-buff.....*Bubulcus ibis* (breeding)

66

Genus ARDEA Linnaeus

Ardea Linnaeus, 1758, Syst. Nat., ed. 10, 1: 141. Type, by subsequent designation, *Ardea cinerea* Linnaeus (Gray, 1840)

Bill long, compressed, and pointed; culmen straight, edges of both mandibles slightly serrated at commissure. Upper mandible grooved on either side; nostrils rather long, situated near base. Sides of head to behind eye naked. Tibia partially naked; tarsus long, scutellated in front. Wings ample and rounded; tail short, nearly square-cut. Head crested; lower plumage very lax and soft; feathers at base of neck below and on scapulars long and attenuated forming ornamental plumes. Genus cosmopolitan.

HERONS, EGRETS

53

33. Great Whitebellied Heron. *Ardea insignis* Hume

Ardea insignis Hume, 1870, *Stray Feathers*, 6: 470 (Sikkim Terai, Bhutan Duars)
Ardea imperialis Baker, 1928, *Bull. Brit. Orn. Cl.* 49: 40 (Sikkim terai, Bhutan duars)
 Baker, FBI No. 2220, Vol. 6: 342
 Plate 6, fig. 3.

LOCAL NAMES. None recorded.

SIZE. Considerably larger than Grey Heron; length c. 127 cm. (50 in.).

FIELD CHARACTERS

Adult. Above, like the Grey Heron (q.v.). Crown slaty black (contra white), the longest crest feathers tipped grey. Tail and primaries slaty black. Below, lower breast, abdomen, flanks, axillaries, under tail-coverts pure white. Thigh-coverts white in front, grey behind. Sexes alike.

'Except for the whitish chin and throat, and the shiny white belly, under wing- and under tail-coverts, the bird appears dull grey all over' (H. C. Smith, MS.).

STATUS, DISTRIBUTION and HABITAT. Resident, but apparently rare, in Nepal and Sikkim terai, Bihar (north of Ganges river), Bhutan duars to NE. Assam. East Pakistan, Arakan, and N. Burma where the upper reaches of the Irrawaddy river mentioned as one of its strongholds. Affects inland swamps, marshes, and stretches of rivers through forest. Not on sea coast. Singly or in small parties of four or five.

GENERAL HABITS. As of the Family. Nothing specifically recorded.

BREEDING. Unrecorded in our area; only once in Arakan, Burma (April) — a huge stick nest in a lofty tree, containing four eggs like those of Grey Heron but larger, c. 70 × 50 mm.

MUSEUM DIAGNOSIS. See A. O. Hume 1878, *Stray Feathers*, 6: 470-1.

MEASUREMENTS. A male collected by H. C. Smith in Burma had wing 530 mm. Baker gives for

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	546-572	152-176	171-216	199-211 mm.

COLOURS OF BARE PARTS. 'Iris ochraceous yellow. Bill and legs blackish' (H. C. Smith). 'Loral skin, orbital skin, and base of lower mandible greenish; upper mandible and inner margin of lower mandible blackish slaty; tip of lower mandible underneath greenish ochre, remaining portion mussel-grey. Tarsus black with horny patches. Claws black' (Stevens).

34. Giant Heron. *Ardea goliath* Cretzschmar

Ardea goliath Cretzschmar, 1826, in Rüppell's *Atlas*, Vögel : 39, pl. 26
 (White Nile, Bahbar Abiad)
 Baker, FBI No. 2221, Vol. 6: 343
 Plate 6, fig. 2

LOCAL NAMES. None recorded.

SIZE. Considerably larger than Grey Heron; length c. 142-152 cm. (56-60 in.). Standing almost the height of a man.

FIELD CHARACTERS. Like a gigantic Purple Heron.

For reversion of name from *imperialis* Baker see Biswas, 1963, JBNHS 60(3): 680.

HERONS, EGRETS

55

Grey Heron (q.v.), from which it differs in being a darker grey above. Sexes alike; female smaller.

STATUS, DISTRIBUTION and HABITAT. Casual winter visitor, recorded from Baluchistan, Sind, Kutch, and Nepal (Rand & Fleming), but possibly commoner and more widespread than hitherto believed. Shows great diversity of status within a single population, some individuals (or local populations) sedentary, others — specially juveniles — tending to wander and even migrate long distances. Thus, a ringed example from Kazakhstan (40°48'N., c. 70°E.). USSR was recently recovered in South Kanara, Mysore (JBNHS 59: 650). Breeds in the Palaearctic and Ethiopian regions — Europe, N. Africa to Asia Minor, NW. Siberia.

MUSEUM DIAGNOSIS. See Withersby 1939, 3: 131-3.

MEASUREMENTS, COLOURS OF BARE PARTS etc. See under No. 36 below.

36. Eastern Grey Heron. *Ardea cinerea rectirostris* Gould

Ardea rectirostris Gould, 1843, *Proc. Zool. Soc. London* : 22 (New South Wales ' = India? ', Stone, 1913, *Austral. Av. Rec.*, 1: 142 restricted by Ripley 1961, *Synopsis*: 12 to India)
Ardea leucophaea Gould, 1848, *Proc. Zool. Soc. London* : 58 (India)
Ardea cinerea jayyi Clark, 1907, *Proc. U.S. Nat. Mus.*, 32: 468 (Seoul, Korea)
 Baker, FBI No. 2218, Vol. 6: 340
 Cf. Baker, E. C. S., 1928, *Bull. Brit. Orn. Cl.* 49: 30-40
 Abdulali, H., 1968, JBNHS 65: 191-2
 Plate 6, fig. 4

LOCAL NAMES. *Nāri*, *Sain*, *Kūbūd*, *Ānjān* (Hindi); *Khyra* (Bihar); *Sada kāk* or *Kāk*, *Anjan* (Bengal); *Saa* (Sind); *Brāg* (Kashmir); *Natayana pachchi* (Telugu); *Nārai*, *Sambal nārai* (Tamil); *Chārimūnti* (Malayalam); *Kalapua karawal koka*, *Indura koka* (Sinhala); *Kūddil* (Kolís of Maharashtra).

SIZE. Same as No. 35. Standing c. 75 cm. high.

FIELD CHARACTERS. A long-legged, long-necked marsh bird.

Male (adult). Above, ashy grey with white crown and neck, and long black occipital crest. Below, a conspicuous black-dotted line down middle of foreneck. Elongated black-streaked white feathers on breast. Rest of underparts greyish white.

Female similar but smaller; crest and pectoral plumes less developed.

STATUS, DISTRIBUTION and HABITAT. Resident. All India, both Pakistans, Nepal, Ceylon, Maldives Islands, Andamans, and Nicobars (?). From plains level to about 900 m. in Nepal, and between c. 3500-4000 m. in Ladakh. Breeds up to c. 1750 m. — Vale of Kashmir. Affects inland water — jheels, marshes, rivers; also tidal creeks, estuaries, mangrove swamps, coastal backwaters, and rocky offshore islets.

EXTRALIMITAL. The Middle East, Burma, Thailand, Indochina, Malaysia, E. Siberia, E. China, Japan, Formosa, Hainan.

GENERAL HABITS. Usually solitary, occasionally small parties; gregarious when nesting. Largely crepuscular, hunting chiefly in the early morning twilight and into the dusk. Still-hunts by standing motionless at the water's edge head sunk between the shoulders, or wades into the shallows neck arched and partly stretched forward, peering intently for any fish or frog

54

CICONIIFORMES

Adult. Above, crown and crest deep vinous chestnut; neck rufous-cinnamon. Upperparts, wings and tail slaty grey. Below, chin, cheeks, and throat, white; elongate breast plumes streaked white and slaty black. Lower parts, including wing-lining, deep chestnut or maroon. Sexes alike.

Young (immature). Above, head and neck duller and paler rufous. Upperparts grey with rufous edging. Below, white streaked with brown.

STATUS, DISTRIBUTION and HABITAT. Rare vagrant. Essentially an African species, breeding on islands off the African and Arabian coasts of the Red Sea, and in Iraq, etc. Appearances in India sporadic, rare, and somewhat mysterious. Blyth got some live examples in the Calcutta market in 1845 and 1846, presumably from the Salt Lakes where he shot one bird each in 1878 and 1879; a third seen in 1880. In c. 1873 Hume saw six gigantic herons on the river near Multan (W. Pakistan) above the confluence of the Chenab and Sutlej, with a great deal of rufous about the neck, which were probably this species (SF, 1: 105). Blanford observed one example each near Nagpur (Madhya Pradesh) and in Baluchistan; Stuart Baker saw five on the Meghna river near Dacca in 1910. After that no record till December 1925 when one was shot by L. R. Fawcett in the Khulna Sunderbans, now in East Pakistan (JBNHS 31: 523). Described by the collector as 'not uncommon'; Peter Jackson, 1974 (JBNHS 71(3): 608), observed several in the same locality. Two specimens collected in Ceylon, also in 1878 and 1879, and another seen on a later occasion; also a solo quite recently (T. W. Hoffmann, CBCN, Feb. 1975: 6).

GENERAL HABITS. As of the Family. In its endemic area frequents tidal creeks, mangrove swamps, estuaries, and inland lakes. Usually solitary and very shy. Has a seemingly slow and ponderous flight. Archer 1937 (1: 47) points out that for the bird's size its pale blue eggs are remarkably small (c. 71 × 52 mm.); being nearly equal to those of the Crab Plover (*Dromas ardeola*), which is one-third its size, or less, but lays large eggs.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	570-589	184-196	225-252	212-237 mm.
♀ ♀	592-662	180-196		

COLOURS OF BARE PARTS. Iris yellow, with an outer rim of red. Bill dark horny-slate, the lower mandible, gape, and commissure paler and yellowish. Legs and feet dark slaty black (Baker).

35. European Grey Heron. *Ardea cinerea cinerea* Linnaeus

Ardea cinerea Linnaeus, 1758, *Syst. Nat.*, ed. 10, 1: 143 (Europe, restricted to Sweden)
 Baker, FBI No. 2217, Vol. 6: 339

LOCAL NAMES. As under No. 36.

SIZE. Length c. 98 cm. (39 in.) including neck and legs. Standing about 75 cm. high.

FIELD CHARACTERS. A lanky, long-legged, long-necked grey marsh bird. Indistinguishable in the field with certainty from the resident Eastern

56

CICONIIFORMES

that may blunder within striking range of the formidable poised bill. When prey is sighted the bird cranes its flexible neck forward and freezes, waiting for a favourable opportunity to strike. Presently the rapier bill is shot out with lightning speed and the unsuspecting victim impaled or firmly secured in the mandibles. With an upward jerk it is manoeuvred into position and swallowed head foremost. Sometimes the bird will stalk its prey stealthily or shift to a new vantage point, lifting up and putting down each foot noiselessly and with studied deliberation. Single birds observed perched all day long on snags—the remnants of submerged forest trees under the waterspread of dammed irrigation reservoirs (e.g. Periyar Lake in Kerala), almost flush with the surface. They procure their food in such deep water by jabbing at prey as it swims or floats past or by short forays from the base, bellyflopping momentarily on the surface to seize a fish. When disturbed, the bird rises with a harsh *quaark* which is also uttered from time to time on the wing. The initial take-off from the perch is clumsy and accompanied by an awkward stretching of the long neck, vigorous laboured flapping of the wings, and by much swaying and balancing with the long loosely dangling legs. The launching is preceded by a slow swinging, or wagging, of the tail up and down, as if to assist in the process. The bird then flexes its legs and springs upward. Once in the air it flies strongly with steady flaps of the broad wings, neck characteristically folded back in a flat S, head drawn in between the shoulders, legs tucked under the tail and trailing behind. It roosts at night on trees and mangroves, and also settles on them in daytime when sated.

FOOD. Fish, frogs, molluscs, crustaceans, aquatic insects, small rodents, and young birds. In Kashmir alleged to do considerable damage to the trout fisheries. However, a proper scientific investigation of the food and feeding habits may reveal, as elsewhere, that by preying largely on predatory fishes the birds actually do more good than harm to the trout. Drinks water in the usual manner of birds, repeatedly dipping bill into the liquid and raising head to swallow.

VOICE and CALLS. In addition to the resonant *quaark* uttered in flight, a variety of harsh croaks and, at the heronry, a goose-like *honk*.

BREEDING. Season. Various. Mainly March to June in Kashmir; July to October in northern India; November to March in S. India and Ceylon. Nests gregariously, sometimes in pure colonies but usually in mixed heronries of egrets, storks, cormorants, night herons, etc. Two best-known of such heronries are Keoladeo Ghana in Rajasthan, and Vedanthangal in Madras, but smaller and less-known ones widely scattered over the country. In Kashmir Valley the largest chenar trees (*Platanus orientalis*), often over 35 m., are selected for the nests; in Keoladeo Ghana large *Kili-kaddim* (*Stephgyne parviflora*), and babool (*Acacia arabica*) and kandi (*Prosopis spicigera*) are the most favoured, while at Vedanthangal the substrate is provided by partially submerged *Barringtonia racemosa* trees. The selected trees are usually standing in water or in its close proximity. In tidal forest nests are normally built on mangroves, *Avicennia*, *Rhizophora*, and other species. Rarely tall dense reed-beds are used. Nest, a platform of twigs with a central depression scantily lined with leaves, straw, and water-weeds. Often many nests in a single tree, cheek by jowl with those of other tenants of the heronry. Egg,

HERONS, EGRETS

57

normally 3 or 4 occasionally 5, broad to moderately long ovals, pale sea green or green-blue, variable in shade. Average size of 100 eggs 58.6 × 43.5 mm. (Baker).

Both sexes share in building the nest, incubation, and feeding the young. Incubation period 25–26 days. Incubation, as with most other occupants of heronries, begins with the first egg as a protection from the fierce sun and from nest-robbers like crows. Thus a marked disparity is noticeable among chicks of the same brood. Chick in down grey above whitish below; the down on the crown very long and erect with bristly tips giving a crested appearance. Young fed by regurgitation. On arrival of parent at nest its bill is seized by an importunate youngster in its own mandibles and vigorously twisted and wrestled with till the parent disgorges the half digested food. This either taken by small chicks directly from parent's bill or gobbled up from nest floor when older.

For details of courtship, nest relief and other behaviour see Witherby 1939, 3: 126–9.

MUSEUM DIAGNOSIS. For plumages of nominate race, from which *retirostris* differs only in minor details, see *ibid.*: 131–3.

MEASUREMENTS. Baker gives for Indian and Chinese examples of *retirostris*:

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	422–475 (once 481)	109–135	140–162	165–180 mm.

There is no significant difference in size between the two races.

Weight 4 oo? 1500–2250 (av. 1757) gm. (BNHS).

COLOURS OF BARE PARTS. Iris golden yellow. Bill (breeding) bright orange-yellow with a brown line down middle of culmen; (non-breeding) dark horny brown. Legs and feet (breeding) bright orange-yellow sometimes with a pink tinge; (non-breeding) greenish brown, marked with yellowish on the joints and back of tarsi (SA).

MISCELLANEOUS. Longevity, *A. c. cinerea* (from ringing data) = 24 + years (Ring, 1962, 33: 148).

37. Eastern Purple Heron. *Ardea purpurea manilensis* Meyen

Ardea purpurea var. *manilensis* Meyen, 1834, Nova Acta Acad. Caes. Leop. Carol. 16, suppl.: 102–103 (Philippines)

Baker, FBI No. 2216, Vol. 6: 337

Plate 6, fig. 5

LOCAL NAMES. *Nāri*, *Lāl sain*, *Lālānjān* (Hindi); *Khyra* (Bihar); *Lāl kānk* (Bengal); *Lāl kol* (Assam); *Yerra nārāyānā pākshi* (Telugu); *Chēmārai* (Tamil); *Chēyāmūti* (Malayalam); *Karawala kokka*, *Barendi kokka* (Sinhala).

SIZE. Smaller and slighter than Grey Heron; length c. 97 cm. (38 in.) including long neck and legs. Standing c. 70 cm. high.

FIELD CHARACTERS. A lanky marsh bird like the last. In direct sunlight upperparts, including dorsal surface of wings, bright purple, a shade darker than the Purple Moorhen.

Adult. Above, purplish blue or purplish slaty; blackish on wing and tail. Crown and crest slaty black, rest of head and long thin neck ferruginous boldly striped with black. Below, chin and throat white; long drooping plumes on upper breast buffy white with black and chestnut streaks. Rest of

58

CICONIIFORMES

underparts slaty black and rich chestnut; under wing chiefly ferruginous. Sexes alike; female with crest and pectoral plumes less developed.

Young (immature). Uniform cinnamon brown in distance, effect of broad cinnamon-brown edges masking the purplish slaty feathers.

STATUS, DISTRIBUTION and HABITAT. Resident and local migrant. Throughout the plains of India east to Assam and Manipur, both Pakistan, Nepal (lowlands), Ceylon, Andamans and Nicobars. Possibly as in Grey Heron, augmented in winter by influx of extralimital migrants. The nominate race, with more black streaks on foreneck, has been obtained by Meinertzhagen (JBNHS 32:91) in Baluchistan (Quetta, Nushki), where it occurs sporadically (Christison, *ibid.* 43:486). Frequents jheels, reedy swamps, lakes, and rivers.

Extralimital. Burma, Thailand, the Indochinese countries, China south of the Yangtze and Ryukyu Islands, south to the Philippines, Greater Sunda Island and Celebes (Sulawesi). Other races in Europe, Madagascar, and USSRiland.

GENERAL HABITS. Largely crepuscular. Solitary. Similar to those of Eastern Grey Heron (q.v.). Perhaps shyer and more secretive, keeping to dense reed cover, where it may be easily overlooked on account of the bittern-like way it freezes on suspicion — thin neck and bill upstretched — camouflaging it among the reeds. The bird flushes out with a fluster and harsh croaking when suddenly come upon, and settles on a low tree in the open until the covert is quiet again.

FOOD and VOICE. Similar to the Grey Heron.

BREEDING. Season. Various; June to September–October in N. India; November to March in S. India and Ceylon. Usually nests in small colonies of its own. When in mixed heronries with other species, shows a tendency to segregation into its own *mohallas*. Nest, a platform of sticks and branches, or rush stems, built in trees, dense reed beds, or screw pine (*Pandanus*) tangles standing in fairly deep water, from a few centimetres to two or three metres above the surface. The rushes or *Pandanus* leaves are beaten down to form a platform for the nest. Eggs, 3 to 5, rarely 6, pale sea green or greenish blue. Broad to moderately long ovals, close and smooth textured; very similar to eggs of Grey Heron. Average size of 100 eggs 54.6 × 39.7 mm. (Baker). Both sexes share nest-building, incubation, and care of the young. Incubation period about 24–26 days. Eggs laid at longer intervals than 24 hours; incubation commences from the first egg, hence the very marked disparity in young of the same brood. Half-grown chicks clamber about freely among branches of nest-tree, but promptly return to nest on arrival of foraging parent. The parent's bill is seized and violently stroked and drawn down to induce regurgitation. The food is gobbled up from the nest floor, or as it issues from the parent's throat.

MUSEUM DIAGNOSIS. For plumages of nominate race, from which *manilensis* differs only in details and is hardly distinguishable, see Witherby 1939, 3: 136–7.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	327–387	115–144	121–145	120–142 mm. (Baker)

HERONS, EGRETS

59

Males are appreciably larger than females.

COLOURS OF BARE PARTS. Iris yellow; orbital skin dull greenish or yellowish green. Bill dark yellow, culmen and tip horny brown. Legs and feet reddish brown, soles and hinder edge of tarsus paler and more yellow. In breeding birds bill and legs much brighter orangey.

MISCELLANEOUS. Both this and Grey Heron highly prized as food by certain classes, e.g. the mohanas or inland fishermen of Sind. The birds are kept tethered by a leg, perched on floating bits of log or on the prow of the mohanas' houseboats to fatten for slaughter or use as decoys.

Longevity, *A. p. purpurea*: 16 + years (Ring, 1962, 33: 148).

37a. Western Purple Heron. *Ardea purpurea purpurea* Linnaeus. See Appendix. The genus *Ardea* also includes Nos. 45 and 46.

Genus BUTORIDES Blyth

Butorides Blyth, 1852 (1849), Cat. Bds. Mus. Asiat. Soc.: 281. Type, by monotypy, *Ardea javanica* Horsfield

Unlike Pond Heron (*Ardeola*) has no nuptial plumage. Tibia feathered nearly to the joint. Tarsus comparatively much shorter than in *Egretta* or *Ardeola*. Feet smaller and slenderer; middle toe with claw about equal to tarsus in length, but much shorter than bill. Head crested. Scapulars and interscapulars long and lanceolate but not disintegrated as in *Egretta* or *Ardeola*. Tail of twelve feathers as in *Ardeola*.

38. Little Green Heron. *Butorides striatus javanicus* (Horsfield)¹

Ardea chloriceps 'Hodgs.' = Bonaparte, 1857, Consp. Gen. Av., 2: 129 Nepal. (Restricted to Hitaura, Chisapani Garhi dist. by Biswas, 1959, Curr. Sci., 28: 288)

Baker, FBI No. 2231, Vol 6: 357

Plate 6, fig. 1

LOCAL NAMES. *Kancha bāglā* (Hindi); *Kāna bāk* or *Kuro bāk* (Bengal); *Kona moochree* (Assam); *Dori konga* (Telugu); *Dorhi kokku* (Tamil); *Podi kokka* (Sinhala); *China kokku* (Malayalam).

SIZE. Pond Heron; length c. 46 cm. (18 in.).

FIELD CHARACTERS. Smaller than Pond Heron, chiefly black, grey, and metallic dark green, but otherwise like it in general effect.

Adult. Above, forehead, crown, and long occipital crest glossy greenish black; cheeks white; head and neck grey. Upperparts, with lengthened scapulars, slaty grey glossed with dark green and bronze-green. Wing-coverts dark glossy green. Wing quills green-glossed black with grey and white tips and edges. Below, chin and centre of throat white. Lower parts ashy grey; under tail-coverts white with blackish tips or edges. Sexes alike.

Young (immature). Above, brownish without the lengthened scapulars. Crown and short crest streaked with buff. Wing feathers edged with buff, and with apical white spots. Below, buffy white, heavily streaked with dark brown.

STATUS, DISTRIBUTION and HABITAT. Resident. Generally, but thinly

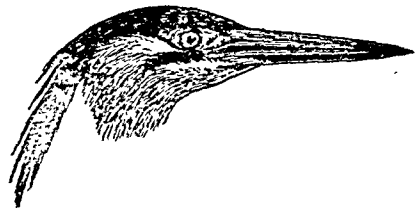
¹ Revival of name *chloriceps* (Bonaparte) as in the earlier edition is unnecessary. See Ripley, S. D., 1969, *Ibis* 111: 102.

60

CICONIIFORMES

distributed throughout the subcontinent from Sind (in W. Pakistan) to eastern Assam and Manipur. Also Ceylon and Laccadive Islands. Chiefly plains and up to at least c. 1000 m. in the Nepal bhabar and duns, and up to c. 1500 m. in the peninsular hills (Mahabeshwar). Affects streams, lakes, ponds, etc., with dense marginal shrubby growth. Also coastal backwaters, mangrove swamps, and tidal creeks.

Extralimital. Burma, Thailand, Malaysia, Indochina, Indonesia, Philippines, Sunda Islands, Celebes (Sulawesi). Numerous other races occur in S. America, Africa, Indian Ocean islands, and eastern Asia south to Australia and S. Pacific islands.



x.c. 1

GENERAL HABITS. Solitary; shy and retiring; silent. Crepuscular and nocturnal, but also active during daytime, particularly in cloudy overcast weather. Partial to shady nullahs and secluded rock pools in jungle streams bordered or overgrown with jamun (*Eugenia jambolana*) seedlings, *Phyllanthus lawii*, and similar bushes. Flushes when suddenly come upon, flying with deliberate wing flaps, the thick and heavy-looking neck stretched forward (not telescoped like heron's), and dropping into the shrubbery or alighting on an overhanging branch a hundred metres or so farther. Normally keeps during daytime to shady watercourses under the welter of tangled brushwood, uprooted trees and other debris brought down by monsoon torrents, perched rather sluggishly on some snag or projecting root a few inches above water, constantly flicking its tail up and down like a kingfisher. Very parochial; occupies the same secluded spot day after day. Here sits patiently craning down its neck now and again to jab at anything eatable that floats or swims past. Or it stealthily creeps along the water's edge and lunges at prey within range. On suspicion, surreptitiously clambers up into the seclusion of a thicket, descending immediately it is reassured.

FOOD. Fish, shrimps, frogs, crabs, water beetles, etc. Mudfish or *neota* (*Periophthalmus*) and *Belone strongylura* (16.50–20.25 cm. long) specifically recorded among stomach contents of specimens.

VOICE. Normally very silent. When flushed and flying off utters an alarm note *K'you*, *K'you* or *K'yek*, *K'yek* (y as in 'yes') (G. M. Henry). 'Teem-teem-teem like redshank' (H. Abdulali). Other notes not described.

BREEDING. Evidently double brooded. Season, over the greater part of the subcontinent March to September, varying locally with water conditions; in Ceylon March to July. Nest, a small platform of twigs with an unlined depression for the eggs. Built singly, but colonially or in mixed

HERONS, EGRETS

61

heronries, though exceptionally several nests may be found in a circumscribed area. Normally 3 to 4.5 metres up in a small tree in a mangrove swamp, or in one concealed among bushes on the edge of the stream or pond; occasionally near a village, the bird's silent and secretive behaviour preventing discovery. Eggs, 3 to 5, smooth, fine textured, light sea green, very like those of Pond Heron (q.v.) but curiously enough averaging larger. Average size of 40 eggs 39.5×29.7 mm. (Baker).

Both sexes incubate and feed the young by regurgitation, the chicks seizing the adult's bill and vigorously twisting and stroking it to make it disgorge (cf. Purple Heron). Incubation period unrecorded. Courtship display and behaviour undescribed. Incubation commences with first egg, resulting in considerable disparity in growth of nestlings in the same brood.

MUSEUM DIAGNOSIS. Indian birds, *chloriceps*, are paler than those from W. Java (*javanicus*), with longer moustachial streaks and longer wings. Wing 18 ♂ 174-184; 6 ♀ 177-182 mm. v. 3 ♂ 165-174; 2 ♀ 166-174 mm. in *javanicus* (Biswas, loc. cit.).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	174-203	56-70	47-51	54-69 mm. (Baker)

Weight 1 ♂ 220 gm. (BNHS).

COLOURS OF BARE PARTS. Iris bright lemon-yellow. Bill, upper mandible dark horny brown, lower sage green; blacker in breeding birds. Eyelids and bare patch in front of eyes bright yellowish leaf-green. Legs and feet yellowish leaf-green, yellower on hind tarsus and soles; claws dusky.

39. Andaman Little Green Heron. *Butorides striatus spodiogaster* Sharpe

Butorides spodiogaster Sharpe, 1894, Bull. Brit. Orn. Cl., 3: xvii
(Andamans and Nicobars)
Baker, FBI No. 2232, Vol. 6: 359

LOCAL NAMES. Unrecorded.

SIZE. As last.

FIELD CHARACTERS. Similar to *chloriceps* but darker, especially on the underparts. (See Museum Diagnosis.)

STATUS, DISTRIBUTION and HABITAT. Resident. Andaman and Nicobar islands. Affects mangrove forest along the shores.

GENERAL HABITS, FOOD, VOICE, etc. As in the last.

BREEDING. No difference except that the nesting sites are chiefly in mangrove trees in tidal swamps. Eggs averaging slightly smaller — 38.2×28.2 mm. (Baker).

MUSEUM DIAGNOSIS. Differs from *chloriceps* in being darker grey, especially on neck, breast, and abdomen which are dark slaty grey. Sides of the head deeper grey with less white.

MEASUREMENTS. Slightly smaller:

	Wing	Bill	Tarsus	Tail
♂ ♀	167-171	57-60	41-44	58-62 mm.

COLOURS OF BARE PARTS. As in last.

HERONS, EGRETS

63

42. Indian Pond Heron or Paddybird. *Ardeola grayii grayii* (Sykes)

Ardea Grayii Sykes, 1832, Proc. Zool. Soc. London: 158 (Dukhun)
Baker, FBI No. 2229, Vol. 6: 354
Plate 4, fig. 9 and Plate 6, fig. 8

LOCAL NAMES. *Bāglā*, *Āndhā bāglā*, *Chama bāglā*, *Khūnch bāglā* (Hindi); *Koneh bāk* (Bengal); *Bāgli* (Mirbhikars, Bihar); *Ral puchake* (Gond); *Kūlāthū kokkū*, *Kūrūthū kokkū*, *Mādū kālān*, *Mādāyān* (Tamil); *Gūddi konga* (Telugu); *Kana kokka*, *Podi kokka* (Sinhala); *Brūku* (Kashmir); *Kūlāmūnī* (Malayalam).

SIZE. Country hen +; length c. 46 cm. (18 in.).

FIELD CHARACTERS. An egret-like waterside bird largely snow-white and prominent when in flight, effectively camouflaged earthy brown when at rest.

Adult (non-breeding). Drab. Above, head and neck dark brown streaked with yellowish buff. Back, scapulars, and tertiaries, ashy brown with pale yellowish shaft-stripes on the scapulars. Below, chin and throat white; upper breast white, streaked with brown. Rest of plumage, including tail, white.

Adult (breeding). Very handsome. Above, head and neck light yellowish brown; crown browner. Long recumbent white or buff occipital crest of lanceolate plumes. Back deep maroon with very long decomposed feathers extending over the tail. Below, chin and throat white; upper breast ashy brown, the feathers long and somewhat disintegrated. Rest of body, wings, and tail white; tips of first primaries tinged brownish. Sexes alike in breeding and non-breeding plumages.

STATUS, DISTRIBUTION and HABITAT. Resident; shifting locally with drought and flood conditions. Throughout the subcontinent, and Ceylon. Also Andaman, Nicobar, and Laccadive islands. In the plains and seaboard; up to c. 1200 m. in the peninsular hills (to 2150 m. in the Nilgiris), and c. 1500 m. in the Kashmir and Nepal valleys. Affects streams, jheels, marshes, inundated paddyfields, village tanks, stagnant roadside ditches, borrow-pits and puddles, even kutchas wells, and tidal mudflats.

Extralimital. From the Persian Gulf to Burma and Malaysia.

GENERAL HABITS. Usually solitary when feeding, or in small loose parties. Gregarious at roost; colonial when nesting. Its method of hunting is typically heron-like, either standing hunched up and motionless but fully alert on the water's edge or amidst a squelchy puddle, or stalking stealthily, lifting each foot clear of the water and putting it down circumspectly, neck craned forward and bill poised in readiness to jab at the quarry. Observed catching fish by bellyflopping on the water from overhanging stone slab c. 1 metre above (Muir, JBNHS 24: 366). Large numbers collect at drying-up village ponds after the monsoon to feast on the concentrating refugee frogs and fish. Rises with a flash of the white wings and flies with deliberate rather lazy flapping, neck partly extended as in the Little Green Heron, not folded back as in the Grey Heron.

FOOD. Frogs, fish, crustaceans, water beetles, and other insects. Mud-skippers or *Periophthalmus* from tidal swamps, and *Oryzias* crabs from between tidemarks on the sandy seashore specifically recorded. Also among insect food the following identified: *Brachytrypes achatinus*, *Atractomorpha crenulata*, *Oxya* sp., *Crocotemis serrillia*, *Pelagonus marginatus*, *Trithemis*

62

CICONIIFORMES

40. Paler Maldivian Green Heron. *Butorides striatus didii* Phillips & Sims

Butorides striatus didii Phillips & Sims, 1958, Bull. Brit. Orn. Cl., 78: 51 (Malé Island, North Malé Atoll, Maldive archipelago)
Not in Baker, FBI

LOCAL NAME. *Rabonds* (Maldives).

SIZE. As *B. s. chloriceps*.

FIELD CHARACTERS. Similar to *chloriceps* but much paler even than the next form.

STATUS, DISTRIBUTION and HABITAT. Resident. Common in the central and northern atolls of the Maldive archipelago. Affects mangrove swamps and the neighbourhood of beaches.

GENERAL HABITS. Not different from *chloriceps*. At ebb tide sits on the knobs of coral on the beaches, darting out at small fishes and crabs nearby. Flies inland as tide rises to perch on tops of palm trees or stand on the sea walls and exposed coral outcrops, apparently asleep. Not shy.

41. Darker Maldivian Green Heron. *Butorides striatus albidulus* Bangs

Butorides albidulus Bangs, 1913, Proc. Biol. Soc. Washington, 26: 93 (Suadiva Atoll, Maldive Islands)
Not in Baker, FBI

LOCAL NAMES. *Rabonds* or *Rabulli* (Maldives).

SIZE. As *B. s. chloriceps*.

FIELD CHARACTERS. Similar to *chloriceps* but paler.

STATUS, DISTRIBUTION and HABITAT. Resident. Southern Maldive Islands. Mangrove swamps and around beaches.

GENERAL HABITS. As in the paler Maldivian race (q.v.).

MUSEUM DIAGNOSIS. Paler than *chloriceps*. Described from the unique type collected on Suadiva Atoll. Whether both races from within this group of islands can be maintained needs investigating.

MEASUREMENTS and COLOURS OF BARE PARTS. As in the other races.

Genus ARDEOLA Boie

Ardeola Boie, 1822, Isis von Oken, col. 559. Type, by monotypy, *Ardeola limicola* Scopoli

Cf. Bock, W.J., 1956, Amer. Mus. Novit. No. 1779: 35-57

Feathers of head, neck and upper breast elongate. Those of the two latter decomposed during the breeding season, when also a crest of elongate, lanceolate feathers develops. Bill stout and about equal in length to middle toe and claw. Tarsus strong, about same length as bill. Tail of twelve feathers, typically broad. Neck shorter than in *Ardea*. Head, neck and back always coloured, but undergoing a complete change of colour in the breeding season.

64

CICONIIFORMES

palidinnervis, *Platygomphus dolobratus*, *Dysticus* spp., *Chrotopogon* spp., grasshoppers, dragonfly larvae, crickets, ants, etc.

VOICE and CALLS. A harsh croak when suddenly flushed. Birds in a nesting colony constantly utter a conversational wa-koo — very human-like — interlarded with short croaks.

BREEDING. Usually in small groups of its own species, or mixed with night herons, egrets, cormorants, etc. Perhaps less colonial than many others of the family. *Season*, in most parts of the subcontinent May to September; in south India and Ceylon November to February; in Ceylon till August. *Nest*, an untidy structure of twigs, slightly more substantial than a dove's nest. Built in isolated large trees or clumps such as of tamarind or mango, often growing in the midst of a noisy town or village, and not necessarily close to water. Colonies also sited in willows, as in Kashmir, or in babool (*Acacia arabica*) or tamarisk (*Tamarix* sp.) standing in water, the nests between two and four metres above the surface; likewise in mangroves. If undisturbed, the same sites are used year after year and tend to become traditional. Eggs, 3 to 5; smooth, fine-textured, typical broad oval of the family, pale sea green in colour. Average size of one hundred eggs 38.0×28.5 mm. (Baker). Believed to pair for life, but this not proven. Both sexes take part in nest building; apparently the male chiefly responsible for collecting the material which the female puts together. Both sexes incubate and feed the young. Period of incubation 24 days (Lamba, *Pavo* 1(1)-1963). Feeding done by regurgitation as in the Grey and Green Herons (qq.v.), with vigorous bill-seizing and demands by the young.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	199-230	60-67	60-64	73-84 mm. (Baker)

Scheer (loc. cit. *infra*) gives for Indian birds:

	Wing	Bill length	depth at base	Tarsus
♂ ♂	194-230 (210.9)	48-66 (60.6)	12-15 (13.8)	50-63 mm. (56.6)
♀ ♀	182-224 (198.4)	51-66 (58.8)	11-15 (12.9)	49-62 mm. (54.5)

Weight 10 ♂ ♀ 175-310 (av. 215) gm. (BNHS).

COLOURS OF BARE PARTS. Iris lemon yellow. Orbital skin greenish yellow. Bill greenish yellow with blue on base, horny on middle part of culmen, black on top and sides of anterior third. Legs and feet dull green; claws pale horny; pads dingy yellowish white (Biswas).

HERONS, EGRETS

65

In full breeding dress the legs and feet in some individuals become bright salmon pink. In the majority there is merely a brightening of the yellow.

42a. Maldivian Pond Heron. *Ardeola grayii phillipsi* Scheer

Ardeola grayii phillipsi Scheer, 1960, Senck. biol. Frankfurt am Main, 41: 145 (Hitadu, Addu Atoll, Maldives)
Not in Baker, FBI

LOCAL NAME. *Hudu rabulli* (Maldivian).

SIZE. Same as 42.

FIELD CHARACTERS. Same as for 42. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Race peculiar to the Maldivian Is. Found on the southernmost atolls — Addu and Suadiva. Affects freshwater ponds and rain puddles; also tidal mudflats.

GENERAL HABITS, FOOD, VOICE and CALLS. Similar to 42. Recorded as eating frogs, skinks, small fish, shrimps and insects. Has been observed jabbing at large land crabs with the heavy bill.

BREEDING. No information.

MUSEUM DIAGNOSIS. Differs from the nominate form in having a more massive bill in the male, and shorter tarsus in the female. Outermost primaries in adult pure white instead of dusky.

MEASUREMENTS

	Wing	Bill length	depth at base	Tarsus
♂ ♂	207-220 (211.1)	64-68 (65.8)	14.5-16 (15)	54-67 mm. (57.6)
♀ ♀	186-199 (190.6)	53-58 (56.5)	12.5-14 (13.1)	49-52 mm. (50.1)

COLOURS OF BARE PARTS. Iris golden yellow. Bill yellow. Legs pale yellow-green becoming deeper yellow in ♂ ♂ and more rose in ♀ ♀ during the breeding season. Weight of type specimen 230 gm. (Scheer).

43. Chinese Pond Heron. *Ardeola bacchus* (Bonaparte)

Buphus bacchus Bonaparte, 1855, Cons. Av., 2(1) (Malay Peninsular)
Baker, FBI, No. 2230, Vol. 6: 355
Plate 6, fig. 7.

LOCAL NAMES. *Lampra* (Manipur).

SIZE. Indian Pond Heron +; length c. 52 cm. (21 in.).

FIELD CHARACTERS. Slightly larger than Indian Pond Heron and very similar to it in non-breeding plumage.

Adult (breeding). Above, head and neck, with long lanceolate nuchal crest, dark maroon-chestnut. Back and some scapulars blackish slaty. Below, chin and throat white; elongate breast plumes dark maroon-chestnut, blackish towards ends. Rest of body including wings and tail white; the outer two or three primaries brownish at tip. Sexes alike.

HERONS, EGRETS

67

SIZE. Village hen; length c. 51 cm. (20 in.).

FIELD CHARACTERS. In non-breeding plumage a lanky snow-white bird very similar to Little Egret, usually seen in attendance on grazing cattle, not necessarily near water. Always identified from Little Egret by yellow bill contra black. In breeding plumage unmistakable: golden buff on head, neck, and back, the feathers disintegrated and hair-like. Sexes alike.



× c. 1

STATUS, DISTRIBUTION and HABITAT. Resident, but in the Himalayas migrating to lower elevations in winter. Throughout the subcontinent, Ceylon, and the Andaman, Nicobar, Laccadive, and Maldivian islands. Plains, and cultivated Himalayan duns and valleys up to at least 1500 m. altitude (Nepal), and to c. 1200 m. (possibly higher) in the peninsular hills and plateaux (e.g. Sahyadris, Nilgiris), often as a daily commuter from lower levels. Almost invariably in attendance on grazing animals, domestic or wild. In recent years the species has spread to and colonized widely in S. America and the U.S.A.

Extraliminally the race *coromandus* occurs in Burma, the Indochinese countries, Malaysia, S. China, Korea, S. Japan, Formosa, Hainan, Philippines, Sunda islands, Celebes (Sulawesi), and Ceram as resident, migrant, or on passage.

GENERAL HABITS. Gregarious. Usually seen in attendance on grazing village cattle on damp grassy margins of tanks as well as dry fallows and forest glades far removed from water. Also with grazing herds of wild buffaloes, or rhinoceros wallowing in swamps and *bheels* in Assam. The birds stand around amongst or on the backs of the animals fearlessly, or stalk alongside running energetically in and out between their legs and pouncing on grasshoppers and other insects disturbed by the animals' progress. Every now and again the long flexible neck and pointed bill lunges out at the fleeing quarry. Sometimes a bird will complacently settle on and walk along the body of a wallowing animal to explore the inside of its ear or some less accessible part. Blood-sucking flies, ticks and other parasitic insects are picked off the sides and bellies of the grazing animals by the birds springing up for them as they scurry alongside, or from other parts while riding upon the animals' heads or backs. To capture bluebottle flies (*Musca comitoria*) off the low herbage, the bird poises its bill, cranes forward and sways its neck comically from side to side as if taking aim, and jabs at the insect.

Besides attending on cattle they sometimes collect in large gatherings (of up to several hundred strong) at inundated ploughed fields where the freshly turned up soil provides ample feeding. They consort freely with vultures at slaughter-houses and animal carcase dumps on the outskirts of towns, for the flies and maggots these unsavoury places provide. Cattle

66

CICONIIFORMES

STATUS, DISTRIBUTION and HABITAT. Resident; shifting locally. Eastern Assam, Manipur, East Pakistan, Andaman islands. Affects marshes, and every sort of inland and tidal waters, as the Indian bird (q.v.).



Winter plumage, × c. 1

Extralimital. China from Kansu and the Tsinling Mts south to Burma, Thailand, Malaysia, Hainan and Borneo. Wanderer to Japan (non-breeding).

BREEDING. Breeds in the eastern Brahmaputra Valley in Assam (Lakhimpur), westward to about Tezpur, in small mixed heronries together with Indian Pond Herons and the usual associates. Season, chiefly May to July-August. Nest and eggs not different from those of the Indian bird, the latter 3 to 5 pale sea green. Average size of 50 eggs 37.7 × 28.4 mm. (Baker).

MUSEUM DIAGNOSIS. Non-breeding plumage differs from *A. grayii* only in being somewhat more brown and buff on the head and neck, and rather deeper brown on back and scapulars.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	195-238	61-69	60-64	72-90 mm. (Baker)

COLOURS OF BARE PARTS. Iris deep golden yellow. Orbital skin greenish yellow. Bill yellow, blackish on terminal quarter, bluish at base. Legs and feet yellowish green, the soles still paler; possibly as in *A. grayii* salmon pink in some breeding individuals, but not recorded.

Genus *BUBULCUS* Bonaparte

Bubulcus Bonaparte, 1855, Comp. Rend. Acad. Sci. Paris, 40: 722. Type, by tautonymy, *Ardea ibis* Linnaeus = *Ardea bubulcus* Audouin

Included by some authors in *Ardeola*. Differs from *Egretta* by its shorter bill and feet. Naked portion of tibia shorter than inner toe without claw. Breeding plumage very distinctive, consisting of golden buff hair-like plumes on head and back.

Only a single species inhabiting the warmer parts of Europe and Asia, and all Africa. Has spread to America within recent years.

44. Cattle Egret. *Bubulcus ibis coromandus* (Boddaert)

Cancerma coromanda Boddaert, 1783, Table Pl. enlum.: 54 (Coromandel)
Baker, FBI No. 2226, Vol. 6: 349
Plate 7, fig. 5

LOCAL NAMES. *Sirkhia-bāglā*, *Badāmi-bāglā*, *Doria bāglā*, *Gāi bāglā* (Hindi); *Go bāk*, *Gāi bāk* (Bengal); *Samti konga* (Telugu); *Unni kokku* (Tamil, Ceylon); *Harakkakka* (Sinhala); *Jobogali* (Assam); *Gochāndi khāo* (Marathi); *Kunk pakki* (Sind); *San-dung-il* (= 'following after cattle' — Manipur); *Kāliminti* (Malayalam).

68

CICONIIFORMES

egrets have favourite roost trees, shared with crows, mynas, and other birds, to which they resort every evening flying in a more or less disorderly rabble in the characteristic heron style — neck folded back, head hunched between the shoulders, and legs tucked under the tail, projecting behind like a rudder.

FOOD. Chiefly insects. From stomach contents the following have been identified: Sarcophagidae, *Agrotis* sp. larvae, *Chrologonus* spp., *Acridium aeruginosum* and other grasshoppers, carabid beetles, earth-worms, and flies (Muscidae). To a minor extent tadpoles, frogs and lizards.

VOICE and CALLS. A low croak uttered when one bird is supplanting another, especially at nest colony. Normally very silent.

BREEDING. Season, mainly June to August in N. India; November to February in the south; February to July in Ceylon. In small to medium sized colonies of its own, but more usually mixed with cormorants, night herons, egrets, etc., in large trees such as mango, tamarind, or peepul, often standing in the midst of a noisy bazaar — even within populous cities like Bombay, Madras, and Calcutta — not necessarily close to water. Eggs, 3 to 5, broad ovals, very pale sea green, almost white or skim-milk blue. Average size of 80 eggs 44.1 × 36.5 mm. (Baker). Both sexes share in nest building, incubation, and feeding the young by regurgitation as in Purple Heron (q.v.). Incubation period undetermined.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	240-260	50-66	82-92	83-96 mm.

Males average a little larger than females.
Weight 2 oo? 450, 475 gm. (BNHS).

COLOURS OF BARE PARTS. Iris golden yellow. Bill yellow; orbital and facial skin greenish yellow. Legs and feet black, the upper parts of the tibia, and soles, yellow or greenish yellow (Baker)

Genus *EGRETTA* Forster

Egretta T. Forster, 1817, Syn. Cat. Brit. Eds.: 59. Type, by monotypy, *Ardea garzetta* Linnaeus

Contains those egrets which in the breeding season develop ornamental plumes on the back as well as, in some cases, on the breast and head. All are white at all seasons with the exception of *E. guloris* and *E. sacra* which are dimorphic with also slaty phase. Smaller than birds of the genus *Ardea* and with much slenderer bills and thinner necks. In winter plumage the species can be distinguished chiefly by size.

See Key, p. 50.

45. Large Egret or Great White Heron. *Ardea alba alba* Linnaeus¹

Ardea alba Linnaeus, 1758, Syst. Nat., ed. 10, 1: 144 (in Europe = Sweden)
Baker, FBI No. 2222, Vol. 6: 345

LOCAL NAMES. Same as next.

SIZE. Grey Heron ±; length c. 96 cm. (38 in.); standing c. 75 cm. to top of head.

¹*Egretta alba* has been transferred to genus *Ardea*.

FIELD CHARACTERS. A large lanky snow-white heron-like marsh bird with bare blackish legs, long slender neck and head, and pointed black-and-yellow or yellow bill. In the breeding season a bunch of ornamental filamentous plumes (aigrettes) develops on the back, falling over beyond the tail. Sexes alike. Solitary.

STATUS, DISTRIBUTION and HABITAT. Rare winter straggler into West Pakistan and Uttar Pradesh. Affects jheels and marshes.

Extralimital. Breeds in SE. Europe, W. and N. Asia to SE. Siberia, N. China, N. Japan.

GENERAL HABITS. See next.

MUSEUM DIAGNOSIS. For plumages etc. see Withersby 1939, 3: 139.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	410-465	110-135	170-215	140-185 mm.

♀♀	400-450	110-132	—	—
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COLOURS OF BARE PARTS. Iris yellow. Bill black, base yellow (ad. summer), all yellow (ad. winter & juv.); lores and round eyes green; legs and feet black-brown, sides yellowish, toes greenish black (Withersby).

46. Eastern Large Egret. *Ardea alba modesta* J. E. Gray

Ardea modesta J. E. Gray, 1831, Zool. Misc.: 19 (India)

Baker, FBI No. 2223, Vol. 6: 346

Plate 7, fig. 1

LOCAL NAMES. *Māldng bāglā*, *Tūrā bāglā* (?), *Tar bāglā*, *Bādā bāglā* (Hindi); *Dhār bāk*, *Bādā bāk* (Bengal); *Bōr bōg* (Assamese in Nowgong); *Loklenba* (= 'standing in streams' — Manipur); *Peddā tellā konga* (Telugu); *Mala konga* (Gond); *Peria vellāi kokku* (Tamil, Ceylon); *Loku sudu kokka*, *Badadel kokka* (Sinhala); *Bāglo āchho* (Sind); *Perūmūnti* (Malayalam).

SIZE. Grey Heron —; length c. 91 cm. (36 in.).

FIELD CHARACTERS. Slightly smaller, otherwise identical with the foregoing and indistinguishable from it. Size variable and deceptive; thus in non-breeding plumage confusion between some individuals and the Smaller Egret easily possible. In breeding season, especially during various nest ceremonies, the diaphanous lacelike plumes of the back are often erected and spread out in 'showers' — a halo of mist! No crest. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident and nomadic, shifting locally with water conditions. Throughout the subcontinent and Ceylon, Nepal Valley (?) and lowlands, and Maldiv Islands in winter. Not recorded in Andaman or Laccadive is.; possible sight record in Nicobars (JBNHS 61: 502). Low country — at jheels and marshes, rivers, tidal estuaries, etc.

Extralimital. Burma, eastward through the Indo-Chinese countries and Malaysia to S. and C. China, S. and C. Japan, south and east to Australia.

GENERAL HABITS. Usually solitary, and seldom more than two or three separated individuals amongst feeding groups of the two smaller species. More gregarious when nesting, but everywhere less abundant, more widely scattered, and less communal than the other egrets. Behaviour and feeding

HERONS, EGRETS

71

Baker gives the range of *modesta* ♂♀ as Wing 354-391; bill (from feathers) 104-116 mm. and says 'Bill much more slender than in *E. a. alba*'

COLOURS OF BARE PARTS. Breeding: Iris bright lemon-yellow. Bill black, yellow at base. Orbital skin and lores bright verdigris green. Legs: tibia bright rose-pink; tarsus and feet pinkish brown or black. Non-breeding: Bill orange-yellow. Orbital and facial skin greenish yellow. Legs, feet, and claws, black.

MISCELLANEOUS. Longevity, *A. a. alba*: c. 10 years (Ring, 1962, 33: 148).

47, 48. Smaller or Median Egret. *Egretta intermedia intermedia* (Wagler)

Ardea intermedia Wagler, 1829, Isis von Oken, col. 659 (Java)

Egretta intermedia palluca Deignan, 1947, Proc. Biol. Soc. Washington 60(1): 97 (Muang Chiang Rai, Siam)

Baker, FBI No. 2224, vol. 6: 347

Plate 7, fig. 2

LOCAL NAMES. *Pātāngkhā bāglā*, *Pātōkhā bāglā*, *Kārchā bāglā* (Hindi); *Korehā bāk* (Bengal); *Bāglo āchho* (Sind); *Lāng khong sāng* (Manipur); *Vellāi kokku* (Tamil); *Sudu kokka* (Sinhala); *Tellā konga* (Telugu).

SIZE. Length c. 45 cm. (26 in.).

FIELD CHARACTERS. Slightly smaller, otherwise very like Eastern Large Egret; non-breeding birds often indistinguishable from it. In breeding plumage presence of decomposed filamentous plumes on back as well as breast diagnostic. No crest. Sexes alike. Less solitary than Large, less gregarious than Little Egret.

STATUS, DISTRIBUTION and HABITAT. Resident and nomadic, shifting locally with water conditions. Throughout the subcontinent, Ceylon, Andaman and Nicobar islands. Low country and plateaux; to about 1400 m. altitude in Nepal Valley. Affects jheels, marshes, inundations; also coastal backwaters, tidal estuaries, and mangrove swamps.

Extralimital. Burma, Thailand, Indo-Chinese countries, Malaysia, east to China and Japan, south to Greater Sunda Is. and the Philippines. Resident in some of the areas, migratory in others.

GENERAL HABITS. Not different from Large Egret except that it is somewhat more social even in the non-breeding season, occasionally seen in small flocks.

BREEDING. Colonial, in mixed heronries with the usual associates. Season, nest, and nest sites as in the previous species. In Sind inundated tamarisk forest, and in Kutch and other coastal areas tidal mangrove forests are commonly resorted to for nesting. Eggs, 3 or 4, sometimes 5, pale sea green, smooth-surfaced broad ovals. Average size of 60 eggs 47.6 × 35.8 mm. (Baker). As in other egrets, both sexes share all domestic chores. Incubation period undetermined, but believed to be about 21 days.

MUSEUM DIAGNOSIS. For distinguishing this from *E. a. modesta* see remarks under that species.

Egretta intermedia palluca Deignan is based on the mistaken premise that eastern birds retain a yellow bill at all seasons. La Touche (1931-4, 2: 447), and Smythies (1953: 529) both describe the bill as black in the breeding season, and the former as 'yellow, pointed with black in winter', therefore exactly as in typical *intermedia* from western India. There seems no justification for retaining this race.

70

CICONIIFORMES

habits very similar to the Grey Heron's (q.v.). Flight with rather slow deliberate flapping of the broad wings, typically heron-like — neck telescoped, head pulled in between the shoulders, legs trailing behind. When disturbed and suddenly taking off, and also during short foraging hops the long slender neck is fully extended, and twisted this way and that, seemingly to counterbalance the swaying legs and produce an even keel.

FOOD. Fish, frogs, crustaceans, water insects, etc.

VOICE and CALLS. Except for an occasional throaty croak when one bird is supplanting a rival, very silent.

BREEDING. Colonial, in mixed heronries of storks, darters, cormorants, Smaller and Little Egrets; etc. Season, July to September in Sind and N. India; November to February in the south; December to May in Ceylon. Nest, a flimsy twig platform, c. 25-35 cm. in diameter, seemingly too small for the bird. Built in trees of medium to large size standing by themselves or in a grove or copse, either partially submerged or on raised ground away from water. In the latter case it may be a large peepul or tamarind tree in the midst of a noisy town or overhanging a public highway, with as many as 40 to 50 nests of this species in addition to others'. Babool (*Acacia arabica*) and kandi (*Prosopis spiciroga*) trees in the Keoladeo Ghana Sanctuary of Rajasthan, and tamarisks in the riverain and canal areas of Sind, are commonly patronized. The nests here are scattered amongst those of other species in the heronry without any suggestion of segregation. Eggs, 3 or 4, smaller but otherwise identical with those of the Grey Heron. Average size of 60 eggs 54.0 × 38.6 mm. (Baker). Both sexes build the nest, incubate, and feed the young by regurgitation, as described. Incubation period unrecorded; in the nominate race (*alba*) it is said to be 'probably 25-26 days'.

MUSEUM DIAGNOSIS. For description of plumages etc. see Withersby 1939, 3: 139 for the nominate race, from which *modesta* differs only in being smaller. Generally distinguishable from *Egretta i. intermedia* (next species) by its wing length of c. 350 mm. and tarsus over 160 mm. *contra* wing under 350 and tarsus under 150 mm. But females are smaller, and furthermore there is considerable individual variation in size, sometimes producing an overlap or near-overlap in these measurements. Therefore, identifying individual examples in non-breeding plumage is not always satisfactory, and in some cases even impossible.

MEASUREMENTS

		Wing	Bill (from feathers)	Tarsus	Tail
China specimens (Foochow)	5 ♂♂	360-370	109-111	173.5-175 (one 163)	139-150 mm.
	4 ♀♀	345-361	95-104	152-157	130-143 mm.

Breeding males have the train of dorsal ornamental plumes projecting from about 92 to 165 mm. beyond tip of tail; females about 38 to 90 mm. (La Touche 1931-4, 2: 446).

		Wing	Bill (from skull)	Tarsus	Tail
Indian specimens (Gujarat & Ceylon)	6 ♂♂	355-375	103-117	146-165	125.5-143 mm.
	6 ♀♀	337-365	97-100.5	136-160	120-138 mm. (SA, HW)

72

CICONIIFORMES

MEASUREMENTS. Baker gives as follows:

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	304-333 (once 354)	73-97 (twice 68, once 118)	122-148 (once 114)	116-135 mm.

Three specimens from Travancore, Ceylon and Rajasthan measure: 2 ♂♂ wing 302, 316; bill (1) 94 (from skull), (1) 77.5 (from feather); tarsus 111.5, 120; tail 121.5, 124 mm. 1 ♀ wing 294; bill (from feathers) 69; tarsus 102 tail 117 mm.

Weight 1 ♂? 900 gm. (BNHS).

COLOURS OF BARE PARTS. Iris lemon-yellow. Bill black, yellow at base (breeding) lemon-yellow, dusky at tip browner at base (non-breeding). Naked lores and infra-orbital skin yellowish green (breeding); yellowish (non-breeding). Legs and feet dusky black, greenish on the joints and tibia. Rose-pink or salmon-pink in leg of breeding birds unrecorded in this species.

49. Little Egret. *Egretta garzetta garzetta* (Linnaeus)

Ardea Garzetta Linnaeus, 1766, Syst. Nat., ed. 12, 1: 237

('Oriente' = northeast Italy)

Baker, FBI No. 2225, Vol. 6: 348

Plate 4, fig. 7 and Plate 7, fig. 3

LOCAL NAMES. *Kilchia* or *Kārchā bāglā* (Hindi); *Bādrō* (Sind); *Chhotā korhā bāk* (Bengal); *Teleri bog* (Assamese in Nowgong); *Crimd tellā konga* (Telugu); *Chin vellāi kokku* (Tamil, Ceylon); *Sudu kokka* (Sinhala); *Chinnamūnti* (Malayalam).

SIZE. Village hen ±, with longer neck and legs; length c. 63 cm. (25 in.).

FIELD CHARACTERS. A lanky snow-white waterside bird — small replica of the Large and Median Egrets. Similar also to non-breeding Cattle Egret but distinguished from it at all seasons by black v. yellow bill, partly coloured legs and feet (black and yellow), and also usually by habitat. In breeding season develops a drooping nuchal crest of two long narrow plumes in addition to filamentous ornamental feathers on both back (scapulars) and breast; the latter less decomposed. Sexes alike.



STATUS, DISTRIBUTION and HABITAT. Resident, shifting locally with water conditions. Throughout the subcontinent, chiefly lowlands and plateaux; to about 1400 m. altitude in the Himalayas (Nepal Valley) and at least 900 m. in the peninsular hills. Also Ceylon, Andaman, Nicobar, Laccadive (?), and Maldiv Islands. Affects inland waters — marshes, jheels, inundated paddyfields, etc. Rarely tidal estuaries, mudflats and backwaters; hardly ever the seashore.

HERONS, EGRETS

73

Extralimital. S. and E. Europe, N. and E. Africa, Middle East, Iran, Afghanistan, Burma, Malaysia, east to China, Hainan, and Japan. Partly migratory.

GENERAL HABITS. More gregarious than the two larger white egrets, usually in flocks on the edge of water or wading in the shallows. Still-hunts or stalks prey in the characteristic heron manner, lunging out with its flexible neck and dagger bill to seize the quarry. Flies with steady but leisurely flaps of the broad rounded wings, head and neck drawn in when commuting or on long flights. Roosts on favourite trees ('rookeries') in association with other species.

FOOD. Fish, frogs, crustaceans, water insects, etc.

BREEDING. Colonial, in mixed heronries. *Season*, July to September in Sind and N. India; November to February in the south; December to May in Ceylon — dependent on water conditions. *Nest*, the typical flimsy cupped structure of twigs — only slightly more substantial than a dove's — placed 2 to 6 metres up in a tree, single or one of a grove standing in a tank or jheel, or on dry land; sometimes away from water and in the midst of a village or town. The nests are often close together, even touching others of the same or different species. Inundated tamarisk forests in Sind, and partially submerged babool and kandi jungle in monsoon-flooded semi-desert areas in NW. India (Kutch, Rajasthan, etc.) are favourite nesting sites. Similarly situated *Barringtonia racemosa* groves and *Pandanus* thickets in South India (Vedanthangal in Madras; Srirangapatnam in Mysore), and mangroves in the Bengal Sunderbans are also regularly patronized. But smaller heronries are scattered all over the country. *Eggs*, 3 to 5, typically heron, pale blue-green broad ovals with a smooth texture. Average size of 60 eggs 44.4 × 31.7 mm. (Baker). As in the family, both sexes share all the domestic chores. Feeding of young etc. as in the species described. Incubation period 21–25 days.

MUSEUM DIAGNOSIS. For details of plumages etc. see Witherby 1939, 3: 141.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	257–289	79–91	99–110	92–108 mm. (Baker)
		(from skull)		
♂ ♂	260–295	85–92	100–110	90–110 mm.
♀ ♀	(240) 250–282	78–90		— (Witherby)

Weight 5 oo? 320–420 (av. 390.6) gm. (BNHS).

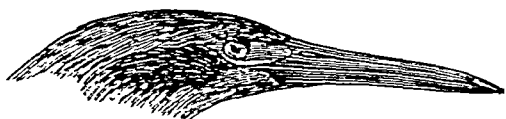
COLOURS OF BARE PARTS. (Breeding and non-breeding) Iris yellow. Facial skin greenish yellow. Bill black, the gape and base of lower mandible yellowish. Tarsus and tibia black; feet yellow, greenish yellow, or mixed black and yellow; soles almost all yellow. In a female in breeding condition from Nepal, 'Ocular skin bluish purple. Bill black, base of upper mandible bluish purple, lower mandible with a small basal area of bluish purple. Legs black, feet orange-yellow' (Ripley).

MISCELLANEOUS. *Egret Farming.* Some years ago this species used to be extensively and lucratively farmed by the *mirbahars* or *mohanas* (inland

HERONS, EGRETS

75

FIELD CHARACTERS. General effect as of Little Egret, but dimorphic. Adult in two colour phases: (1) pure white, (2) slaty grey to slaty blue-black, with glistening white throat and upper foreneck. Some examples intermediate, partly white partly slaty. In breeding plumage a nuchal crest of two elongated narrow plumes and same sort of filamentous plumes on back and breast as in Little Egret. White phase indistinguishable from Little Egret except by more solitary habit and seacoast habitat. Sexes alike in both colour phases.



Sub-adult (dark phase?). *Above*, pale ashy grey. *Below*, chin and throat white; upper foreneck grey; lower foreneck, breast and underparts including under tail-coverts and inner thighs, white.

STATUS, DISTRIBUTION AND HABITAT. Resident, nomadic, and local migrant (see Breeding). Northern shores of the Arabian Sea and seaboard of West Pakistan (where very common); shores of western India south to Kanyakumari, and of northwest Ceylon; Laccadive Is. Rare on the eastern coast, only recently recorded as resident and breeding from east of Nellore and in the neighbourhood of Pulicat lagoon (Kirkpatrick, JBNHS 58: 275). Affects sandy and rocky seashores, tidal lagoons and mudflats, and mangrove swamps. Once far inland, Hyderabad, A.P. (Neavoll, 1967, JBNHS 65: 216).

Extralimital. Coasts of Red Sea, Gulf of Aden, and Persian Gulf.

GENERAL HABITS. Solitary and somewhat crepuscular. Occasional separated twos and threes, both colour phases together. Gregarious at nest colonies. Wades stealthily into shallow surf on tidal mud, or among rock pools left by receding tide, and secures prey by jabbing at it with the pointed bill and flexible neck. Often seen sitting hunched up on a partly submerged rock or fishing stake patiently waiting for the tide to ebb to resume hunting. While stalking in the shallow surf, sometimes suddenly raises unopened wings at the armpits, level with the back, crouching forward furtively on flexed legs (as in a bird about to settle on eggs), wading deeper almost to belly, peering intently into the water, neck craned out and bill poised in readiness. From time to time also suddenly flicks the wings open and shut, quite obviously to stampede lurking or 'frozen' prey by the sudden movement. Flight and general behaviour not different to Little Egret's, though usually more mobile and active when hunting.

FOOD. Fish, crabs, molluscs, etc. The mudskipper (*Periophthalmus*), procured in tidal mud, is a regular food item of adults and nestlings.

VOICE AND CALLS. Very silent. A short throaty croak sometimes heard when one bird is supplanting a rival.

BREEDING. Colonial, usually in segregated heronries of own species, but also mixed with other egrets and pond and night herons. *Season*, between

74

CICONIIFORMES

fisherfolk) of Sind on many of the local dhands (jheels) for their valuable ornamental plumes known to the trade as 'aigrettes' or 'ospreys'. The birds were pinioned and housed in spacious pens of reed matting — 50 or 60 couples to a pen — where they moved about freely and became quite tame. They were well fed and cared for, and between March and September they paired off, built their own nests from twigs provided by the owners, laid from 3 to 5 eggs, and incubated them. After hatching the chicks were left with the parents for about a week, then removed and hand reared. They attained maturity in about 12 months. The parents commenced laying a second clutch almost immediately after the removal of the brood, and soon brought up another family. In this way they sometimes produced 4 and even 5 successive clutches during the season. The dorsal plumes were extracted in a humane manner without injury to the birds. There were four pluckings — one every three months — and each bird seldom produced less than a *tola* (11.66 gm.) in the year. Round about the year 1914, the feathers fetched from Rs. 10 to Rs. 15 per *tola* in the Indian market (even '10 to 28 times their weight in silver'), but as much as £15 per oz. (28.35 gm.) when smuggled to Europe, a trade which was apparently practised on a large scale by specialists in the business! The lack of official encouragement to this profitable cottage industry by a controlled relaxation of the ban on export of wild birds' plumage in favour of genuinely farm-produced feathers — but even more the change in women's fashions in clothing — has virtually put an end to the egret-farming industry. But to our knowledge some small egret farms existed in Sind up to 1930, and some may possibly survive to this day. While the farming concerned the Little Egret almost exclusively, before statutory protection was given enormous numbers of egrets of all species were slaughtered by gangs of professional hunters, armed with snares and muzzle-loading guns, who scoured the countryside visiting one breeding heronry after another and systematically slaying the adults, often leaving the nestlings, to starve and perish. In the more accessible areas this vandalism had reduced the egret population to the verge of extinction. The species that suffered most were the three white egrets — *E. alba*, *E. intermedia* and *E. garzetta*, but to a lesser degree also the Cattle Egret (*Bubulcus ibis*) and the Reef Heron (*Egretta gularis*). (For detailed accounts see articles on 'Egret Farming in Sind', JBNHS 23: 161; 27: 944; 28: 748, 751.)

50. Indian Reef Heron. *Egretta gularis schistacea* (Hemprich & Ehrenberg)

Ardea (Leptorodas) schistacea Hemprich & Ehrenberg, 1832, Symb. Phys. Aves, (p. 12), pl. 6 (Red Sea)

Ardea Asha Sykes, 1832, Proc. Zool. Soc. London: 157 (Dukhun)

Baker, FBI No. 2228. Vol 6: 353

Plate 7. fig. 4

LOCAL NAMES. *Kālā bāglā* (Hindi); *Thirāmūti* (Malayalam); *Therāpū konga* (Telugu); *Kārāi kokke*, *Kārpū kūllāyāyin* (Tamil).

SIZE. Same as Little Egret; length c. 63 cm. (25 in.).

76

CICONIIFORMES

April and August in Sind (Karachi city and harbour) and Kutch (Gul of Kutch); end of May in Ceylon (Chilaw; rare). No record elsewhere in between, therefore possibly migrates locally to special areas. *Nest*, the usual untidy structure of twigs, occasionally plucked green and with leaves still attached. In large trees such as peepul (*Ficus religiosa*), jamun (*Eugenia jambolana*), Rain Tree (*Pithecellobium dulce*) and others standing on dry ground, with the colony overflowing on to adjacent trees. But the normal site is coastal mangrove swamps subject to inundation at high tide, the nests being placed in trees and bushes of *Rhizophora*, *Avicennia*, and *Sonneratia*, etc. Both the dark and pale phases breed together in the same colony, but white mated to white and slaty to slaty only; no evidence here of slaty and white birds paired together as in Africa. *Eggs*, 3 or 4, exactly like those of the Little Egret in colour, shape, and texture of shell. Average size of 50 eggs 44.9 × 34.3 mm. (Baker). Both sexes share all the domestic chores. As in most herons the male collects the twigs and fetches them to the nest where the female puts them together. Incubation commences with the first egg, accounting for marked disparity in growth of young in the same brood. Nest-feeding done by regurgitation as described. Period of incubation undetermined. The nests contain either all white or all grey chicks each. Only a single case observed of 2 white, 1 grey (one of the parents was white, the other not seen). None of the white chicks are snow-white, all being more or less dappled with grey, thus different from Little Egrets'. No adult white bird retains the grey dappling, but adult slaty birds frequently show small asymmetrical white patches on the wings.

MUSEUM DIAGNOSIS. In skins extremely difficult to distinguish *E. garzetta garzetta* from white phase of *E. gularis schistacea*. Proportions and colours of legs and toes (particoloured) the same in both. Plumages both breeding and non-breeding also identical, including the ornamental plumes. The only constant difference is: bill black in the always white *E. garzetta garzetta* against horny brown or even yellowish in *E. gularis schistacea*, whether in the dark or the white phase. It has been suggested that the dimorphic *E. g. schistacea* may only be ecological populations of *E. g. garzetta* adapted to a marine habitat. Contrary to experience in India, dark and white birds often found paired together in the same colonies in Africa, and dark and white chicks in the same nest. Furthermore, in East Africa *E. g. garzetta* has several colour phases — pale lavender grey, sooty grey, dark sooty grey, and blackish slate, with intermediates. The problem of these colour phases is not properly understood. The different coloration does not depend on age or sex.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	267–301	94–101	97–102	102–112 mm. (Baker)

Weight 5 oo? 355–460 (av. 421) gm. (BNHS).

COLOURS OF BARE PARTS. Variable. Adult: Iris yellow. Bill horny brown above, yellowish at base and on lower mandible; or largely bright yellow (in slaty phase). Legs and feet particoloured as in *E. garzetta*: tarsus greenish black; toes yellowish brown (dark phase), largely yellow or greenish yellow (white phase).

In small nestlings, naked skin between feather buds, and apteria, yellowish grey-green. Legs and feet yellowish green and brown.

Iris greenish grey in very young; lighter grey (almost whitish) in older nestlings.

HERONS, EGRETS

77

51. Eastern Reef Heron. *Egretta sacra* (Gmelin)

Ardea sacra Gmelin, 1789, Syst. Nat. 1(2): 640 (Tahiti)

Baker, FBI No. 2227, Vol. 6: 351

LOCAL NAMES. Unrecorded.

SIZE. Length c. 58 cm. (23 in.).

FIELD CHARACTERS. Slightly smaller than the last, otherwise of same general effect and maritime habitat.

Adult. Also dimorphic like No. 50: (1) pure white, (2) dark slaty grey or slaty black, with a white streak down middle of chin and throat. In breeding plumage both phases distinguishable from *E. g. schistacea* by a bushy nuchal crest, *contra* crest of two lanceolated plumes in the latter. Feathers of lower foreneck long, lanceolate, overhanging breast. Long lanceolate plumes on back (scapulars and interscapulars) reaching to middle of tail, ending in paler slaty grey than rest of plumage. Sexes alike.

Sub-adult. Pied or mottled, in intermediate colour stages.

STATUS, DISTRIBUTION AND HABITAT. Resident in the Andaman and Nicobar islands. Affects rocky portions of the coasts.

Extralimital. From the eastern coasts of the Bay of Bengal eastward — Burma, Malaysia, to the coasts of southern China Sea, S. Korea, S. Japan, Philippines, Sunda Islands, Moluccas, Celebes, New Guinea, South Pacific islands, N. Australia, New Zealand.

GENERAL HABITS. Very similar to the last. Solitary. Keeps to the rocky sea coast and squelchy tidal mud exposed at low water, or sits hunched up on a partially submerged rock or mangrove tree waiting for the ebb.

FOOD. Fish, especially the mudskipper (*Periophthalmus*), crabs, and occasionally insects, such as grasshoppers, obtained on bare ground above tide level.

VOICE. An occasional 'grunted croak or *ork* when feeding, presumably to signalize the acquisition of an unduly tasty morsel'. Also a longer harsher, *ark* when alarmed (Gibson-Hill). Normally silent.

BREEDING. Colonial. Season, May to July and up to September. Nest, the usual rough untidy stick platform. Placed on rocks in hollows and crevices, in stunted *Ficus* trees, low thorny bushes up to a metre from the ground, or more commonly among mangrove trees in creeks, sometimes just above high-water mark (B. B. Osmaston). Eggs, 3 or 4, pale sea green, typical of the herons. Average size of 50 eggs 44.8 × 33.3 mm. (Baker).

MUSEUM DIAGNOSIS. For details of plumages, and a very full discussion of the colour phases etc., see A. O. Hume 1874, *Stray Feathers*, 2: 304-9.

	MEASUREMENTS			
	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	250-293	70-86	72-77	93-98 mm. (Baker)

COLOURS OF BARE PARTS. Variable. Iris yellow. Bill horny brown above, yellowish at base and on lower mandible; often yellow all over in white birds. Legs varying from pale yellowish green (in white birds) to deep dull greenish or nearly black (in dark individuals).

HERONS, EGRETS

79

Not recorded from the Laccadives or Maldives. Affects jheels, tanks, streams, and ponds, as well as estuaries, tidal creeks, coastal lagoons and backwaters.

Extralimital. Central and southern Europe, south to Africa. Middle East, Burma, Thailand, Malaysia, the Indochinese countries to China and Japan.

GENERAL HABITS. Gregarious, crepuscular and nocturnal except in breeding season. Colonies from a dozen to several hundred birds spend the daytime roosting in the seclusion of dense *Pandanus*, mangrove or other bushes bordering or overhanging water, or covering a little islet in a river. A grove of large leafy trees or a bamboo copse on dry ground, maybe in the vicinity of a village — lofty chenars in Kashmir — do equally well. Here the birds sit sluggishly in their characteristic hunched posture, neck drawn into the body, shoulders and back rounded, and blood-red eye staring unblinkingly. Owing to their silent and secretive habits such daytime roosts, even large and populous ones, are liable to be overlooked unless some disturbance causes the birds to fly out, when they will mill around like a rabble of flying foxes before resettling. At dusk they bestir themselves, flying out singly or in small parties in different directions to their accustomed feeding grounds by some jheel or creek. Except when foraging for nest-young, feeding is chiefly done in the morning and evening twilight, and during the night. The birds are active in the quest for food and seldom still-hunt in the manner of true herons. The flight is strong and direct, with quick flaps of the rounded wings — reminiscent in the distance, and in silhouette, of a flying fox. The thick-set neck is pulled in and shortened, but not folded in as in the Grey Heron. At the communal roosts and heronries emotion of any kind between individual birds is expressed by a momentary raising of the crest and fluffing out of feathers of the neck, breast and back, followed occasionally by a jab of the bill at a neighbour.

VOICE AND CALLS. A single unmistakable raucous *wook* or *kwaark* is uttered from time to time while flighting to and from the feeding grounds. Partially fledged chicks in the nest or when out clambering among the adjacent branches keep up an incessant clamour, *click, click, click*, etc. for being fed.

FOOD. Fish, frogs, aquatic insects, dragonfly larvae, etc.

BREEDING. Colonial. Often in pure colonies of its own, or in segregated *mohallas* in mixed heronries, or even individually in uneasy proximity of nests of cormorants, egrets, and pond herons. Season, April-May in the Vale of Kashmir; June-July to September in N. India generally; December to February in S. India; December to September in Ceylon. Nest, a rough untidy platform of twigs, sometimes flimsy enough for the eggs to be seen from below. Placed in the same sort of sites as used for daytime roosts — trees, *Pandanus* or tamarisk bushes standing in or near water, or groves of trees (often lofty, as chenars in Kashmir) on dry land. Eggs, 3 or 4, rarely 5, typical of the family, pale blue green, longish ovals. Average size of 50 eggs 49.0 × 35.1 mm. (Baker). Both sexes take part in all the domestic chores. The nest material is evidently collected chiefly by the male. Incubation period not ascertained; given as 21 days for European birds. Great disparity in chicks of same brood owing to the eggs being laid at about 48-hour intervals and incubation commencing with the first egg. Chicks fed by

78

CICONIIFORMES

Genus NYCTICORAX T. Forster

Nycticorax T. Forster, 1817, Syn. Cat. Brit. Bds.: 59. Type, by tautonymy and monotypy, *Nycticorax infansatus* Forster = *Ardea nycticorax* Linnaeus

Bill very stout and deep, much compressed, with culmen distinctly curved; upper mandible notched close to tip. Head short and comparatively thick with nuchal crest of a few narrow feathers. Wings rounded: 3rd primary (as.) longest. Tail short, of 12 feathers. Only upper part of tibia feathered. Tarsus long and stout, about equal to culmen in length; scutellated in front, reticulated behind. Genus practically cosmopolitan.

52. Night Heron. *Nycticorax nycticorax nycticorax* (Linnaeus)

Ardea Nycticorax Linnaeus, 1758, Syst. Nat., ed. 10, 1: 142 (Southern Europe)

Baker, FBI No. 2233, Vol. 6: 659

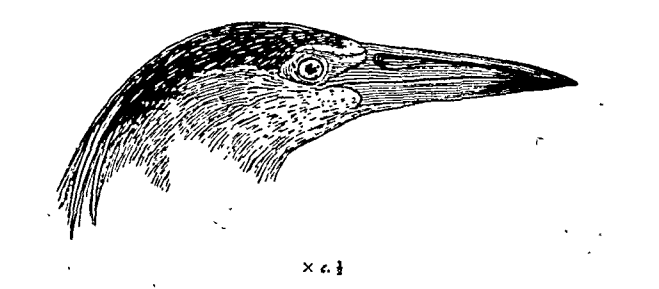
Plate 4, fig. 16 and Plate 6, fig. 14

LOCAL NAMES. *Waak*, *Kwaak*, *Tār bāglā*, *Kōkrāi* (Hindi); *Bār* (Kashmir); *Bachka* (Bengal); *Chongkhū* (Manipur); *Raat bāggūl*, *Raat kōkkā*, *Rāj kōk* (Marathi); *Awaak*, *Waaak* (Gujarat); *Gadri* (Sind); *Chinta wākha* (Telugu); *Vākka* (Tamil); *Toppi kōkkū* (Malayalam); *Re kāna kōkkā* (Sinhala).

SIZE. Pond Heron; length c. 58 cm. (23 in.).

FIELD CHARACTERS. A stocky grey, white and black marsh bird of the same general effect as the Pond Heron, with a markedly stouter bill.

Adult. Above, ashy grey with metallic greenish black back and scapulars. Forehead and a streak over eye white; crown, nape, and drooping occipital crest black, the last with a few long narrow white plumes. Below, white; sides of body ashy grey. Sexes alike.



Young (immature). Brown, streaked and speckled with rufous, buff, and dark brown — rather similar looking, when at rest, to Pond Heron in non-breeding plumage.

STATUS, DISTRIBUTION AND HABITAT. Resident. Patchily distributed, and shifting locally with water conditions. Throughout the subcontinent, up to c. 1900 m. in the Kashmir and Nepal valleys in spring and summer; most moving southward in winter. Ceylon, Andaman and Nicobar islands.

80

CICONIIFORMES

regurgitation, as in the family, the parent's bill being seized and violently pulled down into the nest to induce disgorgement. Courtship display described in Witherby 1939, 3: 148-9.

MUSEUM DIAGNOSIS. For details of plumages etc. see Witherby 1939, 3: 150-2.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	265-300	65-80	65-75	95-110 mm.
♀ ♀	270-285	66-75	—	— (Witherby)

Weight 1 ♂ 275 gm. (BNHS)

COLOURS OF BARE PARTS. Iris blood-red. Bill black, greenish yellow at base and on most of lower mandible. Naked lores and orbital skin yellowish green. Legs and feet dull green. In breeding season bill blacker; legs and feet lemon-yellow, orange-red, or pinkish red.

MISCELLANEOUS. Longevity (in captivity): 18+ years (PZS, 125: 535).

Genus GORSACHIUS Bonaparte

Gorsachius Bonaparte, 1855, Cons. Av., 2: 138. Type, by monotypy, *Nycticorax goisagi* Temminck

Plumage variable. Bill as stout as in *Nycticorax* but much shorter. Culmen shorter than tarsus. Nostrils large, linear, open. Tarsus short, stout, reticulated throughout. Feet small, the toes bordered by a narrow membrane. Tail short, of twelve feathers. Head crested; neck short and thick. Wing rounded: 2nd, 3rd and 4th primaries (as.) subequal, the 3rd usually slightly the longest.

53. Malay or Tiger Bittern. *Gorsachius melanolophus melanolophus* (Raffles)

Ardea melanolophus Raffles, 1822, Trans. Linn. Soc. London, 13(2): 326 (Western Sumatra)

Baker, FBI No. 2234, Vol. 6: 361

Plate 4, fig. 8 and Plate 6, fig. 15

LOCAL NAMES. *Rāj bāg* (Assam); *Thāvitū kōkkū* (Malayalam); *Re kōkkā* (Sinhala).

SIZE. Pond Heron +; length c. 51 cm. (20 in.).

FIELD CHARACTERS. An unmistakable relation of the Pond and Night Herons. Reminiscent also of a large Chestnut Bittern (q.v.).

Adult. Above, crown and long bushy nuchal crest ashy black. Back and rest of upperparts largely chestnut-cinnamon, closely and finely barred with black (hence sometimes called Tiger Bittern). Primaries and secondaries greyish black with chestnut and white tips. Tail black, rufescent at tip. Below, chin and throat white; foreneck and upper breast sandy-rufous streaked with black. Rest of underparts white, blotched and spotted with black and rufous on lower breast and abdomen. Sexes alike.

Young (immature). Above, head almost black; nape and long crest feathers streaked with white. Rest of upper plumage dark brown spotted with white, the wings and scapulars with wavy buff barring. Below, chin and throat white with a central dark brown streak. Rest of underparts white to buff, spotted and barred with dark brown, densely on breast lightly on abdomen and flanks.

BITTERNs

81

STATUS, DISTRIBUTION and HABITAT. One of the peculiar discontinuously distributed Indo-Malayan species of evergreen biotope. Resident in the heavy rainfall areas of the southern Western Ghats — Kerala, W. Mysore (including Nilgiris) north to about Belgaum (c. 15° 50' N. × 74° 31' E.); Assam, Manipur. Winter visitor to Ceylon. Foothills and up to at least 800 m. altitude in SW. India; up to c. 1800 m. in Ceylon. Frequents streams and marshy patches in thick forest.



× c. 1

Extralimital. Burma, Thailand, Malaysia, Indochina, S. China, Formosa, Borneo, Sumatra, Java.

MIGRATION. Very little known. Regular winter visitor to Ceylon arriving on the west coast in October and November. At Jatinga in the Haflong district (c. 25° N. × 93° E.) and in certain other valleys of Assam, birds of this species, along with several others usually considered non-migratory, are regularly attracted in large numbers to lights displayed by the villagers. Jatinga lies on a spur flanking the valley at an altitude of about 600 m., and the appearance of the birds on dark cloudy overcast monsoon nights between August and October, flying in a north-south direction, is clearly suggestive of some sort of migratory passage. Further investigation is desirable. (For a fuller account see Sálím Ali, 1962, JBNHS 59 (1): 128-30.)

GENERAL HABITS. In many respects similar to those of the Night Heron; largely nocturnal. Excessively shy and difficult to approach or observe, but perhaps less rare than generally believed. When disturbed feeding at a water-hole in dense forest, it flies off noiselessly with a rapid flapping of wings, alighting a short distance away in a thick tree, whence it moves on again before it can be approached.

VOICE and CALLS. On the whole very silent. Besides a short croak and hisses uttered by an incubating bird when closely approached, nothing recorded. When hungry, captive birds uttered 'a rasping *arh arh arh* (a as in "hat")' — G. M. Henry.

FOOD. Fish, frogs, lizards, molluscs, insects, etc.

BREEDING. *Season*, in Assam chiefly May and June; in SW. India end May to August, during the heaviest rains. *Nest*, a flimsy structure of twigs like the Pond Heron's, sometimes with a lining of reeds etc. Usually placed between 5 and 8 m. up in a small tree overhanging a stream in thick forest. Not concealed, but easily overlooked. Rarely in reed beds. *Eggs*, 3 to 5, white

BITTERNs

83

55. Little Bittern. *Ixobrychus minutus minutus* (Linnaeus)

Ardea minuta Linnaeus, 1766, Syst. Nat., ed. 12, 1:240 (Switzerland)
Baker, FBI No. 2236, Vol. 6:364
Plate 6, fig. 11

LOCAL NAME. *Goi* (Kashmir).

SIZE. Pond Heron —; length c. 36 cm. (14 in.).

FIELD CHARACTERS. A 'hunchbacked' waterside bird, similar in general effect to the Pond Heron. In flight whitish shoulder patch contrasting with blackish wings, suggestive of identity.

Male (adult). *Above*, black, including crown, nape, crest, back, scapulars, rump, tail, and innermost secondaries. A large lavender-grey to whitish patch on closed wing (coverts) almost masking the blackish brown flight feathers while bird at rest. Sides of head and neck greyish pink or vinous. *Below*, throat and neck white to buff. Upper breast ochre, of lanceolate feathers; lower breast blackish maroon. Rest of underparts white, the flanks ochre with faint dark shaft-lines.

Female. *Above*, chestnut-brown largely replacing black. A chestnut-brown shoulder patch. *Below*, chiefly chestnut and rufous, streaked with rufous-buff.

Young (immature). *Above*, dark brown with rufous scalloping or streaking. *Below*, chiefly white and buff, streaked with chestnut and buff.

STATUS, DISTRIBUTION and HABITAT. Resident: local, and apparently also locally migratory. West Pakistan (Sind), and northern India (Nepal, Uttar Pradesh), east to Assam (Cachar — Baker). Normally in the lowlands; in the vale of Kashmir up to c. 1500 to 1800 m. altitude. Frequents jheels and marshes with thick reed-beds and other cover.

Extralimital. Central and southern Europe to W. Siberia and Transcaucasia. Asia Minor, Israel, Iran, Turkestan, Afghanistan. N. Africa, wintering south to Cape Colony. Other races in tropical Africa, Australia, New Zealand.

GENERAL HABITS. Non-gregarious; usually keeping singly, rarely two or three together. Largely crepuscular. Skulks in thick reed-beds during daytime, clambering amongst the stems, and seldom shows itself except when flushed from its retreat. Flies with fairly rapid flaps of the rounded wings, head characteristically drawn into the shoulders, close above the water or reed tops to pitch into the growth again a short distance away preceded by a short glide. Sometimes seen standing hunchbacked at the edge of a reed-bed, lunging out with its bill now and again at some insect or other morsel. When suddenly come upon, especially when on nest, the bird 'freezes', stretching the flexible neck to its full length upwards, bill thrust stiffly into the sky. In this attitude the long slender neck blends so perfectly with the surrounding reeds, particularly in the case of the streaked female, that the bird becomes astonishingly invisible even at close range as long as it remains still.

VOICE and CALLS. An occasional frog-like *urk* is recorded in Kashmir. In Europe the male has been described as uttering 'a rather low croaking *kéé*' repeated often for long stretches with remarkable regularity at rate of approximately 25 to a minute' (A. Voigt in Witherby 1939).

82

GICONIIFORMES

with a bluish tinge; broad ovals occasionally slightly pointed at the small end. Average of 40 eggs 46.2 × 37.2 mm. (Baker). Though ordinarily so shy, the bird is a close sitter, hissing and croaking at the intruder and refusing to leave its nest till almost touched. Share of the sexes in nest building, incubation and feeding the young unrecorded. Period of incubation unknown.

MUSEUM DIAGNOSIS
MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	255-281	43-49	c. 67-79	96-112 mm. (Baker)

COLOURS OF BARE PARTS. Iris golden yellow. Bill fleshy yellow, the culmen and tip horny brown. Orbital skin greenish slate, suffused with red in the breeding season. Legs and feet dull green, brownish in front.

54. Nicobar Tiger Bittern. *Gorsachius melanolophus minor* Hachisuka

Gorsachius melanolophus minor Hachisuka, 1926, Ibis: 592
(Katchel Island, Nicobar Is.)
Baker, FBI No. 2235, Vol. 6:363

LOCAL NAMES. Unrecorded.

SIZE. Slightly smaller than the foregoing.

FIELD CHARACTERS. As in No. 53.

STATUS, DISTRIBUTION and HABITAT. Apparently resident, but rare. Nicobar Islands (obtained at Katchel, Tillangchong, False Harbour, etc.). Frequents streams and swampy patches in thick forest.

GENERAL HABITS. As described under No. 53.

BREEDING. Not recorded.

MUSEUM DIAGNOSIS. As No. 53, but smaller. Plumage very variable.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	224-234	40-42 (once 44)	c. 61-67	80-88 mm. (Baker)

COLOURS OF BARE PARTS. As in the nominate race (No. 53).

Genus *IXOBRYCHUS* Billberg

Ixobrychus Billberg, 1828, Syn. Faun. Scand., 1(2): 166. Type, by subsequent designation, *Ardea minuta* Linnaeus. (Stone, 1907, *Auk*, 24: 192.)

Bill straight and slender; culmen flat at base with a broad shallow groove on each side of upper mandible. Tarsus rather short, equal to about two-thirds of the culmen. Back of neck almost denuded of feathers, though this concealed by feathers of side of neck. Head crested. Feathers of upper breast very soft and lax; no dorsal or scapular plumes. Tail short, often of ten feathers only.

Genus almost cosmopolitan except in the northern Holarctic Region.

84

GICONIIFORMES

FOOD. Fish, frogs, molluscs, crustaceans, and largely insects.

BREEDING. Has been recorded in the Eastern Nara district of Sind (Doig and Butler) in May; in Kohat (Whitehead) in July; in Cachar (Baker — once) month not stated. Breeds commonly and abundantly in the Kashmir Valley from May to July; singly, not in colonies. *Nest*, a pad of rushes built partly by bending down a number of reeds and then adding other pieces of reed flags to form a shallow platform; from a few centimetres to a metre or so above the water. Normally in dense reed-beds and liable to be swamped by rise of water level in a flood. Sometimes the nests are made of fine twigs and provided with a depression for the eggs. *Eggs*, 4 to 6 or 7, white, often with a pale bluish tinge; regular ovals about equal at both ends, smooth but glossless. Average size of 80 eggs 34.1 × 26.0 mm. (Baker). Both sexes share in building the nest, incubation, and feeding the young. The eggs are laid at two-day intervals. Incubation period 16-17 days. Incubation commences with the first egg, resulting in marked disparity in the development of chicks of the same brood. The nestling is clothed in loose cinnamon-coloured down with longer bottlebrush-like bristles sticking out from its crown. The older chicks clamber about among the surrounding reeds till a parent returns with food, whereupon they scramble back to the nest where the characteristic tussle ensues to induce it to regurgitate.

MUSEUM DIAGNOSIS. For details of plumages etc. see Witherby 1939, 3: 154-5.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	142-155	45-52	42-47	45-52 mm.
♀ ♀	137-150 (once 157)	45-52		

(Witherby)

Weight 2 oo? 105. 108 gm. (BNHS).

COLOURS OF BARE PARTS. Iris pale yellow to orange-yellow. Bill yellow, creamy yellow or purplish yellow, the culmen darker and browner. Orbital skin pale livid green. Legs and feet greenish yellow, dull greenish plumbeous or greenish horny (Baker).

56. Chestnut Bittern. *Ixobrychus cinnamomeus* (Gmelin)

Ardea cinnamomea Gmelin, 1789, Syst. Nat., 1(2): 643 (China)
Baker, FBI No. 2238, Vol. 6:367
Plate 6, fig. 9

LOCAL NAMES. *Lāl bāglā* (Hindi); *Khyri bāk* or *Lāl bāk* (Bengal); *Meti kakkā* (Sinhala); *Kūrūtta kakkū* (Tamil); *Sārdiyya kakkū* (Malayalam).

SIZE. Pond Heron —; length c. 38 cm. (15 in.).

FIELD CHARACTERS. Smaller and lankier than Pond Heron, but an unmistakable cousin.

Male (adult). *Above*, including crown and bushy crest, chestnut-cinnamon. Wing quills chestnut. *Below*, chin and throat whitish with a dark median stripe down foreneck. A patch of black and chestnut buff-edged feathers on each side of upper breast largely concealed by the elongated

BITTERNS

85

breast feathers; rest of underparts pale chestnut. Underside of wings (in flight) still paler chestnut with a pinkish tinge.

Female (adult). *Above*, chestnut-brown. Crown blackish. Scapulars and wing-coverts with black-bordered buff spots. *Below*, buffy rufous with a heavy brown streak down middle of foreneck and breast, flanked by parallel broken lines on either side, like 'coarse stitching with brown thread'. Rest of underparts streaked with dark brown. Underwing rufous-buff.



× c. 1

Young (immature). Like female but less chestnut more brown above, and more distinctly barred and spotted. *Below*, more heavily streaked with dark brown.

STATUS, DISTRIBUTION and HABITAT. Resident — subject to local movements dependent on water conditions; possibly also migratory to some extent. Throughout the subcontinent, Ceylon, Andaman, Nicobar and Maldivian islands. The Indus Valley is approximately the western limit of distribution of both this and Yellow Bittern; eastward to Assam and beyond. Lowlands from the Nepal duns and Himalayan terai southward in the Peninsula and Ceylon. Up to at least 900 m. elevation in the peninsular hills; to over 1800 m. in Ceylon. Affects reed-beds in inland jheels and swamps, inundated standing paddyfields, etc. Rarely also coastal backwaters and tidal mangroves, e.g. in Kerala; frequently side by side with the Yellow Bittern.

Extralimital. Burma, Thailand, Malaysia, Philippines, Sunda Islands, Celebes (Sulawesi). China from Manchuria to Hainan; Ryukyu Islands.

GENERAL HABITS. Non-gregarious and largely crepuscular. Normally seen during daytime only when flushed out of long grass, as when snipe-shooting, but commonly flying about from one reed patch to another during the breeding season and in overcast rainy weather. Flight (rather quick flaps of the rounded wings with neck drawn in) and other habits and behaviour very like Pond Heron and Yellow Bittern.

FOOD. Fish, frogs, molluscs, insects, etc. in astonishing quantity. One bird had swallowed a fish 12.70 cm. long, c. 5 cm. in circumference, with a skull c. 2 cm. across, 1 eel c. 13 cm. long, and 2 of c. 9 cm. each (Butler — Andamans).

VOICE and CALLS. Normally silent. Very noisy in spring, constantly uttering a loud *kok-kok* (La Touche). In courtship 'the male flew slowly before the female with slow, stiff wing beats, calling *ek-ek-ek*, then perched at the top of a low tree and sang *gook-gook-gook-gook-gook-gook-gook* with each of the first five notes louder than the one before it, and the last three pitched three or four tones lower' (H. G. Deignan). J. K. Stanford also describes this display in identical terms, minus the accompanying calls, and

BITTERNS

87

Female. More or less similar except for a buff mesial line down the throat and foreneck, sometimes obsolete.

Young (immature). *Above*, rufous-brown with broad buff fringes to the feathers (scalloping). *Below*, more heavily streaked; buff mesial line down centre of foreneck more pronounced.

STATUS, DISTRIBUTION and HABITAT. Resident, moving locally with water conditions; possibly also migratory to some extent. Throughout the subcontinent from the Indus Valley eastward to Assam and beyond, and from Nepal (duns) southward to Kerala. Also Ceylon, Andamans, and Nicobars. Lowlands, and up to c. 900 m. in the peninsular hills; to c. 1200 m. elevation in Ceylon. Affects reed-beds, and scrubby growth in inland swamps as well as coastal mangroves and backwaters, and inundated standing paddy crops, etc., frequently side by side with Chestnut Bittern.

Extralimital. Burma, Thailand, Malaya east to China and Japan, south to New Guinea and the Caroline Is. The numerous subspecies described are ill defined and their validity, according to Hartert (1910-22, 2: 1260) and later authorities, is questionable.

GENERAL HABITS. Like the Little Bittern (q.v.) largely crepuscular and nocturnal, but quite active in daytime in cloudy, overcast weather. When come upon suddenly, especially on nest, it also assumes the characteristic posture of the tribe aptly termed 'On Guard'. The slender neck is thrust vertically upward, bill pointing to the sky, while the bird freezes, taking full advantage of its streaked underside to become astonishingly inconspicuous amongst the reedy surroundings. In other respects also very similar to both the Little and the Chestnut Bitterns.

FOOD. Fish, frogs, molluscs, insects, etc. One described sitting on its heels catching flies 'which it did with incredibly rapid lunges of its head and bill without moving its body at all' (Vaughan & Jones — E. China).

VOICE and CALLS. Very silent. *Kaka-kakak* (Mayr — SW. Pacific).

BREEDING. Season, as in Chestnut Bittern, between June and September, as soon as the monsoon has properly set in, filling the depressions and swamps. *Nest*, and site, not different from the last — a pad of reed flags etc. placed on bent-down reeds in a swamp, or in shrubbery on the edge of a pond, from a few centimetres to a metre or so above the water or mud. *Eggs*, 4 to 6, fine-textured but glossless, pale skim-milk blue or green-blue. Inner membrane pale blue *contra* white or pale yellowish white in *Ixobrychus minutus*. Average size of 60 eggs 31.2 × 23.9 mm. (Baker). Both sexes take part in all the domestic chores. The eggs are laid on consecutive days and incubation begins from the first egg. Period of incubation undetermined.

MUSEUM DIAGNOSIS. For fuller description of plumage see Baker, loc. cit. Tibia feathered down to the tibio-tarsal joint. Culmen longer than mid-toe and claw. Rest as for the genus.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	129-136 (once 143)	52-57 (once 49)	44-51	41-47 mm. (Baker)

COLOURS OF BARE PARTS. Iris orange-yellow or bright golden-yellow. Bill: culmen horny brown, commissure and lower mandible pale yellowish flesh; mouth

86

CICONIIFORMES

says it reminded him of the nuptial flight of a long-eared owl or a greenfinch (*sic* Smythies).

BREEDING. Season, between June and September, commencing as soon as the monsoon rains have well set in; most general in July-August. *Nest*, a small pad of leaves, bits of reed stem, etc. built on bent-down matted reeds, or in a cane brake in a swamp, a metre or so above the water or mud. *Eggs*, 4 or 5, sometimes 6, white with occasionally a bluish tint; short to long ovals, generally almost cylindrical. Average size of 50 eggs 36.5 × 26.4 mm. (Baker). Both sexes take part in building the nest, incubation, and feeding the young, which is done by regurgitation, as described under No. 36. Period of incubation undetermined.

MUSEUM DIAGNOSIS. Tibia naked for c. 10 mm. above tibio-tarsal joint; otherwise as for the genus (cf. *I. minutus*).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	138-149 (once 156)	43-51	45-50	41-45 mm. (Baker)

Recent specimens from Nepal measure:

	Wing	Bill (from posterior edge of nostril)	Tail
3 ♂♂	151, 152, 154	45, 46, 47	44, 46, 48 mm.
1 ♀	145	45	45 mm. (Biswas)

COLOURS OF BARE PARTS. Iris yellow, orange, or pinky red. Bill greenish yellow or light orange-yellow, the culmen blackish, and base of the mandibles rosy red. Naked orbital and loreal skin deep rosy red or reddish purple in male; yellowish in female. Legs and feet yellowish green; soles paler, more yellow.

57. Yellow Bittern. *Ixobrychus sinensis* (Gmelin)

Ardea sinensis Gmelin, 1789, Syst. Nat. 1(2): 642 (China)

Baker, FBI No. 2237, Vol. 6: 365

Plate 6, fig. 10

LOCAL NAMES. *Jūn bāglā* (Hindi); *Kat bāk* (Bengal); *Meti kokka* (Sinhala); *Māndī nārāi* (Tamil); *Manja kokku* (Malayalam).

SIZE. Same as Chestnut Bittern; length c. 38 cm. (15 in.).

FIELD CHARACTERS. Like the Chestnut Bittern, small and lanky, and an unmistakable cousin of the Pond Heron; predominantly yellow, brown, rufous, and chestnut. In flight yellowish fawn body contrasting with black wings suggestive of identity.

Male (adult). *Above*, crown and bushy crest black; sides of head vinous-pink. Back chiefly light brown or yellowish brown. Rump dark ashy; tail slaty black. Wing quills blackish. *Below*, chin, throat, and foreneck pale yellowish; upper breast blackish with buff streaks; rest of underparts pale yellowish buff.

88

CICONIIFORMES

pink. Naked facial skin pale greenish yellow. Legs and feet yellow or greenish yellow; claws horny brown.

58. Black Bittern. *Ixobrychus flavicollis flavicollis* (Latham)

Ardea flavicollis Latham, 1790, Index Orn., 2: 701 (India)

Baker, FBI No. 2239, Vol. 6: 368

Plate 6, fig. 12

LOCAL NAMES. *Kālā bāglā* (Hindi); *Kālo bāk* (Bengal); *Ay jan* (Assam); *Khaira bōg* (Assam, Nowgong); *Kalu kākka* (Sinhala); *Kāruppu nārāi* (Tamil); *Kāruṭha kākku* (Malayalam).

SIZE. Pond Heron +; length c. 58 cm. (23 in.).

FIELD CHARACTERS. General effect as of Pond Heron; largely black and rufous-buff with a conspicuous buff-and-white cheek patch.

Male (adult). *Above*, crown, sides of head, and upperparts including wings and tail, slaty grey to almost black. A band of bright ochre-yellow on either side of neck. *Below*, chin and throat white with a rufous dotted line down the middle. Foreneck mixed slaty black, chestnut, and buff. Upper breast dark slate with buffy white margins to the feathers (scalloping). Rest of underparts slaty grey to brownish black with a few white-edged feathers on abdomen.

Female (adult). *Above*, more brown less slaty grey. *Below*, breast feathers streaked with white and rufous markings. Abdomen lighter brown with more white in centre.

Young (immature). *Above*, crown slaty black; rest of upper plumage including wings, dark brown scalloped light rufous. *Below*, upper breast brownish rufous, scalloped paler and with darker shaft-streaks.

STATUS, DISTRIBUTION and HABITAT. Resident, shifting locally with water conditions. Also partly migratory. Thinly and patchily distributed throughout the better watered parts of the subcontinent, from Sind in West Pakistan (E. Nara district) and the Gangetic Plain including Bengal and East Pakistan, to Assam, Manipur and beyond. Fairly common in the heavy rainfall zone of south-west India (Mysore, Kerala), and Ceylon. Not recorded from the Andaman and Nicobar islands. Affects reedy inland swamps and overgrown seepage nullahs in jungle, mostly in the low country, but also suitable marshes up to c. 1200 metres in the hills. Apparently not found in tidal mangroves.

Extralimital. Burma, Thailand, Malaysia, Indochina, central and southern China, Greater Sunda Is., Celebes (Sulawesi). Other races extend the species to Australia.

MIGRATION. A bird ringed in Malaya (Selangor, 3°12'N., 101°04'E.) 11.xii.1964 recovered in Manipur (Tadubi, 25°34'N., 94°04'E.) 1.xi.1965 (*Malayan Nature Jour.* 21(1): 36).

BITTERNS

89

GENERAL HABITS. Non-gregarious; largely crepuscular and nocturnal. On the whole very similar to those of the genus *Ixobrychus*. Skulks in swampy reed-beds and thickets once the sun is up, and only seen in daytime when beaten out of its retreat; more active at dawn and dusk, and in overcast rainy weather. Flight characteristic of the little herons as described. When suddenly come upon, adults as well as flightless clambering young assume the 'On Guard' posture and freeze, effectively camouflaging themselves among the reed stems.

FOOD. Fish, frogs, molluscs, insects, etc. (One fish c. 115 cm. taken from stomach.)

VOICE AND CALLS. Unrecorded, except for a loud booming in the breeding season.

BREEDING. *Season*, mainly June to September during the SW. monsoon, varying locally with incidence of rainfall and filling up of jheels and swamps. *Nest*, a pad of twigs or matted water-weeds with a slight central depression. Placed on bent-down reeds in a swamp, or in a cane brake or bamboo clump, a metre or so above the surface. *Eggs*, normally 4, broad ovals more or less equal at both ends, white with a faint tinge of bluish or sea green. Average size of 40 eggs 41.6 × 31.4 mm. (Baker). Both sexes share all the domestic chores. Incubation starts with the first egg. Incubation period undetermined. Chicks fed by regurgitation as characteristic of the family.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	197-215	69-82	61-70	63-74 mm.
♀♀	195-204			

COLOURS OF BARE PARTS. Iris golden brown to red. Bill reddish horny, paler and yellowish at tip and terminal half of lower mandible; bare facial skin purple, the eyelids bluer. Legs and feet dark brown (Baker).

Genus *BOTAURUS* Stephens

Botaurus Stephens, 1819, in Shaw, Gen. Zool. 11(2): 592. Type, by subsequent designation, *Ardea stellaris* Linnaeus

Plumage long and lax forming decorative plumes down foreneck and breast. Bill, short, deep at base, much compressed. Culmen shorter than tarsus. Nasal groove broad and deep with the linear nostril near base. Tarsus stout and short, shorter than middle toe and claw. Tibia partly naked above joint. Tail of ten feathers.

Genus chiefly confined to Palaearctic, Oriental and Australian regions, one species being found in India.

59. Bittern. *Botaurus stellaris stellaris* (Linnaeus)

Ardea stellaris Linnaeus, 1758, Syst. Nat., ed. 10, 1: 144

(Europe, restricted to Sweden)

Baker, FBI No. 2240, Vol. 6: 370

Plate 4, fig. 6 and Plate 6, fig. 13

LOCAL NAMES. *Nir goug*, *Bāz* (Hindi).

STORKS

91

or more. It is not particularly loud but of great carrying power and audible over a mile away.

BREEDING. Not proven but may possibly breed in thick reed-beds in Anchar Lake in the Kashmir Valley as asserted by local shikaris. According to Bates & Lowther 1952 (p. 355) it may occasionally be heard booming there in June, which is suggestive circumstantial evidence. *Nest* and site similar to those of the smaller bitterns. *Eggs*, 4 to 6, light olive-brown with a few specks and spots of darker brown at the broad end. Average size of 80 eggs 52.5 × 38.3 (Baker).

MUSEUM DIAGNOSIS. For description of plumages etc. see Witherby 1939, 3: 159-60.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	320-350	60-75	90-100	95-116 mm.
♀♀	300-356	65-75	—	—

(Witherby)

COLOURS OF BARE PARTS. Iris yellow. Bill greenish yellow, ridge of upper mandible brown at base, black-brown at tip. Lores and round eyes green to 'livid blue'. Legs and feet pale green, yellowish at tarsal joint and back of tarsus; soles yellow (Witherby).

MISCELLANEOUS. Longevity 8+ years (Ring, 1962, 33: 148).

Family GICONIIDAE. Storks

Large, long-legged, diurnal birds chiefly terrestrial and marsh-haunting. Colour pattern mainly white and black with a metallic sheen. Bill long, massive, pointed, straight or nearly so, ungrooved. Wings long and broad. Tail short; under tail-coverts lax and greatly developed in some species. Legs very long, the tibiae partly naked. Toes of moderate length, webbed at base. Claws blunt, that of middle toe not pectinated as in herons. No powder-down 'shampoo' patches. Tracheo-bronchial muscles to the syrinx or 'sound box' absent, therefore lacking voice and calls. Most species produce low grunting and hissing noises, and a loud castanet-like clattering or snapping of the mandibles.

Unlike herons, storks fly with neck and legs fully outstretched like cranes, ibises and spoonbills, by a series of wing flaps interspersed with sailing.

RANGE. Temperate and tropical zones of the Old and New Worlds. Seventeen species in all, the northern ones migratory.

FOOD. Mainly small animals—mammals, birds, reptiles, amphibians, fish, crustaceans, insects, etc.

BREEDING. *Nests*, large stick platforms in trees, or on cliffs and buildings. *Eggs*, 3-6 white. Incubation and nest feeding by both sexes. Chicks nidicolous; naked at first, downy later. Food regurgitated by parent into nest, whence guzzled by nestlings.

For structural and morphological details see Baker 1929, 6: 320; Witherby et al. 1939, 3: 112; Stresemann 1927-34, Aves: 807-9. Cf. Kahl, P., 1971, *Living Bird* (Cornell Univ.) 10: 151-70; 1970 JBNHS 67: 453-71.

Key to the Indian forms

- A Mandibles with edges not touching, leaving open gap near centre of bill

Page

1

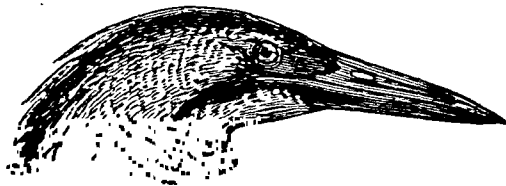
90

GICONIIFORMES

SIZE. Pond Heron +; length c. 71 cm. (28 in.).

FIELD CHARACTERS. Considerably larger than the Pond Heron, but of the same general hunchbacked effect, with neck retracted, both at rest and in flight. Overall tawny buff or straw colour, closely barred and mottled with blackish. Short, stout, pointed bill, and large feet.

Adult. *Above*, crown, nape and upper back black; bushy drooping crest partly tipped and edged with buff. Sides of head ochre, faintly stippled with black. Lower back, rump, and tail yellowish buff, profusely barred and mottled with black. *Below*, chin and throat white with a conspicuous buff and black median line continued down elongated overhanging yellowish buff breast plumes. Rest of underparts yellowish buff, streaked with brown and buff. Sides of breast narrowly barred with brown and dark buff. Sexes alike.



STATUS, DISTRIBUTION AND HABITAT. Winter visitor, found in small numbers from Sind in West Pakistan (common) across Rajasthan and the Gangetic Plain to Assam, straggling south through Gujarat, Madhya Pradesh, Orissa, Andhra Pradesh, Maharashtra, Madras and Mysore (Nanjangud, 160 km. south of Bangalore, being the southernmost record in India). Not recorded in Kerala or Ceylon. Affects dense reed-beds and bulrushes in inland jheels and swamps.

Extralimital. Breeds in the temperate Palaearctic region throughout Europe and Asia from Great Britain to Japan. A second breeding race in South Africa.

MIGRATION. No precise information.

GENERAL HABITS. Similar to its smaller cousins described. Solitary, secretive, crepuscular and nocturnal. Seldom seen in daytime except when put up from partly submerged reed-beds, e.g. while snipe-shooting is in progress. Flaps leisurely and noiselessly above the reeds on its broad rounded wings and pitches into cover again a short distance away. When nesting, has the characteristic habit of freezing on alarm, neck and bill stretched vertically upward. In its winter quarters this 'On Guard' posture is only seen when e.g. a wounded bird is trying to evade capture.

FOOD. Fish, frogs, molluscs, insects, etc. Elsewhere small birds and rodents also recorded.

VOICE AND CALLS. Silent in winter. In breeding season the male utters a deep, resonant, rather ventriloquial boom, commonly repeated 3 to 6 times

92

GICONIIFORMES

1	Primaries, secondaries, scapulars, and tail black, rest of plumage white.....	<i>Anastomus oscitans</i> (breeding)	95
	Primaries, secondaries, scapulars, and tail black, rest of plumage grey.....	<i>Anastomus oscitans</i> (non-breeding)	95
B	Mandibles touching.....	2	
2	Bill straight, head and neck unfeathered, prominent gular pouch, wing over 75 cm. (c. 30 in.).....	a	
	Bill straight, head and neck unfeathered, gular pouch absent, wing under 70 cm. (c. 28 in.).....	b	
	Bill straight, head and neck generally feathered.....	c	
	Bill slightly upcurved at end, head feathered.....	d	
	Bill downcurved, head naked.....	e	
a	Upperparts, including wings, slaty grey. Silvery grey stripe across wings.....	<i>Leptoptilos dubius</i> (breeding)	105
	Silvery grey stripe absent.....	<i>Leptoptilos dubius</i> (non-breeding)	105
	Upperparts blackish brown.....	<i>Leptoptilos dubius</i> (juvenile)	105
b	Upperparts glossy black, copper spots on secondary coverts.....	<i>Leptoptilos javanicus</i> (breeding)	107
	Copper spots lacking.....	<i>Leptoptilos javanicus</i> (non-breeding)	107
	Plumage dull black above, head and neck with patches of feathers.....	<i>Leptoptilos javanicus</i> (juvenile)	107
c	Plumage white, scapulars and wing quills black.....	<i>Ciconia ciconia</i> (adult)	99, 102
	Black of wings replaced with brown.....	<i>Ciconia ciconia</i> (juvenile)	99, 102
	Neck white, back and wings glossy black.....	<i>Ciconia episcopus</i> (adult)	98
	Glossy black replaced by dull, dark brown.....	<i>Ciconia episcopus</i> (juvenile)	98
d	Plumage black with white underparts (standing c. 106 cm. = 3½ ft.).....	<i>Ciconia nigra</i> (adult)	102
	Neck brown, back dull blackish brown, underparts white.....	<i>Ciconia nigra</i> (juvenile)	102
	Head, neck, and scapulars iridescent black, remainder of plumage white (standing c. 135 cm. = 4½ ft.).....	<i>Ephippiorhynchus asiaticus</i> (adult)	104
	Black of head, neck, and scapulars replaced by dusky brown.....	<i>Ephippiorhynchus asiaticus</i> (juvenile)	104
e	Neck white.....	<i>Mycteria leucocephala</i> (adult)	93
	Neck brown.....	<i>Mycteria leucocephala</i> (juvenile)	93

Genus MYCTERIA Linnaeus

Mycteria Linnaeus, 1758, Syst. Nat., ed. 10, 1: 140

Type, by monotypy, *Mycteria orientalis* Linnaeus

Bill long, and very slightly compressed, broad at the base. Culmen rounded throughout; slightly turned downwards throughout its length; lower mandible concave beneath. Both mandibles subcylindrical anteriorly. Nostrils oval, placed near base of culmen. Head and throat naked; nape and neck feathered. Legs long with tibia half naked; toes long. Under tail-coverts very long, extending beyond tail. Represented in our area by only one species.

60. Painted Stork. *Mycteria leucocephala* (Pennant)*Tantalus leucocephalus* Pennant, 1769, Indian Zool.: 11, pl. 10 (Ceylon)

Baker, FBI No. 2214, Vol. 6: 331

Plate 8, fig. 2.

LOCAL NAMES. *Jānghil*, *Dhāk* (Hindi); *Kānkāri* (Mirshikars, Bihar); *Jānghil*, *Rām jāhākar*, *Soma jāngha* (Bengal); *Lamjang*, *Lungduk* (Sind); *Chitrōda* (Kutch); *Teru kāla konga* (Telugu); *Chingā nārāi* (Tamil); *Sāngudāi nārāi* (Tamil, Ceylon); *Das tuduwa* (Sinhala).

SIZE. Vulture \pm ; standing c. 93 cm. (3½ ft.).

FIELD CHARACTERS. A long-legged, long-necked, egret-like marsh bird with long, heavy yellow bill slightly decurved at tip, and unfeathered waxy yellow face. Plumage white, closely barred with metallic greenish black above, with a black band across breast. Delicate rose-pink near the tail (closed inner secondaries). Wing- and tail-quills black. Sexes alike.

Flight silhouette somewhat hunchbacked, neck outstretched (head lower than line of back) and long legs trailing straight behind.

Young (immature). Pale brown with dark scale-like edges to the neck feathers. No pectoral band.

STATUS, DISTRIBUTION AND HABITAT. Resident, shifting locally with water conditions. Throughout the plains of the Indian Union, both Pakistans, Nepal terai, Ceylon (low country dry zone). Not recorded in the Andaman Is. Affects inland marshes, jheels, inundated fields, and occasionally river banks.

Extralimital. Burma, Thailand, N. Malaya (vagrant), Indochina, SW. China.

GENERAL HABITS. Normally met with in pairs or small parties. In the breeding season enormous congregations of up to several thousand strong may collect at favourite heronries, e.g. Keoladeo Ghana in Rajasthan. Such heronries tend to become traditional if left unmolested. The birds feed gregariously where food is abundant, such as when large quantities of fish are washed down by monsoon floods. Usually they hunt individually, wading into shallow water with neck bent down, mandibles open like an enormous pair of forceps and partly immersed, probing the bottom mud. The bird saunters about slowly ploughing the water thus. From time to time one leg is partly flexed and deliberately wagged back and forth in a raking motion, occasionally supplemented by a sudden flicking open of the wing on the same side. This manoeuvre is obviously intended for stampeding 'frozen' quarry towards the open mandibles. Its success is evident from the snapping and swallowing action that frequently follows. When sated, the birds spend their time standing about hunchbacked on the bank, or soaring on thermals for hours on end, circling aloft on motionless wings in company with pelicans and other stork-like birds. Normal flight typical of the family (q.v.), accompanied by a rhythmical slight opening and closing of bill as if gasping for breath.

FOOD. Mainly fish. Also reptiles, frogs, crustaceans, and insects.

VOICE AND CALLS. Silent except for the characteristic clattering of the mandibles of the family. During greeting ceremony at nest a low moan

STORKS

95

bills into the parent's gullet and tugging at the fish to speed it on its way. Possibly the delay in delivery is due to the necessity of predigesting the food for the young.

MUSEUM DIAGNOSIS. Chick (in down). Sullied white with naked black face and black bill tipped with pale greenish yellow or sulphur yellow, more extensively on upper mandible. Also yellow on short thick (naked) eyebrow, at anterior end of eye and along naked hindneck.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	490-510	252-278	240-250	150-172 mm. (Baker)

Weight 2 oo? 2020, 3500 gnn. (BNHS).

COLOURS OF BARE PARTS. Iris straw yellow; grey-brown in immature. Bill orange-yellow, darker and plumbeous at base; naked skin of face orange-yellow. Legs and feet brown or fleshy brown, sometimes nearly red.

Genus *ANASTOMUS* Bonnaterré

Anastomus Bonnaterré, 1791, Tabl. Encyc. Méth. Orn., 1: xciii. Type, by subsequent designation, *Ardea oscitans* Boddaert

Bill stout and strong; gonys considerably upcurved; an open space between the mandibles for about two-thirds their length in the middle. Anterior half of upper mandible furnished with lamellae. Face, chin, and throat naked in adults; feathered all but the lores and throat in juveniles. Tarsus about equal to culmen in length; reticulated throughout. Toes and claws longer than in other genera of Ciconiidae.

61. Openbill Stork. *Anastomus oscitans* (Boddaert)*Ardea oscitans* Boddaert, 1783, Table Pl. enlum.: 55 (Pondicherry)

Baker, FBI No. 2215, Vol. 6: 333

Plate 8, fig. 5

LOCAL NAMES. *Gūnglā*, *Ghāngil*, *Ghōnghila* (Hindi); *Dokar* (Bihar); *Thonte bhānga*, *Shāmukh bhānga*, *Shāmukh khol* (Bengal); *Pouna konga* (Southern Gonds); *Galu konga* (Telugu); *Naththai kuththi nārāi* (Tamil); *Gombelle kōkka*, *Bellan kōkka*, *Beli kava* (Sinhala); *Sāmik bhānga* ('snail breaker'. Assamese, Nowgong); *Cherakokkan* (Malayalam).

SIZE. Large duck; length c. 81 cm. (32 in.). Standing c. 68 cm. (2½ ft.) to top of head.

FIELD CHARACTERS. A small stork, chiefly white with glistening purplish black or greenish black mantle (scapulars), wings, and tail. The peculiar-shaped bill with arching mandibles, leaving a narrow open gap between them, is diagnostic. Casually mistakable in the distance for White Stork, *Ciconia ciconia* (q.v.). Sexes alike.

In non-breeding plumage white upper parts replaced by dull smoky grey.

Young (immature). Darker smoky brown-grey with blackish brown mantle.

STATUS, DISTRIBUTION AND HABITAT. Resident, shifting locally with water conditions. Possibly regular local migrant in parts (?). Throughout

produced by both (?) sexes. A continuous harsh grating or scraping noise by half-grown nestlings when begging food.

BREEDING. Colonial, sometimes several thousand pairs together in mixed heronries. Season, variable, dependent on monsoon conditions. Normally August to October in N. India; November to March in the south; March-April in Ceylon. In drought years breeding may be skipped altogether. Nest, a large stick platform with a shallow central depression sparsely lined with leaves, straw, and waterweeds; added to desultorily throughout occupation with leafy twigs or green water vines (e.g. *Ipomoea*). Built in large or medium sized trees standing in water, such as babool (*Acacia arabica*), kāndi (*Prosopis spiciroga*), kelikādāmb (*Stephegyne parviflora*) and *Barringtonia racemosa*, often twenty nests or more on a single tree crowded cheek by jowl in disorderly tiers, in amicable association with cormorants, darters, open-bill storks, and others. Not uncommonly also on single large peepul (*Ficus religiosa*) or suchlike trees overhanging a pond within a populated town. Eggs, 2 to 5—most commonly 3 or 4—dull sullied white, sometimes sparsely spotted and streaked with brown. Average size of 50 eggs 69.5 × 49.0 mm. (Baker). Both sexes share all the domestic chores. Period of incubation undetermined. Adult, on arrival at nest, greets incubating mate by craning forward and stiffly arching neck (as in aggressive vulture at a carcass), with bill partly open as if about to be sick! This gesture reciprocated by mate in the same way; both (?) birds uttering a low moan during the ceremony, sometimes crossing the stiffly arched necks the while. In nest relief the incoming bird is greeted by its incubating mate standing up on the edge of the nest, both birds ruffling their long, lax, under tail-coverts, bending their heads together down into the nest, shifting from one foot to the other, and making as if to adjust the twigs in the structure before the newcomer takes over. While one bird is brooding its mate often flies out, maybe half a kilometre or more, to fetch tender leafy babool branches to add to the nest. Twigs wrenched off topmost branches with much effort, and sections of floating *Ipomoea* vine collected from the water—sometimes absurdly large bushy branches, at others ridiculously tiny or scraggy leafless twigs or rush-blades. Twigs broken off tops of only certain individual trees to which many birds from the neighbourhood may resort, several tugging at the same time. When the forager returns with material, the sitting bird greets him (or her) with clattering of mandibles, bill-touching and tail-spreading.

In the pre-clambering stage, small nestlings very intolerant of hot sun; constantly shielded by parent standing on edge of nest with partly open, drooping wings. On fright they disgorge all undigested food and feign death in a realistic manner, crumpling up pathetically on the floor of the nest. Three-quarter-grown chicks clamber about the neighbouring branches. On return of foraging parent they quickly scramble back to the nest and beg with open bills and partly open flapping wings, bobbing or 'pumping' head up and down with a continuous rasping or scraping cry, rather as of vultures in copulation. Sometimes incoming parent sits inert for long periods beside the nest (in one case 45 minutes) before stepping on to the edge and disgorging 6 to 8 large fish, along with much slimy matter. The chicks gobble these up from the nest floor, the more impatient ones poking their

CICONIIFORMES

96

the Indian Union, both Pakistans, Nepal (terai), and Ceylon. Affects inland waters—jheels, marshes, etc.; rarely river banks, and tidal mud flats.

Extralimital. Burma, Thailand, east through the Indochinese subregion.

MIGRATION. Apart from local shifts directly influenced by water conditions, performs some sort of regular migratory movement, as yet little understood. Birds are constantly reported dashing themselves against the dome of the lantern at various coastal lighthouses, e.g. Point Calimere (Tanjavur dist., Madras) and Sacramento (E. Godavari dist., Andhra).



× c. 1

This occurs only during the later monsoon months (August-September) on particular nights in the dark period of the moon, in overcast weather with low clouds, poor visibility and heavy wind. The falls occur before midnight or in the very early dark hours of morning, when a sedentary diurnal bird as this should normally have no business to be about!

Nestlings ringed at Bharatpur (Rajasthan) have been recovered a few months later up to 800 km. due east, suggesting definite seasonal movement. Further evidence of long migration provided by a bird ringed in Thailand (Wat Phailom, 14°06' N., 100°33' E.) on 5.ii.1965, recovered in East Pakistan (Jessore 23°20' N., 89°20' E.) on 26.vi.1966—a straight line distance of c. 1500 km. It is possible that after leaving the nest the young of this stork also disperse and wander far and wide, as young Grey Herons are well known to do.

GENERAL HABITS. Our smallest and commonest stork, with a wide local distribution. Met with singly or in small parties and flocks; large congregations when nesting. Like others of the family, regularly soars on thermals on a sunny day, circling for hours high up in the heavens in company with pelicans, ibises, and vultures, etc. The descent from aloft is a spectacular performance. With erect neck, head held high (cocked), wings half pulled in, the dangling legs partly flexed and straddled to balance—sometimes worked back and forth as in running—the bird hurtles steeply through space, banking, side-slipping, and gyrating violently, till within a few short seconds, from a mere speck in the sky, it has swished down, to alight buoyantly on a tree-top in the colony, preceded by a vigorous braking with the wings.

The significance and function of the peculiar gap in the bill is obscure. It is not meant for crushing snail shells as sometimes suggested. However, it is obviously an adaptation to facilitate extraction of the soft body and viscera of molluscs from the shell, particularly of the large *Pila globosa* snails on which the bird commonly feeds. The precise mechanics of the process have not been observed. In captivity Ierdon (1862-4) records that even blinded Openbills secured the shell with their feet and after some manipulation 'succeeded in cutting off the operculum as cleanly as if it had been done by a razor', but so rapidly that he was unable to follow the details. After removing the operculum the bird inserted the tip of its

STORKS

97

mandibles and 'pulled out the entire shell fish almost to its utmost tip'. Examination of *Pila* shells immediately after they had been emptied by Openbills showed that pressure exerted by the mandibles on the thin and brittle rim of the mouth had cracked off a section of it, allowing the bill tip to be inserted below the operculum to prise it up. How the soft parts are extracted so cleanly and rapidly remains a puzzle. The shells are often tackled under water with the mandibles of the bird partly open and submerged to above the eyes. The rapidity with which the bill is raised again and again to swallow the morsels is quite amazing. Before withdrawing, the head is shaken from side to side in the water as if to wash off the mud from the food.

FOOD. Chiefly molluscs. From the bill and gullet of a specimen eight complete bodies and viscera of large *Pila globosa* snails have been taken. Also eats crabs, frogs, and other small animals found on its accustomed feeding marshes. For details of food in the Sunderbans see Mukherjee, A. K., 1974, JBNHS 71(2): 188-91.

VOICE and CALLS. Very silent except for occasional deep moans and clattering of mandibles during greeting ceremony at nest. During copulation ♂ clatters his bill against that of ♀ (M. P. Kahl).

BREEDING. Colonial; in large mixed heronries sometimes several thousand pairs (e.g. at Keoladeo Ghana, Rajasthan). *Season*, mainly July to September in north India; November to March in the south; December to April in Ceylon; dependent on monsoon and water conditions. In drought years breeding may be skipped altogether. *Nest*, a rough circular pad of twigs with a central depression lined with leaves, etc. Built in trees such as *Acacia*, *Prosopis*, or *Barringtonia*, standing partially submerged in a jheel or monsoon-filled depression. Occasionally on the edge of a tank, in or close to a village. Many nests (up to 30 or more) on a single tree, in crowded association with darters, cormorants, and egrets with a tendency to segregation. Nests in such crowded situations become thickly caked with chalky white excreta from the jostling occupants of adjacent nests. *Eggs*, 2 to 4, rarely 5, sullied white, broad to moderate ovals, with a close texture. Average size of 100 eggs 57.9 × 41.2 mm. (Baker). Both sexes partake in all the domestic chores. Period of incubation believed to be 24-5 days; not confirmed. Chicks clothed in pale fawn-coloured down. Intolerant of the hot sun, and constantly shielded by parents standing on edge of nest with open drooping wings.

Fed by regurgitation by parent on to floor of nest, almost exclusively on soft bodies and viscera of large snails. Importunate chicks often short-circuit the food from the parent's open bill during the disgorgement process. On fright they throw up large boluses of it (once c. 58 gm.).

Till young flies from nest, bill of normal shape with close fitting mandibles; subsequent development of gap needs study. For further notes see Kahl, M. P., 1970, JBNHS 67(3): 454-6.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	392-408	153-162	c. 140-150	163-217 mm. (Baker)

STORKS

99

Extralimital. Burma. Other races in Africa and SE. Asia.

GENERAL HABITS. Met with as a solitary, in pairs, or small parties — a flock of fifteen being the largest ever recorded by us (SA). Stalks about and feeds on dry or marshy land, seldom wading in water or immersing bill. Roosts at night in tall trees. Has the common habit of soaring on thermals on a sunny day and gliding in circles high up in the sky in company with related birds, and with vultures. For further notes see Kahl, M. P., 1970, JBNHS 67(3): 456-7.

FOOD. Frogs, reptiles, crabs, molluscs, and large insects. Fish only when stranded high and dry by receding flood, or from drying up water-holes in forest streams, etc. Has been observed to pick winged termites emerging from the ground and also in the air, flying back and forth through a rising swarm and snapping up the insects in the bill (Ball 1874, SF2: 433).

VOICE and CALLS. Silent except for a clattering of the mandibles with neck bent over backwards and crown resting between the shoulders.

BREEDING. Individual; not in colonies. *Season*, variable; mostly July to September in northern India; December to March in the south; January to April in Ceylon. *Nest*, a massive structure of twigs, c. 1 metre in diameter, with a considerable central depression lined with straw, almost deep enough to hide the bird when sitting close. Usually built in a lofty tree such as *Salmalia* some 20 to 30 metres from the ground. Sometimes also lower down in medium sized trees. The same site may be used in subsequent years if the birds are left undisturbed. *Eggs*, broad to pointed ovals, 3 or 4, rarely 5, white, but becoming stained brown during incubation through contact with the bird's muddy feet. Very variable in size and shape. Average size of 100 eggs 62.9 × 47.4 mm. (Baker). Both sexes take part in building the nest and feeding the young; presumably also in incubation (unconfirmed). Period of incubation unrecorded. Young fed by regurgitation of predigested food by parent into nest, as in other storks.

MUSEUM DIAGNOSIS. Forehead, sides of head to behind the eye naked. Tail (black) short and deeply forked. Under tail-coverts (white), longer than tail and with stiff shafts, giving the impression of being the true tail.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	444-497	145-168	c. 152-180	199-255 mm. (Baker)

Two males collected by SA recently have wings 515-519 mm., showing the wide diversity in the range.

COLOURS OF BARE PARTS. Iris brown. Bill black, red on culmen, gony, along the commissure, and at tips of both mandibles. Naked skin of face, chin, and throat slaty black. Legs and feet red lake.

63. White Stork. *Ciconia ciconia ciconia* (Linnaeus)

Ardea Ciconia Linnaeus, 1758, Syst. Nat., ed. 10, 1: 142 (Sweden)

Baker FBI No. 2207, Vol. 6: 321

Plate 8, fig. 3

LOCAL NAMES. *Lāglāg*, *Hāji lāglāg*, *Ujti*, *Dhak*, *Gyār*, *Bāda ritarā* (Hindi); *Wādumi konga* (Telugu); *Lēklāk* (Sind).

98

CICONIIFORMES

COLOURS OF BARE PARTS. Adult. Iris almost white, grey, or pale brown. Bill dull greenish horny, redder beneath; or dusky red. Orbital skin and naked lores black. Legs and feet dull fleshy. Grown nestling. Iris greyish brown. Bill dark brown; gular skin bright purple. Legs and feet greyish- or pinkish brown.

Genus *CICONIA* Brisson

Ciconia Brisson, 1760, Orn., 1: 48, 5: 361. Type, by tautonymy, *Ciconia* = *Ardea Ciconia* Linnaeus

Bill long, stout, tapering, and pointed, the lower mandible slightly inclined upwards anteriorly. Nostrils almost linear, basal, and pervious. Part of lores, and chin, naked. Lower half of tibia naked. Tarsi long and reticulated. Feet short with broad toes; claws very short, broad, and depressed. Feathers of lower neck elongated, partly overhanging breast. For further structural details see Witherby 1939, 3: 115.

62. Whitenecked Stork. *Ciconia episcopus episcopus* (Boddaert)

Ardea episcopus Boddaert, 1783, Table Pl. enlum.: 54 (Coromandel Coast)

Baker, FBI No. 2210, Vol. 6: 342

Plate 8, fig. 6

LOCAL NAMES. *Mānī jor* (Bengal); *Lāglāg* (Hindi); *Bāgūla*, *Kārdāk*, *Kandana*, *Kourou* (Marathi); *Kāli tūl* (Gujarat); *Vānnāthi nārū* (Tamil); *Kamua* (Assam); *Kārim kōkku* (Malayalam); *Padili kōkka* (Sinhala).

SIZE. Goose ±; standing c. 106 cm. (3½ ft.) to top of head.

FIELD CHARACTERS. A red-legged black and white stork with conspicuous white neck and black crown (like a padre's skull-cap). Rest of plumage including short tail black glossed with purple or greenish blue, except elongated under tail-coverts which are white. Sexes alike.



× c. 3

Young (immature). The glossy black replaced by dull dark brown, but sometimes as in adult. Feathers of neck longer and more fluffy. (For description of nestling c. 1 week old, see Whistler JBNHS 25: 746.)

STATUS, DISTRIBUTION and HABITAT. Resident. Sparsely distributed throughout the well watered parts of India, both Pakistan, Nepal (to c. 1250 m. elevation), Ceylon. Locally not uncommon. Low country, plateaux, and up to at least c. 650 m. in the peninsular hills in suitable biotope. Affects flooded grassland and fallows, irrigated ploughed fields, rain-filled puddles and depressions, banks of streams, seepage marshes, etc. Often deep in forest where marshes occur. Rarely on tidal creeks, and only far up from the sea.

100

CICONIIFORMES

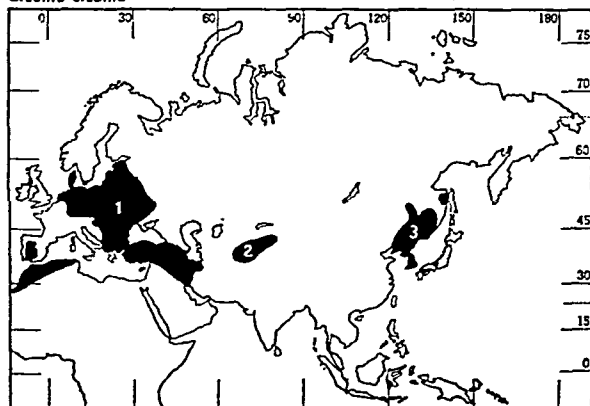
SIZE. Goose ±; standing c. 106 cm. (3½ ft.) to top of head.

FIELD CHARACTERS. A long-legged, long-necked, egret-like bird, all white except for the longer scapulars and wing quills which are black. Legs and heavy pointed bill red. Feathers of head, neck, and breast long and lanceolate. Sexes alike.

Young (immature). Like adult, but the black parts are brown or tinged brown, and some of the shorter scapulars have brown centres.

Nestling (in down), snow white, with blackish bill and grey legs and feet.

STATUS, DISTRIBUTION and HABITAT. Winter visitor, arriving September/October, all gone by March/April. Fairly common in West Pakistan, northwestern India, Nepal terai. In smaller numbers east and south in the Gangetic Plain (Uttar Pradesh, Bihar, Orissa, W. Bengal), Assam, East Pakistan, Madhya Pradesh, Gujarat, Rajasthan, Maharashtra. Decreasingly south through the Deccan (Andhra, Madras, Mysore). The records from the eastern side of the subcontinent — Bengal, E. Pakistan, Assam, etc. — probably relate to the next subspecies (*boyceana*).

Ciconia ciconia

■ Breeding range 1 *C. c. ciconia*; 2 *C. c. asiatica*; 3 *C. c. boyceana*

There is a single sight record from Ceylon where it is evidently a rare straggler. Also a very doubtful and incredible one of a pair nesting in the NW. Province of the island in 1880 (Wait 1931: 419).

Parties or small flocks by jheels and in marshy fields, etc.

Extralimital. Breeds in Europe north to 60° N. lat., N. Africa, Western Asia (Asia Minor, Iraq, Iran, Turkestan).

GENERAL HABITS. Stalks along sedately in search of food on marshy grassland, freshly drained fallows or moist fields ploughed for winter crops. Though almost domesticated and enjoying protection by popular sentiment as a harbinger of good luck in most countries where it nests, the bird is

STORKS

101

usually wary and difficult to approach in its Indian winter quarters. Flight — a few flaps followed by a glide — appears leisurely, but is fast and strong. Royal Air Force pilots in Mesopotamia during World War I clocked the speed of migrating storks at about 48 miles (77 km.) per hour. Has the common habit of soaring on thermals and gliding in circles high up in the heavens for many hours at a stretch in company with its allies — other stork species, pelicans, etc. Often roosts at night in bare tree-tops.

FOOD. Frogs, reptiles, crustaceans, young rodents, occasionally fish, but very largely orthopterous insects, of which seasonally locusts in all stages — from egg to adult — form a considerable proportion. For this reason it enjoys additional protection in many countries both in its breeding and wintering areas.

VOICE. Poorly developed. Adults practically silent but for the characteristic bill-clattering of the family — a form of 'percussion music'. In this the head is thrown backward till the crown and culmen nearly touch the back. The mandibles are clattered rapidly, producing a castanet-like rattling, variable in volume and tempo. The puffed-out gular pouch functions as a resonator. While thus clattering, the head is slowly returned to the normal position and continued in an arc, till the bill nearly rests on the ground. Frequently both birds of a pair (especially in courtship) indulge in a bill-clattering duet, standing breast to breast.

MIGRATION. Little precise data available for India, but southward passage (autumn) observed through NW. Pakistan, across the Great Rann of Kutch, and Rajasthan. Northward passage (spring) recorded in Kurram Valley, April to end May (Whitehead, JBNHS 20: 976). A nestling ringed in Braunschweig, Germany (c. 52°N., 10°E.) and recovered a few months later in Bikaner, Rajasthan (c. 28°N., 73°E.), was our first positive evidence that some at least of our winter visitors may derive from Europe. This is confirmed by a nestling ringed at Molkenberg, Germany (52°42'N., 12°12'E.) 3.vii.1971, recovered at Tirunelveli, Tamil Nadu (c. 8°44'N., 77°41'E.) January 1973 — c. 7600 km. ESE.

BREEDING. Extralimital. *Season*, March to May. *Nest*, a large stick platform placed on buildings, chimney stacks, cliffs or tall trees near human habitations. In the Middle East old mosques are commonly resorted to, whence the bird's claim to veneration by the Muslim populace. Known in Iran as *Hāji Lāglāg* from its habit of settling on mosques and the popular belief that it migrates annually for pilgrimage to Mecca! *Eggs*, 3 to 5, pure white. Average size of 120 eggs 73.2 × 58.8 mm. (Baker). Incubation period about 30 days.

MUSEUM DIAGNOSIS

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	530—635	c. 150—220	c. 180—230	215—240 mm.
♀♀	530—590	c. 140—175		

COLOURS OF BARE PARTS. Iris brown or greyish brown. Bill bright red. Bare loral and orbital skin, and chin, black. Legs and feet bright red.

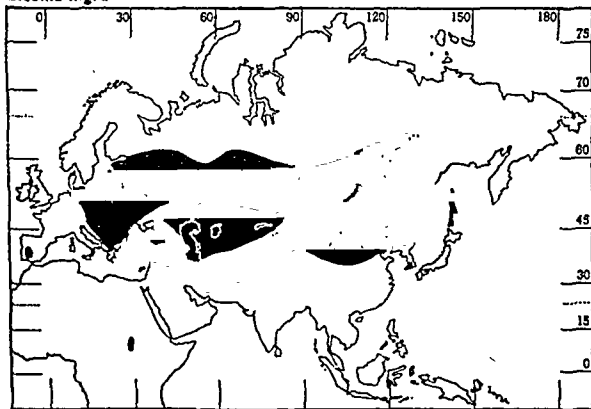
The Turkistan race *asiatica*, supposedly larger and with a larger bill, is not sufficiently differentiated and of dubious validity.

STORKS

103

Extralimital. Breeds in Denmark, Sweden, and Germany, east through Russia and Asia to N. China. Winters also in Africa.

GENERAL HABITS. Not appreciably different from those of the White Stork except that perhaps it usually keeps more to marshy ground and the neighbourhood of rivers and inland waters, and is even more shy and wary. Seen in pairs, small parties of 10 or 12, or large herds — an exceptional one of 'not less than 500' recorded by Hume near the Chenab river, Punjab (SF 1: 106). Its association with the Whiteneked Stork has been repeatedly remarked.

Ciconia nigra

Breeding range

FOOD. Animal matter — frogs, fish, crustacea, insects, and occasionally young or disabled rodents, birds, etc.

VOICE. Seldom heard in India, but in breeding season said to be more vocal than White Stork, adults producing a variety of guttural notes (reported by several observers as 'melodious'), and nestlings a heron-like chatter. Bill-clattering is rare.

BREEDING. *Season*, in central Europe April/May. *Nest*, a large stick platform built in a lofty pine, oak, or other tree, 10 to 25 metres from the ground; never on buildings. *Eggs*, 3 to 5, blunt oval, white. Average size of 100 eggs 65.3 × 48.7 mm. (Baker).

(For a full account of breeding, courtship, etc. see Witherby *et al.* 1939, 3: 116—18, mostly culled from the excellent observations of Horst Siwert in Germany, recorded in his book *Storche*, 1932.)

MUSEUM DIAGNOSIS. For full description of plumages etc. see Witherby 1939, 3: 117—18.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	520—605	160—190	c. 180—200	190—240 mm. (Baker)

102

CICONIIFORMES

64. Eastern White Stork. *Ciconia ciconia boyciana* Swinhoe

Ciconia boyciana Swinhoe, 1873, Proc. Zool. Soc. London : 513 (Yokohama)

Ciconia alba asiatica Severtzov, 1873, Bull. Imp. Soc. Friends Nat. Sci. Anthr. and Ethnogr. Moscow 8(2): 145 (Turkestan)

Baker, FBI No. 2209, Vol. 6: 322

LOCAL NAMES. As for 63.

SIZE. Slightly larger than the preceding, but difference hardly perceptible in the field.

FIELD CHARACTERS. Differs from No. 63 chiefly in having a larger and black (contra red) bill.

STATUS, DISTRIBUTION AND HABITAT. Uncommon winter visitor to Assam, Manipur, and E. Pakistan, where Stuart Baker saw a pair ('with conspicuous black bills') in Khulna.

Extralimital. Breeds from Lower Ussuri and Amur rivers to Korea and Japan.

GENERAL HABITS. Same as in the nominate race. Nothing specifically recorded in its Indian winter quarters.

MUSEUM DIAGNOSIS. Black bill and larger measurements: ♂♀

Wing 620—70; bill (from feathers) 195—222 (Baker), (from skull) 200—60 mm. (Hartert).

COLOURS OF BARE PARTS. 'Iris rosy pink with an outer ring of black' (David & Oustalet). Bill black in breeding season, tinged purplish at base. Other parts as in nominate race (Baker). 'Naked skin round eye red; skin of [throat] pouch red; bill blackish; legs and feet red' (La Touche).

65. Black Stork. *Ciconia nigra* (Linnaeus)

Ardea nigra Linnaeus, 1758, Syst. Nat., ed. 10, 1: 142 (Sweden)

Baker, FBI No. 2209, Vol. 6: 323

Plate 8, fig. 4

LOCAL NAME. *Surnal* (Hindi).

SIZE. White Stork ±; standing c. 106 cm. (3½ ft.) to top of head.

FIELD CHARACTERS. A black stork with white underparts.

Adult. *Above*, including head and neck, black highly glossed with green, bronze and purple. *Below*, lower breast, belly, flanks and under tail-coverts white. Sexes alike.

Young (immature). Head, neck and upper breast dark brown, each feather tipped paler. Mantle dull brownish black. Underparts white.

Nestling (in down). Snow-white with lemon-yellow bill and bright rosy legs which later turn almost white.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor to West Pakistan and northern India, from Baluchistan, Sind, NWF. Province, and the Punjab through the Nepal lowlands (to c. 900 m. alt.) and the Gangetic Plain to eastern Assam; south through Rajasthan normally to about Kutch and northern Gujarat. Rare in the Deccan, south to c. 18°N. lat. (Sholapur dist.). Has not been recorded in South India, and only once in Ceylon (Phillips, *Ibis* 1940: 333—4). Occurs on spring passage in Kashmir (Ward, JBNHS 17: 947), and in both spring and autumn in Gilgit (Scully, SF 10: 143).

104

CICONIIFORMES

Weight of an adult male recorded by Scully, 7 lb. (= c. 3.17 kg.).

COLOURS OF BARE PARTS. Iris brown or black. Bill red, pale at tip. Bare facial skin deep red. Legs and feet coral or scarlet-red.

MISCELLANEOUS. Longevity: 14 years (Ring, 1962, 33: 148).

Genus *EPHIPPIORHYNCHUS* Bonaparte

Ephippiorhynchus Bonaparte, 1885, Consp. Av. 2: 106. Type, by monotypy, *Mycteria senegalensis* Shaw

Bill very long, and curved slightly upwards at the tip. Tarsus very long. Head and neck completely feathered.

66. Blacknecked Stork. *Ephippiorhynchus asiaticus asiaticus* (Latham)

Mycteria asiatica Latham, 1790, Index Orn., 2: 670 (India)

Baker, FBI No. 2211, Vol. 6: 326

Plate 8, fig. 1

LOCAL NAMES. *Banaras*, *Lohāṛjāṅg*, *Lohā sarang* (Hindi); *Lohāṛ jāṅgh* or *Lohā jāṅgh* (Bengal); *Telia hāreng* (Assam); *Periya nārdi* (Tamil); *Peddā nāllā kōṅga* (Telugu); *Ali kokka* (Sinhala).

SIZE. Painted Stork +; standing c. 135 cm. (4½ ft.) to top of head.

FIELD CHARACTERS. A handsome black-and-white stork with massive black bill and long coral-red legs. In overhead flight large size, black neck and bill, pure white underparts (including all wing quills) with a broad black diagonal band across each wing diagnostic.

Adult. *Above*, head, neck, scapulars, and tail black, brilliantly glossed with green-blue, purple, and bronze. Back (interscapulars to upper tail-coverts) pure white. *Below*, from upper breast to under tail-coverts, pure white. Sexes alike except for colour of eyes; brown in male, conspicuous bright lemon-yellow in female.

Young (immature). Rather like a large washed-out example of Black Stork: the glossy black parts replaced by dull brown; white parts less pure and dusky.

Nestling (in down). Completely snow-white at first, head and neck changing to greyish black later.

STATUS, DISTRIBUTION AND HABITAT. Resident. Widespread but sporadic and nowhere abundant. All India (rare in the south), both Pakistan, Nepal, Ceylon (low country dry zone). Affects lowland marshes, jheels, and large rivers. Occasionally tidal mangrove swamps.

Extralimital. Burma, Malaysia, Thailand, Indochinese countries. The race *australis* extends the species to Australia.

GENERAL HABITS. Keeps solitary or in widely separated pairs apparently with recognized feeding territories; after the breeding season in small parties consisting of adults and young. Usually seen wading in shallow water or stalking sedately on a squelchy marsh in search of food, or squatted on its tarsi on dry ground at the edge. Has the characteristic stork habit of soaring and circling aloft in the heat of the day. Normally shy and suspicious.

FOOD. Chiefly fish, but also frogs, reptiles, crabs, and any other small animals that can be come by. Observed capturing live coots, once in skimming flight, and swallowing them entire (Panday, J. D., 1974, JBNHS 71(1): 141).

STORKS

105

VOICE. Of adults unrecorded. When disturbed on nest, or otherwise agitated, e.g. a wounded bird about to be captured, the bill is clattered aggressively. Downy nestlings being hand-reared produced 'a sort of *chack* followed by *wee-wee-wee* repeated two or three times'. They also stretched up their necks and clattered their bills when suddenly disturbed, and then produced the above sounds (McCann, JBNHS 34: 581).

DISPLAY. Since Hume's vivid but fragmentary account in *Nests and Eggs of Indian Birds* (1890, 3: 266) nothing new has been added to warrant a reinterpretation of the antics described. Hume wrote: 'A pair will gravely stalk up to each other, and when about a yard or two feet apart will stand face to face, extend their long black and white wings, and while they flutter these very rapidly, so that the points of the wings of the one flap against the points of the other's wings, advance their heads till they nearly meet, and both simultaneously clatter their bills like a couple of watchmen's rattles.' See also Kahl, M. P., 1970, JBNHS 67(3): 457-8.

BREEDING. Season, overall September to December varying locally with the early or late cessation of the rains. Nest, an enormous platform of sticks, often thorny, 1 to 2 metres in diameter, with the central portion lined with straw, leaves, bits of rag, etc. Placed singly 20 to 25 metres up near the top of a large peepul (*Ficus religiosa*) or similar tree standing solitary in the midst of cultivation, not necessarily close to water. Eggs, 3 or 4, rarely 5, typical broad blunt smooth-textured ovals, white in colour with the inner membrane dull green. Average size of 75 eggs 72.1 × 53.4 mm. (Baker).

Both sexes build the nest and feed the young by regurgitation on to the nest floor. Share of the sexes in incubation, and incubation period, unrecorded.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	565-645	298-324	c. 300-333	257-281 mm. (Baker)

COLOURS OF BARE PARTS. Iris ♂ dark brown; ♀ lemon-yellow. Bill black. Naked skin of gular pouch and eyelids dull purple. Legs and feet coral-red.

Genus *LEPTOPTILOUS* Lesson

Leptoptilos Lesson, 1831, *Traité d'Orn.*, livr. 8: 583. Type, by subsequent designation, *Ardea dubia* Gmelin

Cf. Kahl, P., 1972, *Ardea* 60: 97-111.

Bill very large, high at base, tapering gradually to tip. Culmen and commissure almost straight, the former about as long as, or a little longer than, tarsus. Nostrils small, narrow, placed near culmen. Head and neck naked except for sparse scattered hair-like feathers. Crown bald.

67. Adjutant Stork. *Leptoptilos dubius* (Gmelin)

Ardea dubia Gmelin, 1789, *Syst. Nat.*, 1(2): 624 (India)

Baker, FBI No. 2212, Vol. 6: 327

Plate 8, fig. 10.

LOCAL NAMES. *Hārgila*, *Gārūr*, *Peḍa dhauk* (Hindi); *Dhānk* (Mirshikars, Bihar); *Dusta* (Hindi in Deccan); *Hārgila* (Bengal); *Peemigāla konga* (Telugu).

STORKS

107

from her calf' (Oates), and 'a loud grunting croak not unlike the low of a buffalo'. How these sounds are produced is not known since the bird is devoid of true voice muscles.

DISPLAY. Only incompletely recorded. Courtship dance described as similar to that of the Blacknecked Stork (q.v.), but copulation only observed in a tree and not following the dance on the ground (Baker).

BREEDING. Season, overall October to January, varying locally with early or late cessation of the rains. The only specific record for India is an old one (January 1883) of Baker's in the Khulna Sunderbans where about 40 or 50 pairs nested for many years on lofty trees in dense forest on the edge of a vast area of swamp and lake. The breeding grounds *par excellence*, however, seem to lie in S. Burma where incredible numbers congregate to breed on the pinnacles of the limestone rocks and in lofty trees along the Ataran river in Pegu district. It has been suggested that Indian Adjutants probably all migrate to this area to nest. (For a full account of the remarkable colony see Hume & Oates 1890, 2: 260-4.) According to Smythies 1953: 523, no recent information is available about this colony.

Nest, an enormous platform of coarse sticks 1 to 2 metres in diameter and up to a metre deep, placed far out on a near-horizontal branch of a lofty tree such as *Salmalia*. Eggs, 3 or 4 — sometimes 2, but never 5 — white, usually badly soiled. Broad ovals, more or less equal at both ends; fine-textured and smooth-surfaced with the inner membrane very dark green. Average size of 50 eggs 77.3 × 57.5 mm. (Baker). Both sexes share in nest building and incubation; presumably also in feeding the young (not recorded). Incubation period unknown.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	800-820	320-345	320-330	310-335 mm. (Baker)

COLOURS OF BARE PARTS. Iris white or yellowish white (adult); blue-brown (young). Bill pale yellowish or greenish fleshy, more red near base in breeding season. Bare skin of head dull reddish brown, turning to brick-red on hindneck and blackish on forehead. Pouch and neck yellow; more pink on pouch and fleshy pink on the end, where it is moreover spotted with black. Legs and feet pale greyish white to pale horny brown.

'The pouch can be extended to a great size, looking like a child's pink balloon with smeary black spots' (Baker).

MISCELLANEOUS. The popular folk belief, recorded by the Mogul Emperor Baber in his Memoirs, still persists that if you spit the head of an Adjutant before death you may extract from it the fabulous *Zohar-mohra* or 'snake-stone', allegedly a potent antidote against snake- and all other kinds of poison.

68. Lesser or Haircrested Adjutant. *Leptoptilos javanicus* (Horsfield)

Ciconia javanica Horsfield, 1821, *Trans. Linn. Soc. London*, 13(1): 188 (Java)

Baker, FBI No. 2213, Vol. 6: 329

Plate 8, fig. 12

LOCAL NAMES. *Chinjōrā*, *Chandana*, *Chandari*, *Beng ger*, *Chhota gārūr* (Hindi); *Maddāshūr*, *Medertāk* (Bengal); *Tekla moora* (= 'bald head', Assam); *Ber*

106

CICONIIFORMES

SIZE. Vulture +, standing 120-150 cm. (4 to 5 ft.) to top of head.

FIELD CHARACTERS. The largest and ugliest of our storks; black, grey and dirty white with naked reddish and yellow head and neck and a huge four-sided wedge-shaped bill. A naked pinkish gular pouch 25-35 cm. long, hanging from base of neck, distinguishes it from the Smaller Adjutant (next species).

In overhead flight the broad black wings with a whitish band along the middle are distinctive.

Adult (breeding). Above, including wings and tail, blackish slaty grey slightly glossed with green. Innermost secondaries and greater wing-coverts silvery grey forming a broad band on wing. A ruff of fluffy white feathers round base of neck. Below, white, including soft flimsy under tail-coverts.

Adult (non-breeding) lacks the silvery grey wing-band. Sexes alike.

Young (immature). Scantly feathered on the naked parts. Inner secondaries and coverts dark brown. Nestling (in down). Pure white.

STATUS, DISTRIBUTION AND HABITAT. Uncertain. Largely nomadic and local migrant. Breeding principally, and abundantly, in Burma, but only sporadically in Assam, Orissa, and the Sunderbans. Not uncommon in northern India — chiefly during the rains — from Sind through Kutch, N. Gujarat, Rajasthan, Nepal terai, and the Gangetic Plain to Assam and E. Pakistan. Rare in the Deccan. Not recorded in the southern Peninsula, Andamans, or Ceylon. At jheels and marshes, and on outskirts of habitations.

Extralimital. Burma, Thailand, Malaysia, Indochinese countries, Sumatra, Java, Borneo.

GENERAL HABITS. Keeps singly or in small parties, stalking about with a martial gait (whence its English name) on marshland and jheels, particularly where the water is drying and concentrating the fish life in shallow puddles. When not actively feeding it spends the time standing hunched up, or squatting on its shanks head ludicrously drawn in between the shoulders, and often with the mandibles agape. The birds consort freely with kites and vultures to feast on animal carcasses dumped on the countryside or on village outskirts. In the last century, when municipal sanitation was more primitive than now, large numbers of Adjutants haunted the city of Calcutta, perching boldly on rooftops etc. for the offal and refuse, and rendered valuable service as scavengers. The flight, attained by running a few steps for the take-off with noisy flapping of the huge wings, is the acme of grace and buoyancy once the bird is fairly launched, and its effortless sailing in circles high up in the heavens in company with vultures and other storks is a sight that never fails to impress. The precise significance and function of the pendent sac at the base of the neck is obscure. It communicates with the nasal cavity and is unconnected with the gullet. Therefore it cannot receive or store food as is popularly believed. In greeting display bill pointed vertically upward and clattered loudly (*contra* downward in African Marabou — Kahl).

FOOD. Fishes, frogs, reptiles (*Vipera russelli*, *Uromastix hardwickii* taken from stomachs), crustaceans, and almost any manageable living thing it can come by. Also largely carrion. Observed walking down, capturing and swallowing maimed wild ducks (Panday, J. D., 1974, JBNHS 71(1): 141).

VOICE. Besides the characteristic bill-clattering of the family it is described as emitting a sound like 'the lowing of a cow when separated

108

CICONIIFORMES

tekola (Nowgong, Assam); *Dodal konga*, *Dodal gatti gadu* (Telugu); *Mera kokku* (Tamil, Ceylon); *Māna* (Sinhala); *Vayalanatticken* (Malayalam).

SIZE. Vulture +; standing 110-120 cm. (3½ to 4 ft.) to top of head.

FIELD CHARACTERS. A large stork with massive dirty yellowish wedge-shaped bill. Chiefly glossy metallic black above, white below, with sparse hair-like feathers on almost naked reddish yellow head and neck. Very similar to the Adjutant, but somewhat smaller size, less erect carriage, black instead of slaty upperparts, and absence of neck-pouch diagnostic. Sexes alike.

In non-breeding plumage lacks the copper spots near the tips of the larger secondary coverts.

Young (immature). Upper plumage less glossy; head and neck more feathered.

STATUS, DISTRIBUTION AND HABITAT. Resident, nomadic (especially in the rains), and locally migratory. Assam, Bengal, East Pakistan, Bihar, Orissa, Kerala, Ceylon. Recorded also from Andhra, Uttar Pradesh (Lucknow Division), Delhi, Nepal terai, Kutch and Rajasthan, but uncommon in continental India. Affects well watered tracts — swamps and pools in forest, jheels, flooded land, etc.

Extralimital. Burma, Malaysia, Borneo, Java, Sumatra, S. China.

GENERAL HABITS. Usually solitary; not different from the Adjutant's except that it is less of a scavenger, does not haunt the neighbourhood of human habitations, and is much more shy and retiring. At close quarters the noise made by its wings in flight has been likened to the humming of telegraph wires in a wind. See also Kahl, M. P., 1970, JBNHS 67(3): 459-60.

FOOD. Fish, frogs, reptiles, crustaceans, and locusts recorded.

VOICE. 'Heard making same guttural noise as *Ciconia episcopus*' (Inglis, JBNHS 15: 75). No other data.

DISPLAY. Beyond that 'the nuptial dance consists of the same fantastic steps and gestures as those assumed by the Large Adjutant', and that both sexes take an equal part in the display, nothing recorded.

BREEDING. Baker, 1935, (4: 448-9): 'Nesting in Ceylon, Travancore, parts of the Malabar coast, Madras Presidency, E. Bengal, and Assam.' For some of these areas, e.g. Kerala, only circumstantial evidence is so far available. Within our limits Assam is probably where the largest number of nests is to be found. Season, November to January. Nest, a huge stick platform c. 120 to 150 cm. in diameter and 30 to 120 cm. deep depending upon for how long annually renovated. Placed in lofty trees such as *Salmalia* standing in forest, 12 to 30 metres from the ground. Eggs, indistinguishable from those of the larger Adjutant even in size. Average of 50 eggs 76.4 × 55.3 mm. (Baker). A curious habit, apparently fairly general, is reported by Baker of the birds jabbing their eggs with their bills when agitated, as by a collector climbing up to the nest. Share of the sexes in the domestic chores, as well as incubation period, unrecorded.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	580-600	260-305	228-268	230-253 mm.

COLOURS OF BARE PARTS. Iris white. Bill dull yellow, the tip whitish and base tinged red in the breeding season. Bare skin of crown greenish brown. Face and neck yellow, tinged with brick-red in the breeding season. Legs and feet greenish brown to almost black (Baker).

In a freshly killed non-breeding adult ♂ noted as follows: Iris slaty grey. Bald crown greyish biscuit-colour. Bill pinkish biscuit colour. Sides of head and extreme base of neck pale pink; rest of neck bright turmeric yellow. Legs, feet and claws slaty black.

Family THRESKIORNITHIDAE. Ibises, Spoonbill

Comparatively long and bare-legged gregarious waterside or marsh birds related to and resembling storks, herons, and egrets, with whom they normally associate. Plumage in Indian representatives chiefly white, or black, or chestnut with metallic gloss. Bill long, slender, grooved and decurved (ibises), or extremely flattened and spatulate at tip (spoonbill). Nostril placed at base of a long, narrow groove on each side of culmen. Face and throat, or whole head and neck, bare in some species. Neck slender, longish, outstretched in flight. Wings long; tail short. Legs and toes moderately long; tibiae partly bare; toes webbed at base. Sexes alike or nearly so.

RANGE. N. and S. America, Africa (including Madagascar), the southern Palearctic Region, Australia. Some species migratory.

TECHNICAL DIAGNOSIS. Witherby 1939, 3: 118; Stresemann, 1927-34 Aves: 806 (under Plegadidae).

CLASSIFICATION. Ripley 1961, Synopsis: 22-23.

Key to the Indian forms

	Page
A Bill long, curved downward, generally dark coloured, plumage white, glossy black, or chestnut.....	1
1 Naked skin of head and neck black; plumage nearly all white, elongated inner secondaries forming slaty grey ornamental plumes (75 cm. = 30 in.).....	
..... <i>Threskiornis melanocephala</i> (adult, breeding)	110
Similar to above but plumes lacking.....	
..... <i>Threskiornis melanocephala</i> (adult, non-breeding)	110
Similar to non-breeding adult but neck and most of head feathered, primaries tipped with black.....	
..... <i>Threskiornis melanocephala</i> (juvenile)	110
Head black, naked, covered with red warts, neck feathered; plumage mostly glossy black with white patch on shoulder (68 cm. = 27 in.).....	
..... <i>Pseudibis papillosa</i> (adult)	112
Resembling above but lacking red warts, and plumage overall dull glossless brown.....	
..... <i>Pseudibis papillosa</i> (juvenile)	112
Smaller (52 cm. = 25 in.). Plumage of head, neck, and underparts rich chestnut-brown, wings and tail glossed with metallic greenish purple.....	
..... <i>Plegadis falcinellus</i> (adult, breeding)	114
Similar to above but head and neck brown, streaked with white.....	
..... <i>Plegadis falcinellus</i> (adult, non-breeding)	114
Like non-breeding adult but overall plumage dull ashy brown instead of chestnut.....	
..... <i>Plegadis falcinellus</i> (juvenile)	114

Extralimital. Burma, sporadically to China and Japan.

GENERAL HABITS. Gregarious. Normally parties and moderate to large flocks, often associated with storks, spoonbills, and such other marsh-frequenting birds. Saunters actively on squelchy mud or in shallow water probing with partly open mandibles into the bottom ooze, often with head almost completely submerged. Morsels of food are forcepied out and swallowed with an upward jerk of the bill. Flight strong and direct attained by steady rapid wing-strokes punctuated by short glides, the head and neck outstretched, either in V-formation or in evenly-spaced single file. Roosts and nests in trees.

FOOD. Almost entirely animal — fish, frogs, molluscs, insects, worms, etc. — but some vegetable matter (algae ?) also taken. Stomachs of small downy nestlings contained pulpy olive-brown and green vegetable matter, and elytra of tiny blackish beetles, c. 5 mm. long (SA).

VOICE. Normally silent. In the breeding season 'a remarkably loud booming call' (Doig); not confirmed by other observers. In breeding colony 'a series of peculiar grunts, not loud but vibrant', likened to the mumble of many people talking together (Bates). Subdued nasal grunts by adults on the nest tree (SA).

BREEDING. Colonially, in association with storks, herons, cormorants, and other marsh birds, with a tendency to segregation into discrete *mohallas*.

Season, in N. India June/July to October, varying with early or late monsoon and filling of tanks and jheels; in S. India and Ceylon November to February/March. Nest, a smallish platform of sticks c. 25 to 30 cm. across, usually unlined, built in moderate-sized trees (*Acacia*, *Prosopis*, *Barringtonia*, etc.) standing in or near water, or on the tops of partially submerged shrubs (*Zizyphus*, *Copparis horrida*, etc.); sometimes on the outskirts of a village. Eggs, 2 to 4, smooth-surfaced long ovals, chalky white with a faint bluish tinge. Immaculate or sparingly marked with small spots and blotches of light or dark brown, more densely at the broad end. Average size of 150 eggs 63.5 x 43.1 mm. (Baker). Both sexes take part in nest-building and all the domestic chores. Incubation period estimated at 23-25 days (unconfirmed). In the heat of the day, while incubating or standing about on the nest tree, the bill is partly open, the throat pulsating incessantly. Nest-feeding by regurgitation, the nestling wrestling with the parent's bill to receive food directly from gullet. Not picked up from nest floor as in storks. Nestlings commonly predated on by Pallas's and Spotted eagles (*Haliaeetus leucorhynchus* and *Aquila clanga*) and other raptors. On onslaught by eagle the parents fluff out plumage menacingly, erect rump and under tail-coverts, lower head and bill and open out wings, biting the neighbouring twigs in rage and lunging out at the marauder viciously but usually ineffectively. The eggs and hatchlings (as of other birds in heronries) suffer heavy depredation from House Crows (*Corvus splendens*), which habitually infest such places.

MUSEUM DIAGNOSIS. Chick (in down) snow-white with forehead, crown (to below ear coverts), and nape, velvety black. Chin, ventral side of neck, down centre of abdomen, and underside of wings naked or almost naked, the skin pale vinous pink. Egg tooth persists at tip of short waxy bill till third or fourth day.

B Bill long, straight, spatula-shaped at end, coloured black with terminal half bright yellow; plumage including bushy nuchal crest white (standing c. 60 cm. = 25 in.).....	<i>Platalea leucorodia</i> (adult, breeding)	116
Similar to above but lacking nuchal crest.....	<i>Platalea leucorodia</i> (adult, non-breeding)	116
Like non-breeding adult but primaries tipped with black.....	<i>Platalea leucorodia</i> (juvenile)	116

Genus THRESKIORNIS G. R. Gray

Threskiornis G. R. Gray, 1842, App. to List Gen. Bds.: 13. Type, by original designation, *Tantalus aethiopicus* Latham

Head and neck naked in adult. Bill deeply downcurved, stout, blunt. Nostril linear. Tibia feathered only on upper half; tarsus reticulated. Toes long, webbed between the bases, bordered by a membrane to the claws. Tail of twelve feathers. In breeding season inner secondaries longer than primaries, disintegrated, forming ornamental plumes.

The genus ranges from Africa through India and the SE. Asian countries and islands to Australia.

69. White Ibis. *Threskiornis aethiopica melanocephala* (Latham)

Tantalus melanocephalus Latham, 1790, Index Orn., 2: 709 (India)

Baker FBI No. 2203 Vol. 6: 314

Plate 8, fig. 11

LOCAL NAMES. *Munda*, *Safid bāza*, *Didhar* (Hindi); *Kachator* (Purnea, Bihar); *Mündukh* (Mirshikars, Bihar); *Kastechara*, *Sada dochara* (Bengal); *Boga akoki bog* (Assam); *Tattu kokka*, *Dahākatti kokka* (Sinhala); *Thālakāthi chondan* (Tamil); *Kūshānti kokku* (Malayalam).

SIZE. Large domestic hen ±; length c. 75 cm. (30 in.).

FIELD CHARACTERS. A largish snow-white marsh bird with naked black head and neck, and long black downcurved curlew-like bill.

In flight bare blood-red patches on flanks and under wing conspicuous.

Adult (breeding), with some slaty grey in scapulars and in the elongated disintegrated inner secondaries. Long ornamental plumes overhanging base of neck. In non-breeding plumage the slaty grey scapulars, ornamental secondaries and neck plumes are replaced by ordinary feathers. Sexes alike.

Young (immature) has only face and round the eye bare; rest of head and neck feathered. In newly fledged (flying) juvenile, head and hind neck well clothed with black or slaty down. Front of neck covered with short white disintegrated feathers. Bare skin under wing black, not blood-red as in adult.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, nomadic (and/or locally migratory), depending on water conditions. All India, both Pakistans, Nepal terai, Ceylon. Plains and plateau country.

Affects rivers, jheels, marshes, inundated ploughed land and fallows; occasionally tidal mudflats and brackish lagoons.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	343-370	139-170	c. 99-115	133-145 mm. (Baker)

[A freshly killed ad. ♂ (Gujarat) measured Wing 381; bill (from skull) 185; tarsus 119; tail 129 mm. (SA)]

COLOURS OF BARE PARTS. Iris red-brown or red. Bill black. Naked skin of head and neck bluish black. Bare skin of flanks and under wing blood-red. Legs and feet glossy black.

Genus PSEUDIBIS Hodgson

Pseudibis Hodgson, 1844, in Gray's Zool. Misc.: 86. Type, by monotypy,

Ibis papillosa Temminck

Only the head and nape naked in adults *contra* *Threskiornis* which has also the neck bare. Bill slenderer, legs and feet shorter than in *Threskiornis*. Plumage principally black. Inner secondaries of normal shape in breeding season (not lengthened or disintegrated), and no long ornamental plumes at base of neck.

70. Indian Black Ibis. *Pseudibis papillosa papillosa* (Temminck)

Ibis papillosa Temminck, 1824, Pl. Col., livr. 51, pl. 304 (India)

Baker, FBI No. 2204, Vol. 6: 316

Plate 8, fig. 7

LOCAL NAMES. *Bāzā*, *Kālā bāzā*, *Kārān kāl* (Hindi); *Kālo dochara* (Bengal); *Kālo akoki bēg* (Assam); *Nella kānkāndam* (Telugu).

SIZE. Domestic hen ±; White Ibis —. Length c. 68 cm. (27 in.).

FIELD CHARACTERS. A distinctive glossy black marsh bird with slender downcurved curlew-like bill, a small but conspicuous white patch near shoulder of wing, and brick-red legs. A triangular patch of brilliant red warts covering top of naked black head. Sexes alike.



x c. 1

Young (immature). Overall dull glossless brown including feathered crown, head, and throat.

STATUS, DISTRIBUTION and HABITAT. Resident. West Pakistan (Sind), Gujarat, Rajasthan, and throughout the Gangetic Plain and peninsular India south to Mysore. Sparingly in Nepal (terai and dun), Bengal, and

IBISES

113

Assam. Not recorded from the West Coast, Kerala, Ceylon, or the Andamans. Affects dry plains and cultivated country.

Extralimital. Recorded as having occurred in Arakan, though the race normally found in Burma, Thailand, and the Indochinese countries is *davisoni* in which the red warty patch on head is obsolete.

GENERAL HABITS. Keeps in small parties of 3 or 4 or flocks of 8 to 10 individuals; sometimes up to 50 or more. Less dependent on water than White Ibis, preferring to forage on the drier margins of jheels, river banks, and in stubble fields; only occasionally wading into puddles. Flight and behaviour similar to that of White Ibis.

FOOD. Among the stomach contents of specimens, Mason & Lefroy (1912) identified frogs, small fish, earthworms, beetles and other insects (including *Brachytrypes achatinus* adults, and larvae of *Cyrtister confusus*, *Agrotis* sp., and *Hydrophilus* sp.). In addition, lizards, small snakes, scorpions, crustaceans, and a quantity of grain have also been recorded.

VOICE. On the whole silent. A loud nasal screaming cry of two or three notes reminiscent of the Brahminy Duck (*Tadorna ferruginea*), uttered chiefly on the wing (SA).

BREEDING. Not in mixed heronries. Usually individual nests by themselves; rarely small colonies of 3 to 5 pairs in same tree. *Season*, variable: between March and October in N. India; later in Gujarat, Deccan, and the south. *Nest*, a large stick platform c. 35 to 60 cm. in diameter, 10 to 15 cm. deep, loosely and untidily lined with straw. Built in a large tree such as banyan or peepul, or among the bases of leaf stalks in a palmyra (*Borassus*) palm, 6 to 12 metres up. Old nests of kites and vultures frequently utilized. Fresh material added to the nests even when incubation well advanced. *Eggs*, 2 to 4, pale bluish green, some spotless but the majority sparsely flecked and blotched with pale reddish; broad to moderately long ovals with a smooth surface. Average size of 59 eggs 63.0 × 43.8 mm. (Baker). Both sexes incubate. Period of incubation, and other details, unrecorded.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	365-400	138-158	c. 75-85	165-194 mm. (Baker)

COLOURS OF BARE PARTS. Iris brownish yellow to bright orange-red. Bill plumbeous green to dull blackish green. Naked skin of head black; crown and nape bright coral-red or brick-red. Legs and feet brick-red.

Genus PLEGADIS Kaup

Plegadis Kaup, 1829, Skizz. Entw.-Gesch.: 82. Type, by monotypy, *Tantalus falcinellus* Linnaeus

Head feathered except on lores and a small area in front of eyes. Tarsi long, scutellated in front, reticulated behind. Toes long and slender; claw of middle toe pectinated. Bill long, curved, more slender even than in *Pseudibis*.

IBISES

115

Extralimital. S. Europe, the Mediterranean and Middle East countries, Baluchistan, Afghanistan, Turkestan, Burma. Also Africa, Madagascar, and parts of southern North America. The race *peregrinus* inhabits the Philippines and Indonesia to Australia.

MIGRATION. A juvenile ringed in the Volga Delta, USSR, c. 45°55' N., 47°45' E. (9.vii.1931) was recovered at Deolali, Nasik dist., c. 20°N., 74°E. (14.iii.1934). Another juvenile ringed in the same locality, 12.vii.1941, recovered in Malda district, West Bengal, c. 25°N., 88°30'E. (c. 15.iv.1942). These constitute our first positive proof that the resident population is augmented in winter by northern migrants.

GENERAL HABITS. Gregarious; usually tame and confiding. Small parties or flocks of up to 40 or 50. Feeds like White Ibis on marshland or in shallow water, sometimes wading in up to the belly and submerging head completely. Flight—a series of rapid wing-beats followed by a glide—and other habits similar to White and Black Ibises (q.v.). Flocks fly in V-formation or in diagonal wavy ribbons. Perches and roosts on trees.

FOOD. Molluscs, crustaceans, worms and insects. Possibly also tadpoles and small frogs as recorded elsewhere.

VOICE. Normally silent. In breeding season adults utter a peculiar bleating reminiscent of a sheep (Heinroth). Another call described as 'a decidedly corvine prolonged guttural croak' (Lillford).

BREEDING. Colonial; in mixed heronries. Sporadic. Recorded in Sind, Oudh, Orissa, Assam, Manipur. *Season*, mainly May to July. *Nest* smallish, of sticks, c. 30 cm. across and c. 12 cm. deep, on moderate-sized trees such as kandi (*Prosopis spiciopera*) standing in clumps in or near water. *Eggs*, 2 or 3 (in Europe up to 5), deep unspotted blue-green, smooth-textured long ovals, more or less pointed at both ends, somewhat more at the small end. Average size of 100 eggs 52.18 × 36.9 mm. (Baker). Both sexes share incubation. Period 21 days (Heinroth). No details recorded in India; for Europe see Witherby 1939, 3: 123.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	248-298	99-144	c. 85-100	94-106 mm. (Baker)

Female smaller than male: for European birds Wing ♂ 290-306; ♀ 264-277 mm. Weight c. 750 gm. (Heinroth).

COLOURS OF BARE PARTS. Iris grey, brown, or mottled grey and brown. Bill dark livid, olive-grey or plumbeous brown; ('bare skin at base lead-blue'—Ticehurst). Naked skin of face and round eye livid. Legs and feet bronze-brown, bluish ('greenish'—Ticehurst) above 'knee'.

MISCELLANEOUS. Longevity (from ringing data) c. 20 years (Ring, 1962, 33: 148).

Genus PLATALEA Linnaeus

Platalea Linnaeus, 1758, Syst. Nat., ed. 10, 1: 139. Type, by subsequent designation, *Platalea leucorodia* Linnaeus

Both mandibles greatly flattened, becoming broader and spoon-shaped at the tip, where they are slightly decurved. Face and throat naked. Legs long; tibia feathered; tarsus reticulated in front and behind. Toes long, bordered by a membrane, webbed at base.

114

CICONIIFORMES

71. Glossy Ibis. *Plegadis falcinellus falcinellus* (Linnaeus)

Tantalus falcinellus Linnaeus, 1766, Syst. Nat., ed. 12, 2: 241 (Austria and Italy)
Baker, FBI No. 2206, Vol. 6: 318
Plate 8, fig. 9

LOCAL NAMES. *Kowari*, *Kowar*, *Chhōta bāza* (Hindi); *Kachia tora* (Bengal); *Thāi kākānām* (Telugu); *Kārāppu kottan* (Tamil, Ceylon); *Ratu dōe tuduwa* (Sinhala).

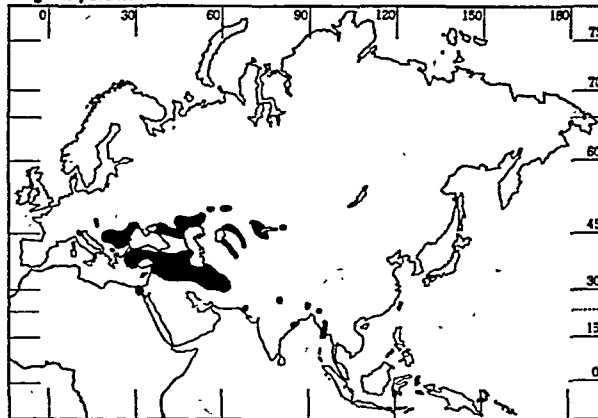
SIZE. Domestic hen ±; Black Ibis —. Length c. 52 cm. (25 in.).

FIELD CHARACTERS. A small blackish ibis with feathered head and characteristic slender downcurved bill.

Adult (breeding). Above, rich dark chestnut or maroon-brown, heavily glossed with green and purple on head, neck, chin, throat, lower back, and rump. Tail black glossed with green and purple. Below, chestnut. Under tail-coverts and axillaries deep purple. Sexes alike.

Adult (non-breeding). Head and neck brown, streaked with white. Scapulars and innermost wing-coverts glossy green-blue.

Young (immature). Like adult in winter, but dull (unglossed) ashy brown instead of chestnut.

Plegadis falcinellus

Breeding range

Nestling, clothed in black down. Bill rose-coloured, with a black band at middle and tip which disappear with fledging of chick (Heinroth).

STATUS, DISTRIBUTION AND HABITAT. Partly resident and nomadic, partly winter visitor. West Pakistan (Sind), Uttar Pradesh, Nepal (plains and terai), Gangetic Plain, Madhya Pradesh, Deccan, Rajasthan, Kutch, Gujarat, Orissa, W. Bengal, E. Pakistan (Sylhet, Faridpur), Assam, Manipur. Very rare in Ceylon and Maldives Is., recorded only six times, August to January, between 1960 and 1973 (CBCN).

CICONIIFORMES

116

72. Spoonbill. *Platalea leucorodia major* Temminck & Schlegel

Platalea major Temminck & Schlegel, 1849, in Siebold, Fauna Jap., Aves: 119, pl. 73 (Japan)
Baker FBI No. 2202, Vol. 6: 311
Plate 8, fig. 8

LOCAL NAMES. *Chāmēch bāzā*, *Chāmēch* (Hindi); *Chinta*, *Khuntā bāk* (Bengal); *Khantiya bōg* (Assam); *Gentā miki konga* (Telugu); *Kārāndi mūkh nārī* (Tamil, T.N.); *Chāppāi chondan* (Tamil, Ceylon); *Handi alaiwā* (Sinhala).

SIZE. Domestic duck +; standing c. 60 cm. (24 in.) to top of head.

FIELD CHARACTERS. A long-legged, long-necked, snow-white marsh bird with a distinctive long, flat, black-and-yellow spatula-shaped bill. A cinnamon-yellow patch at base of foreneck, naked yellow throat, and long, bare, black legs. Sexes alike. In breeding season with a long white bushy nuchal crest, erected in display or to express anger or other emotions.



× c. 1

Young (immature), has the primary wing-coverts tipped with black. All primaries black-shafted, the first three largely blotched and mottled with black, 4th and 5th with black tips.

Nestling, covered with white down. Bill at hatching of normal shape, short, pink, and fleshy, gradually thickening and becoming bulbous at tip with slight decurvation. Assumes characteristic 'spoon' shape when chick full-fledged.

STATUS, DISTRIBUTION AND HABITAT. Partly resident and nomadic, partly winter visitor. West Pakistan (Baluchistan, Sind), East Pakistan, practically all India, Nepal (terai), and Ceylon. Plains and plateau country. Affects marshes, jheels, rivers; occasionally tidal creeks and mangrove swamps.

Extralimital. 'Central Asia from China, southern Transbaikalia, Ussuri-land and Japan south to Syria; Egypt, India, and Formosa. Migratory in northern part of its range' (Peters).

MIGRATION. From older observations of vast flocks arriving in Uttar Pradesh in October (Reid 1887, SF 10: 77), and of flocks of many thousand birds each on the Chenab and Sutlej rivers near Multan in December including one estimated to contain ten thousand individuals (Hume 1873, SF 1: 106), the Spoonbill was well known to be, in part, an abundant winter migrant from extralimital areas. Direct evidence has since been provided by the recovery in India of four Spoonbills ringed as nestlings in the Caspian region of USSR (between c. 40° and 50°N. and 45° and 55°E.) in June-July, as follows: Kolhapur district, Maharashtra, (c. 17°N., 75°E.); Monghyr district, Bihar (c. 25°N., 86°E.); Tonk, Rajasthan (c. 26°N., 76°E.); Mandasaur district, Madhya Pradesh (c. 24°N.,

75°E.). Three of these were recovered between October and January; one curiously enough in July, almost exactly two years after ringing and more-over at the time when our local population here should be breeding. A fifth juvenile ringed near Yeysk, Sea of Azov (46°41'N., 38°15'E.) on 10.vi.1961 was recovered — again almost exactly two years later, in June 1963 — near Hyderabad in W. Pakistan (25°35'N., 68°25'E.).

GENERAL HABITS. Gregarious and sociable. Keeps in small parties and flocks of up to fifty or more, either by themselves or in association with egrets, ibises, and other marsh birds. Feeds more actively in mornings and evenings than during daytime, and is partly nocturnal. Wades into the shallows on the edge of a jheel or swamp and with outstretched obliquely poised, partly open bill sweeps from side to side in the water with a semi-circular scything action, raking the bottom ooze with the tip of the lower mandible as it moves forward. Where food is plentiful a compact, eager, jostling herd will advance almost at a run, working methodically back and forth over a particularly rewarding patch. Bouts of intense feeding activity alternate with pauses of quiescence when the entire herd will stand about listlessly with no apparent interest in food. Flight seemingly rather slow, with deliberate wing flaps — neck and legs extended. Flocks fly in diagonal wavy ribbons, each bird evenly spaced behind and to one side of the one in front.

FOOD. Small fish, tadpoles, frogs, molluscs, crustaceans, aquatic insects. Also some vegetable matter.

VOICE. Normally very silent; in breeding colony occasional short low grunts and bill-clattering.

BREEDING. Colonial. Usually in mixed heronries — sometimes very large ones, e.g. Keoladeo in Bharatpur (Rajasthan) — but with a tendency to segregation. *Season*, variable, depending on early or late monsoon and filling of tanks and jheels; normally July to October in N. India, November to January in S. India, December to April in Ceylon. *Nest*, a variable platform of sticks, sometimes a flimsy pad and at others a fairly substantial structure, lined in varying degree with grass or leaves. Built in clumps of moderate-sized trees (*Acacia arabica*, *Prosopis spicijera*, *Barringtonia racemosa*, etc.) standing partially submerged in a jheel. Rarely in reed-beds. Often many nests in the same tree almost touching one another. *Eggs*, 3 or 4, rarely 5, long ovals slightly pointed at one end, smooth surfaced. Chalky white in colour, sparsely marked with small blotches and spots of light to dark brown, sometimes with faint secondary markings of pale grey-brown or pinkish grey. Average size of 40 eggs 65.6 × 44.2 mm. (Baker). Both sexes take part in nest-building and incubation. Incubation period unrecorded in India; estimated as about 21 days.

MUSEUM DIAGNOSIS

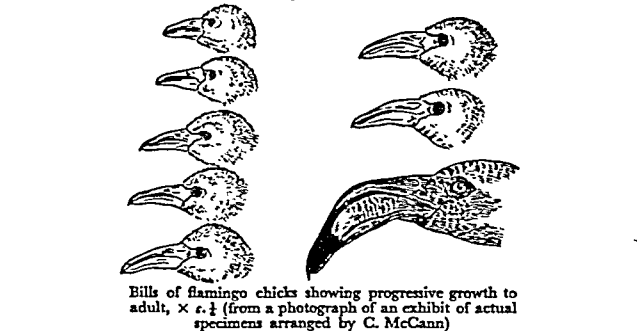
MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	350-395	180-228	130-165	108-122 mm.
		(from feathers)		(Baker)

Weight 2 oo? 1770, 1785 gm. (BNHS).

COLOURS OF BARE PARTS. Iris dark brown to brownish crimson. Bill, upper mandible black; terminal half of 'spoon' bright yellow; lower mandible slaty grey.

sharply downcurved ('broken') from about half its length. Sexes alike, but female somewhat smaller and paler.



In flight the large size, long slender outstretched legs and neck, and black-and-scarlet underwing diagnostic.

Young (immature). Overall greyish brown, with brownish bill and dark slaty brown legs. Older birds have more greyish body with dark brown head and bill. Under wing-coverts and axillaries pale pink.

Chick (newly hatched to 2 or 3 days old). Nidifugous; covered with French grey powder-puff down, with soft pale pink bill and short salmon or orange-red legs; both changing to bluish grey in a few days. Very precocious and lively, slithering down from nest mound on alarm and scuttling off unsteadily, balancing itself with stumpy wings, frequently stumbling and rolling over.

STATUS, DISTRIBUTION AND HABITAT. Resident, nomadic, and locally migratory. Also extralimital migrant in part. Not uncommon, but capricious and sporadic, in W. Pakistan (Sind) and throughout the Indian Union (rare in Bengal and Assam), East Pakistan (rare) and Ceylon. Not recorded from Nepal. Affects large jheels, brackish lakes and lagoons, salt pans, estuaries, and tidal mudflats on the sea coast.

Extralimital. S. France, S. Spain, parts of N. and E. Africa, the Middle East and Caspian region to W. Siberia, south through Afghanistan.

MIGRATION. Of chicks ringed at the Ashk Island breeding colony in Lake Rezaieyeh, Iran (37°25'N., 45°30'E.) between 1970 and 1972, six recovered in India 3 to 5 months after ringing — in Gujarat, Rajasthan, Delhi, Andhra Pradesh and Orissa. This gives some plausibility to McCann's conjecture of 35 years ago that under stress of hydrographic conditions breeding populations may shuttle between the major nesting sites in Europe, Africa, and Asia.

GENERAL HABITS. Highly gregarious, normally in small or large flocks and vast congregations at favourite feeding and nesting places, often numbering many hundred thousand. Feeds in shallow water — usually brackish and even concentrated brine — with head immersed. Sometimes swimming and 'up-ending' like duck in deeper water. The partly open bill is inverted

Bare skin of face and throat canary or sulphur yellow, sometimes blotched with black on and above lores. Legs and feet black.

NOTE. The European breeding (nominat) race is only slightly smaller with a smaller bill, but the measurements often overlap. Such examples, and borderline cases, are impossible to assign racially with confidence.

Family PHOENICOPTERIDAE: Flamingos

Large, excessively long-legged marsh birds with very long slender necks and peculiar thick lamellate bills sharply downcurved or 'broken' in the middle. Plumage largely pinkish white and crimson, with black remiges or wing-quills. Tibia bare; toes short and webbed. Sexes alike or nearly so.

ANATOMICAL DETAILS in Witherby 1939, 3: 162-3; Baker 1929, FBI 6: 372; Stresemann 1927-34, Aves: 804-5.

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Key to the Indian forms

Larger (standing c. 140 cm. = 4½ ft.). Plumage rosy white with scarlet and black wings, upper mandible overlapping lower, throat naked	<i>Phoenicopterus roseus</i>
Smaller (standing c. 90-105 cm. = 3-3½ ft.). Plumage deeper rose pink, upper mandible not overlapping lower, throat feathered	<i>Phoeniconaias minor</i>

Genus PHOENICOPTERUS Linnaeus

Phoenicopterus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 139. Type, by monotypy, *Phoenicopterus ruber* Linnaeus

Upper mandible overlapping lower; throat naked. See also under Family.

73. Flamingo. *Phoenicopterus roseus* Pallas

Phoenicopterus roseus Pallas, 1811, Zoogr. Russo-Asiat., 2: 207 (Mouth of Voiga river, south Russia)

Baker, FBI No. 2241, Vol. 6: 373

Plate 3, fig. 7

LOCAL NAMES. *Bog hāns*, *Rāj hāns* (Hindi); *Kānmunthi*, *Kānthuti* (Bengal); *Chārdj bāggo* (Mirshikar, Bihar); *Pu konga*, *Sāmidrāpū chihuka* (Telugu); *Pān nārāi*, *Urian* (Tamil); *Siyak karaya* (Sinhala); *Lakkā*, *Lakkē jāni* (Sind); *Hānj pākhi* (Kutch).

SIZE. Vulture +; standing c. 140 cm. (4½ ft.) to top of head.

FIELD CHARACTERS. A tall, long-legged, long-necked, stork-like marsh bird; rosy white with bright scarlet-and-black wings and massive pink bill

so that the upper mandible forms a scoop with culmen skimming or scraping the bottom ooze. The fleshy tongue works back and forth like a piston sucking in the water and mud, from which minute organisms are strained out by the lamellae along the edges of the bill. In dense congregations, where individual feeding space is restricted, the bird dabbles around pivoting on itself, the bill action describing a shallow circular trough or moat in the mud around the central 'turntable'. Such feeding circles, c. 60-90 cm. in diameter, almost touching one another, and sometimes many acres in extent, mark the places where flamingos have been feeding. Flight — with fairly rapid wing-strokes, neck fully extended in front and legs trailing well behind — in diagonal wavy ribbons, single file, or in the characteristic V-formation of geese. Rests usually standing on one leg with the long slender neck coiled round, and head tucked in feathers of back.

FOOD. *Chironomus* larvae, small molluscs and crustaceans (e.g. *Artemia salina*), tiny seeds of lacustrine plants (e.g. *Ruppia* spp., *Scirpus*), and organic mud. Possibly also small fish on occasion, e.g. *Cyprinodon dispar* which is very abundant in the bird's haunts in the Rann of Kutch.

VOICE. A single hoarse brassy goose-like honk. A constant babbling while feeding in company.

BREEDING. *Season*, in the Great Rann of Kutch, the only known nesting ground within our limits, variable, depending on hydrographic conditions, September/October to March/April. *Nest*, a truncated conical mound with shallow pan-like depression at top, from a few centimetres to half a metre high, of sun-baked mud scraped up from the vicinity when in semi-liquid condition, and daubed on. Built in hundreds close to one another in a compact, expansive 'city' covering several acres. Sometimes a merely slightly raised bed of mud pellets constitutes the nest. *Eggs*, normally 1 — occasionally 2 — rather like huge eggs of cormorants, from skim-milk to pale blue in colour overlaid with calcium deposit. Average size of 100 eggs, measured by Jourdain, 88.8 × 54.5 mm. (Baker). Three eggs from the Rann of Kutch measured 83 × 50, 83 × 53, 93 × 58 mm. (SA), falling within the maxima and minima of the above.

Both sexes take part in incubation. Period elsewhere stated as 30 to 32 days. Newly hatched, and small chicks, fed by parent on drops of a clear liquid from its bill tip, of unknown origin and composition. (For further accounts of ecology, bionomics etc. consult References under Family.)

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill	Bare tibia	Tarsus	Tail
♂ ♂	393-444	c. 139-164	c. 220-250	c. 311-327	152-189 mm.
♀ ♀	375-405	c. 120-143	—	—	—
		(from feathers)			(Baker)

A Kutch ad. ♂ (measured in the flesh) Wing 464; bill (from skull) 134; tarsus 324; tail 167 mm. (SA).

Weight 3 oo? 2020-3100 (av. 2481) gm. (BNHS).

COLOURS OF BARE PARTS. Iris lemon-yellow. Bill, facial and gular skin pale pink to rich strawberry-ice colour, the first with black tip. Legs and feet variable pink, like bill.

FLAMINGOS

121

Genus PHOENICONAIAS Gray

Phoeniconaias Gray, 1869, Isis: 440. Type, by monotypy, *Phoenicopterus minor* Geoffroy. Upper mandible not overlapping lower; throat well feathered.

74. Lesser Flamingo. *Phoeniconaias minor* (Geoffroy)

Phoenicopterus minor Geoffroy, 1798, Bull. Soc. Phil. Paris, 1: 98 (East Africa)
Baker, FBI No. 2242, Vol. 6: 375

Plate 3, fig. 6

LOCAL NAME. *Chhōta rājāns* (Hindi).

SIZE. Large duck; standing c. 90–105 cm. (3–3½ ft.) to top of head.

FIELD CHARACTERS. Smaller size, deeper rose-pink plumage, and dark coloured bill with crimson feathers around its base, distinguish it from its larger relative. Sexes more or less alike; female somewhat smaller and paler without crimson on back or breast.

In flight, crimson and black underwing, comparatively thicker neck, shorter trailing legs, and goose-like flight are leading pointers.

Young (immature). Overall greyish brown as in the larger flamingo with shorter, darker bill.

Chick. Pale grey natal down replaced by coarser growth in a few days. Colour of bill and legs at hatching pale pink and orange respectively; when slightly older, black.

STATUS, DISTRIBUTION AND HABITAT. Status uncertain. Recorded practically in all months and only recently found breeding within our limits. Largely seasonal (?) visitor with erratic local movements. W. Pakistan and NW. India — Sind, Rajasthan, Gujarat, and the western Gangetic Plain. The Sambhar Salt Lake (Rajasthan) and the Little Rann (Gujarat) are two of its strongholds where vast concentrations, tens of thousand strong, occur irregularly. Stray specimens taken as far south as Bombay (Sálim Ali & Abdullá, JBNHS 40: 649), and Secunderabad, Andhra (Butler, SF 9: 436), and Chilka Lake, Orissa (January 1967) where reported as casual in winter but frequent. More restricted to salt and brackish lakes and tidal lagoons than large flamingo.

MIGRATION. No definite data.

GENERAL HABITS. Gregarious; large concentrations of the two species frequently together. Differs from the large flamingo chiefly in its ecological preference for heavily saturated brine and its feeding technique consequent upon the bill structure being specially adapted for filtering microscopic organisms (see Jenkin, loc. cit.). Usually walks along, or swims, in 30 to 45 cm. depth of still water swinging head from side to side in a scything motion, sucking in the algae from the surface layer (Brown, loc. cit.). However, in shallow brine only a few centimetres deep, e.g. in salt pans and in the Little Rann of Kutch, the bird feeds in the same way as its larger relative, partly or entirely submerging the head and inverting the bill. The difference in the size of food for which the bills are respectively adapted doubtless enables the two species to co-exist side by side without competing.

FOOD. Almost exclusively algae and diatoms. Occasionally insect larvae and copepods. Regularly drinks fresh water.

BREEDING. Long suspected in Little Rann of Kutch from presence of vast numbers of immature birds in brown plumage accompanying adults. Actual

122

ANSERIFORMES

nesting first discovered only in January 1974 on the periphery of Flamingo City in the Great Rann — an estimated 3–400 nests with eggs and/or chicks. For details see Sálim Ali, 1974, JBNHS 71(1): 141–4. Nests, downy hatchlings and older pulli indistinguishable from those of the larger flamingo. Eggs, similar but averaging smaller, 78.5 × 49.3 mm. (Leslie Brown). Breeds abundantly on the soda lakes in East Africa.

MUSEUM DIAGNOSIS

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	329–354	100–118	c. 190–242	c. 120–142 mm.
♀♀	310–325	c. 93–104	—	—

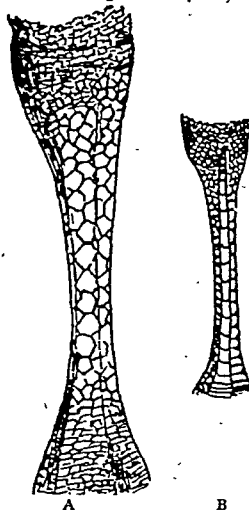
(Baker)

COLOURS OF BARE PARTS. Iris red. Bill dark lake-red with black tip. Legs and feet red.

Order ANSERIFORMES

Family ANATIDAE: Ducks, Geese, Swans

A group of large, conspicuous water birds perhaps more generally known and recognized than any other, even by persons whose interest in birds does not extend beyond hunting them or purely as items on the menu. By virtue of the regularity of their seasonal appearances and disappearances, their spectacular flights, and their abundance and widespread occurrence in winter on all types of inland waters throughout the country, they perhaps also provide the most tangible example to the popular mind of the phenomenon of bird migration.



Tarsus of Greylag Goose (A) and Mallard (B) to illustrate reticulated tarsus of swans and geese and partially scutellated tarsus of ducks

SIZE. Very diverse, from considerably larger than a Vulture (swan) to about that of a Pigeon (Cotton Teal). Colour from wholly white (swan) to combinations of grey, brown, black, and green with metallic reflections in many attractive patterns. Most ducks with conspicuous metallic 'speculum' or white patch on wing. Bill typically broad, flat, rounded at tip, and with a comb-like fringe or lamellae for straining out food particles from water in which they chiefly feed. Wings in most species rather narrow and pointed, adapted for swift and long-ranging flight. Tail short. Legs short; feet webbed. The majority of our species are migratory, originating from the Palearctic Region (see map, p. xxxvii).

FOOD. Animal and/or vegetable matter. Obtained in water, marshes, or meadows and fields by dabbling, diving, or grazing.

BREEDING. On ground, in holes in ground, or hollows in tree-trunks, etc. Young nidifugous, down-covered.

DUCKS, GEESE, SWANS

123

ANATOMICAL DETAILS. Witherby 1939, 3: 167; Stresemann 1927–34, Aves: 794–97; Baker 1929, FBI 6: 377–8.

CLASSIFICATION AND TAXONOMY. Delacour, J. and Mayr, E. 1945, 'The Family Anatidae.' *Wilson Bulletin*, 57: 3–55; Ripley, S. D. 1961, *A Synopsis of the Birds of India and Pakistan*, pp. 25–40; Peters, J. L. 1931, *Check-list of Birds of the World*, 1: 143–89.

GENERAL BIOLOGY: Delacour, J. 1964, *The Waterfowl of the World*, Vol. 4.

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Key to the Genera

	Page
A Hind toe not lobed.....	1
B Hind toe very narrowly lobed.....	2
C Hind toe broadly lobed.....	3
1 Neck as long as, or longer than, body.....	Cygnus 134
Neck not as long as body.....	a
a Plumage on sides of neck longitudinally furrowed, tail white or tipped with white.....	Anser 125
Plumage on sides of neck unfurrowed, tail not tipped with white.....	I
I Distance from tip of bill to gape slightly more than one-half length of tarsus.....	Branta 124
Distance from tip of bill to gape as long as or longer than tarsus.....	a ¹
a ¹ Underparts white.....	Sarkidiornis 192
Underparts not white.....	b ¹
b ¹ Upperparts shiny blue-green.....	Cairina 193
Upperparts brown.....	Rhodessa 174
2 Bill short and goose-like.....	b
Bill rather flat and broad.....	c
b Head crested, primaries edged with silvery grey.....	Aix 188
Head not crested, primaries not edged with silvery grey.....	Nettion 190
c Lower portion of tarsus in front reticulated, primaries equal to secondaries in length.....	Dendrocygna 138
Lower portion of tarsus in front scutellated, primaries considerably longer than secondaries.....	II
II Entire outer web of inner secondaries chestnut.....	Tadorna 141
Outer web of inner secondaries not chestnut.....	Anas 145

* not to be confused with the tips of secondary coverts which are chestnut in several species of *Anas*.

124

ANSERIFORMES

	Page
3 Bill long and thin with saw-like teeth on edges of both mandibles.....	Mergus 200
Bill not like above.....	d
d Tail feathers narrow and very stiff.....	Oxyura 208
Tail feathers normal.....	III
III Under wing-coverts dark.....	a ¹
Under wing-coverts white or whitish.....	a ²
a ² Nostrils situated on culmen about one-third of the distance from base to tip.....	Clangula 196
Nostrils situated on culmen about two-thirds of the distance from base to tip.....	Bucephala 198
a ² Width of culmen becoming narrower towards tip, lamellae coarse and prominent.....	Netta 177
Width of culmen becoming broader towards tip, lamellae fine and not prominent.....	Aythya 179

Genus BRANTA Scopoli

Branta Scopoli, 1769, Annuus I, Hist. Nat.: 67. Type, by subsequent designation, *Anas bernicla* Linnaeus (Bannister, 1870)

Bill very small with no serrations visible on the edge of the upper mandible as in *Anser* q.v. For further particulars see Delacour, 1: 145.

75. Redbreasted Goose. *Branta ruficollis* (Pallas)

Anser ruficollis Pallas, 1769, Spic. Zool., fasc. 6: 21, pl. 4 (Lower Ob, Southern Russia)
Baker, FBI No. 2259, Vol. 6: 407

Plate 12, fig. 7

LOCAL NAMES. None recorded.

SIZE. Domestic duck ±; length c. 61 cm. (24 in.).

FIELD CHARACTERS. A small brightly coloured goose, largely black and chestnut, strikingly marked with white.

Adult. Above, crown, dorsal side of neck, back and rump black, with two conspicuous grey bars on closed wings. Sides of head and face boldly patterned with white and chestnut. Below, ventral side of neck and upper breast bright chestnut separated from black hindneck and black lower breast by running white bands. Abdomen, vent, and a broad horizontal band on flanks white. Sexes alike.

Young (immature) has the black parts browner and duller and the chestnut parts paler and more cinnamon.

STATUS, DISTRIBUTION AND HABITAT. Rare straggler. Has only been observed thrice within our limits: once in Madhya Pradesh in 1836 (Hume 1880, SF 8: 421) and twice in Assam on the Brahmaputra river (Baker); not more recently than 1907.

Extralimital. Breeds on the Siberian Tundra from the Ob to the Khatanga. Winters in the southern part of the Caspian Sea and the Aral Sea (Peters).

GENERAL HABITS. See Delacour, 1: 181. Nothing recorded in India.

DUCKS, GEESE, SWANS

125

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	342-363	23-27	52-58	100-110 mm. (Delacour)

COLOURS OF BARE PARTS. Iris hazel to brown, 'chestnut' (Witherby). Bill and legs black (Baker).

Genus ANSER Brisson

Anser Brisson, 1760, Orn. 1: 58, 6: 261. Type, by tautonymy, *Anser domestica* = *Anas* Linnaeus

Bill short and high at base; nostrils situated half way between base and tip, the latter furnished with a nail-like dertrum. Tarsus fairly long and strong. Wing long and pointed. Tail short and rounded, of sixteen to eighteen feathers.

Key to the Species

A	Head white with two black bands at nape.....	<i>A. indicus</i>	Page 131
B	Head dark.....	1	
1	Nail of maxilla black.....	<i>A. fabalis</i>	125
	Nail of maxilla white.....	a	
a	No white or very little white on forehead; rump grey, legs pink.....	<i>A. anser</i>	129
	Considerable white on forehead and around base of bill; legs reddish-flesh to orange-yellow.....	I	
I	Wing over 380 mm.....	<i>A. albifrons</i>	126
	Wing under 380 mm; swollen yellow ring round eye.....	<i>A. erythropus</i>	128

ANSER FABALIS (Latham)

Key to the Subspecies

Bill and legs orange-yellow, occasionally pink	
Wing 440-562 mm., bill 64-87 mm.....	<i>A. f. middendorffi</i>
Wing 405-462 mm., bill 51-66 mm.....	<i>A. f. rossicus</i>

76. Forest Bean Goose. *Anser fabalis middendorffi* Severtzov

Anser middendorffi Severtzov, 1873, Vert. goriz. rospostr. tark. zhiv.: 149 (Sibérie Orientale = Oudskoi Ostrog.). (= *sibiricus* Alphéraky)
Plate 12, fig. 9

77. Tundra Bean Goose. *Anser fabalis rossicus* Buturlin

Anser serrirostris rossicus Buturlin, 1933, Opredelitel promyslovikh pitz. d. h. Best, Buch der jagdbaren Vogel: 60 (West Siberian Tundra. Locality restricted by Dementiev, 1936, Alauda: 190, to Beluchia Guba, Jamal, Taimyr).
Baker, FBI No. 2256, Vol. 6: 403 (= *A. neglectus*)¹

¹ Sushkin's Goose, *A. f. neglectus*, recorded in winter from Assam, is now considered merely a colour phase of the mixed population *A. fabalis-rossicus* (with pink bill and legs) breeding in northern USSR.

DUCKS, GEESE, SWANS

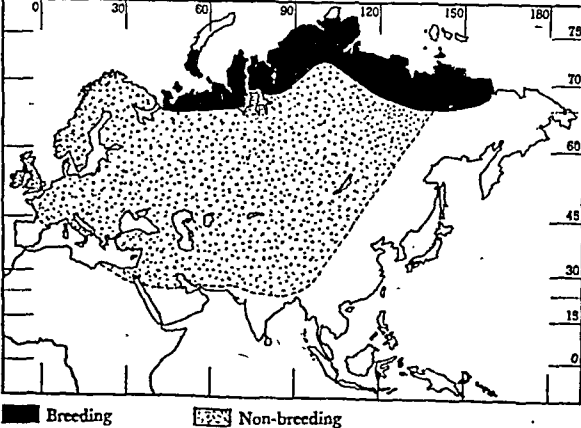
127

SIZE. Greylag Goose —; length c. 68 cm. (27 in.).

FIELD CHARACTERS. Darker and considerably smaller and daintier than the Greylag, with a much shorter (pinkish) bill. A diagnostic white patch on forehead (from base of bill), and irregular coarse black barring on lower breast and flanks. Rump dark greyish brown *contra* grey in Greylag. Legs orange. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Sparse and rare winter visitor to West Pakistan, NW. India (including Kutch and Rajasthan¹, and across the Gangetic Plain (U.P.) to Assam and Manipur). Southernmost record in India from Chilka lake, Orissa, c. 19°40'N. (Craven, JBNHS 48: 365-6).

Anser a. albifrons



Extralimital. Breeds on the Arctic coasts of Europe and Asia, east from the Kanin Peninsula, Kolguev, and southern Novaya Zemlya to the Kolyma river and perhaps beyond. Winters in W. Europe, shores of the Mediterranean, Black, and Caspian seas to China and Japan (Peter Scott). Also in N. Iraq (C. D. W. Savage).

GENERAL HABITS. On the whole very similar to the Greylag. Has a reputation for ability to rise almost vertically from the ground on sudden alarm or disturbance, and to get out of gunshot faster than any other goose. VOICE. Described as a high-pitched musical disyllabic honking, whence known as 'Laughing Goose' in many countries.

MUSEUM DIAGNOSIS. For full description of plumages etc. see Witherby 1939, 3: 183.

¹ The bird shot in Bikaner in December 1948 and recorded (JBNHS 46: 186-7) as *Anser fabalis brachyrhynchus*, proves on re-examination to be an immature of this species.

ANSERIFORMES

126

SIZE. Domestic goose ±; length c. 76 cm. (30 in.).

FIELD CHARACTERS. A large brown goose with an elongate body, long neck, and longish slender bill making somewhat straight line with forehead; black on basal half, yellow or pink on terminal half. Distinguished from the Eastern Greylag, which it resembles, in being less grey more brown, with uniformly dark brown head and neck contrasting with lighter breast and back. Also by longer neck, less tubby body, and slenderer and longer *particoloured* bill *contra* all pink in Greylag.

STATUS, DISTRIBUTION AND HABITAT. Vagrant. Three specimens ('*neglectus*') recorded from Assam by Baker. Possibly both forms occur less rarely in winter, but unidentified.

Extralimital. *A. f. middendorffi* breeds in forests of eastern Siberia from the Khatanga to the Kolyma, south to the Altai. Winters in eastern China, northern Mongolia, and Japan.

A. f. rossicus breeds in Novaya Zemlya and on tundra shores of Arctic Russia and Siberia west of the Taimyr Peninsula. Winters in Europe south to Italy; in Asia to Turkestan and China.

MUSEUM DIAGNOSIS. *A. f. rossicus* differs from *A. f. middendorffi* in being somewhat stockier and less elongate in body, with the bill shorter and higher at base. Lower mandible deep and distinctly curved outward, the nail at tip long, oval, and tapering (*contra* lower mandible straight and nail rounded in *middendorffi*). Normally no narrow band of white feathers around base of bill in either.

MEASUREMENTS

<i>A. f. middendorffi</i> ♂ ♀	Wing 440-562; bill 64-87 mm.; visible depth of lower mandible 7-10 mm.
<i>A. f. rossicus</i> ♂ ♀	Wing 405-462; bill 51-66 mm.; visible depth of lower mandible 7-10 mm.

COLOURS OF BARE PARTS. Iris brown. Terminal half of bill, legs and feet orange-yellow; often pink in *rossicus*.

[*Synopsis* (p. 26) includes the Pinkfooted Goose, *Anser fabalis brachyrhynchus* Baillon, in the Indian avifauna chiefly on the basis of the record of one shot in Bikaner, Rajasthan, in December 1948 (JBNHS 46: 186-7). The identity of the specimen mentioned by Baker (Fauna 6: 403) as taken by his collector in the Surma Valley, Assam, was doubted by Dr C. B. Ticehurst (JBNHS 34: 489) who pointed out that this goose has a limited and distinctly western distribution in winter and not a single record was known even so far east as European Russia. Baker's specimen is apparently non-existent, but the one from Bikaner in the BNHS collection has been re-examined by Mr Humayun Abdulali and one of us (SDR) and proves in fact to be a young Whitefront, *Anser albifrons albifrons*. In the absence of any specimens from India therefore, *Anser f. brachyrhynchus* must be deleted from the Indian list and Baker's record of '*neglectus*' from Assam treated with cautious disbelief !]

79. Whitefronted Goose. *Anser albifrons albifrons* (Scopoli)

Branta albifrons Scopoli, 1789, Annus I, Hist. Nat.: 69 (North Italy)
Baker, FBI No. 2253, Vol. 6: 399
Plate 12, fig. 10

LOCAL NAMES. Unrecorded.

ANSERIFORMES

128

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	392-442	43-52	60-71	114-132 mm.
♀ ♀	380-421	43-47	—	—

Extremes for European birds:

♂ ♀	369-450	40-55 (nail 8-15)	55-80	— mm. (Witherby)
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Weight c. 2-3 kg.

COLOURS OF BARE PARTS. Iris brown. Bill flesh colour or pale orange-yellow to rosy flesh colour, the nail paler and whiter. Legs and feet reddish flesh colour to orange-yellow, the webs paler; claws whitish (Baker).

80. Lesser Whitefronted or Dwarf Goose. *Anser erythropus* (Linnaeus)

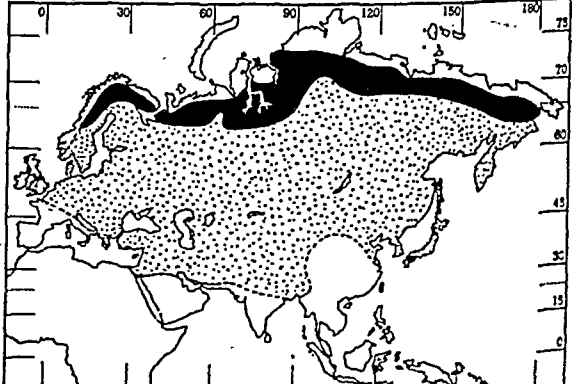
Anas erythropus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 123 (North Sweden)
Baker, FBI No. 2254, Vol. 6: 401
Plate 12, fig. 8

LOCAL NAMES. Unrecorded.

SIZE. Duck ±; c. 53 cm. (21 in.).

FIELD CHARACTERS. Like the Whitefronted, *A. albifrons*, but considerably smaller, dark brown, also with blotchy black bars on lower breast and belly, with a round shaped head and proportionately much shorter pink bill. The more extensive white forehead patch, reaching to top of head between the eyes, and the conspicuous swollen ring of yellow skin around

Anser erythropus



■ Breeding ▨ Non-breeding

DUCKS, GEESE, SWANS

129

the eye are diagnostic features which, on a satisfactory view, should settle all doubt. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Rare and sparse winter visitor. Recorded sporadically from West Pakistan (Sind, the former NWFP), Kashmir, Uttar Pradesh, Bengal, Bihar, and Assam. Has strayed as far south as Maharashtra, Poona district (Trevenen, JBNHS 28: 1081).

Extralimital. Breeds largely on mountain tarns from Norwegian Lapland to the Kolyma in Siberia, and perhaps further eastwards. Winters in south-eastern Europe, Black and Caspian seas, Middle East (Iraq, Iran), Seistan, Turkestan, China and Japan.

GENERAL HABITS. Usually congregates in large flocks in its regular winter quarters, e.g. around the Caspian and in northern Iraq. In India recorded only in twos and threes, separately or mixed up with flocks of Greylags.

VOICE. Described as resembling that of *A. albifrons* but much higher pitched and more squeaky.

MUSEUM DIAGNOSIS. In the hand an additional point for differentiation from *albifrons* is that the 'teeth' or serrations are concealed when the bill is shut. For details of plumages etc. see Witherby 1939, 3: 192.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	367-388	28-35	58-62	95-109 mm.
♀♀	352-381	32-35	—	—

(Witherby)

Extremes

	Wing	Bill	
♂♀	340-390	30-45	(J. Berry in Witherby)

COLOURS OF BARE PARTS. Iris brown. Bill pink. Legs orange-yellow (Delacour).

81. Eastern Greylag Goose. *Anser anser rubirostris* Swinhoe

Anser cinereus var. *rubirostris* Swinhoe, 1871, P.Z.S.: 416, ex Gray, 1846, Cat. Bds. Nepal, 144, nom. nud., ex Hodgson, 1844, Zool. Misc.: 86, nom. nud. (Shanghai)

Baker, FBI No. 2252, Vol. 6: 398

Plate 12, fig. 11

LOCAL NAMES. *Sona*, *Karria sona*, *Hāns*, *Rāj hāns* (Hindi); *Rāj hāns* (Bengal); *Kāj* (Bihar); *Kallak*, *Khar hāns* (Bhagalpur); *Mogāla*, *Mogāla bātāk* (Nepal terai); *Kāng ngā* (Manipur); *Rāj hāns*, *Dhitrāj* (Assam); *Gāj* (Kutch); *Hājī* (Sind).

SIZE. Domestic Goose ±; length c. 81 cm. (32 in.).

FIELD CHARACTERS. Very like the normal ashy brown phase of the domestic goose. Pale or French grey rump, white upper tail-coverts, and white nail to pink bill diagnostic.

In flight the comparatively pale head, and pale grey leading-edge of the wing next the body, are additional pointers. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor. Common in West Pakistan (Sind, the former NWFP), Kashmir, Punjab, in small numbers in

¹ A white goose shot by Col. H. Nedou and published (JBNHS 49: 311) as the first record in India of the Snow Goose, *Anser carolinensis*, was wrongly identified. It proves to be a partial albino Greylag.

130

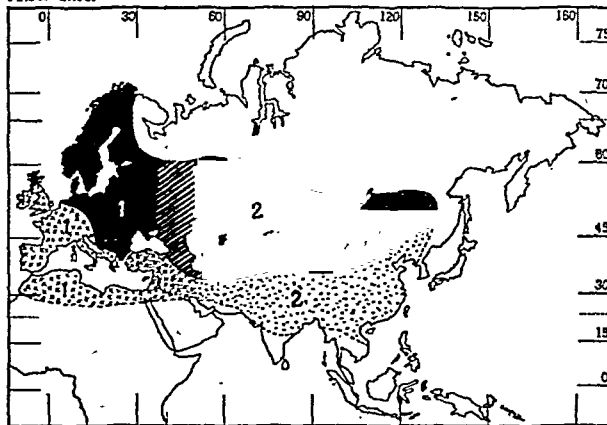
ANSERIFORMES

Rajasthan, N. Gujarat, Nepal terai, and across the Gangetic Plain to Assam, Manipur (abundant on Logtak lake), and East Pakistan. Abundant on the Chilka lake, Orissa, in some winters. Rare in Madhya Pradesh; virtually absent in the Deccan and S. India. Only once in Ceylon.

Extralimital. Breeds eastwards from c. 40°E. and south of 60°N., through Asia Minor and central Asia to Kamchatka. In winter to the eastern Mediterranean, Black and Caspian seas, and in Seistan and China (Peter Scott).

MIGRATION. Little precise data. Normally arrives in large skeins (from central Asia?) through the NWFP and Kashmir in October/November, (sometimes as early as first half September) spreading out by December. Has been observed migrating (this and/or Barheaded Goose) at over 4,270 m. (14,000 ft) alt. across the Himalayas in this sector. Practically all have left by mid March. Birds ringed in Bharatpur, 27°14'N., 77°28'E., recovered in Kazakh SSR and Mongolian People's Republic, between c. 48° and 50°N. and 82° and 92°E. For details see JBNHS.

Anser anser



1 *A. a. anser*; 2 *A. a. rubirostris*

GENERAL HABITS. Highly gregarious. Congregates in considerable flocks on the larger jheels particularly in the north-west (e.g. Manchar and Haigam lakes in Sind and Kashmir) wherever abundance of food, comparative freedom from molestation, and extensive cultivation of winter crops in the surroundings supply the essential requirements. Family parties or larger gaggles spend the daytime squatting belly to ground or resting on one leg on mud-spits in jheels and rivers or amidst open fields, or floating listlessly on the water with head tucked in the feathers of the back. But the birds are always uncannily vigilant and alert and can seldom be taken unawares. They

DUCKS, GEESE, SWANS

131

fly out to their accustomed feeding-grounds in the evenings and are active more or less throughout the night — sometimes till well after sunrise. The feeding is done by grazing in wet meadows or newly sown fields; also in the water while swimming by submerging the head and up-ending like ducks. Flight swift and strong with regular wing-beats either in the characteristic V-formation or in trailing wavy ribbons; usually the former in migration. Flocks occasionally indulge in spectacular acrobatics — plunging, side-slipping, turning over on back (the 'Immelmann Turn') and nose-diving high up in the air as if to escape some imaginary devil in pursuit, apparently purely for fun.

FOOD. Almost exclusively vegetarian. Whilst with us, grass and shoots of winter crops such as wheat and gram (to which they may do considerable local damage) and paddy left over in the stubbles after harvesting; also aquatic weeds and tubers etc. *Singhāra* (water-chestnuts = *Trapa*) in the Kashmir lakes form the staple diet in season.

VOCAL. A nasal conversational *gag-gag-gag* while feeding. The far-reaching honking *aahng-urg-ung*, with its variants, uttered in different keys during the morning and evening flighting, is one of the most exhilarating bird sounds for the sportsman and bird lover. These calls are also uttered when migrating, especially during the night.

BREEDING (including display etc.) see Witherby 1939, 3: 182-3 for the Western race.

MUSEUM DIAGNOSIS. Distinguished from the Western (nominative) race, *A. a. anser* by its distinctly lighter and greyer colour, and pink instead of orange bill. No significant size difference.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	445-482	55-72	73-82	129-150 mm.
♀♀	416-470	54-70	52-70	125-145 mm.

(Delacour, for *A. a. anser*)

Weight (100 weighed by Hume) 2-72 kg. (♀) to 3-86 kg. (♂); 5 ♂♂ 2350-3750 (av. 3100), 5 ♀♀ 2450-3060 (av. 2790) gm. (BNHS).

COLOURS OF BARE PARTS. Iris brown. Bill fleshy white to pink; nail paler and whiter. Legs and feet pink.

82. Barheaded Goose. *Anser indicus* (Latham)

Anser indicus Latham, 1790, Index Orn., 2: 839 (Taimyr = India vide Ticehurst 1930, JBNHS 34: 489)

Baker, FBI No. 2258, Vol. 6: 405

Plate 12, fig. 12

LOCAL NAMES. *Hāns*, *Kāryee hāns*, *Rāj hāns*, *Birwa*, *Saxān* (Hindi); *Bādi hāns* (Bengal, Chittagong); *Kārbānch*, *Māgli* (Mirzikhars, Bihar); *Gūwa*, *Paria* (Nepal); *Nāngā* (Ladakh); *Ner teithoo* (Coimbatore); *Bernooria hāns*, *Boga rājādas* (Assam); *Kāng ngā* (Manipur).

SIZE. Greylag Goose —; length c. 75 cm. (30 in.).

FIELD CHARACTERS. A slender, pale grey, brown, and white goose

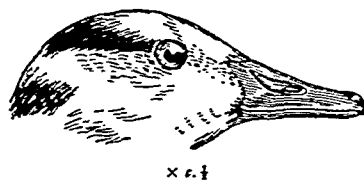
Adult. Head, face, throat, chin, and a conspicuous stripe down each side of brown neck, white. A black bar across snicuput from eye to eye,

132

ANSERIFORMES

and a shorter second one below it across nape, diagnostic. Bill and legs yellow, nail at bill-tip black. Sexes alike.

In flight white head, pale body and black wing-quills are leading pointers.

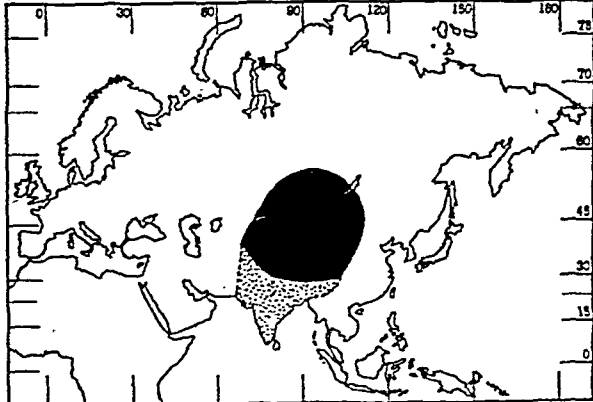


Young (immature). Like adult but paler. Head and neck pale grey without markings. Hindcrown, hindneck, and a line through the eyes dusky brown. Bill and feet greenish yellow.

STATUS, DISTRIBUTION AND HABITAT. Breeds in Ladakh; elsewhere winter visitor. Common throughout the northern portions, from West Pakistan and Kashmir eastward through the Punjab, Rajasthan and the Gangetic Plain (including Nepal terai) to Assam and East Pakistan. In some years abundant on the Chilka lake in Orissa. Rare in Gujarat and Deccan, but leap-frogging as far south as Mysore in small numbers fairly regularly. Does not reach Ceylon. Affects large jheels and rivers.

Extralimital. Breeds on high elevation lakes in central Asia from the Tien Shan to Kokonor. Winters sparingly also in Burma.

Anser indicus



■ Breeding ● Non-breeding

MIGRATION. Little known beyond that it normally arrives in northern West Pakistan and NW. India about October/November, is well in by

DUCKS, GEESE, SWANS

133

mid-December, and mostly gone by end March during which month thousands reported migrating northward over lower reaches of Karnali river in Nepal (R. G. M. Willan, *in epist.*). Two birds (1 juvenile, 1 adult), ringed in Kirghiz SSR (c. 40°-42°N., 75°E.) in the breeding season, were recovered in subsequent winters near Gilgit (c. 36°N., 74°E.) and in Dera Ghazi Khan district, W. Pakistan (c. 30°N., 71°E.) respectively. (Details in JBNHS 58: 284, 1961; 59: 964, 1962.) For migration over High Himalayas in NW. sector see under Greylag.

GENERAL HABITS. Gregarious; family parties of 5 or 6 and gaggles of up to a hundred or more. Not appreciably different from the Greylag except that it keeps more to the larger rivers whose expansive sandbars afford safe daytime refuge to vast resting congregations. Also largely a crepuscular and nocturnal feeder, often causing considerable local damage to winter crops. Extremely wary and difficult to approach while in its winter quarters where commonly hunted, but astonishingly tame and confiding where unmolested, e.g. on its breeding grounds in Tibet — at least was (c. 1945) before the Chinese marched in.

VOICE. Similar to the Greylag's but more nasal and musical.

FOOD. Almost exclusively vegetarian: grass, tubers, tender shoots of wheat, gram, and other winter crops. Also paddy in stubbles.

BREEDING. Within our limits only Ladakh, on the high plateau lakes at c. 4300 metres elevation, e.g. Pangong Tso, Tso Moriri, and Tsokr. Season, mainly end May and June. *Nest*, a slight depression in the ground thickly padded with down which is banked up in a parapet around it. On grassy islets in the lakes, or on inaccessible spongy humps in the surrounding bogs — often many nests close to one another. At Tsokr, B. B. Osmaston found them breeding also on cliffs in situations normally used by the Brahminy Duck (q.v.); once in a disused raven's nest padded with down. Eggs, 3 to 6, commonly the latter; thick-shelled, ivory white, becoming soiled during incubation by the owner's muddy feet. Average size of 100 eggs 84.4 × 55.1 mm. (Baker). Incubation by female alone. Period 28-30 days (Delacour). Gender very solicitous about safety of young, the two parents flanking the chicks on either side when leading them on land or on water — the brood occasionally strung out like a furry tail behind flank of swimming parent.

MUSEUM DIAGNOSIS

Chick (in down). *Above*, pale greyish brown with yellow patches on wings. Head and neck yellow, with a grey patch on occiput. *Below*, pale yellow. Bill bluish grey with fleshy nail. Legs greenish grey. [See Delacour 1954, 1: 192 (plate).]

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	450-482	48-63	70-80	140-170 mm.
♀♀	406-460	47-55	63-75	127-160 mm.

Weight 5 ♂♂ 1600-2250 (av. 1975), 1 ♀ 1400 gm. (BNHS).

COLOURS OF BARE PARTS. Iris brown. Bill yellow with black nail and nostrils. Legs and feet deep yellow (Delacour).

[*Synopsis* (p. 27) includes the Lesser Snow Goose or Blue Goose, *Anser caerulescens caerulescens* (Linnaeus) in the Indian avifauna on the strength

DUCKS, GEESE, SWANS

135

(Rajpur). Cf. Abdulali, H., JBNHS 65: 420.

Extralimital. Breeds in N. Russia from the Kanin peninsula and N. Siberia east to the Lena delta. In winter south to the British Isles, N. Europe, Caspian Sea and central Asia.

85. Jankowski's or Eastern Whistling Swan. *Cygnus columbianus jankowskii* Alpheraky

Cygnus bewickii jankowskii Alpheraky, 1904, Priroda i Okhota, Sep.: 10 (Ussuriland). In Russian, cf. Buturlin 1907, Ibis: 651
Baker, FBI No. 2245, Vol. 6: 382 (= *C. minor*)

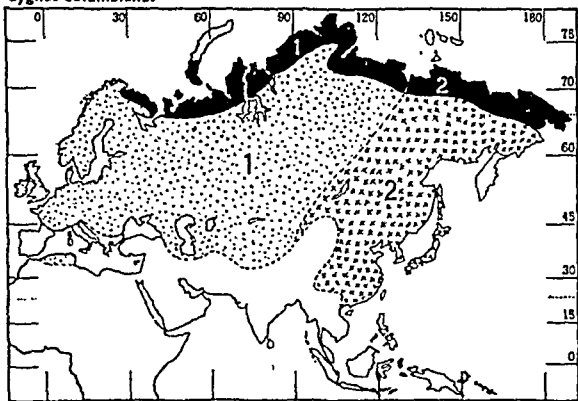
LOCAL NAMES. Unrecorded.

SIZE. Vulture +; length c. 122 cm. (48 in.) of which neck c. 60 cm.

FIELD CHARACTERS. Large, all-white, goose-like, but with much longer and proportionately slenderer neck. A conspicuous yellow patch of variable extent on base of bill (lores) more or less abruptly truncated behind nostril. Terminal portion of bill black. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Very rare straggler in severe winters. Only three examples appear to have been taken within our limits at irregular intervals during the present century: one each in Baluchistan (Khushdil Khan) and NWFP (Campbellpur, Attock dist.), both in December; the third and latest in Kutch (Bluji) in February (JBNHS 47: 167). However, the eastern and western subspecies intergrade, and the distinctness of *jankowskii* is currently doubted by some authorities.

Cygnus columbianus



1 *C. c. bewickii*; 2 *C. c. jankowskii*

134

ANSERIFORMES

of a record published in the Journal of the Bombay Natural History Society (49: 311-12) of a white goose, then so identified, shot on Haigam jheel, Kashmir, in February 1950 — a single bird with a party of Greylags. On a re-examination of the specimen in the BNHS collection by Mr Humayun Abdulali and one of us (SDR) it proves to be a partial albino of *Anser anser* (JBNHS 63(1): 198). This leaves us without any record of the Snow Goose in our area, and the species must therefore be expunged from the Indian list.]

Genus *CYGNUS* Bechstein

Cygnus Bechstein, 1803, Orn. Taschenb., 2: 404, note. Type, by monotypy, *Anas olor* Gmelin

Characterized by very long neck. Bill of moderate size, raised at the base, of nearly equal breadth throughout. Nostrils elliptical, placed very far back. Wing long; 1st primary (as.) about half length of 2nd; 2nd and 3rd subequal and longest. Tail short, well rounded. For further details see Delacour 1954, 1: 57.

Key to the Species

	Page
A Lores and triangular patch between forehead and gape black. A knob at base of bill in adults.....	<i>C. olor</i> 137
B Lores and triangular patch between forehead and gape yellow or orange-yellow, never black. Knob at base of bill lacking.....	1
1 Yellow on bill extending up to or beyond nostril towards tip of bill.....	<i>C. cygnus</i> 136
Yellow never reaching nostril and generally confined to somewhat circular patch on base.....	<i>C. columbianus</i> 134

CYGNUS COLUMBIANUS (Ord)

Key to the Subspecies

Bill shorter (87-96 mm.), not so broad but comparatively high at base. Serrations visible along edge of bill when closed.....	<i>C. c. bewickii</i>
Bill longer (94-99 mm.), broader but less high at the base in comparison. Serrations hardly visible when bill closed.....	<i>C. c. jankowskii</i>

84. Bewick's or Western Whistling Swan. *Cygnus columbianus bewickii* Yarrell

Cygnus bewickii Yarrell, 1850, Trans. Linn. Soc. London, 16: 453 (Yarmouth, England)
Baker, FBI No. 2244, Vol. 6: 381
Plate 3, fig. 10

SIZE. As in 85.

FIELD CHARACTERS. As under 85. See Key to the Subspecies.

STATUS, DISTRIBUTION AND HABITAT. As in 85. Three records from Pakistan (Mardan, Dera Momin, Kabul River — NWFP) and one from Delhi

136

ANSERIFORMES

C. c. jankowskii breeds from the delta of the Lena to the delta of the Kolyma. In winter south to China and Japan.

GENERAL HABITS. This and other swans have been recorded in India singly, in pairs, or small herds, keeping to the larger rivers and open waters. They swim buoyantly, rather high on the water, and feed mostly on aquatic vegetation, submerging their head and neck in the quest and frequently up-ending like ducks to reach the lower levels. Sometimes dives for food like all other swans. They require effort to take off from the water, running some distance along the surface with powerful flaps of the broad wings, but are fast and graceful once properly airborne, flying considerable distances on migration.

MUSEUM DIAGNOSIS. For plumages and other details see Witherby 1939, 3: 174. The eastern race *C. c. jankowskii* is described as differing from *bewickii* only by its larger bill which is longer (94-99 mm. v. 87-96), broader near the tip (32-36 mm. v. 29-32), and higher near the base. Its yellow loreal patch extends a little further towards the nostril and is not so abruptly truncated. No size or other difference.

MEASUREMENTS (of *C. c. bewickii*)

	Wing	Bill — (from feathers)	Middle toe with claw	Tail
♂♀	480-560	87-96	115-128	140-175 mm. (Hartert)

The Kutch specimen (♂?) measured in the flesh:
(from skull)

552	99	140	161 mm. (SA)
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Tarsus 112 mm.

COLOURS OF BARE PARTS. Iris brown. Bill black and yellow (see Field Characters). Legs and feet black.

86. Whooper Swan. *Cygnus cygnus* (Linnaeus)

Anas cygnus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 122 (Sweden)
Baker, FBI No. 2243, Vol. 6: 380
Plate 3, fig. 8

LOCAL NAMES. Unrecorded.

SIZE. Vulture +; length c. 152 cm. (60 in.) of which neck c. 76 cm.

FIELD CHARACTERS. Very large, pure white, goose-like, but with a markedly straight and upright carriage of long neck when swimming. Bill longer than in other swans, with the upper outline running straight from tip to base of forehead. 'Tip of bill black, base and lores yellow, this colour extending forward laterally to the nostrils' (Delacour). Sexes alike; female slightly smaller.

STATUS, DISTRIBUTION AND HABITAT. Very rare straggler in severe winters. Less than a dozen occurrences recorded within our limits sporadically: one in Nepal in 1829, the others in the present century in NWFP Province (Peshawar dist.), Kashmir, Punjab, Sind and Rajasthan. Latest record of three birds on Chenab river at Timmu (Jhang district, W. Pakistan), December 1953 by Nasiruddin Khan (C. D. W. Savage). On large rivers and open dhands or jheels.

DUCKS, GEESE, SWANS

137

MUSEUM DIAGNOSIS. For plumages and other details see Witherby 1939, 3: 168-72; Delacour 1954, 1: 72-5.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	560-630	100-112	112-120	160-200 mm.
♀♀	550-600	95-103	110-118	155-180 mm. (Delacour)

Weight of adults: ♂ c. 7-12 kg.; ♀ c. 6-10 kg.

COLOURS OF BARE PARTS. Iris brown. Bill: base and lores yellow, tip black (see Field Characters). Legs and feet black.

87. Mute Swan. *Cygnus olor* (Gmelin)

Anas olor Gmelin, 1789, Syst. Nat., 1: 502 (Russia)

Baker, FBI No. 2246, Vol. 6: 383

Plate 3, fig. 9

LOCAL NAMES. Unrecorded.

SIZE. Vulture +; length c. 152 cm. (60 in.) of which neck c. 76 cm.

FIELD CHARACTERS. As large as Whooper Swan, also pure white. Easily identified by a prominent black knob on forehead at base of rather long and pointed pinkish orange bill. Slender neck carried in a graceful S-shaped curve. Sexes alike; female slightly smaller.

In subadult birds, as have mostly occurred in our area, traces of the pale grey-brown juvenile plumage persist. The knob is absent or only slightly developed; the feathers of the forehead prolonged to a point.

STATUS, DISTRIBUTION AND HABITAT. Very rare straggler in severe winters. About a dozen specimens in all have been taken within our limits sporadically during the last hundred years (the last in 1911), chiefly in West Pakistan — N. Baluchistan, Sind, the former NW. Frontier Province, and Punjab. Most records are from the Indus and the Punjab rivers, and from Khushdil Khan lake near Quetta, and the Manchar and other large duck-shooting dhands or jheels in Sind. Sight record of a single bird from as far south as the Bombay Deccan, near Poona (Trevenen 1922, JBNHS 29: 287).

Extralimital. Breeds in E. Europe and western Asia. Winters south to the Mediterranean area and Iran.

GENERAL HABITS, FOOD, etc. See under *C. c. bewickii*. When angry this species assumes the characteristic aggressive posture, commonly depicted in pictures, drawing in the neck and arching the wings over the back.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from knob)	Tarsus	Tail
♂♂	560-625	70-85	100-120	190-200 mm.
♀♀	537-570			(Delacour)

Weight c. 6-11 kg.

COLOURS OF BARE PARTS. Iris dark brown. Lores black. Bill: upper mandible reddish horny, the knob, base, nostrils, margins, and nail black; lower mandible wholly black. Legs and feet dull black.

DUCKS, GEESE, SWANS

139

the surf, or backwater lagoons (in coastal areas), fighting at sunset to forage in nearby paddyfields. A remarkable refuge of this type in the Calcutta area is the open duck pond in Alipore Zoo, where hundreds of wild birds congregate every morning to spend the day throughout the winter months, year after year. Flight feeble, flapping reminiscent of a jaçana's. The birds keep wheeling over a tank long after the better sporting ducks have departed as a result of gunfire. They are poor eating and seldom shot by sportsmen.

It is a good diver and also walks well on marshy land, grazing rather like a goose.

VOICE AND CALLS. A shrill wheezy whistling *seasick*, *seasick* constantly uttered on the wing.

FOOD. Largely vegetarian — aquatic weeds and tender shoots and grain of wild and cultivated rice etc. Also small fish, frogs, snails, worms.

BREEDING. Season overall June to October varying locally with early or late monsoon and resulting water conditions; in Ceylon chiefly December-January and July-August. *Nest*, of twigs and grass placed in natural hollows in ancient tree-trunks, or built at moderate heights in the fork of large branches, sometimes well away from water. Old nests of kites, herons and crows frequently utilized. Some nests built on the ground among reeds and scrub bordering a tank or jheel — fairly substantial pads of leaves, rushes, and grass. Unlined with down, but occasionally with a few odd feathers. *Eggs*, 7 to 12 (maximum recorded 17) — commonly 10, ivory white, smooth, becoming stained brownish during incubation. Average size of 100 eggs 46.9 × 36.8 mm. (Baker). Both sexes said to incubate. Period of incubation 22 to 24 days (Baker); 'probably 30 days' (Delacour).

MUSEUM DIAGNOSIS. Distinguished from *D. fulva* by smaller size and by uniformly chestnut upper tail-coverts *contra* creamy white.

Chick (in down). 'Blackish brown and whitish grey, with large [white] spots on back' (Delacour).

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♀	170-204	38-42	40-50	53-55 mm. (Delacour)

Weight c. 450-600 gm.

COLOURS OF BARE PARTS. Iris dark brown. Bill slaty grey to almost black, the nail still darker. Eyelids bright yellow. Legs and feet plumbeous-grey or plumbeous-blue; webs and claws blackish.

89. Large Whistling Teal. *Dendrocygna bicolor* (Vieillot)

Anas bicolor Vieillot, 1816, Nouv. Dict. Nat. Hist., 5: 136 (Paraguay)

Baker, FBI No. 2261, Vol. 6: 413

Plate 11, fig. 3 and Plate 13, fig. 3

LOCAL NAME. *Biddi shari* (Bengal).

SIZE. Domestic duck —; length c. 51 cm. (20 in.).

FIELD CHARACTERS. Similar to the Lesser Whistling Teal; ferruginous, brownish black, cinnamon, and chestnut. Distinguished from it by somewhat larger size, *creamy white* (*contra* chestnut) upper tail-coverts, a black

138

ANSERIFORMES

Genus *DENDROCYGNA* Swainson

Dendrocygna Swainson, 1837, Classif. Bds., 2: 365. Type, by subsequent designation, *Anas arcuata* Horsfield

Bill of moderate size, raised at base and of nearly equal width throughout. Nail prominent and abruptly bent down. Nostrils situated about one-third length of bill from base. Wings rather broad and rounded. Tarsus long and stout, reticulated on lower portion in front. Legs placed more forward than in most Anatidae. Feet large.

The genus is represented almost throughout the tropical world, two species being found in the Indian subcontinent. (For further details see Delacour, loc. cit., 1: 27-34.)

Key to the Species

Upper tail-coverts uniformly chestnut.....*D. javanica*
Upper tail-coverts whitish, sometimes marked with black...*D. bicolor*

88. Lesser Whistling Teal or Tree Duck. *Dendrocygna javanica* (Horsfield)

Anas javanica Horsfield, 1821, Trans. Linn. Soc. London, 13: 199, pl. 1 (Java)

Baker, FBI No. 2260, Vol. 6: 411

Plate 11, fig. 4 and Plate 13, fig. 4

LOCAL NAMES. *Seelhi*, *Seelkahi* (Hindi); *Sharāl* ♂, *Sharāli* ♀ (Bengal); *Hansrali* (Orissa); *Sorali*, *Horali* (Assam); *Ting* (Manipur); *Bongfang daophlantu* (Cachar); *Teranda* (Malayalam); *Chilli thārā* (Tamil, Ceylon); *Sērūcā*, *Thumba sērūcā* (Sinhala); *Nāni sīvoti* (Gujarat); *Chiku* (Sind); *Chayi* (Kutch).

SIZE. Domestic duck —; length c. 42 cm. (17 in.).

FIELD CHARACTERS. A small pale brown and maroon-chestnut coloured duck, confusable with no other of the same size except the Large Whistling Teal. Uniformly chestnut upper tail-coverts distinguish it from the latter, in which they are creamy white. Feeble, flapping rail-like flight, and the shrill wheezy whistling notes constantly uttered on the wing are leading clues to its identity. Sexes alike.

Young (immature). Duller coloured. Mantle feathers margined with dingy fulvous instead of golden rufous. Lower plumage pale dull fulvous brown.

STATUS, DISTRIBUTION AND HABITAT. Resident; moving about locally with drought and flood. Also partial local migrant. All India, Andaman and Nicobar islands, both Pakistans, Nepal (terai), Ceylon. Affects reedy and vegetation-covered tanks and jheels in plains country.

Extralimital. Burma eastwards to coast of S. China, Malaysia, Thailand, S. Viet Nam, Ryukyu Is., SW. Borneo, Sumatra, Java.

GENERAL HABITS. Sociable. Keeps in small parties of 10 to 15, occasionally fairly large flocks, on and around weedy tanks and inundated paddy-fields. Perches freely in the surrounding trees. Avoids open water and large rivers. Mainly a nocturnal feeder, seeking safety during daytime on undisturbed lotus-covered village tanks, or on the open sea just beyond

140

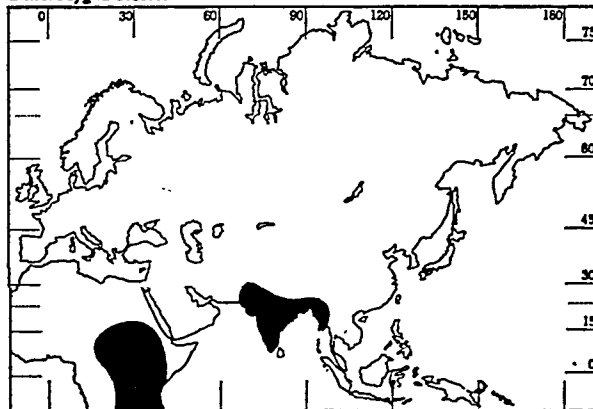
ANSERIFORMES

line down back of neck, and a broad, diffuse rusty-whitish collar round middle of foreneck. Sexes alike.

Young (immature). Duller; the chestnut portions more brown.

STATUS, DISTRIBUTION AND HABITAT. Resident, nomadic, and possibly also local migrant in part. Scattered widely but sporadically in many areas; everywhere rather scarce and much less common than *D. javanica*. Both Pakistans, N. India south to the Deccan, Assam, Manipur; Ceylon (rare vagrant). Frequents reedy and vegetation-covered jheels and tanks in plains country.

Extralimital. Range very remarkable: far flung, discontinuous and fragmentary, yet producing no geographical variation. S. California, Mexico, northern tropical S. America, Brazil, Peru, south to Paraguay and N. Argentina. East Africa from Lake Chad to Natal; Madagascar. In Asia, besides the Indian subcontinent and Ceylon, only Burma south to Pegu.

Dendrocygna bicolor

Residential range (Also Madagascar and Central & South America)

GENERAL HABITS. Keeps in smaller flocks and to rather more secluded weed-covered tanks, but on the whole very similar to *D. javanica* with which it is often found in association. Wilder and faster on the wing.

VOICE. Also similar, but said to be shriller.

FOOD. Aquatic vegetation taken while swimming and diving.

BREEDING. Apparently more common in Bengal (Nadia dist.) and East Pakistan (Khulna and Jessore districts) than elsewhere in our limits. Season, June to October, chiefly July-August. *Nest*, of sticks roughly put together in hollows in ancient tree-trunks or in forks of large branches, at moderate heights. Very like that of Lesser Whistling Teal; likewise appropriates disused nests of kites and crows. Occasionally built on ground among rank vegetation at edge of a tank. *Eggs*, 6-8, ivory white, smooth, like those of the preceding species only somewhat larger. Average size of 50 eggs

DUCKS, GEESE, SWANS

141

56.6 × 42.9 mm. (Baker). Share of the sexes in incubation unrecorded. Incubation period 30-32 days (Delacour).

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit. Chick (in down). Pale greyish brown; white markings as in *D. javanicus* less contrasty.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	200-235	42-52	56-61	52-58 mm. (Delacour)

Females slightly smaller than males. Weight ♂ c. 650-900 gm., ♀ c. 450-730 gm. COLOURS OF BARE PARTS. Iris light to dark brown. Bill dusky black with bluish slate of varying extent at base. Legs and feet pale dusky plumbeous or bluish slate, to nearly black. Claws black.

Genus TADORNA von Oken

Tadorna Lorenz von Oken, 1817, Isis von Oken 1, col. 1183. Type, by tautonymy, *Anas tadorna* Linnaeus

Casarea Bonaparte, 1838, Geogr. and Comp. List: 56. Type, by monotypy and tautonymy, *Anas rutila* Pallas = *A. ferruginea* Pallas

Goose-like in shape and habits. Bill short, high at base, concave above, flattened and turned up at tip. Nail small and abruptly turned downward and inward; thus bill more or less hooked at tip. Nostrils less than one-third length of bill from base. Tarsus scutellated in front near foot. Wings long and pointed. Tail rounded, of fourteen feathers. Sexes more or less alike.

Two species occur in our limits, formerly placed under separate genera.

Key to the Species

Chestnut-coloured above and below, head paler chestnut, large white patch on bend of wing, bill black.....*T. ferruginea*
Black and white above and below, head black, chestnut girdle around breast and shoulders, bill red.....*T. tadorna*

90. Ruddy Shelduck or Brahminy Duck. *Tadorna ferruginea* (Pallas)

Anas (ferruginea) Pallas, 1764, in Vroeg, Cat. d'Ois., Adumbr.: 5 (Tartary) Baker, FBI No. 2263, Vol. 6: 416

Plate 11, fig. 1 and Plate 13, fig. 1

LOCAL NAMES. *Chākwa* ♂, *Chākui* ♀, *Sūrkhāb*, *Lāl* (Hindi); *Mungh*, *Lālo*, *Kwancha*, *Kathiun* (Sind); *Chākā-chāki* (Bengal); *Rāmkaon*, *Chākoī-chākoua* (Assam); *Kāsār pāndia*, *Pānda hansa* (Orissa); *Sarza*, *Chakravak* (Marathi); *Bāpānā chiluwā* (Telugu); *Thārā* (Tamil); *Loku sēwō* (Sinhala).

SIZE. Large domestic duck; length c. 66 cm. (26 in.).

FIELD CHARACTERS. A large orange-brown or cinnamon-brown duck with paler head and neck, a prominent metallic green speculum on wing with a white patch (wing-coverts) in front of it, and black wings and tail.

DUCKS, GEESE, SWANS

143

GENERAL HABITS. Less gregarious than most other ducks. Usually seen in pairs and small parties, less commonly in flocks of twenty or more. But occasional enormous congregations have been recorded, e.g. on Chilka lake in Orissa, one such estimated by an experienced duck hunter (L. A. Craven) at 'not less than 15,000' (JBNHS 49: 313). Rather aggressive in disposition, and intolerant of feeding competitors of its own and other species. Its flesh is considered rank and fishy, therefore sportsmen usually leave it alone. Nevertheless it is excessively wary and difficult to approach in its winter quarters, flying off and giving the alarm to other ducks long before they have scented danger. Contrary to this, ridiculously tame and confiding on its breeding-grounds, e.g. in Ladakh and Tibet where conditioned to non-molestation from the Buddhist inhabitants, even settling and waddling about on the flat roofs of Tibetan houses and nesting in lumber rooms (Ludlow, JBNHS 33: 79). Walks well and with ease; grazes on dry river banks and grassy lake margins like geese.

FOOD. Omnivorous; takes grain, tender shoots and tubers, crustaceans, molluscs, aquatic insects, reptiles, etc. Alleged to share carrion with vultures occasionally; this needs confirmation.

VOICE AND CALLS. A loud, nasal, clanging *aang-aang* rather like the Greylag's in the distance, uttered on the ground as well as in flight.

BREEDING. Around the high-altitude lakes and swamps above c. 4000 m. in Ladakh, e.g. Pangong, Tsokri, and Tso Moriri. Possibly also in the Khumbu region of Nepal at c. 5000 m. *Season*, chiefly May and June. *Nest*, a thick pad of white down (the duck's own) in a hole or fissure in a cliff, often far from water and maybe several hundred metres above a lake or bog. The ducks flying about the rugged contours or alighting like pigeons on rocky pinnacles high up on a forbidding mountainside present a curiously unrealistic spectacle. *Eggs*, 6 to 10, ivory white, moderately broad ovals, about equal at both ends. Average size of 85 eggs 67.0 × 47.0 mm. (Baker). Incubation mainly by female (?). Incubation period 28-30 days (Delacour). Both parents tend the ducklings, frequently of more than one brood: in one case as many as 34 ducklings accompanying a single pair recorded (Ludlow, *Ibis* 1928: 229). The downy chicks probably shuffle and tumble their way down the rugged slopes to the water. Osmaston suggests their being carried down in the parent's bill. The actual process has not been observed.

For courtship display etc. see Witherby 1939, 3: 228.

MUSEUM DIAGNOSIS. For description of plumage see Baker 1929, loc. cit. Both sexes possess a rudimentary spur on the carpal joint whose significance is not understood.

Chick (in down). Above, dark brown marked with white. Below, white. Very similar to chick of *T. tadorna* but with lores dark brown as on crown, *contra* white (Ticehurst).

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♂	365-387	43-48	60-66	142-146 mm.
♀ ♀	340-355	38-42	55-60	140-142 mm. (Delacour)

142

ANSERIFORMES

In overhead flight orange-brown body, white underside of wings and black quills (remiges) diagnostic.

Male, with narrow black collar or ring round base of neck in breeding season; obsolete in winter.

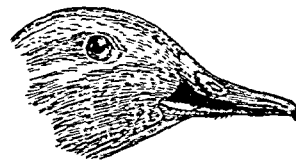
Female, similar but with head paler and whitish and no black collar.

Young (immature). Like female but with a grey wash on scapulars and tertiaries.

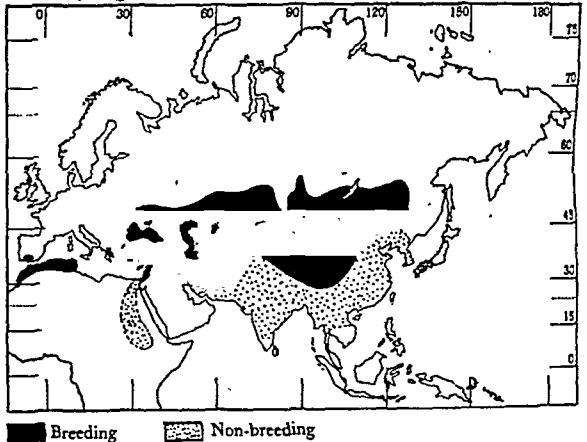
STATUS, DISTRIBUTION and HABITAT. Winter visitor (breeding in our area only in Ladakh). All India (rare or absent in the south), both Pakistan, Nepal (possibly breeding), Ceylon (occasional). Affects large open lakes and rivers with shingle banks and mudspits.

Extralimital. Breeds in S. Spain and from SE. Europe, Near East, Caspian Sea, across Asia to Transbaikalia, south to Himalayas and SW. China. [Also in SE. Iran and Seistan.] Winters in southern half of its breeding range to the Nile Valley; India and S. China. Occasional in Britain (Peter Scott).

MIGRATION. Arrives in N. India c. October/November; most have departed by mid-April. A juvenile ringed in Kirghiz SSR (c. 42°N., 75°E.) in July 1959 was recovered near Lahore (c. 31°30'N., 74°20'E.) in October of the same year (JBNHS 58: 284).



Tadorna ferruginea



144

ANSERIFORMES

Weight ♂ 3 lb. to 4 lb. 4 oz. (c. 1360 to 2140 gm.); ♀ 2 lb. 10 oz. to 3 lb. 5 oz. (c. 940 to 1500 gm.) (Hume); 5 ♂♂ 820-1500 (av. 1034), 3 ♀♀ 950-1100 (av. 1026) gm. (BNHS).

COLOURS OF BARE PARTS. Iris rich brown. Bill, legs, and feet black.

MISCELLANEOUS. As *Chākwa-chākui* (its commonest Hindi name for male and female respectively) the Brahminy Duck has won immortality in popular folklore. Legend describes the birds as a pair of lovers torn apart by unkind fate, ceaselessly calling and answering each other in anguished tones.

91. Common Shelduck. *Tadorna tadorna* (Linnaeus)

Anas Tadorna Linnaeus, 1758, Syst. Nat., ed. 10, 1: 122 (Sweden) Baker, FBI No. 2262, Vol. 6: 414

Plate 11, fig. 2 and Plate 13, fig. 2

LOCAL NAMES. *Shāh chākwa*, *Safed sūrkhāb*, *Rararia* (Hindi); *Shāh chākā* (Bengal); *Thār jo mirgi* (Sind).

SIZE. Domestic duck ±; length c. 61 cm. (24 in.).

FIELD CHARACTERS. A handsome, strikingly coloured duck, chiefly white, black, and chestnut, with a distinctive bright red upturned bill and pink legs.

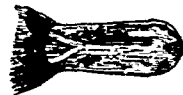
Male (adult). Above, head and neck glistening greenish black. Rest of upperparts white with two broad black bands along either side of upper back (scapulars). Glistening green wing-speculum bordered above by a chestnut patch. Below, white. A broad chestnut hoop or girdle around upper breast and shoulders. A broad black band from breast to vent and a conspicuous red knob above base of bill.

Female considerably smaller and duller coloured, with the chestnut breast feathers edged with black vermiculations.

Young (immature). Head and neck dull blackish; interscapulars dark brown; no chestnut breast band but sides sometimes suffused with chestnut.

STATUS, DISTRIBUTION and HABITAT. Casual and uncommon winter visitor; fairly plentiful in certain years. Recorded in W. Pakistan (Baluchistan, Sind, the former NWF Province), Punjab, Kashmir, Delhi, Uttar Pradesh (Mainpuri, Banda, Sitapur districts), Bengal (Murshidabad district, Calcutta Salt Lakes), Assam (Brahmaputra river), Manipur (Logtak lake), East Pakistan, Bihar (Monghyr, Darbhanga and Patna districts), Orissa (Chilika lake), Gujarat (Kutch, Saurashtra), Madhya Pradesh (Neemuch), south to the Deccan (Poona), Nepal (Kosi R.). Has occurred regularly in small numbers in recent years in parts of Sind and Punjab (C. D. W. Savage, 1966 in *epist.*). On open lakes and large rivers. Not recorded on sandy and muddy sea coasts and estuaries where chiefly met with in Europe.

Extralimital. Breeds on coasts of W. Europe, including the British Isles; locally about the shores of the Mediterranean, Black, and Caspian seas, east on the saline lakes of central Asia to E. Siberia, Mongolia, and



DUCKS, GEESE, SWANS

145

Tibet. Winters from southern part of its breeding range to N. Africa, Arabia, India, south China and Japan' (Peter Scott).

GENERAL HABITS. Normally more gregarious than the Brahminy. In our area occurs sporadically and irregularly in small parties here and there in the northern parts of the subcontinent. Perhaps more regular on the larger open lakes such as the Manchar and Chilka, and on broad rivers, e.g. the Indus and Brahmaputra, with extensive mudspits and shingle banks. 'Hundreds' recorded on the Chilka in December 1937; practically none the following year! Keeps to mudflats more than water, sauntering about with the facility of geese.

FOOD. Molluscs, crustaceans, insects, and worms. Also algae, seeds, leaves and tubers of aquatic plants, etc.

VOICE AND CALLS. Apparently not heard in India. Recorded elsewhere as a clear whistle (male) and a harsh short quack (female).

BREEDING. The only record in our area is from W. Pakistan — near Khushdil Khan lake, Quetta dist. (Christison, JBNHS 43: 486). Breeds more commonly in neighbouring Seistan (Persian Baluchistan). *Season*, May-June. *Nest*, a bed of down in a natural crevice or hollow in a cliff or bank. *Eggs*, 8 to 16, pearly white. Average size of 100 eggs 65.7 × 47.3 mm. (Baker). (For further details see Witherby 1938, 3: 223.)

MUSEUM DIAGNOSIS

MEASUREMENTS	Wing	Bill	Tarsus	Tail
♂♂	318-350	52-60	50-57	110-130 mm.
♀♀	290-334	44-54	48-52	100-115 mm.
				(Delacour)

Weight ♂ 2 lb. to 2 lb. 14 oz. (c. 910-1300 gm.); ♀ 2 lb. to 2 lb. 2 oz. (c. 910-960 gm.) (Hume & Marshall).

COLOURS OF BARE PARTS. Iris brown. Bill deep fleshy red to coral-red; nail darker and brownish. Legs and feet fleshy pink to fleshy red; claws black.

Genus ANAS Linnaeus

Anas Linnaeus, 1758, Syst. Nat., ed. 10, 1: 122. Type, by subsequent designation. *Anas boschas* Linnaeus = *Anas platyrhynchos* Linnaeus (Lesson, 1828, Man. d'Orn., 2: 417)

Includes the Dabbling or Surface-feeding ducks, characterized by shorter tail and shorter legs than shelducks (*Tadorna*) set farther back in the body, producing a more waddling gait on land. Tarsus with shields in front. Hind-toe (hallux) with a much narrower inner lobe than in Pochards or the so-called Diving ducks. Also characterized by a common behaviour and display pattern.

Genus cosmopolitan. Represented in India by twelve species many of which were formerly assigned to separate genera. Most species sexually dimorphic. For further details see Delacour 1956, 2: 17-22.

Genus MARMARONETTA Reichenbach

Marmaronetta Reichenbach, 1832, Av. Syst. Nat. p. 9. Type by monotypy, *Anas angustirostris* Ménetriès

Cf. Johnsgard, P. A., 1961, Bull. Brit. Orn. Cl. 81(3): 37-43; Sage, B. L., 1963, ibid. 83: 161-4.

See No. 92, p. 147.

DUCKS, GEESE, SWANS

147

Page

b ¹ Outer edge of tertiaries white forming conspicuous patch on wing	c ¹
White patch absent	c ²
c ¹ Speculum blue-violet or green	<i>A. poecilorhyncha</i>
c ² Speculum purple-blue bordered in front and behind with black and white band, the white predominating	<i>A. platyrhynchos</i>
Speculum dark dull brown splotched with green or bronzy overtone	<i>A. acuta</i>
Outer secondaries black except two or three in the centre which are bronze-green	<i>A. gibberifrons</i>
a ¹ Speculum white	<i>A. strepera</i>
Speculum dull blackish, sometimes glossed with green and bordered inwardly by white edges of long pointed tertiaries	<i>A. penelope</i>
Speculum: Outermost secondaries black with narrow white tips, those next to them brilliant metallic green sometimes narrowly tipped with black and white, their coverts tipped rufous	<i>A. crecca</i>
Speculum: Outermost secondaries black with wide white tips, those next to them bronze-green at base, then black tipped with white, their coverts tipped rufous	<i>A. formosa</i>

92. Marbled Teal. *Marmaronetta angustirostris* (Ménetriès)¹

Anas angustirostris Ménetriès, 1832, Cat. Rais. Obj. Zool. Caucase: 58

(Lenkoran, Transcaspiia)

Baker, FBI No. 2277, Vol. 6: 445

Plate 9, fig. 8 and Plate 10, fig. 8

LOCAL NAME. *Chai* (Sind).

SIZE. Domestic duck —; length c. 48 cm. (19 in.).

FIELD CHARACTERS.

Adult. *Above*, overall greyish brown, spotted or marbled with pale greyish buff and blackish. A large brown patch from eye to nape. A slight nuchal crest. Speculum or wing-mirror inconspicuous, dull pale brown. *Below*, sullied white, more or less barred transversely with brown. Sexes alike; female slightly smaller.



× c. 1

Young (immature). Like adult but markings duller and greyer, the large creamy spots on the upperparts lacking. Underparts almost uniform.

STATUS, DISTRIBUTION AND HABITAT. Peripheral breeding range in W. Pakistan (Baluchistan, and possibly also Sind where not uncommon throughout the year, e.g. on the Manchar, and fairly abundant in winter). Chiefly a rare winter visitor to northern parts of the subcontinent. Has occurred frequently but erratically in the former NWF Province (Nowshera), Punjab

Anas angustirostris has been transferred to genus *Marmaronetta*, see p. 145.

146

ANSERIFORMES

Key to the Species

Adult males in breeding plumage

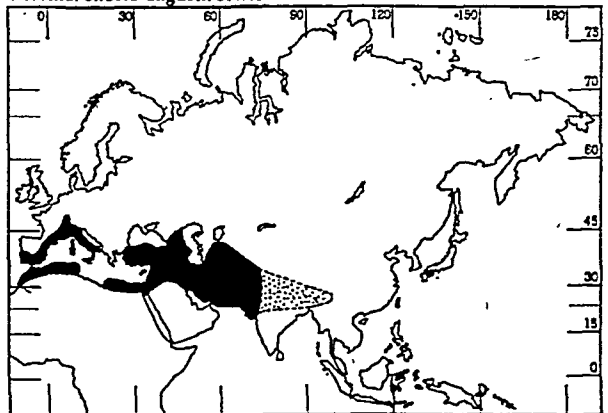
	Page
Speculum always present	
1 Bill spatulate	<i>A. cybeata</i> 172
Bill not spatulate	a
a Outer wing-coverts blue or blue-grey	<i>A. querquedula</i> 169
Outer wing-coverts not blue or blue-grey	I
I Central tail-feathers greatly lengthened and pointed, extending from 75 to 100 mm. beyond upper tail-coverts	<i>A. acuta</i> 149
Central tail-feathers moderate in length and not elongated	a ¹
a ¹ Large-sized (length c. 61 cm. = 24 in.); bill broad (23 mm. across at widest point)	b ¹
Medium-sized (49-56 mm. = 19-22 in.); bill narrow (15-18 mm. across at widest point)	b ²
Smaller-sized (38-43 cm. = 15-17 in.)	b ³
b ¹ Speculum purple-blue or green; outer webs of long pointed tertiaries edged with white	<i>A. poecilorhyncha</i> 157
Speculum purple-blue; no white on edges of tertiaries	<i>A. platyrhynchos</i> 160
b ² Tail-coverts longer than rectrices	<i>A. falcata</i> 165
Tail-coverts shorter than rectrices	c ¹
c ¹ Central tail-feathers extending 30 mm. or more beyond upper tail-coverts	<i>A. penelope</i> 167
Central tail-feathers extending less than 30 mm. beyond upper tail-coverts	<i>A. strepera</i> 163
b ³ Speculum: Outermost secondaries black with narrow white tips, those next to them brilliant metallic green and their coverts tipped rufous	<i>A. crecca</i> 151
Speculum: Outermost secondaries black with wide white tips, those next to them bronze-green at base, then black tipped with white and their coverts tipped rufous	<i>A. formosa</i> 154
Speculum: Outer secondaries black, except two or three in the centre which are bronze-green	<i>A. gibberifrons</i> 155
Adult females, and males in eclipse plumage	
Speculum always present	1
1 Bill spatulate	<i>A. cybeata</i> 172
Bill not spatulate	a
a Outer wing-coverts blue or blue-grey	<i>A. querquedula</i> 169
Outer wing-coverts not blue or blue-grey	I
I Underparts brown or mottled brown	a ¹
Underparts white or whitish	a ²
a ¹ Small nuchal crest	<i>A. falcata</i> 165
Nuchal crest absent	b ¹

148

ANSERIFORMES

(Bahawalpur), and as a straggler in Uttar Pradesh, Madhya Pradesh, Rajasthan (Bikaner, Bharatpur districts), Gujarat (Kutch, Bhavnagar, Ahmedabad, and Baroda districts), Bengal (Calcutta area), Assam (Sibsagar district), Maharashtra (Ahmednagar, Poona). Affects reedy and matted vegetation-covered jheels. Flooded tamarisk forest, etc., avoiding open water.

Extralimital. Resident (breeds) in Mediterranean Basin from southern Spain to Near East, Persia, Baluchistan, and NW. India (Peter Scott).

Marmaronetta angustirostris

■ Breeding range ▨ Winter extension

GENERAL HABITS. Normally in pairs or small parties; occasionally larger flocks in winter. Habits rather coot-like; dropping into cover after a short flight rather than flying round and round with other ducks when disturbed by gunfire. Feeds chiefly swimming.

FOOD. Almost entirely vegetarian — shoots, tubers, seeds of aquatic plants. Partly also worms, molluscs, aquatic insects and larvae.

VOICE AND CALLS. Silent. Male's calls variously described as a 'weak nasal squeak', 'a whistling croak' and 'a low croaking whistle'. Also a loud and abrupt quack (female?). But apparently insufficiently known and needs accurate recording.

BREEDING. Breeds in West Pakistan (Khushdil Khan lake near Quetta c. 1500 m. altitude; Sonmiani jheel, Las Bela); possibly also on the Manchar in Sind, and in Gujarat as conjectured but not yet substantiated. *Season*, May/June. *Nest*, of rushes and weeds, unlined or sometimes scantily so with down; concealed among weeds and rushes on swampy ground or on an islet in a lake. *Eggs*, 9 to 12, pale creamy, rather long elliptical oval in shape; with a smooth glossy surface. Average size of 122 eggs 46.5 × 34.2 mm. (Baker). Share of the sexes in incubation not recorded. Incubation period 25 days (Delacour).

MUSEUM DIAGNOSIS. Bill long, narrow, high near base, depressed beyond the nostrils, with very short lamellae. The absence of a metallic speculum is a curious departure from the normal condition in its close relatives of the genus *Anas*. Previously placed in a separate genus, *Marmarettia*, considered from structure and habits to bridge *Nettion* with *Anas*, now united (Johnsgaard 1961, Bull. B.O.C., 81: 37-43).

Chick (in down). Like Mallard (q.v.) in pattern, but brownish grey above, pale grey below.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	205-215	43-45	36-38	85-105 mm.
♀♀	198-20	—	—	—

(Delacour)

Weight ♂ 1 lb. 3 oz. to 1 lb. 5 oz. (c. 535-592 gm.); ♀ 1 lb. to 1 lb. 3 oz. (c. 450-535 gm.) (Hume & Marshall).

COLOURS OF BARE PARTS. Iris brown. Bill blackish with a dull grey-green triangle at the base (more pronounced in ♀) and a whitish subterminal line in ♂. Legs and feet olive-brown, the webs blackish.

93. Pintail. *Anas acuta* Linnaeus

Anas acuta Linnaeus, 1758, Syst. Nat., ed. 10, 1: 126 (Sweden)

Baker, FBI No. 2274, vol. 6: 437

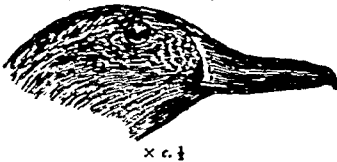
Plate 9, fig. 2 and Plate 10, fig. 2

LOCAL NAMES. *Sand*, *Semkh pār* (Hindi); *Kotūāli*, *Drigōsh* (Sind); *Dhrūgūkhō* (Kutch); *Dig hāns*, *Bedā digar*, *Sholanchō* (Bengal); *Dighēnch* (Mirshikars, Bihar); *Digunch* (Nepal); *Nanda*, *Nanja* (Orissa); *Mārkalian* (Tamil); *Nejāl hāns*, *Dighal negi* (Assam); *Daophilantus loubi* (Cachar); *Mehunga* (Manipur).

SIZE. Domestic duck —; length ♂ c. 56-74 cm. (22-29 in.).

FIELD CHARACTERS.

Male (breeding). Elongated body, slender neck, and long pointed pin-like central tail-feathers diagnostic. Black under tail-coverts with a broad buff patch in front, additional pointers. Head, face, and throat chocolate; hindneck black. A white band running down either side of neck, broadening into white of breast and belly. Upper plumage and flanks largely grey, finely vermiculated with black. Conspicuous silver-grey edges to long black pinnae scapulars and upper tail-coverts. Speculum metallic bronze-green.



× c. 1/2

Male (in eclipse). More or less like female, sometimes with the mantle dark ash- or blackish grey coarsely vermiculated with greyish white.

audible from considerable heights. One of the species most sought after by duck hunters both for its sporting qualities and its excellence as a table bird. Seems uncannily aware of this human predilection and is always amongst the first to zoom out of gunshot range when shooting has commenced on a jheel, or to clear right away to other waters while the less prized species are still milling around and paying the toll. Largely a crepuscular and nocturnal feeder, flock after flock flying at sundown from the daytime retreat on some weedy jheel to forage in favourite marshes or squelchy paddyfields, and back again before dawn. This morning and evening 'flying' provides exhilarating sport for duck hunters. Where hunting pressure is not heavy, may continue to feed till the sun is well up, or even during the day, walking about freely and grubbing on marshy tank edges or in wet paddy stubbles. In shallow water the food is procured by the characteristic tipping up or up-ending of the non-diving or surface-feeding ducks. A flock engaged in this way, with merely the tail ends projecting above the surface here and there, presents a singularly comical sight.

FOOD. Chiefly vegetable matter — grass, corns, shoots, and seeds of aquatic plants, and wild and cultivated rice. To a lesser extent also molluscs, worms, water insects and larvae.

VOICE. Very silent. No calls recorded in India.

BREEDING. Entirely extralimital. For particulars of courtship display, nesting, etc. see Withersby 1939, 3: 271-2.

MUSEUM DIAGNOSIS. For description of plumages, moults, etc. ibid.: 273-5.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	254-287	48-59	39-44	172-209 mm
♀♀	242-266	45-50	38-42	—

Weight ♂ 1 lb. 10 oz. to 2 lb. 12 oz. (c. 730-1250 gm.); ♀ 1 lb. 2 oz. to 1 lb. 14 oz. (c. 500-850 gm.) (Hume & Marshall).

COLOURS OF BARE PARTS. Iris dark brown, often tinged with red. Bill light to dark plumbeous, the culmen, lower mandible, and base, darker. Legs and feet dark plumbeous-grey or blackish; webs, claws, and joints blacker.

MISCELLANEOUS. Flight speed, chased c. 104 km./h (Sprunt & Zim). Longevity (from ring recovery) 17 years 10 months (Bear River Refuge, Utah, U.S.A.).

94. Common Teal. *Anas crecca crecca* Linnaeus

Anas crecca Linnaeus, 1758, Syst. Nat., ed. 10, 1: 126 (Sweden)

Baker, FBI No. 2271, Vol. 6: 431

Plate 9, fig. 9 and Plate 10, fig. 9

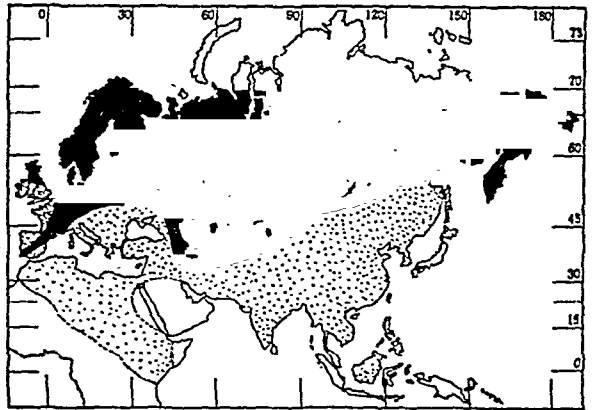
LOCAL NAMES. *Chāhī mīrghāhī*, *Kerra*, *Lohiya kerra*, *Charter*, *Patāri*, *Souchareka* (Hindi); *Neorib*, *Patāri hāns*, *Tālibitri* (Bengal); *Bajila* (Mirshikars, Bihar); *Bajila* *geini* (Nepal); *Kerds* (Sind); *Chakrag* (Marathi); *Sindri*, *Kūdwai* (Tamil); *Terrada* (Malayalam); *Solari kākki* (Kannada); *Kelivari*, *Chila hāns*, *Patāri hāns* (Assam); *Daophilantus kashiba* (Cachar); *Sirrad* (Sinhala); *Surit* (Manipur).

SIZE. Half-grown domestic duck ±; length c. 38 cm. (15 in.).

FIELD CHARACTERS.

Female (adult). Mottled brown and buff with pointed but pinless tail. Rather like slender female Gadwall but lacking its characteristic white wing-patch and orange bill. Absence of prominent speculum distinguishes her from female Mallard. In overhead flight the peculiar trident-like ending — the two feet with pointed tail projecting between — identifies it.

Anas acuta



■ Breeding ▨ Non-breeding

Young (immature) male has wing coloration of adult male, but with faint light edges to wing-coverts. Rest like female.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor. Common, widespread, and locally abundant: all India, both Pakistans, Nepal, Ceylon; probably also Andaman and Nicobar islands whence not yet reported. Affects reedy and vegetation-covered jheels, brackish lagoons, and estuaries.

Extralimital. 'Breeds in the northern parts of Europe, Asia, and N. America, including British Isles. Winters south to N. Africa, the Nile Valley, Ethiopia, the Persian Gulf, India, Ceylon, Burma, Siam, S. China...' (Peter Scott).

MIGRATION. Arrives in W. Pakistan and NW. India in September and October; normally well spread out east and south by middle of November. Mostly gone by end March. Recoveries of Russian-ringed birds in India and vice versa suggest that our migrants originate chiefly from the Caspian region and Siberia, lying between c. 45° and 65°N. lat. and c. 48° and 100°E. long. — at single straight-line distances on the map of up to about 5000 km.

GENERAL HABITS. One of our commonest migratory ducks. Keeps in flocks of 15 or 20 to several hundred strong. Early in the season parties often composed entirely of drakes. Usually wild and wary, swift on the wing, and invariably seeming in tearing haste. The peculiar hissing or whishing sound produced by the rapid wing-beats of a flock overhead is

Male (breeding). Pencilled greyish, with chestnut head and a broad metallic green band running backward from in front of eye to nape, narrowly bordered above and below with whitish. A tricoloured wing bar (speculum) — black, metallic green, buff — particularly conspicuous in flight.

Female (in eclipse). Head as in female, but crown and nape blackish brown, the feathers narrowly edged with buffish cinnamon. Mantle and scapulars edged and marked with rufous-buff.

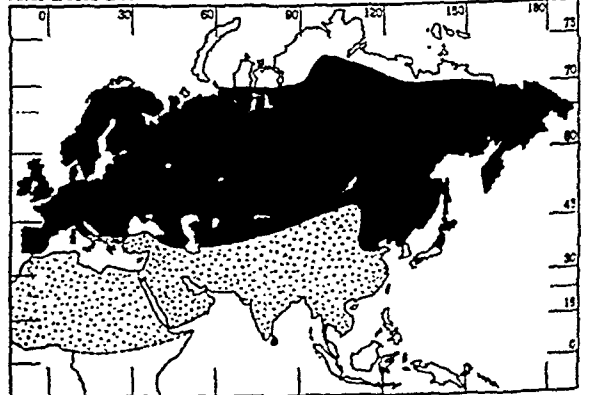
Female (adult). Mottled dark and light brown, with black and green wing speculum, and pale underparts. May be confused with female Garganey (q.v.), but the prominent speculum is distinctive. At rest, and at close range, speckled brown throat (c. unmarked whitish) is also a pointer.

Young (immature). Belly spotted; secondaries shorter.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor. Common, widespread and locally abundant: all India, both Pakistans, Nepal, Ceylon, Andaman, Nicobar, and Maldives islands. Affects tanks, jheels, and marshes, chiefly freshwater.

Extralimital. 'Breeds in Europe and Asia from Iceland to China, Manchuria and Kurile Islands, and Japan. Winters as far south as N. Africa, Nile Valley, Somaliland, Persia, India, to southern China and the Philippines' (Peter Scott).

Anas crecca crecca



■ Breeding ▨ Non-breeding

DUCKS, GEESE, SWANS

153

MIGRATION. Together with the Garganey, one of the earliest ducks to arrive in autumn, numbers being already in W. Pakistan and NW. India by middle or end August, the influx continuing till November, by which time the birds are widely spread out. Many birds moult the remiges after reaching their winter quarters in India, becoming flightless for a time. Mostly gone again by end March; some staying on as late as May. Observed on northward passage in Ladakh, at over 3000 m. altitude in April (Meinertzhagen). Recoveries to date of Russian-ringed Teal in W. Pakistan and India, and Indian rings in the USSR, indicate that our winter visitors are derived from the Caspian region east to Kirghiz SSR and beyond (between c. 50° and 132°E.), and north in Siberia to c. 70°N.

GENERAL HABITS. One of our commonest and most abundant ducks, widely scattered in the plains country on every sort of marsh and inland water, large or small, provided it is shallow, has a muddy bottom, and a plentiful supply of aquatic vegetation. Judged by the qualities that most appeal to the sportsman—abundance, swiftness and versatility on the wing, and palatability—one of our gamiest species. Keeps in small parties and large flocks of up to 200 or more, congregating at times in swarms (together chiefly with the Garganey) that literally blacken acres of marshland and sky, e.g. in the Little Rann of Kutch, before emigration.

On migration, or when commuting to and from distant nocturnal feeding-grounds, the birds fly in a succession of wide Vs or wavy convex lines with a broad front; when disturbed by gunfire on a jheel, usually in close-knit packs which turn and twist in unison with the speed and agility of the smaller waders. They have an uncanny ability to jink in mid-air—braking to a sudden momentary halt in full flight, changing course and rocketing vertically into the sky upon discovering the gunner's ambush or to avoid his forwardly directed shots. Feeding is done by up-ending in shallow water as well as by grazing and grubbing on marshy land.

FOOD. Almost entirely vegetarian: shoots, tubers, and seeds of aquatic plants, and grains of wild and cultivated rice.

VOICE AND CALLS. A low musical far-sounding *krit, krit* by the male; a short sharp quack by the female, usually uttered when suddenly alarmed.

BREEDING. Entirely extralimital. For particulars of courtship display, nesting, etc. see Witherby 1939, 3: 246.

MOULT. Some individuals—presumably our earliest arrivals—leave their breeding grounds even before the post-nuptial (autumn) moult, contrary to the norm in migratory ducks. They shed their wing quills simultaneously after reaching their winter quarters, becoming completely flightless for a time.

MUSEUM DIAGNOSIS. For description of plumages, moults, etc. see Witherby 1939, 3: 248-50.

Chick (in down). Very similar to Mallard (q.v.), blackish brown and yellow, with two dark lines on face.

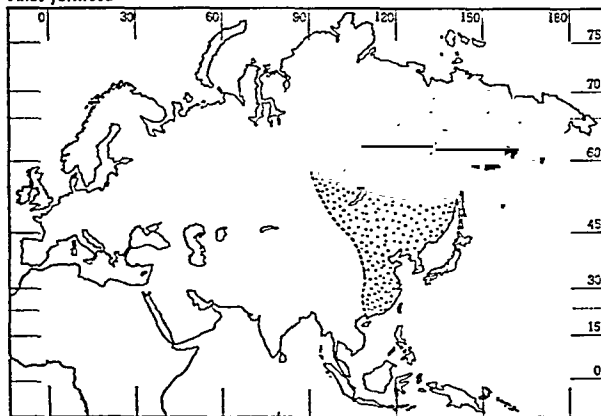
MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	175-192	34-38	27-30	62-72 mm.
♀♀	170-180	31-36	—	—

(Delacour)

DUCKS, GEESE, SWANS

155

Anas formosa

■ Breeding ▨ Non-breeding

GENERAL HABITS. Nothing recorded in India except that in one instance in Manipur the birds were in a party of 8 to 10.

VOICE AND CALLS. Described of captive birds as exactly like the loud clucking of a hen.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Apart from larger size, female differs from female *crecca* by an appreciably broader bill (150+ mm. v. 140—mm. at widest point near tip). Lower back and rump nearly uniform grey-brown, a little darker on the shafts, v. very dark brown, each feather conspicuously margined greyish or buffish in *crecca*. Wing speculum in both very similar but tip of greater secondary coverts narrower and rufous-buff throughout v. broader and white, only tinged with buff posteriorly in *crecca*. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	203-219	33-38	c. 31-35	86-95 mm.

COLOURS OF BARE PARTS. Iris brown, red-brown, or chestnut-brown. Bill dark bluish to slaty black or black. Legs and feet pale plumbeous or slaty blue (Baker).

96. Grey, Andaman or Oceanic Teal. *Anas gibberifrons albobularis* (Hume)

Mareca albobularis Hume, 1873, *Stray Feathers*, 1: 303 (Andamans)

Baker, FBI No. 2273, Vol. 6: 435

Plate 9, fig. 5 and Plate 10, fig. 5

LOCAL NAMES. Unrecorded.

154

ANSERIFORMES

Weight ♂ ♀ 7-7 oz. to 12 oz. (c. 225-340 gm.).—Hume & Marshall.

COLOURS OF BARE PARTS. Iris brown. Bill black, paler and browner under lower mandible; in female more yellow-brown, sometimes tinged with green. Legs and feet light bluish or olive-grey to deep slaty blue or dark olive-plumbeous.

95. Baikal, Clucking or 'Formosa' Teal. *Anas formosa* Georgi

Anas formosa Georgi, 1775, *Bemerk. Reise Russ. Reich*, 1: 168 (Lake Baikal, Siberia)

Baker, FBI No. 2272, Vol. 6: 433

Plate 9, fig. 7 and Plate 10, fig. 7

LOCAL NAMES. Unrecorded.

SIZE. Common Teal +; length c. 40 cm. (15½ in.).

FIELD CHARACTERS. A remarkably beautiful teal.

Male (breeding). With a distinctive gaudily patterned head. Crown, nape, hindneck, and throat black. Face, sides of upper foreneck, and below the throat buff, narrowly margined with white. A narrow crescentic vertical black band from eye down across the face to the black throat. Crown from in front of and above eye bordered on each side by a narrow white band looping forward down the sides of the black nape into the buff lower throat. A broad crescentic metallic green band from behind eye down sides of head bounded behind by the white loop and in front by the buff facial patch. Mantle slaty grey, pencilled with brown and black. Inner scapulars and tertiaries very long and lanceolate as in the Garganey, velvety black; white and cinnamon. Speculum black and bronze-green, edged with black and white. *Below*, breast vinaceous, spotted with black. Sides slaty. Rest of underparts largely white.

Female (adult). Overall brown, similar to female Common Teal but for somewhat larger size and the distinctive head pattern—crown dark; face light speckled brown with dark lines above the eyes from eye to nape. A round white patch at base of bill (below the brown lores).

Young (immature). Like female but plainer, with no white patch near bill (Delacour).

STATUS, DISTRIBUTION AND HABITAT. Very rare and sporadic winter visitor. Has been recorded at long intervals about a score of times in the last 70 years or so, in Sind, Punjab, Rajasthan, Gujarat, Uttar Pradesh, Bihar, Bengal, Assam, Manipur, the most recent being a sight record on the Jumna near Delhi, 12 May [sic] 1947 (R. S. Symons). Owing to similarity of female with female Teal, possibly some examples go undifferentiated, in spite of larger size.

Extralimital. Breeds in Siberia east from the Yenisey river to the Kolyma delta and Anadyr, south to Lake Baikal, northern Sakhalin and northern Kamchatka. Winters in China and Japan.¹ Recorded from Formosa but derives its name not from that island but from the fact that "formosa" is the Latin for "beautiful" (Peter Scott).

¹ Very abundant winter visitor in southwestern Japan particularly in certain years, flocks numbering 10,000 having been observed. The highest single day's catch of three men operating six throw-nets on a pond was 10,000 Baikal Teal! (Austin & Kuroda 1953).

156

ANSERIFORMES

SIZE. Half grown domestic duck ±; Common Teal +. Length c. 43 cm. (17 in.).

FIELD CHARACTERS.

Male (breeding). Above, dark (almost chocolate) brown, the feathers edged greyish producing a scaly or scalloped effect. Throat, foreneck, and a varying area encircling eye white, this colour sometimes extending to entire face. Wings brown with a green and black speculum bordered in front and behind by whitish bands, the former broad and conspicuous. *Below*, buffy grey spotted with dark brown.

Female differs only in being slightly duller coloured with less distinct centres to the feathers. The green of the speculum more coppery. 'The broad white wing-bar is most conspicuous in flight' (Butler, JBNHS 11: 333).

Young (immature). Like female but dusky markings on lower plumage less distinct, and white eye-ring narrower and more fulvous.

STATUS, DISTRIBUTION AND HABITAT. Endemic in the Andaman group of islands (Landfall, Coco, Great Coco, and others). Nomadic, and on many islands apparently only a winter visitor. Affects outlying freshwater jheels and swamps; also tidal creeks and salt water.

GENERAL HABITS. Less common than the two Whistling Teals. Keeps in flocks of twenty or thirty, feeding chiefly at night by walking about and grubbing in wet paddyfields like Common Teal. Spends much of the day roosting perched up amongst the mangrove trees or on rocks exposed at low tide. The flocks break up into small parties and pairs as the breeding season approaches.

FOOD. Chiefly vegetarian—tender shoots of crops, grain, etc. Probably also insects, worms, crustaceans, etc.

VOICE. A soft whistle. Also described as having a low quacking call-note.

BREEDING. Season, the only dependable record (Osmaston, JBNHS 17: 491) is of a nest containing ten nearly fresh eggs on August 4. *Nest*, in a natural hollow high up in lofty dead tree-trunks, usually inaccessible. *Eggs*, normal clutch? Long, elliptical, cream-coloured ovals. Average size of 10 eggs 49.0 × 36.3 mm. (Baker). Incubation period, share of the sexes in the domestic chores, etc. not recorded.

MUSEUM DIAGNOSIS. The northern Andamans population was hitherto designated as a separate race—*A. g. leucoparva* Fleming—on account of larger extent of white on face and neck. This is now shown to be a case of partial albinism probably caused by too much inbreeding, and the race is currently considered untenable.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	199-205	34-36	35-37	79-81 mm.
♀♀	197-205	34-35	—	—

(Delacour)

Weight c. 425 gm.

COLOURS OF BARE PARTS. Iris reddish brown or red. Bill greenish blue, plumbeous-blue, or plumbeous with the nail black; in some examples lower mandible variously tinged with pink. Legs and feet dark greenish or plumbeous; claws black.

DUCKS, GEESE, SWANS 157

ANAS POECILORHYNCHA J. R. Forster

Key to the Subspecies

	Page
A No white band posterior to the speculum.....	<i>A. p. zonorhyncha</i> 159
B A broad white band posterior to the speculum.....	1
1 A red spot on each side of base of bill.....	<i>A. p. poecilorhyncha</i> 157
No red spots on bill.....	<i>A. p. haringtoni</i> 159

97. Spotbill Duck. *Anas poecilorhyncha poecilorhyncha* J. R. Forster

Anas poecilorhyncha J. R. Forster, 1781, Indian Zool.: 23, pl. 13, f. 1 (Ceylon)

Baker, FBI No. 2265, Vol. 6: 421

Plate 9, fig. 3 and Plate 10, fig. 3

LOCAL NAMES. *Gārm pāi*, *Gugrat* (Hindi); *Hānjār* (Sind); *Lāddim* (Mirshikars, Bihar); *Nāddun* (Nepal terai); *Kara* (Manipur); *Bār māghī hāns* (Assam).

SIZE. Domestic duck; length c. 61 cm. (24 in.).

FIELD CHARACTERS. A large duck of scaly-patterned buffy grey and dark brown plumage. Narrowly black-and-white margined metallic green wing speculum, bordered above (posteriorly) by a broad pure white bar particularly conspicuous in flight. Bright coral-red legs, yellow-tipped dark bill, and two swollen orange-red spots at its base on either side of forehead, are further diagnostic clues.



× c. 1

Female slightly smaller and duller than male; but conclusive sex differentiation possible only on voice (q.v.).

Young (immature). Like adult but paler, less spotted below, and with no red spots at base of bill.

STATUS, DISTRIBUTION AND HABITAT. Resident, nomadic, and occasionally migratory. Common and widely though capriciously distributed, and nowhere really abundant. Throughout the Indian subcontinent, locally up to c. 1200 m. elevation, east of the lower Indus river (occasionally Baluchistan), and Kashmir (to c. 1800 m.) to western Assam. South to Mysore, and occasionally Ceylon. Frequents reedy and vegetation-covered jheels, shallow irrigation tanks, etc. Rarely also on rivers.

A flock of over 200 (subspecies?) reported on Neill Island, Andamans (E. G. Silas, in *epist.*, March 1960), but occurrence there needs confirmation.

MIGRATION. One ringed in Rajasthan (Bharatpur, 27°13'N., 77°33'E.) 5.xii.1969 recovered in USSR (near Novosibirsk, c. 54°06'N., 74°38'E.) August 1970 — c. 2880 km. N. (JBNHS 68(1): 244).

GENERAL HABITS. Very similar to the Mallard, usually seen in pairs, family parties, or moderate sized flocks. A strong flier but less quick in take-off than the Mallard, rising less abruptly and vertically. Prized by sportsmen as much for its sporting qualities as for excellence as a table bird. A non-diving duck, obtaining most of its food by walking about and grubbing on marshland or in wet paddyfields, or by up-ending in shallow water to reach the bottom mud, tail sticking above the surface and legs kicking to maintain the vertical stance. But it can dive very effectively to evade capture when wounded or moulting wing, surfacing only momentarily in a flash, or with just the bill showing. Often it holds on thus to partially submerged vegetation and remains completely hidden from view.

DUCKS, GEESE, SWANS 159

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	260-280	60-65	46-48	120-140 mm.
♀♀	250-268	50-55	—	—

(Delacour)

Weight ♂ 2 lb. 4 oz. to 3 lb. 5 oz. (c. 1230-1500 gm.) — Hume; ♀ 1 lb. 12 oz. — 3 lb. (c. 790-1360 gm.) — Baker.

COLOURS OF BARE PARTS. Iris light to dark brown. Bill black, the terminal third or less yellow to orange-yellow or orange, tipped black. A spot at base of bill on each side of forehead orange-red to coral-red. Legs and feet deep coral-red; claws black.

98. Burmese Spotbill Duck. *Anas poecilorhyncha haringtoni* (Oates)

Pollionetta haringtoni Oates, 1907, Jour. Bomb. nat. Hist. Soc., 17: 558

(Shan States)

Baker FBI No. 2267, Vol. 6: 423

LOCAL NAME. *Bār māghī hāns* (Assamese).

SIZE. Same as 97 ±.

FIELD CHARACTERS. 'Similar to the Indian Spotbill, but a little smaller, the underparts more uniform, less spotty; very small or no red dots on the base of the bill' (Delacour). Also with conspicuously white-bordered green speculum.

Young (immature) and Chick (in down) as in the Indian race.

STATUS, DISTRIBUTION AND HABITAT. Resident. Extreme eastern Assam (N. Lakhimpur, Dibrugarh).

Extralimital. Burma, Shan States, Yunnan.

GENERAL HABITS, FOOD, VOICE, etc. Similar to those of the Indian subspecies.

BREEDING. Two nests, similar to those of the Indian race, recorded from Lakhimpur by Baker on 6 February and 13 April respectively. In the Shan States nests have been taken in February, April, June, July, and November. Eggs, 6 and 14, more or less incubated, have been found in nests, but normal clutch-size uncertain. Average size of 27 eggs 52.7 × 39.6 mm. (Baker).

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill
♂♂	245-268	50-57 mm.
♀♀	237-255	— mm. (Delacour)

COLOURS OF BARE PARTS. As in the Indian race.

An intermediate example between this and *zonorhyncha* has been recorded from eastern Assam (1937, JBNHS 39: 638).

99. Eastern Grey Duck. *Anas poecilorhyncha zonorhyncha* Swinhoe

Anas zonorhyncha Swinhoe, 1866, Ibis: 394 (Ningpo, China)

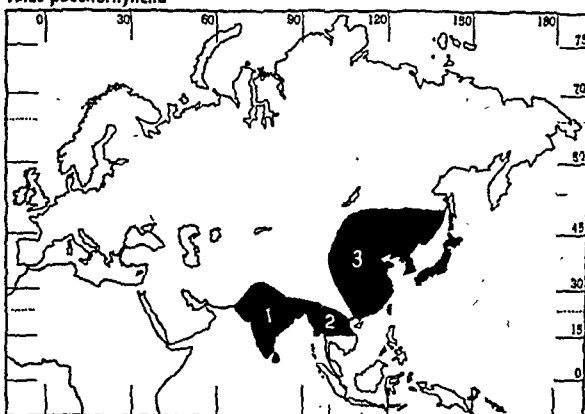
Baker, FBI No. 2266, Vol. 6: 422

SIZE. As No. 97 ±.

158 ANSERIFORMES

FOOD. Chiefly vegetarian — shoots, corms, etc. of aquatic plants, seeds of sedges, grain of wild and cultivated rice, etc. The birds occasionally do considerable damage to rice crops by trampling down a great deal more than they eat. Sometimes also water insects, and their larvae, worms, and molluscs. Among the animal items specifically identified in stomach contents is the water-snail *Vivipara (bengalensis?)*.

Anas poecilorhyncha



Residential range 1 *A. p. poecilorhyncha*; 2 *A. p. haringtoni*; 3 *A. p. zonorhyncha*

VOICE. Almost indistinguishable from the Mallard's — a hoarse wheezy note by the drake, and a loud quack by the duck particularly when suddenly startled. As a rule very silent.

BREEDING. Season, not strictly defined. Depending largely on water conditions, but chiefly July to September/October in north and peninsular India; November/December in the south. Possibly two broods a year. Not Ceylon. Nest, a pad of grass and weeds concealed in herbage on the margins of a tank or swamp; sometimes lined with a small quantity of feathers and down. Eggs, 6 to 12, normally 7 to 9, greyish buff or greenish white, rather broad ovals, smooth and fine textured; very similar to those of the Mallard. Average size of 100 eggs 56.0 × 42.3 mm. (Baker). Incubation, believed to commence with last egg, takes about 24 days. The drake's share in this is unknown, but he assists the duck in guarding and leading the ducklings.

MUSEUM DIAGNOSIS. No eclipse plumage in male. Both sexes undergo a post-nuptial moult when all the wing quills are cast simultaneously, the female sometimes possibly incubating in this condition (Sálim Ali, JBNHS 44: 219).

Chick (in down). Like Mallard, blackish above with yellow back and wing markings and underparts, but the black line through eyes a little broader and blacker (Delacour).

160 ANSERIFORMES

FIELD CHARACTERS. Differs from the Indian Spotbill by duller, less conspicuously marked plumage with darker practically unspotted underparts, and absence of the two red spots at base of culmen. A broad line, heavily speckled with black, from base of bill to ear-coverts. Supercilium, chin, cheeks, and throat more contrastingly whitish. Speculum blue (instead of green) and only narrowly bordered with white. White on secondaries restricted and much less conspicuous. Nail of bill yellow (v. black in *A. p. poecilorhyncha*). Sexes alike; female slightly smaller.

Young (immature) duller than adult.

STATUS, DISTRIBUTION AND HABITAT. Migratory. A frequent straggler in winter to eastern Assam (Sibsagar dist.) and Manipur. Once also procured in Bihar (Darbhanga dist., C. M. Inglis).

Extralimital. Breeds in eastern Siberia, Manchuria, Mongolia, N. China, Korea, S. Sakhalin, the Kurile Is., and Japan. Winters south to S. China and Formosa (Peter Scott).

GENERAL HABITS, FOOD, VOICE, etc. Nothing specifically recorded in India. Elsewhere said to haunt sea coasts as well as inland waters.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)
♂♂	254-276	56-63 mm.
♀♀	243-260	—

(Baker, Delacour)

For a male and female from Chinwangtao, E. China, La Touche (1931-34) gives Wing ♂ 282, ♀ 265 mm.

COLOURS OF BARE PARTS. As in the Indian (nominat) race, but nail of bill yellow and red spots at base lacking.

100. Mallard. *Anas platyrhynchos* Linnaeus

Anas platyrhynchos Linnaeus, 1758, Syst. Nat., ed. 10, 1: 125 (Sweden)

Baker, FBI No. 2264, Vol. 6: 419

Plate 9, fig. 1 and Plate 10, fig. 1

LOCAL NAMES. *Nīlīr*, *Nīr rūgi* (Hindi); *Nīlīr* (Bengal); *Līlēh* (Mirshikars, Bihar); *Līlē* ♂, *Līlēhī* ♀ (Nepal); *Amrolīa hāns*, *Bonaria pāti hāns* (Assam); *Nīrdī*, *Hīrdī* ♂, *Nīrdīdīnī* ♀ (Sind); *Bur*, *Rīje* (Kutch).

SIZE. Domestic duck; length c. 61 cm. (24 in.).

FIELD CHARACTERS.

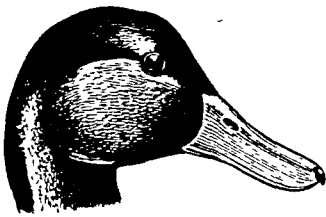
Male (breeding). Largely grey above and below, finely pencilled and vermiculated with black. Glistening metallic dark green head and neck separated from chestnut breast by narrow white collar. Rump, tail-coverts, and two upcurled central tail-feathers black. Speculum metallic purplish blue bordered in front and behind by narrow black and white bands, conspicuous in flight. Yellowish green bill; orange legs.

Female (and male in eclipse plumage). Brown and buff, streaked and spotted with black. Chin, throat and foreneck plain buff; an irregular dark line through the eye. Orange legs. Distinguished from the very

DUCKS, GEESE, SWANS

161

similar ♀ Shoveller, also orange-legged, by bill shape and purple-blue speculum (v. green).

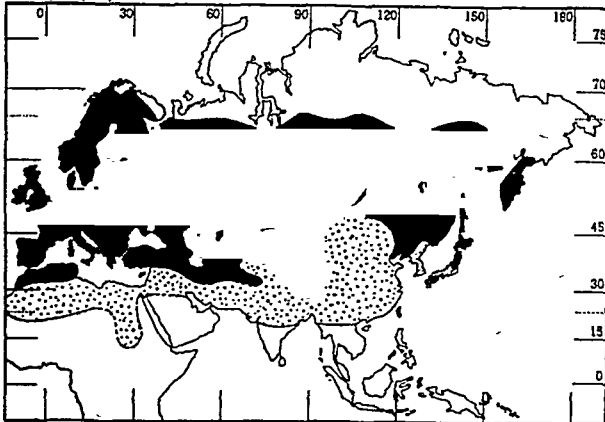


× c. 1/2

Young (immature). Like female, but duller and less well marked.

STATUS, DISTRIBUTION AND HABITAT. Breeds in small numbers in Kashmir. Mainly winter visitor. Apparently no longer so common in northern W. Pakistan (Bahawalpur) where until c. 1940 at least it often formed 70 to 80 per cent of sportsmen's seasonal bags of duck. Common in lower Sind, decreasingly so eastward through U.P., Nepal, Bihar, Bengal, E. Pakistan to Assam; southward sparingly to rare to about 19°N. in Orissa, Madhya Pradesh, Gujarat and northern Maharashtra. Exceptional if further south; no record. Frequents shallow reedy jheels (or dhands) and marshes; rarely also rivers and ponds.

Extralimital. Throughout the Holarctic Region. In Europe and Asia breeds from the Arctic Circle south to the Mediterranean and roughly

Anas platyrhynchos

■ Breeding ■ Non-breeding

DUCKS, GEESE, SWANS

163

so but quicker repeated. This is uttered as a call-note and can be effectively imitated by hunters to decoy the birds. The female (?) also gives a series of rapid *tuckata-tuckata-tuckata* notes signifying satisfaction on discovering food.

BREEDING. Bates & Lowther (1952), have shown that Major Cock's account in Hume & Oates (1889-90) of 'boatloads' of Mallard eggs from the Kashmir lakes being brought to Srinagar market for sale was a palpable exaggeration. At the present time only very small numbers breed on Hokarsar, Anchar, and other lakes in the Kashmir Valley. *Season*, late April, May and June. *Nest*, a bed of dry grass, rush leaves, and a quantity of the bird's own (blackish) down; sometimes bulky and rimmed with a thick well-felted layer of down, at others without any. Placed on the ground in thick cover of sedges, grass, and bushes on the edge of a lake or some distance from water. *Eggs*, 6 to 10, long ovals, more or less equal at both ends. Normally greenish grey, sometimes pale dull yellowish stone or pale buff; close-textured, smooth-surfaced, with a slight gloss. Average size of 100 Indian eggs 56.6 × 40.3 mm. (Baker). Only the female incubates. Incubation period 26 days (Witherby; q.v. also for courtship display and other details of breeding biology).

MUSEUM DIAGNOSIS. For details of plumages, etc. see Witherby 1939, 3: 236-9. Chick (in down). 'Blackish brown above, with yellow face, underparts, and spots on the back and wings; a dark line through the eyes and shorter ones or spots on the ears; sometimes a small dark streak at the base of the bill' [Delacour 1956, 2: 42; 70 (plate)].

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	266-292	50-57	c. 40-45	80-97 mm.
♀♀	232-276	44-55		(Baker)

Weight ♂ 2 lb. 8 oz. to 4 lb. (c. 1135-1800 gm.); ♀ 1 lb. 10 oz. to 2 lb. 10 oz. (c. 735-1195 gm.). — Hume & Marshall.

COLOURS OF BARE PARTS. Iris brown. Bill dull olive-yellow, or dingy green, the base and gape yellower or orange; nail black. Legs and feet orange-yellow to coral-red; claws black.

MISCELLANEOUS. Flight speeds: cruising 48; chased 64-80 km.p.h. (Sprunt & Zim).

101. Gadwall. *Anas strepera strepera* Linnaeus

Anas strepera Linnaeus, 1758, Syst. Nat., ed. 10, 1: 125 (Sweden)

Baker, FBI No. 2269, Vol. 6: 426

Plate 9, fig. 12 and Plate 10, fig. 12.

LOCAL NAMES. *Myld*, *Bhuar*, *Beykhar* (Hindi); *Pering hāns* (Bengal); *Myle* (Mishikars of Bihar; Nepal); *Burd*, *Buāri*, *Buār* (Sind); *Sary mūgi hāns* (Assam); *Thoidingnem* (= 'sesamum-flavoured', Manipur).

SIZE. Domestic Duck—; length c. 51 cm. (20 in.).

FIELD CHARACTERS.

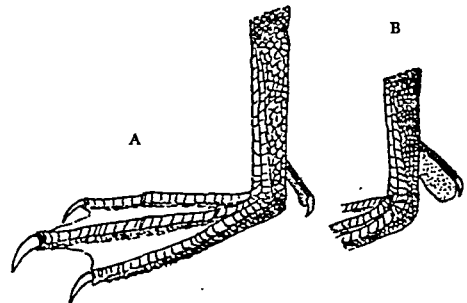
162

ANSERIFORMES

to latitude 30°N. Winters from southern half of breeding range to N. Africa, Nile Valley, India, Burma, S. China and Japan. Several small endemic populations have been described, e.g. from Mexican highlands (*diazi*), Greenland (*conboschas*), Hawaii Is. (*uyvilliana*), Laysan I. (*laysanensis*), but the species is evidently monotypic.

MIGRATION. Mallards ringed in W. Pakistan (Manchar lake, Sind; Jhajja, Bahawalpur) between c. 27° & 30°N. and 68° & 72°E. have been recovered in the Novosibirsk region of USSR, between c. 52° & 56°N. and 67° & 79°E., indicating that a large proportion of our winter visitors are derived from Siberia. The speed of migratory flight has elsewhere been estimated as c. 80 km. per hour.

GENERAL HABITS. A typical surface-feeding or dabbling duck, the ancestor of all our domestic breeds. Gregarious. Keeps in parties and small flocks of seldom more than a dozen or so; sometimes up to 40 or 50. Where persecuted does most of its feeding during the night, fighting at dusk to outlying inundated paddyfields and marshes, and returning to the daytime refuge at dawn. Walks with ease dabbling for food on squelchy ground, or up-ending to rake the bottom mud as it swims in shallow water. The projecting tail is directed backwards to attain the vertical stance, assisted by a constant kicking of the legs. It is a swift and powerful flier, capable of rising almost vertically off the water or land when alarmed. Usually wary and difficult to circumvent, and excellent for the table; therefore combining all the requisites of a coveted sporting bird, and eagerly sought by duck hunters. Though not an underwater feeder, can dive quite effectively to evade capture when wounded.



Foot of Mallard (A) and Common Pochard (B) to show difference in hind toe of surface-feeding and diving ducks

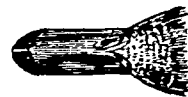
FOOD. Chiefly vegetarian: corms, seeds and shoots of Gramineae and other aquatic plants, wild and cultivated rice, etc. To a lesser extent also molluscs, tadpoles, fish spawn, worms, etc.

VOICE AND CALLS. Of drake a wheezy 'scraping'; of duck a loud rather explosive *quack* when suddenly alarmed and flying off. Also a loud *quack-quack-quack-quack-quack*, the first quack very loud, the others decreasingly

164

ANSERIFORMES

Male (breeding). General effect dark brown and grey, with whitish belly and very black tail end (black upper and under tail-coverts). Dark and light crescentic markings on breast almost forming a pectoral band. A glistening white patch (secondaries) on trailing edge of wing broadly bordered anteriorly with black (middle secondaries), and a chestnut patch (lesser wing-coverts) very conspicuous in flight. At rest the chestnut patch with the black-and-white speculum is a



× c. 1/2

diagnostic pointer.

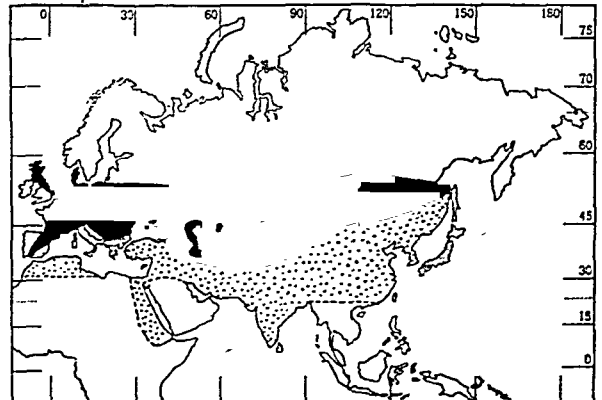
Male in eclipse. Like female, but greyer and less heavily marked above.

Female (adult). A duller and smaller edition of female Mallard, dark brown mottled with buff, with the chestnut on wing obsolete. Also with orange-yellow legs. Diagnosed in flight by white wing-mirror as in drake; at rest, when this often concealed, by smaller size, slighter build, and absence of Mallard's metallic speculum.

Young (immature). Male similar to drake in eclipse. Female like adult duck but with wings less bright coloured.

STATUS, DISTRIBUTION AND HABITAT. One of our commonest wintering ducks. Both Pakistans, Nepal, all India, lessening progressively southward. Rare in S. India; only a single record in Ceylon. Affects reedy marshes and jheels, large and small, with plenty of cover; open water-spread of dammed reservoirs only occasionally as daytime refuges.

Extralimital. Europe, Asia, and western North America. In Eurasia breeding from Iceland to Kamchatka, south to England, Holland, Germany, central Russia, Caspian, Seistan, Transbaikalia. Wintering south to northern Africa, Ethiopia, S. China.

Anas strepera

■ Breeding ■ Non-breeding

DUCKS, GEESE, SWANS

165

MIGRATION. Gadwall ringed in W. Pakistan, on the Manchar lake, c. 26°N., 68°E., have been recovered in USSR chiefly between 50° and 60°N. lat. and 60° and 80°E. long. in the Omsk region of Novosibirsk, therefore almost due N., at straight-line distances of over 3000 km.

GENERAL HABITS. Very similar to Mallard, and typical of the surface-feeding or dabbling ducks. Gregarious and predominantly vegetarian. Usually keeps in small flocks of 10 to 30 birds or so. Feeds by walking about and dabbling on marshland or in squelchy paddyfields, or by up-ending in shallow water to rake the bottom mud. Sometimes also dives for food, and can do so very effectively when wounded and evading capture. Flight swift, with rapid strokes of the pointed wings producing a low whistling sound. A highly prized sporting bird, ranking with mallard and pintail among the finest for the table. Also one of our most abundant migratory ducks, usually well represented in duck hunters' bags in northern India.

FOOD. Chiefly seeds, shoots, and tubers of marsh plants and aquatic weeds, and grains of wild and cultivated rice. Occasionally insects, worms, molluscs, etc.

VOICE. In both sexes very mallard-like. The quack of the duck is somewhat less loud. 'The male has a soft, breathy call and a raucous, croaking note "oe" often repeated, and followed by a sharp whistle, used in display' (Delacour).

BREEDING. Extralimital. Nest like Mallard's, on ground, near water. Eggs, '7 to 15, usually 8-12, creamy buff like those of the Wigeons, 54 x 36 mm.; incubation 25-26 days' (Delacour).

MUSEUM DIAGNOSIS. For detailed description of plumages see Witherby 1939, 3: 242-4.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	270-285	c. 48-54	c. 36-40	c. 82-98 mm.
♀♀	220-256			
Weight ♂ 1 lb. 8 oz. to 2 lb. 4 oz. (c. 575-1025 gm.); ♀ 1 lb. to 1 lb. 12 oz. (c. 450-800 gm.).				

(Baker)

COLOURS OF BARE PARTS. Iris dark brown. Upper mandible dark slaty brown; lower mandible paler and yellowish or reddish underneath. Legs and feet yellow, brownish yellow to dull orange; claws black.

MISCELLANEOUS. Flight speed: cruising 29 m. (c. 47 km.) p.h. (Sprunt & Zim).

102. Falcated or Bronzecapped Teal. *Anas falcata* Georgi

Anas falcata Georgi, 1775, *Bemerk. Reise Russ. Reich*, 1: 167 (Asiatic Russia)

Baker, FBI No. 2268, Vol. 6: 424

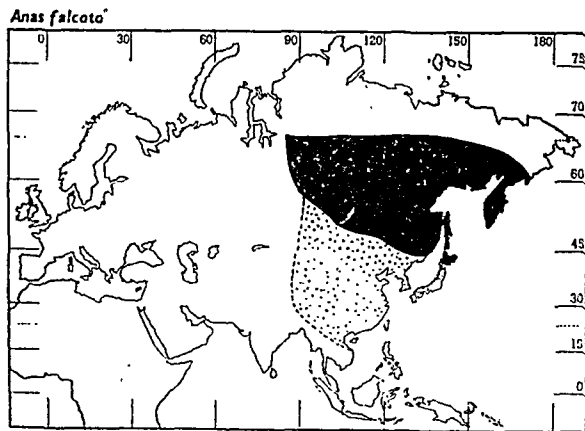
Plate 9, fig. 11 and Plate 10, fig. 11

LOCAL NAME. *Kālā sinkhur* (?) (Uttar Pradesh).

SIZE. Domestic duck —; Gadwall ±; length c. 51 cm. (20 in.).

DUCKS, GEESE, SWANS

167



■ Breeding ▨ Non-breeding

MUSEUM DIAGNOSIS. Upper and lower tail-coverts in both sexes very long, extending beyond the tips of the rectrices. Female confusingly like female Gadwall except for colour of legs, and chiefly the different wing speculum.

In female Gadwall entire visible portions of inner secondaries pure white, terminal portions of their larger coverts black; in female *falcata* visible portions of all inner secondaries black (with a metallic green reflection) narrowly tipped with white, and terminal portions of their greater coverts white.

For detailed description of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	230-242	40-42	37-40	82-85 mm.
♀♀	225-235	38-40	—	—

Weight 1 ♂ 630 gm. (BNHS).

(Delacour)

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet drab, olive-grey, or olive-brown; webs and toes black.

103. Wigeon. *Anas penelope* Linnaeus

Anas penelope Linnaeus, 1758, *Syst. Nat.*, ed. 10, 1: 126 (Sweden)

Baker FBI No. 2270, Vol. 6: 429

Plate 9, fig. 4 and Plate 10, fig. 4

LOCAL NAMES. *Prasan*, *Patari*, *Pharia*, *Chhōta Idāsr* (Hindi); *Chhōta Idāsr* (Bengal); *Arora* (Mirshikar, Bihar); *Cheyun* (Nepal); *Pharao* (Sind); *Gujarat*, *Nal Sarovar*; *Khalriya kunda* (Assam); *Thānggongmāl* (= 'like the Brahminy', referring to the drake's ruddy head, Manipur).

SIZE. Domestic duck —; Gadwall —; length c. 49 cm. (19 in.).

166

ANSERIFORMES

FIELD CHARACTERS.

Male (breeding) strikingly peculiar and beautiful. Head metallic bronzy green and chestnut-purplish, with a bushy mane-like nuchal crest falling over hindneck, resting on back and giving the impression of a thick neck. Throat and foreneck white with a narrow green collar near base. General aspect of body plumage grey, wavyly pencilled with black and resembling Gadwall's, the markings bolder and more crescentic on breast. Speculum glossy black and green, bordered in front by a grey band (wing-coverts). Inner secondaries very long, sickle-shaped (falcated) — velvety black, white, and grey — covering hind part of body and tail. Upper tail-coverts black, overtopping tail.

Female (adult). Very like female Gadwall, but wing mostly grey with black-and-green (v. white) speculum, a short nuchal crest, and grey (not yellow) legs.



x c. 1

Young (immature). Like the female; males more finely vermiculated. **STATUS, DISTRIBUTION and HABITAT.** Rare but not infrequent winter straggler to Assam (Lakhimpur, Sibsagar, Nowgong, Kamrup, Sylhet districts; Surma Valley), and Manipur. Vagrants recorded in Bihar (Tirhut, Patna, Darbhanga districts), Uttar Pradesh (Lucknow, Roorkee districts), Delhi, Punjab (Jhelum, Karnal districts), West Pakistan (Sind, Bahawalpur), Gujarat (Kutch dist.), Nepal (Kosi R.). Females in hunters' bags sometimes possibly misidentified as Gadwall.

Extralimital. Breeds in N. Asia, south of the Arctic Circle from the upper Yenisey to Kamchatka, south to Lake Baikal, N. Mongolia, the Amur and Ussuriland. Winters in Japan, Korea, E. and S. China to Upper Burma (Peter Scott).

GENERAL HABITS. Nothing specifically recorded in India except that it occurs singly or in pairs on jheels in Assam usually in company with Gadwall (M. J. S. Mackenzie). Once shot from a party of 15 (? mixed species). In flight said to resemble Common Teal with the same swishing sound of wings.

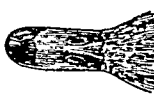
FOOD. Mainly vegetarian.

VOICE. Unrecorded in India. The male's described elsewhere as a loud piercing whistle; also a low chuckling as of Mallard drake when swimming about. The female's as a quack like Gadwall duck's.

BREEDING. Extralimital. Nest. Compactly built of reeds and rushes thickly lined with down. Eggs. 'Six to ten, 56 x 40 mm., creamy white; incubation 24-25 days' (Delacour).

FIELD CHARACTERS.

Male (breeding). General aspect pencilled grey. Head and neck chestnut or bright rusty red with a distinctive cream coloured patch on forecrown.

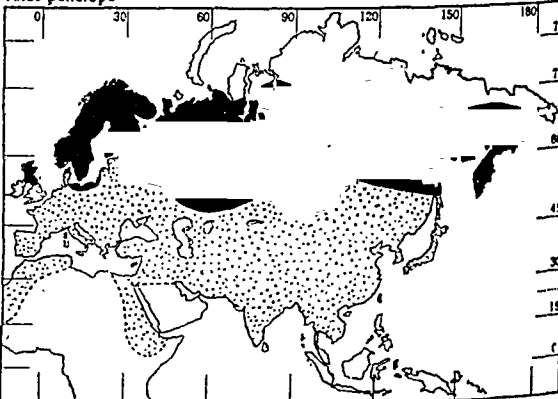


x c. 1

Male (in eclipse). Above, reddish brown, marked and vermiculated with black; below, chiefly white.

Female (adult). Similar to male in eclipse 'but much duller, less reddish brown, the dark vermiculations less coarse, the lesser wing-coverts grey. There are two colour phases, one redder the other greyer' (Delacour).

Anas penelope



■ Breeding ▨ Non-breeding

Differentiated from rather similar female Gadwall by more rufous plumage and metallic green speculum v. contrasty white and black.

STATUS, DISTRIBUTION and HABITAT. Winter visitor. Common in Sind and northern India, where locally very abundant. Less common in peninsular and eastern India generally, but in some years very numerous in W. Bengal, E. Pakistan, Assam, and Manipur, and usually so on Chilka lake (Orissa). Sparse and irregular in Ceylon. Observed in Nepal Valley and central Nepal in winter, and on the high altitude lakes (c. 5030 m. 5330 m.) in eastern Nepal in May and June presumably on northward passage. Frequents shallow reedy jheels and marshes. Small flocks occasionally also on salt-water creeks and mangrove swamps, e.g. on the Sind coast.

DUCKS, GEESE, SWANS

169

Extralimital. 'Europe and Asia, breeding in temperate regions north to the Arctic Circle and beyond, from Iceland and Scotland to Kamchatka. Winters in Britain and south to the Nile Valley. Abyssinia, India, S. China and Japan' (Peter Scott).

MIGRATION. Wigeon ringed during winter in Sind (Manchar lake, c. 26°N., 68°E.) and in central India (Dhar, c. 23°N., 76°E.) have been recovered in summer in Siberia between c. 55° & 58°N. and 66° & 85°E. One of these was a female accompanied by ducklings, and another a male in post-nuptial moult and flightless, indicating that they were on their breeding grounds and thus disclosing the provenance of possibly the majority of our winter migrants.

GENERAL HABITS. Gregarious; sometimes in very large flocks. Like other non-diving ducks feeds by walking about and grazing or grubbing on grassy edges of jheels and in squelchy paddyfields, or by up-ending in shallow water. Swift on the wing, but perhaps less so than Teal, rising abruptly off the water on alarm and quickly climbing well out of gunshot. Flies in compact flocks or irregular lines with a distinctive rustling sound. Provides good sport to the duck hunter and is excellent for the table. Dives effectively to evade capture when only winged.

FOOD. Chiefly vegetarian: corns, seeds, and shoots of marsh and aquatic plants, and wild and cultivated rice. Also water insects and their larvae, molluscs, etc.

VOICE AND CALLS. Of male a distinctive musical piping whistle *whet-oo*, uttered both on the wing and from the ground or water. Of female a short quack, also described as a 'purring growl'.

BREEDING. Extralimital. *Nest*, of matted grass, reeds, etc. with a thick bed of down for the eggs, hidden in undergrowth usually close to water. Eggs, '7 to 12, buffy cream, 54 × 35 mm. on an average; incubation 24 to 25 days' (Delacour).

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	254-273	c. 31-35	c. 35-40	c. 95-110 mm. (Baker)
♀♀	233-256			
Weight	♂ 1 lb. 5 oz. to 1 lb. 10 oz. (c. 590-735 gm.); ♀ 1 lb. 3 oz. to 1 lb. 10 oz. (c. 535-735 gm.).			

COLOURS OF BARE PARTS. Iris brown or red-brown. Bill grey-blue, livid blue, or slate-blue; tip black. Legs plumbeous tinged with grey or green; joints and webs darker; claws blackish.

104. Garganey or Bluewing Teal. *Anas querquedula* Linnaeus

Anas querquedula Linnaeus, 1758, Syst. Nat., ed. 10, 1: 126 (Sweden)

Baker, FBI No. 2275, Vol. 6: 439

Plate 9, fig. 10 and Plate 10, fig. 10

LOCAL NAMES. *Chāila*, *Khira*, *Patari* (Hindi); *Ghang roib*, *Giria hāns* (Bengal); *Chila hāns* (Assam); *Chārho*, *Kardo*, *Kāraro* (Sind); *Kārdio* (Gujarat, Nal Sarovar); *Gendu* (Orissa — most duck); *Surit angouba* (= 'white teal', Manipur).

DUCKS, GEESE, SWANS

171

Frequents every type of water large and small — jheels, marshes, village tanks, coastal backwaters and lagoons (e.g. in Kerala), the last chiefly as daytime refuges from which to forage in outlying paddyfields during the night.

MIGRATION. Meinertzhagen came across a party of Garganeys on migration at Khardong in Ladakh (4100 m.) as early as 30 July, showing that autumn passage of duck may take place across very high parts of the Himalayas. It is rarely witnessed in daytime unless the birds are forced to the ground by heavy clouds as on this occasion. In NW. India autumn passage is usually in evidence in August, and fair numbers of birds are already in by mid-September, e.g. in Rajasthan (Keoladeo Ghana, Bharatpur). Recoveries of ringed Garganeys in India and the USSR indicate that our visitors are derived from a very extensive northern area, between latitudes 51° & 60°N. and longitudes 30° & 82°E. The most spectacular records so far are of a Bharatpur bird recovered in the Kiev region of the USSR (at 51°19'N., 30°14'E.) and of one ringed in the Leningrad area (60°30'N., 32°50'E.) shot in Maharashtra (Sangli dist., c. 17°N., 75°E.). The straight-line distances on the map between the points of ringing and recovery are c. 5000 and c. 6500 km. respectively, the actual air distance of course being considerably greater. See also Appendix.

GENERAL HABITS. Gregarious; non-diving, though like most surface-feeders can dive very effectively to evade capture when wounded. Feeds by walking about and grubbing in marshland and swampy paddyfields, or by up-ending in shallow water. Largely a nocturnal feeder where persecuted, as this and other duck species invariably are. Enormous mixed congregations of tens of thousands of duck and teal collect in certain daytime refuges in winter, e.g. on the Vembanad backwaters in Kerala, and just before northward emigration in March, e.g. on the extensive marsh at the mouth of the Banas river in the Little Rann of Kutch. Garganeys predominate among these. Flight very swift, with less turning and twisting than the Common Teal, in close-packed flocks. Overhead the wings produce a characteristic swishing hiss by which experienced sportsmen can identify the species even in the dark.

FOOD. Mainly vegetarian; seeds and tender shoots of marsh plants, grasses and sedges, and grains of wild and cultivated rice. Also some animal matter: water insects, larvae, worms, molluscs, etc. Shells of *Planorbis* sp. and *Melania tuberculata* have been identified among stomach contents in India.

VOICE. Usually very silent. Hume mentions a loud strident quack apparently common to both sexes; seldom uttered. A harsh grating *kr-r-r* by male in breeding season; also heard just before emigration, likened to a stick rapidly drawn across wooden palings.

BREEDING. Extralimital. *Nest*, a depression in the ground in wet meadows or grassland, lined with fine grasses and the bird's own down. Well concealed. Eggs, 7 to 16, usually 8 to 12, creamy buff with a distinct gloss. Average size of 108 eggs 45.5 × 32.8 mm. (Baker). Incubation 21-23 days (Delacour).

MUSEUM DIAGNOSIS. For detailed description of plumages see Witherby 1939, 3: 258-60.

170

ANSERIFORMES

SIZE. Domestic duck —; length c. 41 cm. (16 in.).

FIELD CHARACTERS.

Male (breeding). *Above*, head and neck pinky brown streaked with white, and with conspicuous broad white eyebrows. Upperparts blackish brown, scalloped paler. Scapulars long, lanceolate, glossy black, with a broad white median stripe. Wing shoulders (coverts) bluish grey. Speculum green, between two white bands. *Below*, breast light brown, speckled with black. Rest of underparts white, finely waved on sides and spotted near vent (tail-coverts) with black.



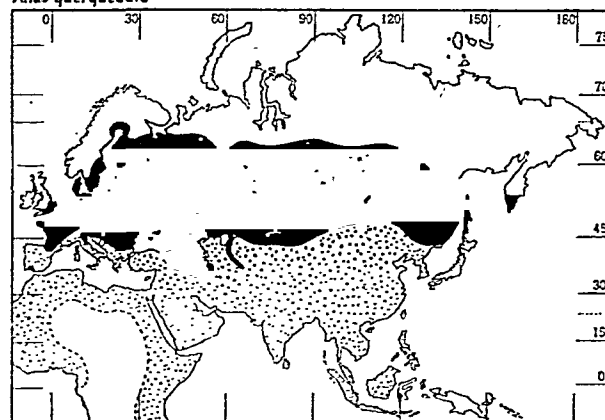
× c. 1

Male (in eclipse). Like female, but with fully coloured ♂ wing.

Young male (immature). Like female but darker, with browner underparts, and better defined speculum.

Female (adult). *Above*, head brown with conspicuous whitish eyebrows, white throat, and a distinct dark line from bill through eye to nape. Rest of upperparts dark brown, scalloped paler. Wing shoulders (coverts) greyish brown. Speculum as in male but rather obscure and the green more olive. *Below*, upper breast and near vent brownish with darker spots; rest of underparts white. May be confused with female Common Teal (q.v.), but speculum green and white v. tricoloured black, green and buff, and throat unmarked whitish v. brown-speckled, are diagnostic pointers.

STATUS, DISTRIBUTION and HABITAT. One of our commonest and most widespread migratory ducks. Perhaps the earliest to arrive in its winter quarters, and certainly one of the last to leave, small parties occasionally being seen till well into May. All India, both Pakistans, Nepal, Ceylon.

Anas querquedula

Breeding

Non-breeding

172

ANSERIFORMES

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	187-198	35-40	26-30	62-70 mm.
♀♀	175-194	34-39	—	—
				(Baker)

Weight. ♂ 10 oz. to 1 lb. (c. 283-453 gm.) commonly c. 13 oz. (c. 370 gm.); ♀ 9 to 14.75 oz. (c. 255-425 gm.) commonly c. 12 oz. (c. 340 gm.) — Hume & Marshall.

COLOURS OF BARE PARTS. Both sexes: Iris dark brown. Bill brownish black; nail quite black; margins of commissure and gape paler, often reddish. Legs and feet dark grey.

105. Shoveller. *Anas clypeata* Linnaeus

Anas clypeata Linnaeus, 1758, Syst. Nat., ed. 10, 1: 124 (Sweden)

Baker, FBI No. 2276, Vol. 6: 442

Plate 9, fig. 6 and Plate 10, fig. 6

LOCAL NAMES. *Tidāri*, *Puāna*, *Tokirwēla*, *Ghirah* (Hindi); *Panta mukhi*, *Khante hāns* (Bengal); *Sānkhar* (Mirshikars, Bihar); *Dho baha*, *Sānkhar* ♂, *Khikieria sānkhar* ♀ (Nepal); *Alipāt*, *Gaino*, *Langho* (Sind); *Gaino* (Gujarat, Nal Sarovar); *Phatphaji* (Kutch); *Khantiya hāns*, *Nak dugora* (Assam); *Sirawā* (Sinhala); *Mattimukh cherevi*, *Thārā* (Tamil); *Khāri* (Manipur).

SIZE. Domestic duck —; length c. 51 cm. (20 in.).

FIELD CHARACTERS. Both sexes readily diagnosed by broad, shovel-shaped bill and orange legs.

Male (breeding). Head and neck glossy metallic green (as in Mallard): Pale blue patch on wing-shoulder (coverts) and a white bar between it and metallic green speculum, particularly conspicuous in flight. Breast white; rest of underparts reddish chestnut except two large white patches on posterior flanks.

Male (in eclipse). Like female but somewhat darker, and largely retaining bright coloured wing of breeding male.

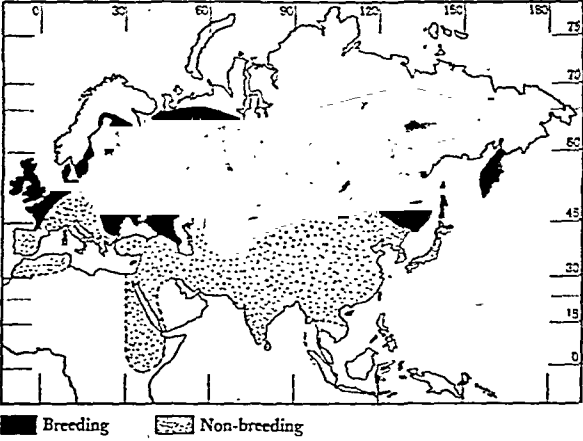
Female (adult). Mottled dark brown and buff, with greyish-blue shoulder patch, faint green speculum bordered above and below with white, and bright orange bill (at base).

Young (immature). Like adult female but with unbarred mantle and narrowly streaked underparts.

STATUS, DISTRIBUTION and HABITAT. Common winter visitor, arriving fairly late (c. October), and also amongst the last to leave (in N. India small numbers present in May and even till mid-June). All India, both Pakistans, and Ceylon. Occurs also in Nepal Valley in winter, but more common on passage in October/November. Affects all types of inland waters: jheels, irrigation reservoirs, flooded ditches, constantly used village tanks, and sometimes rivers.

Extralimital. Breeds in Europe (commonly in Britain), Asia, and N. America, not north of the Arctic Circle nor in E. Canada. Winters as far south as E. Africa, Persian Gulf, Ceylon, Burma, S. China, Japan, Hawaii, Lower California, Mexico, Honduras, Florida (Peter Scott).

Anas clypeata



MIGRATION. A Shoveller ringed in Sind (Manchar lake c. 27°N., 68°E.) was recovered in the Barabinsk district of Siberia, c. 55°N., 76°E., while one ringed in the Kazakh SSR at c. 50°30'N., 69°35'E. was shot near Delhi c. 29°N., 77°E. These recoveries provide a positive clue to the general northerly area whence our winter visitors are derived. Some individuals moult all remiges simultaneously after reaching their winter quarters in India, becoming completely flightless for a time.

GENERAL HABITS. Usually keeps in small parties in association with Common and Garganey teals. When feeding, swims slowly with neck and broad shovel-bill stretched stiffly in front. The lower mandible is fully immersed furrowing the water while the partially exposed upper skims flat along the surface. The bird thus swims into the minute floating organisms which are sifted out from the water by the comb-teeth or lamellae fringing the bill. Sometimes it zigzags along on shallow water, head fully submerged to rake up the bottom mud; or up-ends like other surface-feeding ducks. Flight swift and teal-like, with a distinctive creaking rustle of wings in rising off the water and in the air. But its flesh is usually rank and unpalatable, making the bird unattractive to sportsmen from that point of view.

FOOD. Crustaceans, molluscs, water insects and larvae, fish spawn, worms, etc. Also a quantity of vegetable matter: shoots and corms of aquatic weeds, etc.

VOICE and CALLS. Rather like Mallard's but lower and softer; also a low chuckling quack like Gadwall's.

BREEDING. Extralimital. Nest, a hollow or depression in the ground in a meadow, amongst herbage, lined with grasses and down; occasionally in reed-beds. Eggs, 7 to 16, greenish buff. Average size of 100 eggs 52.2 ×

106. **Pinkheaded Duck.** *Rhodonessa caryophyllacea* (Latham)

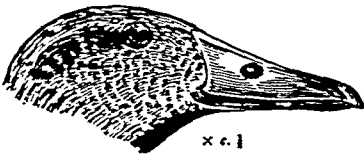
Anas caryophyllacea Latham, 1790, Index Orn., 2: 866 (India)
Baker, FBI No. 2249, Vol. 6: 390
Plate 11, fig. 13

LOCAL NAMES. *Gulāb sūr, Lāl sūrā* (Hindi); *Lāl sūr, Saknal* (Bengal); *Damrar, Dimer* (Nepal terai and Tirhut).

SIZE. Domestic duck; length c. 60 cm. (24 in.).

FIELD CHARACTERS. Shape and carriage of head and neck reminiscent of Whistling Teal. Colour pattern unique.

Male (adult). Brownish black above and below, with the partially tufted head, hindneck, and bill bright pink — the colour of new blotting paper. In flight, light pinkish buff speculum and pale shell-pink underwing (contrasting with dark body) prominent.



Female (adult). Overall blackish brown with pale brownish buff speculum. Head merely suffused with pink, the pink area less bright and not sharply demarcated as in male.

Young (immature). 'Head and neck pale rose-whitish colour, with the top of the head, nape, and hindneck brown; the whole plumage lighter brown; the underparts pale dull brown, with the edges of the feathers whitish' (Salvadori).

Chick (in down). Unknown.

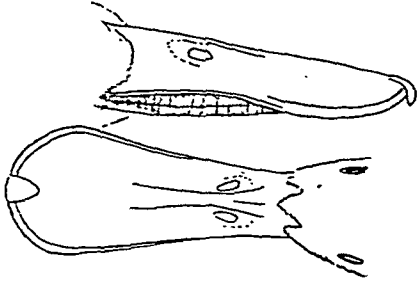
STATUS, DISTRIBUTION and HABITAT. Probably extinct. Last authentic sight record (C. M. Inglis) from Darbhanga, Bihar, June 1935. Apparently local and nowhere common even during the 170 years since first described; to some extent locally migratory. Was presumably resident in Assam ('Flocks on several occasions at Nowgong' 1921-3, — Higgins, JBNHS 36: 417), Manipur, Bengal, Bihar, and Orissa, but stragglers recorded in winter sporadically from as far afield as Lucknow (U.P.), Rupar (Ambala dist., Punjab), Delhi, Mhow (M.P.), Jalna (?), Khandala area (?), Ahmednagar (Maharashtra), Nellore (Andhra), and Pulicat Lake (Madras). In its residential range it affected *bhels* in the Himalayan terai (including Nepal) and duars, and swampy lowland grass jungles.

Total of all skins in world museums about 80; collected between 1825 and 1936 (Sälim Ali, Wildfowl Trust Ann. Rep. 1958-9: 55-60).

Extralimital. Burma.

GENERAL HABITS. Little recorded except that the birds were shy and secretive, and seldom seen unless flushed by chance from ponds amongst tall grass jungle as by a line of elephants during tiger hunts. Usually small parties of up to 6 or 8 when not paired for breeding, but flocks of up to 30 and even 40 have been recorded. Feeding behaviour as of surface-feeding

37.0 mm. (Baker). Incubation 23-25 days (Delacour). Layard's breeding record for Ceylon (March), when he is said to have caught most of the twelve ducklings accompanying the female, is incredible. It has been omitted by both Whistler (1944) and Phillips (1953).



Bill of Shoveller from side and above, x c. 1

MUSEUM DIAGNOSIS. For detailed description of plumages, structure, etc. see Witherby 1939, 3: 279-82.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	230-262	61-71	c. 32-38	c. 72-86 mm.
♀♀	217-238	56-64	—	—
				(Baker)

Weight. ♂ 1 lb. 3 oz. to 1 lb. 14 oz. (c. 540-830 gm.); ♀ 1 lb. to 1 lb. 7 oz. (c. 450-650 gm.) — Hume.

COLOURS OF BARE PARTS. Iris ♂ yellow, orange, or orange-red; ♀ brown or orange-brown. Bill ♂ black or plumbeous black; ♀ browner, sometimes tinged with orange. Legs and feet orange, orange-brown; or orange-red.

MISCELLANEOUS. Longevity (from ringing data): c. 20 years. (Ring, 1962, 33: 148). Flight speeds: cruising 40 km.p.h.; chased 80 km.p.h. (Sprunt & Zim).

Genus RHODONESSA Reichenbach

Rhodonessa Reichenbach, 1853 (1852), Av. Syst. Nat. ix. Type, by original designation, *Anas caryophyllacea* Latham

Endemic. Monotypic. Apparently related to *Anas* more closely than to any other duck genus; to some extent maybe also to the Pochards especially the Red-crested, *Netta rufina*, which it resembles both in proportions and in possession of a similar trachea (see Delacour). Superficially, from the longer and thinner neck, high position of the eye, and the very gradual slope of the forehead, Tickell had earlier considered it more allied to the Whistling Teal (*Dendrocygna*) than to *Anas*.

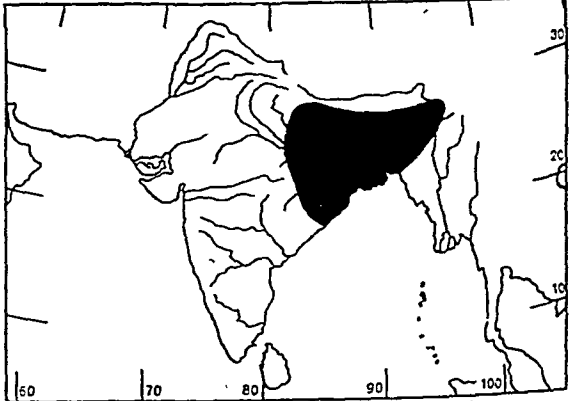
For anatomical details see Humphrey, P. S. and Ripley, S. D., 1962, *Penella*, 61: 1-21, suggesting closer affinity to Aythyinae than Anatinae.

ducks, e.g. Spotbill, but capable of diving like a Pochard on occasion. Sometimes perching on trees.

FOOD. In the gizzard of a specimen were found 'half-digested water weeds and various kinds of small shells' (Shillingford); therefore obviously omnivorous.

VOICE and CALLS (recorded in captivity). Of male a wheezy whistle recalling that of the mallards, but lower and weaker; of female a low quack (Delacour).

Rhodonessa caryophyllacea



Known (former) residential range

BREEDING. An anonymous writer in the defunct *Asian Sporting News* of 17 August 1880 (probably Shillingford) mentions taking its eggs in Purnea (Bihar) in June/July. Nest described as circular, well built of dry grass and a few feathers, without special lining. Diameter c. 9 inches (c. 23 cm.), depth 4-5 inches (c. 10-13 cm.) with wall 3-4 inches thick (c. 7-10 cm.). On ground, well hidden amidst tufts of tall grass, generally not more than c. 500 yards from water. Eggs, 5 to 10, ivory white, spherical, quite unlike those of other ducks in shape. Average size of 8 eggs from two different nests c. 44 × 41 mm. Two very round ones measured c. 43 × 42 mm. Both birds were flushed near a nest, so uncertain whether both sexes, or which, incubates. Shillingford has further described very realistic injury-feigning by a female to draw off intruders from the vicinity of young (or nest?).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	250-282	50-56	c. 40	100-131 mm.
♀♀	246-260	—	—	—

DUCKS, GEESE, SWANS

177

Weight. 1 lb. 12 oz. to 2 lb. 3 oz. (c. 793-990 gm.) — Shillingford. 1 ♂ 3 lb.; 1 ♀ 3 lb. (c. 1,360 gm.) — Inglis.

COLOURS OF BARE PARTS. ♂ Iris light red or orange-red. Eyelids flesh-coloured. Bill dull to bright reddish pink or deep rose-colour, darker on ridge of culmen and gony, brighter and purer pink on nail and at base of both mandibles. Legs and feet reddish black. In ♀ colours same but duller.

MISCELLANEOUS. An inventory recently made of all specimens of the Pinkheaded Duck preserved in the major ornithological collections of Europe, Asia, and N. America revealed that there are probably not more than 80 skins in existence all told, excluding China whence information was unavailable. The oldest of these is dated 1825 (Paris Museum). The paucity of museum skins of this unique and much sought species may be taken as a measure of its rarity even in the last century when no considerations of conscience or conservation could have restrained the collectors' zeal. (Sálim Ali, 1960, *Wildfowl Trust 11th Annual Report*, 1958-9, pp. 55-60.)

Genus *NETTA* Kaup

Netta Kaup, 1829, *Skizz. Entw.-Gesch. Eur. Thierw.* : 102. Type, by monotypy, *Anas rufina* Pallas

Bill long, slightly tapering, very little raised at base; culmen nearly straight. Nostrils placed rather less than one-third length from base. Lamellae broad, prominent, and set rather far apart. Feathering at base of bill ending abruptly in a straight line almost at right angles to commissure. Feet large but less so than in true pochards (*Aythya*); hind toe broadly lobed. Wing comparatively short, pointed, and set far back on the body. Tail of sixteen feathers, short, cuneate. Sexes dimorphic. Male with a full bushy crest.

The species *N. rufina* occurs in temperate Europe, Asia, and N. Africa.

107. Redcrested Pochard. *Netta rufina* (Pallas)

Anas rufina Pallas, 1773, *Reise Russ. Reichs*, 2: 713 (Caspian Sea)

Baker, FBI No. 2278, Vol. 6: 448

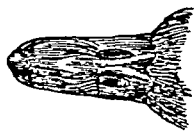
Plate 11, fig. 5 and Plate 13, fig. 5

LOCAL NAMES. *Lál chônch*, *Lál sir* (Hindi); *Bādā rūngāmuri*, *Herā hāns* ♂, *Chobra hāns* ♀ (Bengal); *Doommer* (Mirshikars, Bihar); *Dāmār* ♂, *Sānuca* ♀ (Nepal); *Bāthua*, *Rūlābo* (Sind); *Ratoheri* (Gujarat, Nal Sarovar); *Deo hāns* (Assam); *Irupi* (= 'diver' — all pochards, Manipur).

SIZE. Domestic duck —; length c. 54 cm. (21 in.).

FIELD CHARACTERS.

Male (breeding). Head and silky mop-like crest chestnut and golden orange, with bright crimson bill. Above, body light brown, with white patches on shoulders, and white wing-mirror. Below, black, the flanks conspicuously white. In flight, red head and bill, black body, white flanks, white underside of wings with a white bar on the trailing edges are revealing clues.



× c. ½

Has frequently been misidentified as Pinkheaded Duck (both called *Dāmār* in Bihar and Nepal!) but golden orange head (v. bright rose-pink), brownish black underparts with large white patches on flanks (v. all-black) are diagnostic. Furthermore, being largely

178

ANSERIFORMES

a diving duck, is more likely to be seen on deepish open water while Pinkhead on wooded jheels, forest pools and swamps.

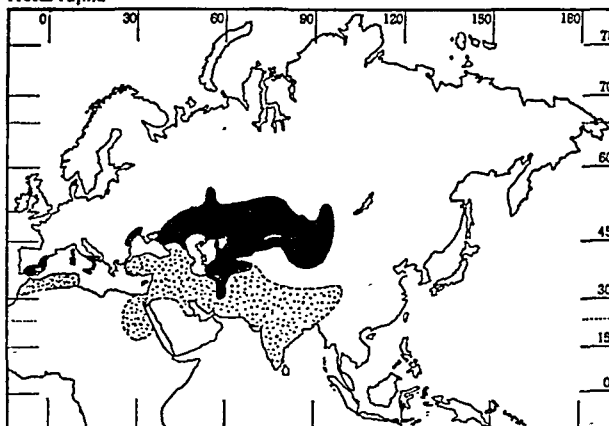
Male (in eclipse). Like female but browner on underparts and retaining bushy crest and bright-coloured eyes, bill, and feet.

Female (adult). Above, dull sooty brown with dark brown (slightly mottled) crown, and nape, sharply demarcated from whitish (pale grey) face and foreneck. Below, excepting breast largely whitish.

Young (immature). Like female, the male browner and darker with dark brown centres to the underparts, and bushier head than in female.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor; arrives about October and mostly gone by mid-March. Common and locally abundant especially in West Pakistan and NW. India (recorded in Nepal Valley) decreasingly so eastward (rare in Assam); south to about the 20th parallel. Less common in the Peninsula, to Madras where fairly plentiful in some years. Not recorded further south in Mysore or Kerala, or for certain in Ceylon. Affects large jheels and reservoirs with plenty of submerged vegetation.

Extralimital. Breeds from southern France, Holland, through lower Danube, S. Russia east across Kirghiz steppes to W. Siberia. Winters in the Mediterranean region; Burma, Shan States to China.

Netta rufina

■ Breeding ● Non-breeding

MIGRATION. Ringing records suggest that our wintering birds are derived from a very widespread northern a.e.a. Two examples ringed in West Pakistan (Larkana district and Bahawalpur) were recovered respectively in Russian Turkestan (at 37°21'N., 66°20'E.) and near Lake Baikal in Siberia (c. 55°N., 105°E.).

GENERAL HABITS. Keeps more to fairly deep open water than to reedy marginal shallows, and obtains its food chiefly by diving, sometimes remaining submerged for many seconds and surfacing again with a peculiar abrupt

DUCKS, GEESE, SWANS

179

spring or pop-up. Often also up-ends in shallow water, like surface-feeding ducks, to reach the bottom mud and weeds. Occasionally walks about and grazes on marshy edges of jheels. Usually shy and wary, quick to take alarm, flying high and keeping well out of gunshot. The palatability of its flesh varies according to the diet on which it has been chiefly subsisting.

FOOD. Largely vegetarian: shoots, buds, rhizomes and seeds of aquatic weeds and grasses, e.g. *Sagittaria*. Also water insects, molluscs, tadpoles, etc. Hume records one that had gorged itself on fish about an inch in length.

VOICE. Very silent in winter. No calls recorded. In breeding male described as a 'hard wheeze, harsher than the Mallard's' (Delacour).

BREEDING. Extralimital. Nest, of reeds, rushes and grass thickly lined with down, placed among herbage at edge of swamps, etc. Eggs, 7 to 12 or 14, pale olive-grey. Average size of 90 eggs 57.8 × 42.4 mm. (Baker).

MUSEUM DIAGNOSIS. For details of plumages etc. see Witherby 1939, 3: 284-5 'When freshly shot the flanks and lesser coverts have a most beautiful salmon-pink tinge which, however, quickly fades' (Ticehurst).

Chick (in down). See Delacour 1959, 3: 49 (description), 140 (plate).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	256-282	48-54	c. 40-45	c. 60-75 mm.
♀♀	241-279	44-51		(Baker)

Weight. ♂ 1 lb. 12 oz. to 2 lb. 14 oz. (c. 795-1305 gm.); ♀ 1 lb. 10 oz. to 2 lb. 6 oz. (c. 735-1080 gm.) — Hume; 2 ♂♂ 940, 1260, 1 ♀ 970 gm. (BNHS).

COLOURS OF BARE PARTS. ♂ Iris bright red. Bill bright red, the nail paler. [Legs and] feet orange-yellow, more or less tinged with black. ♀ Iris reddish brown, becoming orange-red in spring. Bill greyish black, the edges and tip pale pink. Legs black, more or less tinged with pink (Delacour).

Genus *AYTHYA* Boie

Aythya Boie, 1822 (before May 1), Tagebuch Reise durch Norwegen : 308, 351. Type, by monotypy, *Anas marila* Linnaeus

Nyroca Fleming, 1822, *Philos. Zool.*, 2: 260. Type, by tautonymy, *Anas nyroca* Gùldenstädt

Cf. Sharpe, 1899, *Handlist*, 1: 222-3. (*Aythya*, *Aristonetta*, *Fuligula*) Ibis, 1939: 521-2.

Bill of moderate length, rather more raised at the base than in *Netta*, uniformly broad throughout its length, or slightly broader at tip. Culmen slightly concave. Feathering at base of bill forming a convex line on commissure. Lamellae less prominent than in *Netta*, short, and set much further apart. Nostrils as in *Netta*. Character of wings, tail, and feet as in that genus, but the last much larger and placed farther back on the body.

Represented in India by five species, all migratory.

Key to the Species

	Page
A Bill wider at tip than at base.....1	
1 Head, neck, and breast black.....a	
Head, neck, and breast brown or brownish black.....b	
a Head crested, upperparts blackish..... <i>A. fuligula</i> (♂)	185
Head not crested, upperparts white with black vermiculations....	
..... <i>A. marila</i> (♂)	187

180

ANSERIFORMES

	Page
b Wide white band around base of bill..... <i>A. marila</i> (♀)	187
White band at base of bill indistinct or lacking..... <i>A. fuligula</i> (♀)	185
B Bill same width at tip and base.....2	
2 Wings lacking speculum.....c	
Wings with white speculum.....d	
c Head and neck chestnut, back and wings pale grey..... <i>A. ferina</i> (♂)	180
Head and neck pale rufous, back and wings greyish brown..... <i>A. ferina</i> (♀)	180
d Head, neck, and breast chestnut..... <i>A. nyroca</i> (♂)	182
Head, neck, and breast dull brown. Chin and throat sometimes sprinkled with white..... <i>A. nyroca</i> (♀)	182
Head and neck black glossed with green, breast chestnut..... <i>A. baeri</i> (♂)	184
Head dark blackish brown with lighter chestnut patch behind bill. White diamond-shaped spot sometimes present on chin at base of lower mandible..... <i>A. baeri</i> (♀)	184

108. Common Pochard. *Aythya ferina* (Linnaeus)

Anas ferina Linnaeus, 1758, *Syst. Nat.*, ed. 10, 1: 126 (Sweden)

Baker, FBI No. 2279, Vol. 6: 450

Plate 11, fig. 6 and Plate 13, fig. 6

LOCAL NAMES. *Burār nār*, *Lāl sir* (Hindi); *Rangā mūri*, *Lāl mūri* (Bengal); *Chon* (Nepal); *Rangā mūrya* (Assam); *Irūpi* (Manipur); *Torāndio* (Sind); *Tarāndio* (Gujarat, Nal Sarovar); *Dhusanda* (Kutch); *Sengāliān* (Tamil).

SIZE. Domestic duck —; length c. 48 cm. (c. 18½ in.).

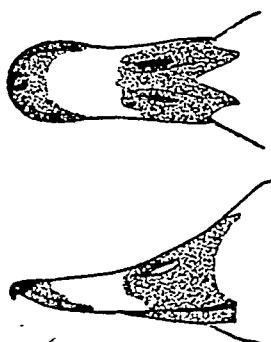
FIELD CHARACTERS. A rather squat, tubby duck.

Male (breeding). Head and neck chestnut-red. Upper back and breast black. Rest of upperparts light grey finely vermiculated with black. Rump, upper and under tail-coverts black. Underparts and sides largely greyish white. A dull grey speculum on wing.

Female (in eclipse). Head duller; black of upper back and breast replaced by brown.

Female (adult). Head, neck, upper back and breast rufous brown. Rest of back and scapulars greyish brown, faintly vermiculated. Lower parts mostly greyish brown. Buffy cheeks and throat, a buff mark around base of bill, and pale blue subterminal band on bill are further pointers.

In flight absence of white wing-bar (only inconspicuous dull grey) distinguishes both sexes from other pochards, and the female of this species from females of Scaup and Tufted Pochard (qq.v.).



Bill of adult male from above and side, × c. ½

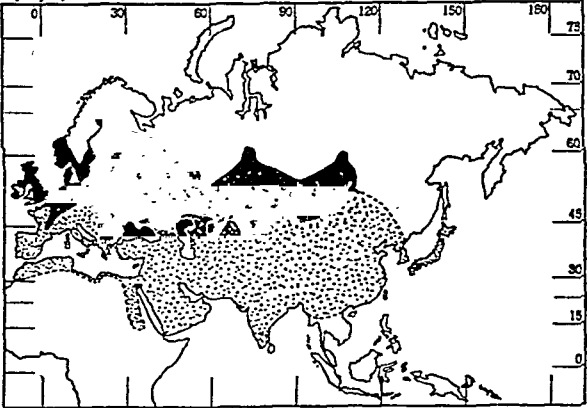
Young (immature). Like female, the male with head more reddish and paler, and underparts browner.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor, arriving in the north fairly late (c. mid-October) and mostly gone by end March. Common and abundant in W. Pakistan and NW. India, and across, more sparsely, to Assam, Manipur, and E. Pakistan. Occurs in Nepal; decreasingly southward in the Peninsula, irregularly to Mysore where not uncommon in some years. Not recorded farther south, or in Ceylon. Frequents the open parts of jheels and irrigation reservoirs with submerged aquatic vegetation.

Extralimital. Breeds in British Isles, S. Scandinavia, and from eastern Russia through W. Siberia to Lake Baikal, south to Holland, Germany, Balkans, Black Sea, Kirghiz steppes and Yarkand. Winters in breeding range and south to Nile Valley; Burma, and S. China (Peter Scott).

MIGRATION. Two Common Pochards ringed in Madhya Pradesh (Dhar) and W. Pakistan (Bahawalpur) respectively, have been recovered in Siberia, between c. 53° & 55°N. and 76° & 84°E., indicating the provenance of at least a part of our wintering population.

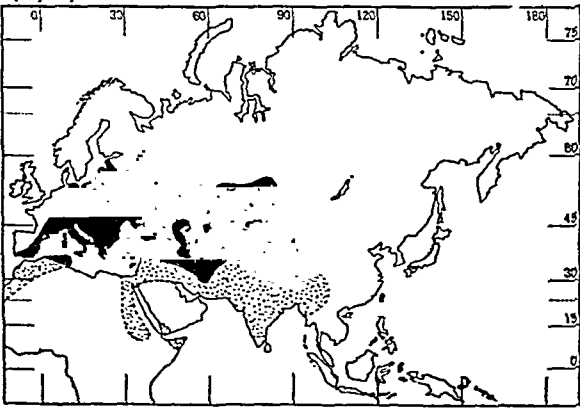
Aythya ferina



■ Breeding ■ Non-breeding

GENERAL HABITS. One of our commonest diving ducks; sometimes collecting in flocks and rafts of up to 300 or 400, to very large congregations of several thousand strong, e.g. on Manchar lake, Sind. Feeds chiefly under water; therefore usually seen on open expanses in the middle of tanks and jheels. Largely nocturnal where subjected to disturbance, flighting to its feeding grounds at dusk and returning to the daytime refuge at dawn. Swims strongly rather low on the water; walks clumsily on land. Flight swift with rapid wing-strokes, but take-off rather slow and awkward preceded by some pattering along surface. Ranked normally amongst the finest ducks for the table.

Aythya nyroca



■ Breeding ■ Non-breeding

STATUS, DISTRIBUTION AND HABITAT. Breeds in Kashmir and Ladakh; winter visitor elsewhere. Common in W. Pakistan and N. India, and practically the entire Union; Nepal (Valley chiefly on passage; bhabar winter). Less common to rare in Bengal, Assam, Manipur, E. Pakistan. Sparsely in the Deccan south to Mysore and Kerala (on coastal backwaters and lagoons). No record from eastern side of the Peninsula south of Madras, or Ceylon. Affects weedy and rush-covered jheels as well as more open irrigation tanks, the latter chiefly as daytime refuges and foraging bases.

Extralimital. 'Breeds in S. Europe, Balkans, Poland and W. Siberia to the Ob Valley, south to N. Africa, Persia, Turkestan, Kashmir, the Pamirs, and S. Tibet. Winters, in the Mediterranean region, Nile Valley, Persian Gulf, India, and Burma' (Peter Scott).

MIGRATION. An adult ringed in W. Pakistan (Karachi district) in winter (January) was recovered at 44°34'N., 66°7'E. in the Syr Daria region of Kazakh SSR, three years later. As this was at the end of April it is uncertain whether the bird had already arrived on its breeding-grounds.

GENERAL HABITS. Similar to those of the Common Pochard and others of the genus. In coastal areas, and in the Kerala backwaters, often spends the daytime riding on the sea beyond the surf, safe from disturbance by passing boats, flighting inland at dusk to feed in outlying tanks and paddy-fields and returning to the diurnal refuge at dawn. Is an expert diver and underwater swimmer, procuring most of its food thus, and difficult to retrieve from the water if shot and only winged.

FOOD. Vegetable as well as animal: corals, shoots, leaves, and seeds of aquatic plants; crustaceans, molluscs, water insects and larvae, worms, frogs and small fish.

FOOD. Largely vegetarian: rhizomes, buds, shoots and seeds of aquatic plants. Also crustacea, molluscs, water insects and larvae, worms, and occasionally tadpoles and small fish.

VOICE. Very silent in India. Nothing recorded.

BREEDING. Extralimital. Nest, a cup of flags, rush blades and reeds, thickly lined with down, placed on the ground among high reeds and rushes. Eggs, 6 to 14, dull greyish- or olive-drab. Average size of 160 eggs 60.6 x 42.9 mm. (Baker).

MUSEUM DIAGNOSIS. For details of plumages etc. see Witherby 1939, 3: 283-92. Chick (in down). See Delacour 1959, 3: 140 (plate).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	210-225	43-50	c. 35-39	c. 54-76 mm.
♀♀	200-213			

(Baker)

Weight. ♂ 1 lb. 13 oz. to 2 lb. 5 oz. (c. 822-1052 gm.); ♀ 1 lb. 5 oz. to 2 lb. 4 oz. (c. 595-1025 gm.) — Hume.

COLOURS OF BARE PARTS. Iris yellow or reddish yellow. Bill: base and tip black; middle portion pale plumbeous-blue to dark slaty blue. Legs and feet variable slaty blue; webs and joints darker and blackish.

109. White-eyed Pochard or Ferruginous Duck. *Aythya nyroca* (Güldenstädt)

Anas nyroca Güldenstädt, 1770, Novi Comm. Sci. Petropol., 14: 403 ('... regionibus Tanaicensibus inter gradum 54°-55° ...' = S. Russia)

Baker, FBI No. 2280, Vol. 6: 453 (= *Nyroca nyroca*)

Plate 11, fig. 10 and Plate 13, fig. 8

LOCAL NAMES. *Kurchiya*, *Burur madda* (Hindi); *Lal bigri*, *Bhish hars* (Bengal); *Burru*, *Birino* (Sind); *Tarni* (Gujarat, Nal Sarovar); *Melak* (Nepal terai); *Kili mūri* (Assam); *Iripi* (Manipur).

SIZE. Domestic duck —; length c. 41 cm. (16 in.).

FIELD CHARACTERS.

Male (breeding). Overall aspect of plumage rich rufous-brown and blackish brown, with a large white oval patch on belly, white speculum, and white under tail-coverts. At short range white eye conspicuous.

Male (in eclipse). Head, neck, and breast dull reddish with sandy borders to feathers of lower neck. Mantle brown.

Female (adult). Similar to male but duller — brown rather than chestnut — with the belly less contrasty off-white and not sharply demarcated at the edges. Eye brown.

In flight the chestnut colour, white oval belly-patch, white under tail-coverts, and broad white crescentic band on flight feathers (outer secondaries) diagnostic in both sexes.

Young (immature). Like female but more uniformly brown, with silvery brown underparts and brownish grey eyes.

VOICE. A peculiar harsh *kirr-kerr*, *kirr* uttered both as it flushes from the reeds and when walking about and feeding in a marsh (Hume).

BREEDING. Within our limits only in Kashmir and Ladakh at about 1500 metres altitude on the Hokarsar, Dal, and other lakes. Season, May to June/July. Nest, a pad of rushes c. 25-35 cm. across and 10-12 cm. in depth, thickly lined with finer grasses and down feathers, with a deep depression for the eggs. Built among reed-beds close to the water's edge. Eggs, 6 to 12 — usually 8-10 — pale buff or *café-au-lait*, moderately broad regular ovals, smooth and fine-textured. Average size of 150 eggs 51.7 x 37.9 mm. (Baker). 'Incubation 25-27 days' (Delacour). The account from Hume's time of 'boatloads' of its eggs being brought by Kashmiri fishermen for sale as food in the Srinagar bazaar seems difficult to credit in view of the low numerical status of the breeding population today. As has been suggested, these boatloads possibly comprised a mixed bag of all marsh-birds' eggs including Mallard, coots, moorhens, and others.

MUSEUM DIAGNOSIS. For details of plumages see Witherby 1939, 3: 294-6. For differentiation from the superficially similar Eastern White-eye (*Aythya boschi*) see under that species and Key.

Chick (in down). See Delacour 1959, 3: 71 (description); 140 (plate).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	174-192	40-43	29-32	48-58 mm.
♀♀	176-185	36-40	—	—

(Witherby)

Weight. ♂ 1 lb. 2 oz. to 1 lb. 9 oz. (c. 510-710 gm.); ♀ 1 lb. 3 oz. to 1 lb. 6 oz. (c. 540-625 gm.) — Hume.

COLOURS OF BARE PARTS. Iris ♂ white, occasionally yellow; ♀ brown. Bill dull slaty or bluish black. Legs and feet dull dark slaty tinged with grey or green, sometimes mottled about the joints.

110. Baer's Pochard or Eastern White-eye. *Aythya boschi* (Radde)

Anas (Fuligula) boschi Radde, 1863, Reise Süd von Ost-Sibirien, 2: 376, pl. 13 (upper Salbatch Plain, middle Amur River, Siberia)

Baker, FBI No. 2281, Vol. 6: 454

Plate 11, fig. 9

LOCAL NAMES. *Bāda bhūti hāns* (Bengal); *Bor kili mūri* (Assam).

SIZE. Domestic duck —; length c. 46 cm. (18 in.).

FIELD CHARACTERS.

Male (breeding). Similar to Ferruginous Duck (No. 109) but whole head and neck black glossed with green, grading into rich rufous-chestnut on breast.

Male (in eclipse). Duller, with head and neck unglossed brownish black like female.

Female (adult). Head and neck dull blackish brown without metallic gloss. A chestnut patch on face near bill. On the whole very like female 109, and if unaccompanied by ♂, doubtfully distinguishable from it in the field.

DUCKS, GEESE, SWANS

185

Young (immature). Like female, but browner.

STATUS, DISTRIBUTION AND HABITAT. Uncommon and erratic winter visitor to Manipur (fairly regular), Assam, W. Bengal, and E. Pakistan. Has occurred also in Bihar. Possibly less rare in these areas than records indicate, but casually overlooked among sportsmen's bags of white-eyes, both species being found together and the females superficially so alike.

Extralimital. Breeds from Transbaikalia to the lower Ussuri and the Amur; Kamchatka (?). Winters in China, Korea, Japan, upper Assam, and Burma (Peter Scott).

MIGRATION. Nothing known.

GENERAL HABITS. Little recorded except that it is stronger and faster on the wing than the Ferruginous Duck.

FOOD AND VOICE. Not specifically described.

BREEDING. Extralimital. Little known.

MUSEUM DIAGNOSIS**MEASUREMENTS**

	Wing	Bill	Tarsus	Tail
♂♂	210-233	48-50	36-38	67-72 mm.
♀♀	186-203	47-48	—	—

(Delacour)

COLOURS OF BARE PARTS. Iris ♂ white or golden yellow; ♀ brown. Bill slaty blue, the basal third, tip, and nail blackish. Legs and feet grey, the joints and webs darker.

111. Tufted Duck. *Aythya fuligula* (Linnaeus)

Anas fuligula Linnaeus, 1758, Syst. Nat., ed. 10, 1: 128 (Sweden)

Baker, FBI No. 2283, Vol. 6: 458

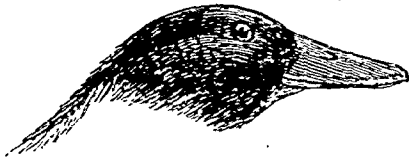
Plate 11, fig. 7 and Plate 13, fig. 7

LOCAL NAMES. *Dūbāru*, *Abīāk*, *Rāhūrā* (Hindi); *Turando*, *Rūhārō* (Sind); *Kālū-lio* (Gujarat, Nal Sarovar); *Malak* (Nepal terai); *Kūringāliān* (Tamil); *Nāllō chiluvu* (Telugu); *Bāmuniya hāns* (Bengal, Assam).

SIZE. Domestic duck —; length c. 43 cm. (17 in.).

FIELD CHARACTERS.

Male (breeding). Plumage boldly contrasting black and white. Jet-black head, neck, breast, back, tail, and vent; pure white flanks and sides of body. White wing-mirror (speculum). A limp occipital tuft (prominent in profile) and yellow eye, additional clues. In flight a broad white band along trailing edge of wings in both sexes conspicuous.



× c. 1

DUCKS, GEESE, SWANS

187

emigration. Affects opener and deeper tanks and irrigation reservoirs than White-eyed Pochard, and expands of open water in the middle of jheels.

Extralimital. Breeds in Europe and Asia from Iceland and the British Isles to the Commander Islands (Pacific), south to central Europe, Balkans, Kirghiz steppes, Lake Baikal, the Amur and Sakhalin. Winters in southern half of breeding range and south to Nile Valley, Persian Gulf, S. China and Philippines (Peter Scott).

MIGRATION. No ringing data.

GENERAL HABITS. Not appreciably different from the Common and White-eyed Pochards (qq.v.), likewise procuring its food chiefly by diving. Rides rather low on water, often with only top of back visible, as in cormorant. Occasionally in very large flocks, or rafts, of several hundred on open tanks.

FOOD. Both animal and vegetable matter as in other pochards.

VOICE. Mostly silent in its winter quarters. A harsh, low *kur-r-r*, *kur-r-r*, uttered in flight.

MUSEUM DIAGNOSIS. For details of plumages etc. see Witherby 1959, 3: 300-2 Chick (in down). See Delacour 1959, 3: 77 (description); 140 (plate).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	192-208	37-44	33-37	c. 49-58 mm. (Baker)
♀♀	189-202	37-42		

Weight. ♂ 1 lb. 8 oz. to 2 lb. 4 oz. (c. 680-1025 gm.); ♀ 1 lb. 4 oz. to 1 lb. 10 oz. (c. 568-795 gm.). — Hume.

COLOURS OF BARE PARTS. Iris bright yellow. Bill greyish blue or bluish slate to dull dark plumbeous; nail and tip black. Legs and feet same as bill; joints darker, webs almost black.

112. Scaup Duck. *Aythya marila marila* (Linnaeus)

Anas Marila Linnaeus, 1761, Fn. svcc., ed. 2: 39 (Lapland)

Baker, FBI No. 2282, Vol. 6: 456

Plate 11, fig. 8 and Plate 13, fig. 9

LOCAL NAMES. Doubtfully differentiated from 111.

SIZE. Domestic duck —; length c. 46 cm. (c. 18 in.).

FIELD CHARACTERS.

Male (breeding). Very similar to Tufted Duck, the black parts glossed with purple but black back replaced by vermiculated pale grey. Occipital tuft lacking.

Male (in eclipse). Like adult female, but upperparts more heavily vermiculated and pure white facial band absent. Speculum whiter and more pronounced than in female.

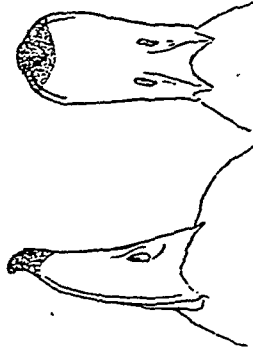
Female (adult). Dark brown, closely resembling female Tufted, but always with a sharply defined white band at forehead around base of bill, broader and more prominent than in similar Tufted females.

Eye colour and wing pattern in both sexes same as in Tufted Duck.

186

ANSERIFORMES

Male (in eclipse). Upperparts duller and browner, and dusted with white. Chin and throat mottled with white; lower breast with crescentic white mottling. Sides and flanks pale brown vermiculated whitish.

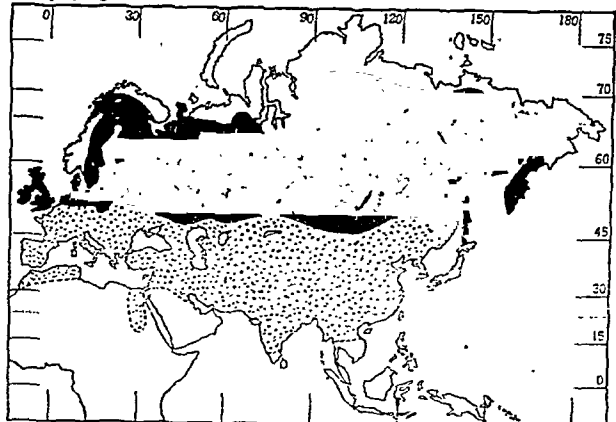


Bill of adult male from above and side, × c. 1

Female (adult). Dark brown replaces black parts of male. White of lower plumage sootier, less in extent, and diffused at edges (not clear-cut). Tuft rudimentary. Sometimes a white ring of feathers at forehead around base of bill but much narrower than in Scaup (q.v.). Rather variable in details.

Young (immature). Male like adult female, but with mantle feathers more dusted with white, underparts more uniform brown, the belly barred with white. Young female more uniform brown.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor arriving about mid-October and mostly gone by end March. Common in W. Pakistan and N. India (rare in Kashmir; on passage?) including Nepal Valley and lowlands, east to Assam, Manipur, and E. Pakistan, south to about the 20th parallel (Madhya Pradesh, Orissa). Decreasingly in the Deccan and farther south to Mysore (rare). Rare vagrant in Ceylon (1 record), and Maldiv Islands. Has been recorded on high-altitude tarns and lakes (up to c. 5330 m.) in E. Nepal and Sikkim, March through May, presumably on northward

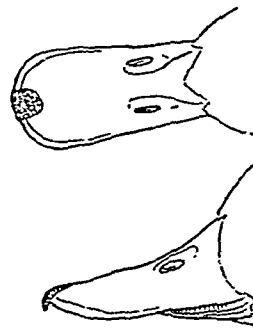
Aythya fuligula

■ Breeding ▨ Non-breeding

188

ANSERIFORMES

Young (immature) male like adult female, but darker and richer brown. Facial band much less in extent, or wanting.



Bill of adult male from above and side, × c. 1

STATUS, DISTRIBUTION AND HABITAT.

Rare vagrant in winter. Has occurred in W. Pakistan (Attock, Karachi?), Salt Range, Kashmir, Kulu, Punjab, Delhi (Gurgaon), Nepal, Uttar Pradesh, Bihar (Monghyr), W. Bengal (Calcutta), E. Pakistan (Chittagong), Assam (Dibrugarh, Lakhimpur), Manipur (near Imphal), Gujarat (Bhavnagar), Maharashtra (Panvel, Ahmednagar). Not south of 19°N. latitude. Some young birds in duck hunters' bags possibly mistaken for other pochards and escape record. Elsewhere largely a sea duck; in India taken on freshwater lakes.

Extralimital. 'Breeds in N. Europe and Asia (eastern limits not yet determined). Winters on coasts of W. Europe (including Britain), eastern Mediterranean, Black Sea, Persian Gulf, NW. India' (Peter Scott).

GENERAL HABITS. Very little recorded in India, and nothing to suggest any appreciable difference from Tufted Duck in habits, food or voice.

BREEDING. Extralimital. Nest and site as in Tufted Duck. Eggs, 7 to 12, olive-drab. Average size of 150 eggs 62.7 × 43.8 mm. (Baker). Incubation 23-27 days (Delacour).

MUSEUM DIAGNOSIS. Female differentiated from female Tufted Duck by broader, sharply defined white band around base of bill, larger wing, and longer, broader bill. For details of plumages see Witherby 1959, 3: 305-7.

Chick (in down). See Delacour 1959, 3: 140 (plate).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	217-235	c. 43-47	34-38	45-63 mm. (Baker)
♀♀	209-225	c. 40-46		

Weight. ♂ 1 lb. 12 oz. to 2 lb. 8 oz. (c. 795-1135 gm.). — Hume.

COLOURS OF BARE PARTS. Iris yellow or golden yellow. Bill greyish blue to dull slaty grey; nail black. Legs and feet greyish blue to dull slaty, darker on joints; webs and claws black.

MISCELLANEOUS. Longevity (from ringing data): c. 13 years (Ring, 1962, 33: 148).

Genus *Aix* Boie

Aix Boie, 1828, Isis, 21, col. 329. Type, by subsequent designation, *Anas sponsa* Linnaeus (Eyton, 1838, Monogr. Anat.: 35)

Foreneck feathers in male much elongated, forming a conspicuous ruff. Innermost secondary highly ornamental, very broad and long. Head crested. Culmen short,

DUCKS, GEESE, SWANS 189

nearly straight. Legs placed well forward; tarsus short; claws sharp enabling the birds to climb steeply inclined tree-trunks and boughs. For further details see Delacour 1959, 3: 99-100.

113. Mandarin Duck. *Aix galericulata* (Linnaeus)

Anas galericulata Linnaeus, 1758, Syst. Nat., ed. 10, 1: 128 (China)
Baker, FBI No. 2251, Vol. 6: 394

LOCAL NAME. None.

SIZE. Domestic duck —; Common Teal +; length c. 44 cm. (c. 17 in.).

FIELD CHARACTERS.

Male (breeding). A multicoloured, highly ornamental little duck — orange-buff, metallic bronzy and coppery blue, green, purple, cinnamon, and chestnut. Sides of face greyish buff, bordered above by white supercilium from bill to nape. A long, thick metallic purple nuchal crest falling over upper back. Enormously broadened fan-shaped tertiary feathers, steel blue and orange-chestnut, upstanding like sails (or like exaggerated tail-fins of an aeroplane). Lower neck and sides of breast brilliant purple-copper. Sides of lower breast with a composite band of 3 black and 2 white stripes — a broken pectoral band. Altogether a unique combination of feather structure and colour, seen in no other duck.

Male (in eclipse). More or less like female, but more glossy. Bill remains reddish and legs yellow.

Female (adult). Above, head and mop-like crest grey, with a white ring round eye continued as a streak behind it. Rest of upperparts olive-brown. A deep blue-green wing speculum margined with black and white. Below, chin, throat, and upper neck white. Lower neck, breast, sides, and flanks olive-brown broadly mottled paler. Rest of underparts white.

Young (immature). 'Like females only more uniform brownish grey, the male with less conspicuous eye markings' (Delacour).

STATUS, DISTRIBUTION and HABITAT. Exceptional vagrant. Only taken twice within our limits: a specimen in Assam (Lakhimpur dist.) and four in one day in Manipur (Mayangthang Valley, c. 930 m.). The latter in March 1934 on a small stream with occasional high grassy pools along its bed. Stuart Baker once observed a party of six birds also in Lakhimpur district, Assam.

Extralimital. E. Asia from the Amur and Ussuri, south through Korea, E. China, Japan to Formosa (Taiwan).

GENERAL HABITS. In its residential range associates in small flocks of a dozen or so, frequenting and feeding in forest streams and ponds. Perches freely in tall trees, 'whole families together exactly like a family of rooks or crows' (Sowerby). Is a strong flier (reminiscent of Common Teal) and good swimmer; walks well but dives poorly.

FOOD. Animal and vegetable matter. Particulars not recorded.

VOICE. Said to utter 'a peculiar whistling note'.

BREEDING. Extralimital. Nest, of grass, thickly lined with down, in holes in trees by forest streams. Eggs, 9 to 12, buffy stone colour, glossy. Average size 49 × 36.5 mm. Incubation 28-30 days (Delacour).

DUCKS, GEESE, SWANS 191

STATUS, DISTRIBUTION and HABITAT. Resident but local, practically throughout the Indian Union, both Pakistans, Nepal terai, Ceylon. Straggler to Andaman and Maldivé Is. Plains to c. 300 metres altitude. Commonest in deltaic West Bengal and E. Pakistan. Rare or absent in arid portions of W. Pakistan, Punjab, and Rajasthan. Not recorded from Kerala. Subject to local movements dependent on water conditions. Affects vegetation-covered jheels, village tanks, and ponds; also shallow lagoons, e.g. 'Salt Lakes', Calcutta.

Extralimital. Burma, east to S. China, south to Malaya and north-western East Indies (Peter Scott).

MIGRATION. Locally migratory to some extent, but no precise indication.

GENERAL HABITS. Usually pairs in breeding season; small flocks from 5 to 15, occasionally up to 50 or more, at other times 'up to 500' in Mysore (Phylian-Adams). Tame and confiding where unmolested, e.g. on secluded village tanks; exceedingly wild where persecuted by hunters. Flight strong and swift with rapid whirring wing-beats, usually with a great deal of agile turning and twisting, fairly low over water and skimming the tree-tops. Feeds on surface but can dive creditably to avoid capture when winged by shot or while moulting flight feathers. Clumsy on land.

FOOD. Mainly vegetarian: shoots, corms, seeds of aquatic plants, grains of cultivated and wild rice (known as *parai* in U.P.), etc. Also crustacea, worms, and insects and their larvae. For details see Mukherjee, A. K., 1974. JBNHS 71(2): 192-4.

VOICE. A peculiar short, sharp, chuckling cackle, rendered by Col. Tickell as resembling the words 'Fix baggonets! Fix baggonets!', uttered chiefly on the wing.

BREEDING. Season, June to September — mainly July and August — in N. India; February to August in Ceylon. Nest, a natural hollow in a tree-trunk standing in or near water, 2 to 5 metres above water level. Occasionally a hole in a building. Unlined or scantily so with grass, feathers, and rubbish; no down. One nest recorded in a box-like hole in the coping of Government House, Rangoon, in 1924, 68 feet (c. 20 m.) above ground. Eggs, normally 6 to 14 (once 22, probably product of more than one female), pearly white, becoming stained and dirty during incubation. Short broad ovals, equal at both ends; fine and close-textured. Average size of 100 eggs 43.1 × 32.9 mm. Incubation by female alone (?); period 15-16 days from last egg (Baker).

In the case of the Rangoon nest, the thirteen ducklings were pushed out of nest-hole by parent, dropped like stones for some distance, then fluttered to break fall, and reached ground safely. Elsewhere female has also been observed carrying down duckling on her back (H. S. Wood).

MUSEUM DIAGNOSIS

Chick (in down). Dark greyish brown above, with large white patches on scapulars, wings, flanks, and sides of rump. Cap black; hindneck greyish. Rest of head and neck white; a black streak through eye continued over hindneck. Underparts pale buff. See Delacour 1959, 3: 140 (plate).

MEASUREMENTS	Wing	Bill	Tarsus	Tail
♂♂	152-167	22-24	23-25	72-75 mm.
♀♀	150-153	20-23	—	—

(Delacour)

190 ANSERIFORMES

MUSEUM DIAGNOSIS. For fuller description of plumage see Baker, loc. cit. Chick (in down). See Delacour 1959, 3: 106 (description); 140 (plate).

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	220-235	27-31	35-42	110-115 mm.
♀♀	217-230	26-30	—	—

(Delacour)

COLOURS OF BARE PARTS. Iris dark brown with a yellow outer ring. Bill red (pink in some females); nail fleshy pink. Legs orange-buff.

MISCELLANEOUS. The Mandarin duck occupies an important place in Japanese folklore and art as a symbol of marital fidelity, on a par with the Sarus crane in India. In Japanese paintings and embroidery the ornate male is seldom depicted alone; traditionally he is always accompanied by his plain-coloured spouse (Austin & Kuroda, 1953).

Genus NETTAPUS Brandt

Nettapus Brandt, 1836, Descr. Icon. Anim. Ross. Nov., Avcs, fasc. 1: 5. Type, by monotypy, *Anas madagascariensis* Gmelin = *Anas avara* Boddaert

Distinguished by small size and short goose-like bill, high at base narrowing gradually in front. Nostrils small, oval, situated near base of commissure. Legs short; hind toe narrowly but distinctly lobed. Wings pointed. Tail rounded. Sexes dimorphic.

114. Cotton Teal or Quacky-duck. *Nettapus coromandelianus* coromandelianus (Gmelin)

Anas coromandelianus Gmelin, 1789, Syst. Nat., 1(2): 522 (Coromandel, India)
Baker, FBI No. 2250. Vol. 6: 392
Plate 11, fig. 12 and Plate 13, fig. 12

LOCAL NAMES. Girri, Girria, Girja (Hindi); Gūrgūra (Etawah); Bālī hāns (Bengal); Bhullia hāns (E. Pakistan); Dāndāna (Orissa); Ade, Aila (Ratnagiri); Naher, Kesh, Chuwa (Nowgong, Assam); Bahār, Kārārhi (Sind).

SIZE. Partridge; length c. 33 cm. (13 in.).

FIELD CHARACTERS. The smallest of our ducks; with a short stubby goose-like bill.

Male (breeding). Crown and back blackish brown, the latter glossed with purple and green. Face, neck and underparts white, with a prominent black collar round base of neck, and white wing-bar. In flight diminutive size, predominatingly white plumage, and white bar on trailing edge of wing diagnostic.

Male (in eclipse) like female but upperparts darker and wing-bar prominent as in breeding dress.

Female (adult), duller and browner with less contrasty white in plumage. White wing-bar less prominent. A dark line through eyes.

Young (immature). Like female but more brown about the head and more banded with light brown on flanks. Wing-bar in males more prominent.



192 ANSERIFORMES

Weight. ♂ c. 8 to 11 oz. (c. 225-312 gm.); ♀ 6½ to 9 oz. (c. 185-255 gm.) — Hume; 5 ♂♂ 230-385 (av. 298), 5 ♀♀ 250-320 (av. 267) gm. — BNHS.

COLOURS OF BARE PARTS. Iris ♂ red-brown; ♀ brown. Bill ♂ black; ♀ brown or dark olive, yellowish on lower mandible and gape. Legs and feet blackish brown or black.

Genus SARKIDIORNIS Eyton

Sarkidiornis Eyton, 1838, Monogr. Anat.: 20. Type, by original designation, *Anas melanotos* Pennant

Bill of moderate length furnished in the male with a fleshy knob on the base which becomes greatly swollen in the breeding season. Tail of twelve feathers, long and graduated. Hind toe narrowly lobed. A spur on shoulder of wing.

Tropical; found in America, Africa, Madagascar, east to Burma and the Indo-chinese subregion. A single species in India.

115. Nakta or Comb Duck. *Sarkidiornis melanotos melanotos* (Pennant)

Anser melanotos Pennant, 1769, Ind. Zool.: 12, pl. 11 (Ceylon)
Baker, FBI No. 2247. Vol. 6: 385
Plate 12, fig. 5

LOCAL NAMES. Nākta (Hindi; Bengal); Nāktā (Bihar); Nāki hāns (Orissa); Jutta chiluvu (Telugu); Doddā sarle hākki (Kannada); Kāro hānj (Sind); Kābaliyā (Sinhala); Mookkān thāri (Tamil).

SIZE. Domestic duck +; length c. 76 cm. (30 in.).

FIELD CHARACTERS. A large perching duck of superficially similar colour pattern to Cotton Teal.

Male (adult). Upper back black, glossed with blue-green and purple. Lower back grey, conspicuous in flight. Head and neck white, speckled with black. A black half-collar down side of breast; another similar black band descending in front of under tail-coverts. Wing speculum (secondaries) bronze. A curious fleshy knob, or comb, on base of bill at forehead, becoming greatly swollen in breeding season.

No eclipse plumage.

Female (adult). Like male, but without comb on bill and considerably smaller and duller. Underparts somewhat mottled with brown and lacking demi-collar on upper breast, and band near tail.

Young (immature), differs from female in being less glossy on black upperparts. White of hindneck sullied with brown and barred with blackish. Lower back and rump dull greyish white; upper tail-coverts and tail dull brown (Whistler).

STATUS, DISTRIBUTION and HABITAT. Resident, shifting locally with water conditions. Rare in southern and eastern Sind; absent elsewhere in W. Pakistan. Occurs practically in all India, Nepal terai, and E. Pakistan, east through Assam, south to Mysore (rare). Formerly sparse resident in Ceylon; now believed extinct as no record in present century. Affects reedy banded tanks and jheels in well-wooded plains country.

Extralimital. Africa from Gambia and the Sudan, south to the Cape and Madagascar; Burma and SE. China (Peter Scott).

DUCKS, GEESE, SWANS

193

Another race, *syliatica* (= *canaliculatus*) in South America.

GENERAL HABITS. Keeps in family parties of 4 to 10 birds, but flocks of 25 to 30 occasional; more rarely gatherings of even up to a hundred. Flight strong and swift with wing-action reminiscent of geese. A good walker and perches freely on branches of trees during daytime; can cling on with ease to tree-trunk outside nest-hollow with its strong claws. Does not normally dive for food which obtained chiefly by grazing, but can dive very effectively to evade capture when in moult and flightless, or when winged.

FOOD. Largely vegetarian: corms, shoots, and seeds of aquatic and marsh plants, and grains of wild and cultivated rice. Also water insects and their larvae; occasionally frogs and fish.

VOICE. Normally silent except for an occasional low harsh croak. A 'fine loud honk' in the breeding season (Baker).

BREEDING. *Season*, during the SW. monsoon, mainly July to September. *Nest*, normally in a large natural hollow at moderate height in an ancient tree standing in or close to water, sometimes a considerable distance away. Unlined or scantily so with dry leaves, grass, and feathers. Occasionally recorded breeding in old vulture nests, and in holes in old fort walls and earth cliffs. *Eggs*, 7 to 15, pale cream, of the texture and appearance of polished ivory. Average size of 100 eggs 61.8 × 43.3 mm. (Baker). Incubation by female alone (?); period 30 days.

Up to 47 eggs have been taken from a single nest, the product of two or more females, as is commonly the case where large trees with suitable hollows are scarce.

MUSEUM DIAGNOSIS

Chick (in down). 'Hair brown above with two large buffy yellow spots on the sides, and one on the wing. Face and underparts buffy yellow with a small brown line, often interrupted, through the eyes' — Delacour 1959, 3: 122; 140 (plate).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	339-406	c. 63-70	c. 64-75	139-153 mm.
♀♀	c. 280-309	c. 59-66	—	—

Comb of ♂ in breeding season c. 55-60 mm. at widest point.

(Baker)

Weight of a fine adult ♂ 5 lb. 12 oz. (c. 2610 gm.); ♀ 4 lb. 4 oz. to 5 lb. 2 oz. (c. 1925-2325 gm.). — Hume.

COLOURS OF BARE PARTS. Iris dark brown. Bill and comb black. Legs and feet plumbeous.

Genus CAIRINA Fleming

Cairina Fleming, 1822, Philos. Zool. 2: 260. Type, by monotypy, *Anas masehata* Linnaeus

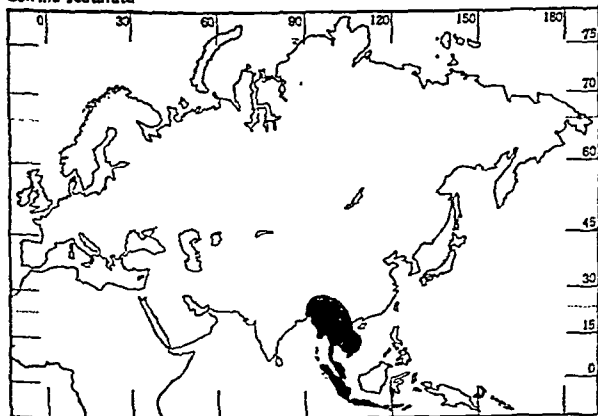
Asarcornis Salvadori, 1895, Cat. Bds. Brit. Mus. 27: 46 (in key), 59. Type, by original designation and monotypy, *Anas scutulata* S. Müller

Close to *Sarkidiornis* in its dark coloration and general proportions of body, wings, bill, legs, and tail. Also in possession of a bony knob on wing. Male appreciably larger than female; bill without comb but becoming considerably swollen at base

DUCKS, GEESE, SWANS

195

recent (1948) observation of two parties totalling about 30 birds on the open Padma river in East Pakistan — February (H. G. Alexander). Habits little known except that like Nakta perches in trees. Flights at dusk to feed in open waters and marshes during night, returning at dawn to daytime refuge on secluded forest pool.

Cairina scutulata

Residential range

FOOD. Feeding habits in wild state not recorded. The crop of a specimen was full of 'pyramidal seeds of a marsh plant' (species?) (T. C. Hutchinson). In captivity apparently omnivorous with a preference for animal food; skimming along the water with head and neck immersed, and diving to chase small fish (Baker).

VOICE. Described as a 'peculiar, distinctive whistle' (R. E. Parsons). The male's as a trumpet-like *crank-crank* (B. E. Smythies). Another observer in Burma likens it to a very mournful wail rather than *crank*, usually heard when the bird is fighting at dusk. Female said to whistle on wing. 'When alarmed, uttered a goose-like *hank*' (Hutchinson).

BREEDING. Presumably similar to Nakta. No authentic record in our area. An egg brought to Baker in Cachar by his local collector was reported to be taken from a nest of grass and rubbish in a deep natural hollow c. 6 metres p in the bifurcation of a tree-trunk alongside a jungle stream. It matched the eggs of Nakta, and measured 65 × 48.1 mm.

Delacour (1959) quoting Schuyf gives 'Eggs greenish yellow, 7 to 10, 5 × 48 mm.; incubation 30 days'.

MUSEUM DIAGNOSIS. For detailed description of plumage etc. see Baker, loc. cit.

Chick (in down). 'Dark brown, the head and neck deeper in colour, the underparts lighter' — Delacour 1959, 3: 140 (plate).

194

ANSERIFORMES

of culmen in breeding season. Differs from *Sarkidiornis* mainly in pattern of plumage and possession of a conspicuous white wing-patch formed by secondaries and upper wing-coverts.

The genus, which contains the familiar domesticated Muscovy Duck, is represented in India by only a single species.

116. Whitewinged Wood Duck. *Cairina scutulata* (S. Müller)

Anas scutulata S. Müller, 1842, Verh. Nat. Ges. Ned. Land-en Volkenk.: 159 (Java) Baker, FBI No. 2248, Vol. 6: 387 Plate 12, fig. 6

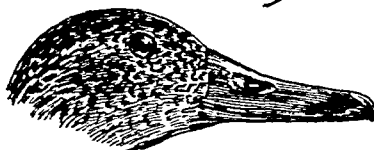
LOCAL NAMES. *Deo hāns* (Assam); *Hagrani*, *Daphlanta* (Cachar).

SIZE. Domestic duck +; length c. 81 cm. (32 in.).

FIELD CHARACTERS.

Male (adult). Head and neck white, variably speckled with black as in Nakta. Rest of plumage above and below largely glistening blackish and rich chestnut-brown. A bluish grey speculum bordered anteriorly by a broad black band. A large white patch on wing-shoulder (upper coverts) diagnostic at rest and in flight. This white wing-patch and dark underparts at once distinguish it from Nakta (of about same large size) even at long range.

No eclipse plumage.



× c. 1

Female (adult). Much smaller, otherwise not conspicuously different from male.

Young (immature). Duller and browner.

STATUS, DISTRIBUTION AND HABITAT. Resident, Assam, particularly the NE. Frontier tracts; Manipur (up to c. 900 m.), and E. Pakistan. Rare and apparently becoming scarcer. Affects waterlogged depressions in evergreen forest, often with gaunt dead trees standing about, and *bheels* amidst dense cane brakes and tall elephant-grass jungle.

Extralimital. Burma, Thailand, Indochina, and through Malaya to Sumatra and Java.

GENERAL HABITS. Keeps in pairs or small parties of 5 or 6 on jungle ponds. Not infrequent in NEFA wherever it occurs, a pair or so present on almost every secluded jungle pool, the more sheltered and overgrown the more likely to hold the duck. Once 11 recorded together; another unusual

196

ANSERIFORMES

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	363-401	58-66	54-60	127-178 mm.
♀♀	305-356	55-61	—	—

(Delacour)

(Baker)

Weight. ♂ 6 lb. 8 oz. to 8 lb. 8 oz. (c. 2945-3855 gm.); ♀ 4 lb. 12 oz. to 6 lb. 12 oz. (c. 2150-3050 gm.). — Baker.

COLOURS OF BARE PARTS. Iris ♂ orange-yellow, ♀ brown. Bill orange, mottled with black; in breeding season base becomes swollen in ♂. Legs and feet orange-yellow.

Genus CLANGULA Leach

Clangula Leach, 1819, in Ross, Voy. Disc., App.: xlviii. Type, by monotypy, *Anas glacialis* Linnaeus = *Anas hyemalis* Linnaeus

'Bill shorter than head and than tarsus; high at base. Cutting edge of upper mandible ascending rapidly towards nail, which occupies whole tip of bill. Culmen straight but nail slightly elevated. Nostril close to feathers. Feathering advancing farthest on culmen; on sides of culmen forming a nearly straight oblique line. Rectrices 14, exceptionally 16; tail strongly rounded, rectrices pointed, those of male greatly elongated. Sexes very different, summer and winter also. One species in arctic regions of Northern Hemisphere' (Witherby 1939, 3: 317-18).

117. Longtail Duck, or Old Squaw. *Clangula hyemalis* (Linnaeus)

Anas hyemalis Linnaeus, 1758, Syst. Nat., ed. 10, 1: 126 (Northern Sweden)

Baker, JBNHS 37: 549

Plate 12, fig. 2

LOCAL NAMES. Unrecorded.

SIZE. Domestic duck —; length body c. 30 cm. (12 in.); pointed tail c. 13 cm. (5 in.).

FIELD CHARACTERS. In winter, when recorded and likely to occur in our area, the contrasty dark chocolate-brown and white plumage pattern of male combined with small head, short bill, and long pointed tail distinctive. The last normally carried horizontal when swimming, partly expanded and erected vertically under excitement.

Male (adult). *Winter*: Head, neck, and upper breast pure white. A dark brown patch on either side of neck behind ear-coverts. Back (i.e. a broad band along spine), pointed central tail, and a collar descending from upper back widening below into a broad pectoral band to include upper abdomen, dark brown. Scapulars, abdomen, flanks, and vent, white.

In flight the scapulars showing up as broad white streaks between dark wings, and the broad brown spinal band (tapering posteriorly into pointed central tail-feathers), aid identification.

Male (adult). *Summer*: Head, neck, and upper breast largely blackish brown. Back same scalloped with chestnut-buff.

Male (in eclipse). 'Mantle darker, the black more pronounced; the sides of the body and flanks have drab and grey feathers mingled with the white' (Baker).

Female (adult). *Winter*: Entire back dark brown, more or less scalloped with fulvous. Head white with dusky crown and patches on sides of upper

DUCKS, GEESE, SWANS 197

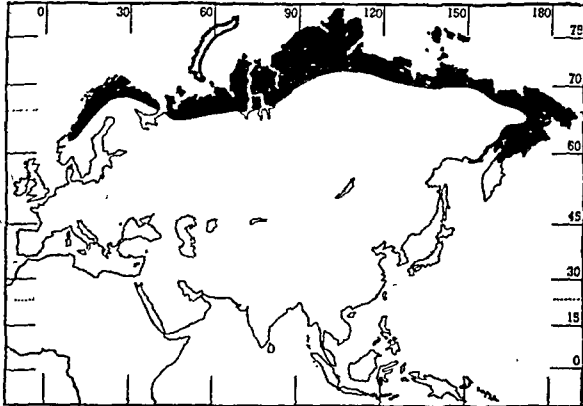
neck. Lower foreneck and upper breast brownish, forming a diffuse pectoral band. Rest of underparts white.

Female (adult). Summer: Upperparts darker and duller than in winter, the scalloping less bright and conspicuous.

STATUS, DISTRIBUTION AND HABITAT. Rare straggler in winter. Three records from W. Pakistan (Baluchistan, 1933, 1938; Sind, 1936); one each from Kashmir (Hokarsar, 1939) and NE. Assam (Sadiya Frontier Tract, 1935). A half dozen or so together observed on some of these occasions. Shot on jheels, and Brahmaputra river.

Extralimital. 'Breeds on arctic coasts of Europe, Asia, and N. America. Winters south to Britain, France, Holland, Black Sea, Caspian Sea, Japan, California, the Great Lakes, N. Carolina; S. Greenland' (Peter Scott).

Clangula hyemalis



■ Breeding range

GENERAL HABITS. Normally a maritime duck, often found far out from the coast even on a choppy sea. A good swimmer and diver, obtaining its food under water, sometimes remaining submerged in the quest for many seconds at a time. Flight reminiscent of Pintail, somewhat less swift.

FOOD. Recorded as mainly animal — molluscs, crustaceans, etc. The Brahmaputra specimen had its crop and gullet crammed with small shrimps.

VOICE. Not recorded in India. A very deep guttural croak, said to be entirely unlike that of any other duck. 'Resembles low or distant bark of dog' (E. M. Nicholson).

BREEDING. Extralimital. Nest a depression in the ground on open tundras, thickly lined with down; well hidden in undergrowth by lakes and pools. Eggs, 6 to 11, olive or yellowish buff, 54 × 38 mm.; incubation 24 days (Delacour).

DUCKS, GEESE, SWANS 199

Male (in eclipse). Like female, but always retaining full wing colour with pure white speculum.

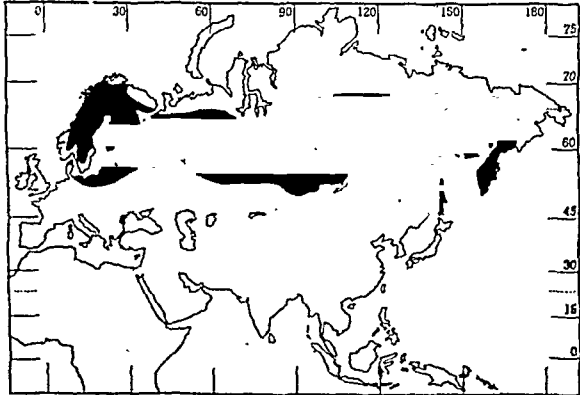
Female (adult). Head and neck hair-brown, with a dull white collar round base. Upperparts mottled blackish and grey with a white wing-patch (secondaries and coverts, in part). A grey band on upper breast (below white collar), greyish flanks and vent. Rest of underparts white.

Young (immature). Male like adult female, somewhat larger and darker. Female similar but with less white on wing. Male assumes adult plumage in second year.

STATUS, DISTRIBUTION AND HABITAT. Uncommon winter visitor mainly to W. Pakistan, N. India, Nepal (up to 3000 m.), and Assam. Recorded from Sind (?), Punjab (Attock, on the Indus), U.P. (Lucknow dist.), Bihar (Champaran dist.), Assam (Lakhimpur dist.), Manipur. On open reaches of swift-flowing rivers where these debouch from the hills, and on jheels.

Extralimital. 'Breeds from northern Scandinavia east across Europe and Asia, north to the limit of trees, south to Germany, Balkans, central Russia and Siberia to Kamchatka and Sakhalin. Winters from British Isles, Mediterranean, to southern China and Japan' (Peter Scott).

Bucephala clangula



■ Breeding range

GENERAL HABITS. A diving duck like the pochards, partial outside the breeding season to the sea coast. Inland it prefers fairly deep clear open water to vegetation-covered jheels. Has been met with in winter in small parties of 5 or 6. A good swimmer and diver; awkward on land. Flight swift and erratic, with rapid strokes of the short, pointed wings which produce a peculiar whistling sound.

198 ANSERIFORMES

MUSEUM DIAGNOSIS. For details of plumages etc. see Witherby 1939, 3: 321-4; Baker, loc. cit.

Chick (in down). See Delacour 1959, 3: 173 (description), 256 (plate).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	219-236	26-29	32-35	199-246 mm.
♀♀	202-210	23-28	—	—

COLOURS OF BARE PARTS. Iris ♂ carmine to hazel, ♀ yellow, immature ♂ brown. Bill ♂ basal half black, terminal portion rose-red to orange-yellow, nail bluish grey; ♀ greyish black; imm. ♂ blue-grey. Legs and feet ♂ light bluish grey, webs dusky, claws black; ♀ greenish grey, webs dusky; imm. ♂ pale grey, webs nearly black (Witherby).

Genus BUCEPHALA Baird

Bucephala Baird, 1858, Rep. Expl. and Surv. R. R. Pac. 9: 1, 788, 795. Type, by original designation, *Anas albifrons* Linnaeus

Bill short, higher than broad at base, not much flattened at tip, tapering slightly throughout, more rapidly and rounded at end. Profile of culmen very slightly concave. Nostril placed nearer to tip than to base of bill, a feature peculiar to this duck. Lamellae short, stout, and placed very close together. Tarsus short; scutellate in front. Hind toe well developed, with broad lobe. Legs placed far back rendering walking difficult. Wings pointed. Tail long and strongly graduated. Posterior end of sternum prolonged as in *Merganser*. Sexes dimorphic.

Only one species occurs in India as a rare winter visitor.

118. Goldeneye Duck. Bucephala clangula clangula (Linnaeus)

Anas Clangula Linnaeus, 1758, Syst. Nat., ed. 10, 1: 125 (Sweden)

Baker, FBI No. 2284, Vol. 6: 460 (= *Glaucionetta c. clangula*)

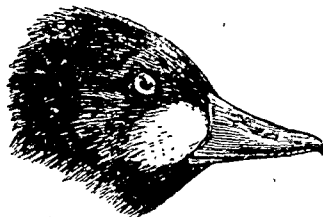
Plate 12, fig. 3

LOCAL NAMES. None recorded.

SIZE. Domestic duck —; length c. 46 cm. (18 in.).

FIELD CHARACTERS.

Male (breeding). Head, nape, chin, and throat black, the first two brilliantly glossed with metallic green. A distinctive white oval cheek-patch at base of bill. Back and tail black, with bold white streaks on scapulars and flanks. Wings black with a conspicuous broad white patch along basal half when closed. Neck, breast, and underparts white.



× c. 1

At rest black and white plumage, and triangular mop-shaped head with white cheek-patch, peculiar. In flight, black head, white cheek-patch, short-looking white neck, black back between streaked white scapulars, and white patch on wings next to body (secondaries and coverts) are leading clues.

200 ANSERIFORMES

FOOD. Mainly animal matter — molluscs, crustaceans, aquatic insects, etc.

VOICE. Unrecorded in India. Elsewhere, female said to emit a loud hoarse note occasionally; male a penetrating *speer, speer*, and in the spring 'a rasping, vibrating double note *quee-reek*' (Delacour).

BREEDING. Extralimital. Nest, a natural hollow in tree-trunks etc., lined with down. Nest-boxes put up for it in likely places are frequently occupied. Eggs, 6 to 15, bluish green. Average size of 200 eggs 55.2 × 42.5 mm. (Baker).

MUSEUM DIAGNOSIS. For details of plumages, structure, etc. see Witherby 1939, 3: 311-14.

Chick (in down). See Delacour 1959, 3: 178 (description); 256 (plate).

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	207-227	31-36	34-38	77-90 mm.
♀♀	197-210	28-31	—	—

Weight. ♂ 1 lb. 12 oz. to 2 lb. 8 oz. (c. 795-1135 gm.); ♀ 1 lb. 8 oz. to 2 lb. (c. 680-910 gm.) — Baker.

COLOURS OF BARE PARTS. ♂ Iris golden yellow. Bill black. Legs and feet yellow or orange with blackish webs. ♀ Iris pale yellow or pale blue-green. Bill black, with a yellow patch next to nail. Legs and feet brownish yellow.

Genus MERGUS Linnaeus

Mergus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 129. Type, by subsequent designation, *Mergus castor* Linnaeus = *Mergus serrator* Linnaeus

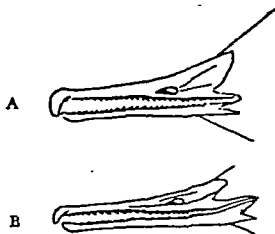
Sexes dimorphic; both with a nuchal crest. Bill long, narrow, tapering throughout with culmen nearly straight, the nail strongly hooked. Serrations or 'teeth' coarse, with tips pointing backwards saw-like. Nostril large, oblong, placed between $\frac{1}{2}$ and $\frac{1}{3}$ length of bill from base. Tarsi very short, placed far back on the body. Feet large with well-lobed hallux. Tail fairly long, rounded, of 16 to 18 stiff cuneate feathers.

Key to the Species

		Page
A	Bill shorter than head.....	<i>M. albellus</i> 201
B	Bill longer than head.....	
1	Head and neck black glossed with green.....	a
	Head and neck rufous.....	b
a	Lower parts white throughout.....	<i>M. merganser</i> (adult ♂) 203, 204
	Upper breast rufous marked with black.....	<i>M. serrator</i> (adult ♂) 206
b	Chin white, back grey.....	<i>M. merganser</i> (adult ♀ and young ♂) 203, 204
	Chin streaked with rufous, back brown.....	<i>M. serrator</i> (adult ♀ and young ♂) 206

DUCKS, GEESE, SWANS

201



Bills of *M. merganser* (A) and *M. serrator* (B) to show differences in shape, position of nostrils and feathering ($\times c. \frac{1}{2}$)

119. Smew. *Mergus albellus* Linnaeus

Mergus Albellus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 129
(Mediterranean Sea near Smyrna)
Baker, FBI No. 2286, Vol. 6: 466
Plate 11, fig. 11 and Plate 13, fig. 10

LOCAL NAMES. *Nikerne* (Hindi); *Jhali* (Sind).

SIZE. Domestic duck —; length c. 46 cm. (18 in.).

FIELD CHARACTERS.

Male (breeding). Predominantly white, with a large metallic black patch on face, a black band from behind eye to nape, and drooping nuchal crest. Back black with two black streaks diverging from its anterior end down each side of white breast. Sides of body, and tail, grey. In flight an easily recognized pied duck, mainly white, with a broad black spinal band, dark tail, and conspicuous black-and-white wings.

Female (adult). Forehead, crown, nape, and short peak-like nuchal crest chestnut-red. Throat and sides of head contrasty white. Back greyish brown. Breast and flanks grey. Rest of underparts white. In flight the contrasty chestnut and white head, greyish body and black-and-white wings distinctive.

Male (in eclipse). Like female, but larger with some black on mantle and larger white patch on secondaries.

Young (immature). Like female but paler, more uniform generally and with the white wing-coverts tipped with ashy brown.

STATUS, DISTRIBUTION AND HABITAT. Uncommon and sparse but regular winter visitor to W. Pakistan and northern India. Recorded from Baluchistan, Sind, NWFP, NW. Punjab, Delhi, Bhutan duars, NE. Assam; south from N. Gujarat, Bihar (Hazariabagh), Orissa (Cuttack), W. Bengal

DUCKS, GEESE, SWANS

203

Weight ♂ 1 lb. 4 oz. to 1 lb. 12 oz. (c. 565–795 gm.); ♀ 1 lb. to 1 lb. 8 oz. (c. 450–675 gm.) — Baker.

COLOURS OF BARE PARTS. Iris ♂ bright red (pearl grey in very old birds — Baker); ♀ reddish brown. Bill ♂ plumbeous, nail greyish white; ♀ dark lead-grey tinged greenish laterally, nail whitish. Legs and feet ♂ plumbeous; ♀ paler and tinged with green, webs black (Witherby).

MERGUS MERGANSER Linnaeus

Key to the Subspecies

Wing: ♂ 283–295 mm.; ♀ 250–267 mm. *M. m. merganser*
Wing: ♂ 243–284 mm.; ♀ 189–257 mm. *M. m. orientalis*

120. Goosander or Common Merganser. *Mergus merganser merganser* Linnaeus

Mergus Merganser Linnaeus, 1758, Syst. Nat., ed. 10, 1: 129 (Sweden)
Baker, FBI No. 2287, Vol. 6: 469

LOCAL NAMES. Unrecorded.

SIZE. Domestic duck +; slimmer. Length c. 66 cm. (26 in.).

FIELD CHARACTERS.

Male (breeding). Head, crest, and upper neck black glossed with metallic green and purple. Mantle (scapulars) glossy black; lower back, rump, and upper tail-coverts grey vermiculated with white. Tail silvery brown. Primaries black; secondaries and coverts white or partly white. Extreme upper back, lower neck, and underparts white, faintly tinged with salmon-pink.

In flight general aspect black and white with slender head and neck, narrow pointed red bill, and red legs.

Female (adult). Head, crest, and neck dark chestnut and cinnamon-brown; chin and upper throat white. Upperparts mottled bluish grey-brown. Primaries blackish; secondaries white and grey, forming a conspicuous white speculum. Tail grey-brown. Underparts white, striped with grey on flanks.

In flight rufous head, grey back, white underparts, black-and-white wings, thin neck, pointed red bill, and red legs distinctive.

Male (in eclipse). Resembles female, but retains white wing-coverts.

Young (immature). Male like adult female but upperparts browner, head paler, chin and throat less white.

Chick (in down). See Delacour 1959, 3: 217 (description), 256 (plate).



Bill from above $\times c. \frac{1}{2}$

202

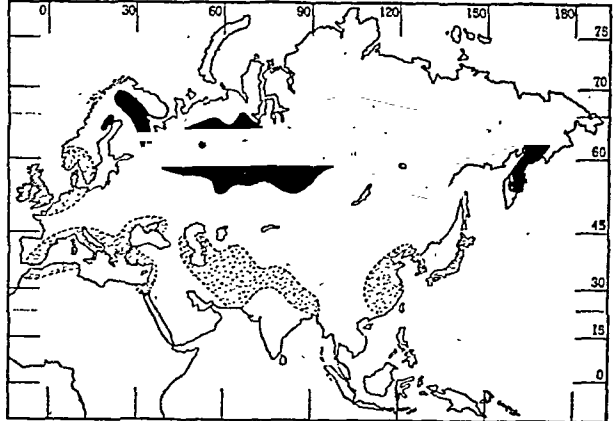
ANSERIFORMES

(Raniganj). Affects small open jheels, but chiefly clear Himalayan streams where these debouch from the foothills into the plains.

Extralimital. 'Breeds in Europe and Asia from Scandinavia to Siberia and south to the Volga, Turkestan and the Amur. Winters on coasts and lakes from Britain, the Mediterranean, Persia, to China and Japan' (Peter Scott).

GENERAL HABITS. Keeps in small parties; occasionally large flocks. A fast swimmer and proficient diver. Normally rides high on the water but, like the pochards, will lower itself considerably on alarm. Flies swiftly with rapid though noiseless beats of the pointed wings.

FOOD. Mainly fish. Crustaceans, molluscs, aquatic insects and their larvae, worms, etc. also taken; occasionally some vegetable matter.

Mergus albellus

■ Breeding range ▨ Main wintering areas

VOICE. Unrecorded in India.

BREEDING. Extralimital. Col. A. E. Ward's record of breeding in Ladakh has not been confirmed, and is doubtful. Nest, in natural hollows in tree-trunks near water; sometimes in nest-boxes in Finland. Eggs, 6 to 10, pale creamy buff. Average size of 137 eggs 52.2 × 37.5 mm. (Baker).

MUSEUM DIAGNOSIS. For detailed description of plumages and structure see Witherby 1939, 3: 377–9.

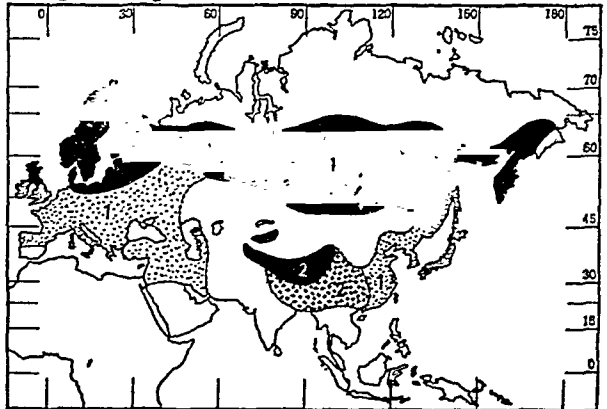
Chick (in down). See Delacour 1959, 3: 193 (description), 256 (plate).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	192–205	28–30	30–32	71–76 mm.
♀ ♀	178–186	25–28	—	— (Witherby)

204

ANSERIFORMES

1 *Mergus m. merganser* 2 *M. m. orientalis*

■ Breeding ▨ Non-breeding: 1, 2

121. Eastern Merganser. *Mergus merganser orientalis* Gould

Mergus Orientalis Gould, 1845, Proc. Zool. Soc. London: 1 (Amoy, China)
Baker, FBI No. 2288, Vol. 6: 472
Plate 12, fig. 4 and Plate 13, fig. 11

LOCAL NAME. None recorded.

SIZE. Slightly smaller than 120. Length c. 63 cm. (25 in.).

FIELD CHARACTERS.

Male (breeding). Differs from western (nominate) race in somewhat smaller size and greater extent of black on mantle. Grey of lower back and rump paler and more freckled with white; salmon-pink tinge on underparts more pronounced.

Female, male in eclipse, and immature male differ from adult as in the western form (q.v.).

STATUS, DISTRIBUTION AND HABITAT. Chiefly winter visitor. Rare in NW. India; Nepal; fairly common in the E. Himalayan foothills. Status of the two races within our limits uncertain. Specimens of nominate race taken in winter in West Pakistan (Sind, Makran coast), U.P., Maharashtra (Bombay), M.P. (Raipur district, sp.?), and NE. Assam (Lohit river). *M. m. orientalis* partly resident in Ladakh (and possibly in N. Sikkim), but specimens collected in Ladakh in May/June approximate in coloration and wing measurement to nominate race (Meinertzhagen, *Ibis*, 1927: 616).

DUCKS, GEESE, SWANS

205

Sight records racially indeterminate. Affects large rivers and lakes; also fast-flowing streams, especially where these debouch from the northern hills into the plains.

Extralimital. *M. m. merganser* breeds in Europe and Asia from Iceland, British Isles, Switzerland, the Balkans, to Kamchatka, the Kurile and Commander Islands. South in winter to Mediterranean and China.

M. m. orientalis breeds principally in Afghanistan, Turkestan, Altai, Tibet. Winters N. India, N. Burma and China (Szechuan) and farther east, where it occurs with the nominate race (Peter Scott).

GENERAL HABITS. An expert swimmer and diver, perfectly at home on icy torrential E. Himalayan streams. Apparently uncomfortable on land. When disturbed resting on bank, shuffles into water on its breast. Keeps in pairs or small parties of 5 to 8—often the sexes separate—which coalesce into larger mixed flocks of 40-50, or more, while courising up and down to hunt in favourite reaches of clear rapid streams. Characteristically follows their bends, seldom deviating or altering course even at sight of a gunner. Usually flies low almost clipping the wavelets, effectively camouflaged against the shimmering background of wet stones and cascading water. Often hunts by cooperative effort like cormorants, a flock swimming in a semicircle from bank to bank across a rapid rippling stream, herding small fish into the less turbulent shallows near the banks—dashing and splashing in the white water in pursuit and diving energetically after the quarry. Little Egrets (*Egretta garzetta*) commonly take advantage of this habit by attending on the hunting flocks, leap-frogging over the duck, back and forth, to take up advance positions on the banks, and seizing any fish stranded in the marginal shallows in their rush to escape. When cruising in calm water, the males especially have a curious habit of arching their necks, and then darting their bills vertically upwards. This is not in an effort to swallow some large morsel, but evidently a kind of display (R. E. Parsons).

FOOD. Almost exclusively fish (up to 125 or 150 mm. long), for seizing which the serrated bill is specially adapted. In Britain 49 perch averaging 3 inches (75 mm.), and a young pike, have been taken from a single stomach (Witherby). Occasionally also some crustaceans, aquatic insects, etc. along with a quantity of pebbles.

VOICE. Only an occasional croak or *krrr* recorded in India.

BREEDING. Within our limits *M. m. orientalis* (?) breeds in Ladakh (possibly also in northern Sikkim and Bhutan) at elevations between c. 3000 and 4000 metres, and perhaps higher, e.g. on Tso Moriri and Pangong lakes, and Indus and Tankse rivers (B. B. Osmaston, R. Meinertzhagen). *Season.* No nests with eggs found, but downy ducklings reported on various lakes in June. *Nest.* (in Tibet) in hollows and crevices in crumbling rock cliffs, lined with rubbish, and thickly with down. *Eggs,* 6 to 10 (?) like those of Goosander but darker and smaller—pale buff or stone-buff, close and fine textured, fairly glossy. Average size of 20 eggs 64.6 × 44.8 mm. (Baker). Incubation period ? In *M. m. merganser* full clutch of 7 to 16 eggs; incubation period 28-32 days (Delacour).

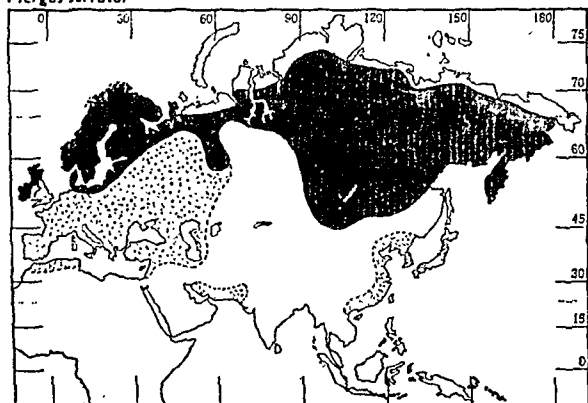
MUSEUM DIAGNOSIS. For description of plumages, structure, etc. of nominate race see Witherby 1939, 3: 364-7.

DUCKS, GEESE, SWANS

207

coast, November 1875; Sind (Karachi harbour); Baluchistan, Quetta dist. (Khushdil Khan lake 1902, Pishin 1908)] and two in W. Bengal: an example procured in Calcutta market, presumably from that neighbourhood (December 1889), and another more recently (January 1961) in the 24-Parganas district (Biswas, *in epist.*). According to C. B. Ticehurst (JBNHS 32: 95) a not uncommon winter visitor to the Makran coast; recorded from Ormara, Chharbar and Jask (December/January).

Mergus serrator



■ Breeding □ Non-breeding

Extralimital. 'Breeds in suitable places throughout northern Europe, Asia, N. America (including British Isles). South in winter to the Mediterranean, Persian Gulf, China, Formosa, Gulf of Mexico, and Florida' (Peter Scott).

GENERAL HABITS. Not markedly different from those of the Goosander (q.v.).

BREEDING. Extralimital. Unlike Goosander does not usually nest in tree hollows. *Nest,* large, compact, of moss, grass, etc. lined with down. In dense cover of bushes, or in holes in banks and cliffs. *Eggs,* 7 to 12 greyish to greenish buff, 65 × 45 mm.; incubation 26-28 days' (Delacour).

MUSEUM DIAGNOSIS. Bill proportionately longer and narrower than in Goosander, less hooked at tip, and with more teeth or lamellae. See figures, p. 201. Chick (in down). See Delacour 1959, 3: 210 (description), 256 (plate).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	244-252	53-62	40-45	79-88 mm.
♀♀	217-231	48-55	—	—

206

ANSERIFORMES

MEASUREMENTS

		Wing	Bill (from feathers)	Tarsus	Tail
<i>M. m. merganser</i>	♂♂	283-295	55-61	46-50	104-115 mm.
	♀♀	250-267	45-51	—	—
				(Witherby)	
<i>M. m. orientalis</i>	♂♂	243-284	49-54	—	—
	♀♀	189-257	40-47	—	—
				(Baker)	

Wing ♂ 275-285; ♀ 244-275 (Delacour).

Weight ♂ 2 lb. 12 oz. to 3 lb. 5 oz. (c. 1250-1500 gm.); ♀ 2 lb. to 2 lb. 10 oz. (c. 910-1195 gm.)—Hume.

COLOURS OF BARE PARTS. Iris ♂ carmine or deep red, sometimes tinged with brown in younger birds; ♀ brown. Bill vermillion; culmen sometimes rather dusky in non-breeding season; nail black. Legs and feet bright vermillion. Colours in ♀ duller.

122. Redbreasted Merganser. *Mergus serrator* Linnaeus

Mergus Serrator Linnaeus, 1758, Syst. Nat., ed. 10, 1: 129 (Sweden)
Baker, FBI No. 2289, Vol. 6: 473

LOCAL NAMES. None recorded.

SIZE. Domestic duck —; slimmer. Length c. 58 cm. (23 in.).

FIELD CHARACTERS. Smaller and slimmer than Goosander, with a prominent straggly, backwardly-directed double crest (with an upper and lower portion) sticking out stiffly from hindcrown.

Male (breeding). Differs from male Goosander (with entire underparts white) in having a dark band (blotchy chestnut and black) on upper breast; rest of underparts white. This comparative feature particularly helpful in identification at distance and in flight. Head, crest, throat and upper neck glossy blackish green. A broad white collar below this, interrupted on hindneck by a black longitudinal stripe continuing from nape into black upper back. Black of back broader, with bold white spots in a chequer pattern at its anterior end covering wing-shoulder. A broad white lateral band along closed wing (secondaries and coverts). Lower back, rump, upper tail-coverts, and upper flanks pale grey vermiculated with black.

Male (in eclipse). Like female, but with the mantle darker; wings more or less as in breeding male.

Female (adult). Rather like female Goosander. Crown, crest (shorter than male's), nape, and hindneck brown; sides of head and neck cinnamon. Chin, throat, and foreneck duller, rufous-washed white. Upperparts dark greyish brown, scalloped paler. Wings as in male but with less white. Underparts white, the breast and sides mottled with ashy brown.

Young (immature) male like adult female, but overall more brown less grey. Crest shorter; bare parts duller coloured.

STATUS, DISTRIBUTION AND HABITAT. Vagrant in winter. Only six authentic occurrences within our limits: four in W. Pakistan [Chharbar, Makran

208

ANSERIFORMES

Two adult ♂♂ obtained in India have wings of c. 253 and 254 mm.

Weight ♂ 1 lb. 12 oz. to 2 lb. 4 oz. (c. 790-1025 gm.); ♀ under 2 lb. (910 gm.); possibly goes somewhat higher — (Baker).

COLOURS OF BARE PARTS. Iris ♂ carmine or red-brown; ♀ brown or red-brown, sometimes carmine. Bill ♂ orange-red to deep vermillion, the edge of culmen and nail black; ♀ duller, more orange-red with the culmen dusky over a greater area. Legs and feet orange-red to deep vermillion, the joints and webs dusker. Duller in ♀.

Genus *OXYURA* Bonaparte

Oxyura Bonaparte, 1828, Ann. Lyc. Nat. Hist. New-York 2: 390. Type, by monotypy, *Anas rubidus* Wilson

Eristura Bonaparte, 1832, Giorn. Acad. Sci. Lett. Arti, Roma, 53(54): 208, new name for *Oxyura* Bonaparte

Bill large, very swollen at base; nail small and curved inwards. Culmen concave; anterior part of bill flat and broad, the lamellae coarse and set far apart. Nostrils large, oval, placed nearer to base than to tip of bill. Tarsi short, placed far back as in Diving Ducks; feet very large; middle toe almost twice length of tarsus; hind toe broadly lobed. Wings short and pointed. Tail well graduated, of very narrow, stiff-feathers, longer than tarsus; tail-coverts short and scanty. Sexes slightly dimorphic.

123. Whiteheaded Stiff-tailed Duck. *Oxyura leucocephala* (Scopoli)

Anas leucocephala Scopoli, 1769, Annus I Hist. Nat.: 65

(probably from northern Italy)

Baker, FBI No. 2285, Vol. 6: 463

Plate 12, fig. 1 and Plate 13, fig. 15

LOCAL NAMES. None recorded.

SIZE. Domestic duck —; length c. 46 cm. (c. 18 in.).

FIELD CHARACTERS. A little larger than Common Teal, but squat and tubby, with very peculiar bill and tail. Bill very high and swollen at base, sinking abruptly and broadening towards tip. Tail of stiff, narrow, pointed feathers with very short coverts at its base, looking like a bunch of wires artificially stuck in; often carried comically upright when swimming.



× c. 1

Male (breeding). Head white, with a black patch on crown, and slaty blue to sky-blue bill. Neck blackish, fading into chestnut on

DUCKS, GEESE, SWANS

209

upper breast and sides, and to rusty grey on back and mantle. Lower back and rump pencilled with black. Upper tail-coverts chestnut, finely pencilled with black. Underparts silvery white mottled with grey. Wings grey.

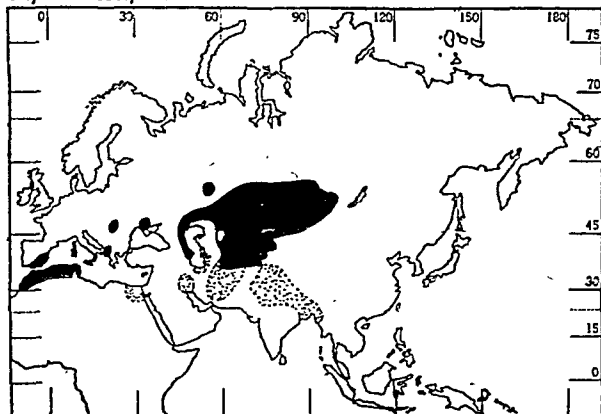
Female (adult) and male in eclipse have the head and neck brown with blackish bars; the crown darker. A conspicuous whitish line below eye from bill to nape. Throat and sides of upper neck whitish; rest of plumage as in breeding male, somewhat greyer and paler, with finer barring.

Young (immature). Like adult female; male redder on back.

STATUS, DISTRIBUTION AND HABITAT. Casual and sparse winter visitor mainly to the northwestern portions of our area. Sporadically, but not infrequently recorded (specimens and observation) from W. Pakistan (Peshawar, Nowshera, Shahpur, Kohat districts), Punjab (Gujrat and Mianwali dists.), Baluchistan (Langi-nawar, Nushki and Quetta dists.), Sind (Larkana and Sukkur dists.), Bahawalpur. In recent years found in large numbers on certain lakes on the Punjab Salt Range—Khabakki, Kallar Kahar, Nammal. Maximum number counted 723 (February 1965) on Khabakki (C. D. W. Savage). Also N. India—E. Punjab (Ludhiana dist.), Kashmir, Delhi dist., Uttar Pradesh (Pilibhit and Hardwar dists.), Rajasthan (Bharatpur, once). Not farther east or south except reportedly twice in Calcutta market (Finn). On large freshwater lakes and brackish lagoons with underwater vegetation.

Extralimital. Breeds in the Mediterranean, Black and Caspian Sea areas, and Turkestan. Winters south to Egypt, Palestine and Iraq.

GENERAL HABITS. In many ways reminiscent of the grebes. Keeps in parties of a half dozen or so, and flocks of 20 to 30. Very local, usually affecting particular portions of a lake either by itself or in association with grebes; rarely with other ducks. Normally rides very low on the water, like

Oxyura leucocephala

■ Breeding range ■ Winter extension

HAWKS, VULTURES, ETC.

211

Key to the Genera

	Page.
A Head and neck bare.....	1
B Head and neck feathered.....	2
1 Bill slender.....	a
Bill stout.....	b
a Nostrils elongate and horizontal.....	<i>Neophron</i> 310
b Nostrils a narrow vertical slit.....	<i>Gyps</i> 301
Nostrils round or oval.....	I
I No wattle on neck.....	<i>Aegypius</i> 293
Fleshy wattle on either side of neck.....	<i>Sarcogyps</i> 296
2 Bill lengthened and vulturine in shape; claws blunt; a tuft of long bristles on the chin.....	<i>Gypsaetus</i> 314
Bill short and aquiline in shape; claws sharp and generally greatly curved; no tuft on chin.....	c
c Tarsus completely feathered in front and behind.....	II
Tarsus naked or partially feathered.....	III
II Claws but little curved, inner longer than hind.....	<i>Ichneutes</i> 283
Claws much curved, hind claw longer than inner.....	a ¹
a ¹ Primaries exceeding secondaries by less than length of tarsus.....	<i>Spizaetus</i> 258
Primaries exceeding secondaries by more than length of tarsus. Occipital crest lacking, rudimentary or developed.....	b ¹ 270
b ¹ Inner toe (without claw) longer than culmen without cere.....	<i>Hieraaetus</i> 265
Inner toe (without claw) about same length as or shorter than culmen (without cere).....	<i>Aquila</i> 272
III Both sides of upper mandible with two sharply pointed conical 'teeth'.....	<i>Accipiter</i> 214
Upper mandible without 'teeth'.....	a ²
a ² Lores feathered.....	<i>Pernis</i> 221
Lores unfeathered.....	b ²
b ² Tarsus long, two or more times length of bill from tip to gape.....	c ²
Tarsus short, less than two times length of bill from tip to gape.....	d ²
c ² Feathers across throat and up each side of neck forming conspicuous ruff.....	<i>Circus</i> 316
Ruff not present.....	d
d Nuchal crest absent or pointed.....	<i>Accipiter</i> 232
Nuchal crest broad covering whole nape.....	<i>Spilornis</i> 329
c ³ Front of tarsus covered with large overlapping hexagonal scales.....	<i>Buteo</i> 256
Front of tarsus covered with vermiculations or small hexagonal scales.....	d ¹
Front of tarsus scutellate.....	d ²
d ¹ Size small (length c. 33 cm. = 13 in.); second primary longest.....	<i>Elanus</i> 212
Size larger (length c. 56-68 cm. = 22-27 in.); third or fourth primary longest.....	c

210

FALCONIFORMES

a cormorant, showing only head, a small portion of rump, and the stiff, pointed tail cocked vertically when at rest; lowered into water when swimming. Flight laboured and grebe-like, preceded by much skittering on the surface to take off. But is an expert swimmer and diver, seeking safety in the water in preference to flying away even when closely approached. Partially submerges itself to escape observation, swimming away from the intruder with only the head and part of rounded back showing, and body and tail out of sight, thus looking like a dabchick in the distance. Dives by quietly lowering itself and vanishing below, or by rolling over smoothly like a porpoise, head in first, the whole back, tail, and legs turned over in succession. The tail is bent downwards, with the legs showing below, these parts being the last to go under.

FOOD. Mainly vegetable matter: corms, seeds, and leaves of aquatic plants; also insect larvae, molluscs, and crustaceans. The stomach of an Indian-killed example contained vegetable matter exclusively (W. A. Whitehead, JBNHS 35: 212).

VOICE AND CALLS. None recorded in winter.

BREEDING. Extralimital. Nest, a floating pad of reeds and rushes overlaid with down; anchored and concealed among reeds and sedges. Eggs, 6 to 13, white, about 66 × 50 mm.; incubation period unrecorded (Delacour).

MUSEUM DIAGNOSIS

Chick (in down). See Delacour 1959, 3: 242 (description), 256 (plate).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	155-165	46-48	34-37	110-112 mm.
♀♀	150-155	43-45	—	—

22 specimens from the Punjab Salt Range give

	Wing	Bill	Tarsus
8♂♂	164-172	46-47	43-46 mm.
14♀♀	150-167	43-46	41-45 mm.

(from feathers) (Delacour) (C. D. W. Savage)

Weight 1 ♂ 690 gm. (BNHS).

COLOURS OF BARE PARTS. Iris dark brown. Bill ♂ generally slaty blue turning to pale sky- or ultramarine blue just before emigration in February-March (C. D. W. Savage); ♀ and imm. duller. Legs and feet plumbeous-black, the webs and toes black.

Order FALCONIFORMES

Family ACCIPITRIDAE. Hawks, Vultures, etc.

Bill short with upper mandible longer than lower, curved and strongly hooked at tip; basal portion covered with a cere, usually bright coloured, in which the nostrils are situated. Feet strong, furnished with powerful hooked claws. Hallux always present. Sexes more or less alike; female usually larger.

For further details of structure and morphology see Stresemann 1927-34, Aves: 811-16; Baker 1928, FBI 5: 1-2; Witherby 1939, 3: 1. Cf. also Brown, L. & Amadon D., 1968, *Eagles, Hawks and Falcons of the World*.

212

FALCONIFORMES

	Page
e Claws grooved beneath.....	<i>Circus</i> 326
Claws not grooved beneath.....	<i>Pandion</i> 335
d ¹ Tail forked.....	<i>Milvus</i> 224
Tail not forked.....	e ¹
e ¹ Tarsus scutellated behind.....	f
Tarsus with large reticulations or hexagonal scales behind.....	f ¹
f Primaries deeply notched.....	<i>Buteo</i> 251
Primaries not deeply notched.....	<i>Ichthyophaga</i> 292
f ¹ Third primary longest.....	<i>Haliaeetus</i> 285
Fourth primary longest.....	<i>Haliaeetus</i> 230

Genus ELANUS Savigny

Elanus Savigny, 1809, Descr. Egypte 1: 69, 97. Type, by monotypy, *Elanus caesus* Savigny = *Falco caeruleus* Desfontaines

Bill small, wide at base, compressed near tip; culmen sharply curved from cere; festoon distinct. Nostrils oval, nearly horizontal, protected by long loreal bristles. Wings long and pointed, reaching beyond tip of tail; second primary (as.) longest. Tail moderately long, slightly forked. Tarsi short and stout, feathered in front for more than half their length; naked parts reticulated throughout. Toes strong, reticulated above except near claws; lateral toes subequal in length. Middle claw keeled, the others rounded beneath.

The genus contains small hawks allied to Kites (*Milvus*), occurring in America, Africa, and Asia to Australia. Only one species (*E. caeruleus*) represented in India.

124. Blackwinged Kite. *Elanus caeruleus vociferus* (Latham)

Falco vociferus Latham, 1790, Index Orn., 1: 46
(India = Coromandel Coast, ex Sonnerat, apud Hartert)

Baker, FBI No. 1789, Vol. 5: 125

Plate 22, fig. 1, Plate 23, fig. 3 and Plate 28, fig. 2

LOCAL NAMES. Kāpāsi (Hindi; Bengali); Māsumā (Oudh); Chūmā (Nepal); Adari ramadasu (Telugu); Argellur (Yerkali); Velli-eriyān (Malayalam); Kurulla geyya, Ukusa (Sinhala).

SIZE. House Crow —; length c. 33 cm. (13 in.).

FIELD CHARACTERS. A small dainty grey and white hawk. Crown, nape, back, rump, and upper tail-coverts pale ashy grey; rest of head and neck, underparts, and tail pure white. A black line from lores to behind the blood-red eyes, and black patches on wing shoulders conspicuous at rest and also in flight. Tips of closed wings (black) extend beyond short square (slightly forked) tail. Sexes alike.

In flight, colour pattern resembles Pale Harrier (q.v.) which also has black wing tips (primaries). But larger size of Harrier slimmer streamlined



× c. 1

HAWKS, VULTURES, ETC. 213

body, longer pointed wings, buoyant sailing flight, and absence of black shoulder-patches readily distinguish it.

Young (immature). Brownish ashy above scalloped paler. Wing coverts (black and grey) also edged with whitish. Remiges and rectrices tipped white. Breast tinged with buff or finely streaked with fulvous.

STATUS, DISTRIBUTION and HABITAT. Resident. Widely but patchily distributed from W. Pakistan [Baluchistan (straggler), Sind, Bahawalpur, W. Punjab] east to Assam plains and Manipur, and from the Himalayan foothills (from c. 1600 m.) and terai south to Kanyakumari; up to c. 1200 m. in the peninsular hills. Nepal, chiefly terai and lowlands, but recorded at c. 1370 m. (Biswas). Ceylon (all zones to c. 2100 mm.); Laccadive Islands; Bangladesh (Pabna, Dacca)-Husain & Sarker, 1972, *Bull. B.O.C.* 92(2): 40.

Affects deciduous biotope: sparse savannah forest, secondary scrub country and grassland interspersed with cultivation; riverain tamarisk and kandi (*Prosopis*) jungle in W. Pakistan and semi-desert areas.

Extralimital, east to S. Yunnan, south to N. Tenasserim and the Indo-chinese countries. The darker nominate race inhabits practically all Africa and Madagascar; occasionally found in S. Europe.

LOCAL MOVEMENTS. Seasonal local fluctuations, and appearances and disappearances often recorded, e.g. in Coorg ('regular winter-migrant'—F. N. Betts), but no precise data.

GENERAL HABITS. Keeps singly or in widely scattered pairs. Somewhat crepuscular; more so in some localities and at certain times than others, presumably dependent on habits of the prevailing food supply. Adopts a favourite patch of open grass-and-scrub jungle, occupying the same pole or tree-top within it day after day. From this perch surveys the surroundings—cocking up the tail from time to time, opening and closing it, raising and lowering it gently or jerking it up and down between the drooping wings—and pounces on any prey that stirs on the ground. More usually quarters the territory, flying and sailing in wide circles 30 metres or so above, turning every now and then to face the wind and hover like a kestrel ('over a minute'—SA) to scan the ground. On suspicion of movement, parachutes obliquely down a few metres to investigate more closely—wings open and upraised back to back, with only the tips quivering. The parachute descent, controlled by slight up and down manipulations of the tail, is often interrupted with bouts of stationary hovering to make sure, the legs being gradually let down in readiness at the same time. Finally when within striking range, the wings are pulled in and the bird drops or stoops on the quarry with a rush, bearing it away in its claws.

Flight sluggish, with deliberate wing-beats, strongly reminiscent of a gull or roller (in head-on silhouette also of a flying fox), alternated with spurts of sailing. When in pursuit, bird capable of swift falcon-like dash. Once carried off a wounded quail 'with quite the rapidity and dash of a peregrine' (Butler, SF 3: 448).

Roosts communally at night in leafy trees, 15–20 birds or more converging on the selected one at dusk from over a wide area.

FOOD. Locusts, grasshoppers, crickets, and other insects. Lizards, field rats and mice, young and sickly birds, etc. Snake and frog also taken among stomach contents.

HAWKS, VULTURES, ETC. 215

125. Blyth's Baza or Northern Brown Lizard Hawk. *Aviceda jerdoni jerdoni* (Blyth)

Pernis Jerdoni Blyth, 1842, *Jour. Asiat. Soc. Bengal*, 11:464 (no type locality = Malacca)
Baker, FBI No. 1824, Vol. 5:174

Plate 21, fig. 8, Plate 22, fig. 3 and Plate 23, fig. 2

LOCAL NAMES. None recorded.

SIZE. Jungle Crow; length c. 48 cm. (19 in.).

FIELD CHARACTERS. A moderate sized brown hawk with rufous and black head and a prominent upstanding black occipital crest, narrowly white-tipped. Chin and throat rufous and white, with a bold black mesial stripe. Breast rufous-brown; rest of underparts conspicuously barred with rufous-brown and white. Tail brown with three dark bands, the terminal one broadest and darkest.

On a casual view could be confused with the Crested Goshawk (*Accipiter trivirgatus*) of somewhat similar coloration, also crested, q.v.

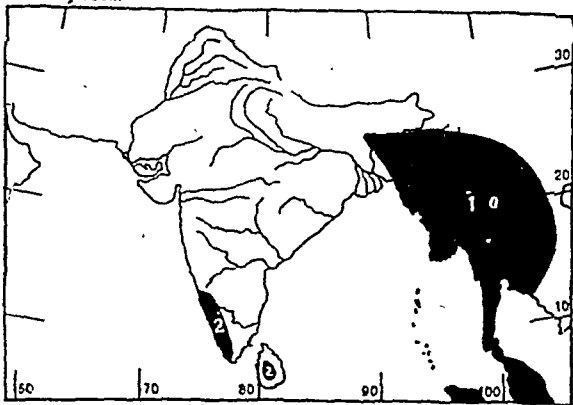
Female (adult). Much paler throughout, with breast fulvous-white instead of rufous.

Young (immature). Like adult female, but paler; with four, or sometimes five, distinct dark bands in tail, the basal one partly concealed; bases of rectrices much mottled with white. Still younger birds have feathers of upper plumage fringed with white, and underparts even paler and more feebly barred and streaked than in female.

STATUS, DISTRIBUTION and HABITAT. Resident. Rare. Darjeeling district (W. Bengal), Sikkim to eastern Assam, between c. 350 and 1800 m. altitude, with some seasonal up and down movement. Confined to evergreen foothills biotope.

Extralimital. Burma, Thailand, Malay Peninsula, Sumatra.

Aviceda jerdoni



214 FALCONIFORMES

VOICE and CALLS. Normally silent. A thin high-pitched squeal occasional. A soft whistle as of man (A. E. Jones).

BREEDING. Season, very extended, varying locally to cover practically entire year, with a marked recession in April and May. Nest, loose, untidy, crow-like; of twigs, lined with roots and grass; sometimes unlined. Placed in a small tree, seldom above c. 9 metres from ground. Eggs, 3 to 5 or 6—most commonly 3 or 4—richly coloured, handsome, highly variable. Ground colour white to pale cream, buff, or yellowish stone, boldly blotched, smeared and spotted with deep red or reddish brown, occasionally with a few scattered specks of blackish blood-red. Last laid egg of a clutch often very poorly marked. Average size of 100 eggs 39.3 × 30.9 mm. (Baker). Both sexes share all domestic chores; major part in nest-building and incubation by female, in foraging for young by male.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	260–276	20–23	30–37	116–124 mm.
♀♀	262–283	23–24	c. 36	119–130 mm. (SA)

Weight 1 ♂ 164 gm. (BNHS).

COLOURS OF BARE PARTS. Iris, adult crimson; imm. yellow or yellow-brown. Bill black; cere and gape pale yellow. Legs and feet deep yellow; claws black.

Genus AVICEDA Swainson

Aviceda Swainson, 1836, *Classif. Bds.*, 1: 300. Type, by subsequent designation, *Aviceda cuculoides* Swainson, 1837, op. cit. 2: 214

Baza Hodgson, 1837, *Jour. Asiat. Soc. Bengal*, 5: 777. Type, by original designation, *Baza tyama* Hodgson

Small to medium sized hawks. Head with thin upstanding crest. Bill strong and well curved. Cutting edge of upper mandible furnished with two sharp conical 'teeth' on each side near tip; lower mandible with three or four pointed serrations on each side near tip. Cere small; nostril very narrow, slanting, placed at anterior edge of cere, partly covered by a membrane. Lores partly feathered as in Honey Buzzard (*Pernis*). Tarsus short, stout, scutellated in front and above the toes, reticulated elsewhere; feathered in front on upper third or more. Claws small, well curved, almost subequal in length. Wings moderately pointed. Tail longish, square-ended or very slightly graduated.

Key to the Species

	Page
Upper plumage brown, fourth primary longest.....	<i>A. jerdoni</i> 215
Upper plumage black, third primary longest.....	<i>A. truphotus</i> 218

AVICEDA JERDONI (Blyth)

Key to the Subspecies

Larger, wing over 320 mm.....	<i>A. j. jerdoni</i>
Smaller, wing under 315 mm.....	<i>A. j. ceylonensis</i>

216 FALCONIFORMES

GENERAL HABITS. Largely crepuscular. Even lesser known than of the southern race (No. 126). Usually keeps in pairs, but family parties of 3 to 5 occasionally seen flying and sailing in circles at treetop height at the edge of a forest clearing. Flight rather sluggish.

FOOD. Lizards, grasshoppers, and other large insects. The stomach contents of a specimen (Kurseong) included two Agamid lizards (*Japaltura variegata*), several longicorn beetles and mantises (Coleoptera, Orthoptera)—D'Abreu, JBNHS 20:518.

VOICE and CALLS. Not recorded.

BREEDING. Only two authentic records, both from Darjeeling district, W. Bengal, at c. 610 and 1825 m. elevation; April and June. The nests—small and compact, of sticks, lined with green leaves—were placed among stout branches of large forest trees at heights of c. 10 and 20 metres respectively. Eggs, 2 in each, closely resembling Shikra's (*Accipiter badius*), greyish white, stained from contact with leafy nest-lining. (Sometimes with sparse reddish blotches and specks.) Fine-textured, smooth, broad ovals. Average size of the 4 eggs 44.7 × 36.5 mm. (Baker).

Share of the sexes in the nesting chores, and incubation period, unrecorded.

MUSEUM DIAGNOSIS. Wing structure of *A. jerdoni* differs from *A. truphotus* in having the 4th primary (as.) longest instead of 3rd; or sometimes 4th and 5th subequal.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	327 (Sumatra)— 360 (Sikkim)	29–30	35–40	210–244 mm.

COLOURS OF BARE PARTS. Iris golden yellow. Bill plumbeous black, base bluish slate; tip and culmen quite black; cere pale bluish plumbeous to almost black. Legs and feet chrome yellow or 'white slightly tinged with blue' (Hume), or 'tarsus china white' (Stevens); claws horny black (Baker).

126. Legge's Baza or Southern Brown Lizard Hawk. *Aviceda jerdoni ceylonensis* (Legge)

Baza ceylonensis Legge, 1876, *Stray Feathers*, 4:247 (near Kandy, Ceylon)
Baker, FBI No. 1825, Vol. 5:175

LOCAL NAMES. *Kurulla goya* (Sinhala); *Parundu* (Tamil); *Propperundu* (Malayalam).

SIZE. Jungle Crow; length c. 48 cm. (19 in.).

FIELD CHARACTERS. Similar to the last (No. 125) sex for sex and age for age, only slightly smaller (see Measurements). General shape in flight, and wing action, reminiscent of a small buzzard. Crest depressed in flight; characteristically erect from occiput when bird at rest.

STATUS, DISTRIBUTION and HABITAT. One of the peculiar discontinuously distributed Indo-Malayan forms separated from its nearest east-Himalayan relative by at least 1900 km. of ecologically unsuited country. Resident, but scattered and rare in south-west India south of c. 12°N. lat.—W.

HAWKS, VULTURES, ETC.

217

Mysore and Kerala (including Coorg and Wynaad), and Ceylon (hill zone in Central and Uva provinces). Affects evergreen forest biotope in the foothills between c. 150 and 900 metres altitude.

GENERAL HABITS. Like No. 125, shy and rather crepuscular. Sluggish on the wing, flying with strong flaps alternated with short intervals of gliding. Keeps in pairs or family parties of 3 to 5 — the young birds distinguishable by their much paler coloration — to hilly forested country where sometimes met with on the edge of sholas and clearings. Still-hunts lizards and large insects, pouncing on them from its look-out perch in a leafy tree. Prey carried in beak not in talons. Rarely seen except when flying in circles at treetop height or soaring aloft. On approach of breeding season much given to extravagant aerobatics accompanied by excited mewling screams, *kip-kip-kip* or *kikiya*, *kikiya*, etc., at times confusingly like the calls of the Palm Squirrel (*Funambulus*).

DISPLAY. The pair soar round each other in circles high up in the air. The male (?) suddenly nose-dives steeply with half-closed wings for 10 to 15 metres, uttering a loud, sharp *kip-kip-kip*; then, using the momentum, he doubles upon himself and zooms almost vertically upwards. When on the crest of the curve, standing on his tail as it were, and seemingly about to stall and topple over backwards, he presently rights himself and continues to soar around. These spectacular antics are repeated at short intervals (F. N. Betts, JBNHS 36: 258; 50: 251).

FOOD. Lizards, frogs, large insects, and other small animals. *Calotes calotes* and field rat (*Golunda ellioti*) recorded in Ceylon (Phillips).

VOICE AND CALLS. Besides the courtship cries, a loud plaintive mewling *pee-ow* uttered by both sexes while circling in the air (W. W. A. Phillips). Also a conversational 'long drawn mournful *gweer* with something of the intonation of a serpent eagle's cry' (Mrs Lushington).

BREEDING. Copulation accompanied by loud cries observed in tree on 26 September. *Season*, in SW. India normally February through April; in Ceylon during the NE. monsoon, from c. November to May. *Nest*, a well-made smallish structure (shallow cup) of leafy twigs, occasionally lined with grass and roots but always with fresh green leaves. Built 7 to 20 metres up in a leafy tree in humid forest; sometimes in trees standing in tea plantations. *Eggs*, 2 or 3, greyish white getting stained during incubation; indistinguishable from those of the northern race. Average size of 32 eggs 44.9 × 33.6 mm. (Baker). Both birds participate in building the nest. Share in incubation, and incubation period, unrecorded.

MUSEUM DIAGNOSIS

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	299-312	28-29	36-37	201-211 mm.

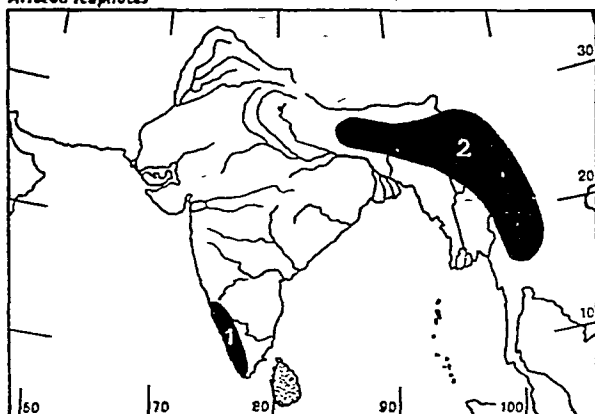
COLOURS OF BARE PARTS. As in the nominate race (No. 125).

AVICEDA LEUPHOTES (DUMONT)
Key to the Subspecies

- Band across chest mainly rufous and chestnut.....*A. l. leuphotes*
Band across chest nearly all black.....*A. l. syama*
Band across chest thin; underparts unbarred.....*A. l. andamanica*

HAWKS, VULTURES, ETC.

219

Aviceda leuphotes

■ Residential range ▨ Winter extension: 1, 2 (1)

1 *A. l. leuphotes*; 2 *A. l. syama*

GENERAL HABITS. Met with singly or in small (family ?) parties; large gatherings of up to 20 birds or so have been recorded. Somewhat crepuscular; more active in cloudy overcast weather and at dusk than during the glare of mid-day. Perches upright high up in the canopy of a lofty forest tree, unnoticed till it makes its aerial sorties after flying insects, returning to a nearby perch after each capture. Insects always seized in the feet (cf. No. 126); sometimes in the air, sometimes picked off a leaf, the bird fluttering or hovering momentarily to do so. When disturbed the birds promptly commence to soar in circles above the tree-tops, sometimes ascending to considerable heights. Normal flapping flight reminiscent of a crow's, and interrupted by short spurts of sailing.

VOICE AND CALLS. A soft, quavering plaintive squeal or whistle, recalling the Pariah Kite's; also described as a shrill gull-like mewling.

FOOD. Chiefly lizards, frogs, large grasshoppers, mantises, and other insects. Bats and small birds only occasionally. We have observed an individual at dusk and dawn day after day flying into and criss-crossing through swarms of yellow wagtails arriving at and leaving their roosts in sugarcane fields in Kerala, making timid unsuccessful dashes at birds within easy reach, but only rarely securing one.

BREEDING. *Season*, in NE. India April to June; in Kerala between February and July, mainly March/April. *Nest*, a well-made platform of thin sticks with the central depression c. 20 cm. across and 5 to 10 cm. deep. Generally well lined with grass and fibre, overlaid with a bed of green leaves which are renewed from time to time. *Eggs*, 2 or 3, like those of *Acriditer badius*, broad, fine-textured and smooth ovals, greyish white,

218

FALCONIFORMES

127. Indian Blackcrested Baza or Lizard Hawk. *Aviceda leuphotes leuphotes* (Dumont)

Aviceda leuphotes Dumont, 1820, Dict. Sci. Nat., 16: 217 (Pondicherry)
Baker, FBI No. 1822, Vol. 5: 171

Plate 22, fig. 2, Plate 23, fig. 1 and Plate 28, fig. 1

LOCAL NAMES. *Prepperandu* (Malayalam).

SIZE. Pigeon ±; length c. 33 cm. (13 in.).

FIELD CHARACTERS. A handsome, prominently crested black and white hawk with barred underparts and black belly.

Adult. *Above*, black, including head with long upstanding occipital crest, neck, back, rump, tail-coverts and tail. Conspicuous white and chestnut blotches on scapulars and flight feathers. *Below*, foreneck and upper breast black; a broad white gorget below it, succeeded by a black-and-chestnut band. Lower breast and flanks buffy white boldly barred with chestnut. Centre of abdomen, vent, and under tail-coverts black. Sexes alike.



× c. 2

In overhead flight paler underside of tail with contrasting black abdomen and vent, dark-barred underparts and white breast band are leading pointers.

Young (immature). Unrecorded.

STATUS, DISTRIBUTION and HABITAT. Resident. Uncommon. Kerala (including Wynaad, Nilgiri Hills); possibly also Coorg and western Mysore (Malnad) though as yet unrecorded thence. Eastern Nepal, Sikkim, northern West Bengal, East Pakistan, to eastern Assam north of Brahmaputra river; terai and up to c. 1200 m. elevation (but see under 128 — *A. l. syama*). A specimen (ssp?) collected in Bastar dist., eastern Madhya Pradesh, in April (JBNHS 62: 556). Rare NE. monsoon (winter) visitor to Ceylon in the low country (all zones), apparently the E. Himalayan form. Status of the two races insufficiently understood owing to paucity of relevant skins for study (see H. G. Deignan 1948, *Auk*, 65: 85). Frequents evergreen forest in the neighbourhood of clearings and wide streams, chiefly in foothills country.

Has the same curious widely discontinuous Indo-Malayan distribution as *Aviceda jerdoni*. More material from Kerala may show that as in that species the resident southern population is discrete.

220

FALCONIFORMES

rarely with specks and blotches of reddish at the broad end. Average size of 24 eggs 37.4 × 31.1 mm. (Baker).

Both sexes participate in nest-building and incubation. Incubation period and share in feeding young unrecorded.

MUSEUM DIAGNOSIS. Distinguished from the Burmese race (*A. l. syama*) by the band across breast being largely intermixed with rufous and chestnut v. almost wholly black.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	227-243	20-22	26-27	130-145 mm.

COLOURS OF BARE PARTS. Iris purple-brown or crimson-brown. Bill deep slaty- or horny-plumbeous; upper mandible tipped black, lower whitish, cere plumbeous-blue. Legs and feet dull plumbeous to plumbeous-blue; claws horny brown (Baker).

MISCELLANEOUS. When freshly killed, the bird 'has a most peculiar and disagreeable odour; what might be termed a regular frog-like or bug-like smell; nor does this wear off till the skin has been exposed to air for some considerable time' (W. Davison, SF 6: 24-5).

128. Burmese Blackcrested Baza or Lizard Hawk. *Aviceda leuphotes syama* (Hodgson)

Baza Syama Hodgson, 1836, Jour. Asiat. Soc. Bengal 5: 777
(Lower region of Nepal)

Baza lephotes burmana W. L. Sclater, 1920, Bull. Brit. Orn. Cl. 41: 31
(Malewoon, Patchan Estuary, Tenasserim)
Baker FBI No. 1823, Vol. 5: 173

LOCAL NAMES. *Deakura*, *Daoling* (Cachar).

SIZE. Same as No. 127, Pigeon ±; length c. 33 cm. (13 in.).

FIELD CHARACTERS. A handsome, prominently crested black and white hawk with barred underparts and black belly. Differs from 127 in having the upper plumage blacker with less chestnut markings, and the breast band below the white gorget almost wholly black (without chestnut admixture).

Young (immature). Like adult but with more chestnut and white in upper plumage.

STATUS, DISTRIBUTION and HABITAT. Uncertain and rather confused. According to H. G. Deignan (*Auk*, 1948, 65: 85), the latest reviewer of this species, *syama* is the breeding form of N. Burma, Assam, and the lower slopes of the E. Himalayas west to Nepal. He considers the breeding bird of Kerala, S. Burma, and N. & E. Thailand to be the nominate *leuphotes*. As Deignan points out, however, it is by no means certain that the Kerala-breeding race is in fact inseparable from that of N. Thailand, as at present assumed. More material from Kerala is needed to settle the point. He suggests that the birds found in Ceylon in winter may be migrants of the east Himalayan population (*syama*).

Like 127, inhabits evergreen forest biotope; broken plains and foothills country up to c. 1000 m. elevation.

GENERAL HABITS, FOOD, VOICE, etc. No differences from 127 recorded.

HAWKS, VULTURES, ETC.

221

MUSEUM DIAGNOSIS. Distinguished from nominate *leuphotes* by the band across the breast being nearly all black v. largely intermixed with rufous and chestnut.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail (Baker)
♂ ♀	221-246	20-23	25-30	130-149 mm.

COLOURS OF BARE PARTS. As in the nominate race.

128a. **Andaman Blackcrested Baza.** *Aviceda leuphotes andamanica* Abdulali & Grubb. See Appendix.

Genus *PERNIS* Cuvier

Pernis Cuvier, 1817(1816), Règne Animal., 1: 322. Type, by monotypy, *Falco apivorus* Linnaeus

Cf. Stresemann, E., 1940, Archiv. f. Naturg.: 137-93

Distinguished from all other accipitrine genera by having the lores, sides of head, forehead, and chin, covered with small scale-like feathers, with no bristles or prolonged shafts. Bill weak, rather long, not much hooked; festoon small or absent. Cere nearly as long as rest of bill. Nostrils long, narrow, oblique; upper margin membranous. Wings long; 3rd and 4th primaries (as.) subequal and longest, 5th a little shorter. Tail moderately long; slightly rounded. Tarsus stout, short, and feathered on the upper half in front, the naked parts covered with hexagonal scales; toes long, covered above with bony transverse shields, all divided except the last two or three; claws long and slightly curved, the middle one dilated on the inner side.

The genus is found in Europe and Africa to Central Asia, extending to the Malay Archipelago and China.

PERNIS PTILORHYNCHUS (Temminck)

Key to the Subspecies

- Black subterminal and median bands on tail nearly as wide as paler bands..... *P. p. ruficollis*
Black subterminal and median bands on tail much narrower than paler bands..... *P. p. orientalis*

129. **Siberian Honey Buzzard.** *Pernis ptilorhynchus orientalis* Taczanowski

Pernis apivorus orientalis Taczanowski, 1891, Fauna, Orn. Sib.-Orient. pt. 1: 50 (in Mém. Acad. Imp. Sci. St. Pétersb. (7), 39) (Eastern Siberia)
Baker, FBI No. 1820, Vol. 5: 168

LOCAL NAMES. As in 130.

SIZE. Pariah Kite \pm ; length c. 68 cm. (27 in.).

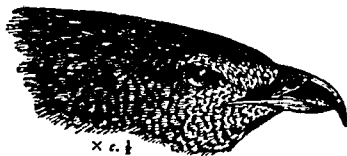
FIELD CHARACTERS. Doubtfully distinguishable in the field from Crested Honey Buzzard (No. 130) by its different tail pattern in which the black

HAWKS, VULTURES, ETC.

223

Slenderer head and longer neck readily distinguish it from Short-toed Eagle which it resembles in overhead flight.

STATUS, DISTRIBUTION AND HABITAT. Resident, with considerable local movements depending on food supply. West Pakistan, and all India from c. 1800 metres in the Himalayas south to Kanyakumari and Ceylon (partly winter visitor), east to Assam and E. Pakistan. Inhabits deciduous and semi-evergreen well-wooded country, hill and plain, affecting forest glades, groves of trees about towns, villages and cultivation, even in semi-desert areas, e.g. Bahawalpur, Rajasthan, N. Gujarat.



Extralimital. East to Tonkin and Laos. Probably also SW. Yunnan (Peters). 'Somewhat migratory' (Vaurie & Amadon, Am. Mus. Novit., No. 2111 — Oct. 29, 1962).

GENERAL HABITS. Usually seen singly or in pairs soaring aloft and circling on motionless wings, or perched on a tree-top; in urban and suburban localities invariably mobbed and chivvied by House and Jungle Crows, often abetted by parakeets and other birds. Normal flight with steady wing-beats punctuated with occasional spurts of sailing. Numbers gather to roost at night in groves of large leafy trees, e.g. *Dalbergia*.

FOOD. Chiefly honey and larvae of bees — even of the ferocious Rock Bee (*Apis dorsata*) — either from combs within natural tree hollows or those festooning the branches. Bits of the comb are broken off regardless of the onslaughts of the infuriated insects (exact method in case of exposed combs not recorded). If the chunk is too large and drops down, the bird descends to deal with it on the ground, digging into the cells with its bill; if of manageable size it is carried off to a perch on a bough, held under foot and torn with the bill, the honey and larvae being gulped down. The dense covering of scale-like feathers on the face afford adequate protection against the stings, but how the eye escapes is not clear. Stomach and crop contents of specimens also show considerable quantities of wax. Whether, as in Honeyguides, this is deliberately swallowed, and digested, is not known. Large insects, reptiles, mice and young birds are also taken. One reported devouring an oriole (Donald) and another attacking a blackbird enmeshed in mist net (J. Panday). Alleged to rob village chickens at times.

VOICE AND CALLS. A single high-pitched screaming whistle *wheteeew* uttered from a perch with crest slightly raised; also on the wing. Sometimes calls during the night (?).

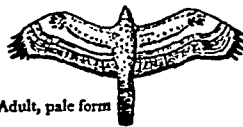
BREEDING. Season, April, May, and early June over most of northern and peninsular India; in south India apparently more birds lay in February than later. No nest actually discovered in Ceylon though copulation once

222

FALCONIFORMES

subterminal and median bands are narrower than the paler (mottled grey) bands that separate them. This character is more noticeable in overhead soaring flight, but is variable and not always a reliable guide. Sexes alike; female larger

STATUS, DISTRIBUTION AND HABITAT. Uncommon winter visitor to N. India. Possibly more frequent than supposed also elsewhere in the subcontinent but not differentiated from 130, q.v.; one specimen from as far south as Ceylon (Mannar — Phillips).



Honey Buzzard, overhead view
(Diagrammatic sketches by L. Tinbergen)

Extralimital. Breeds in S. Siberia from SW. Altai to the Amur region and the mountains of Hondo (Japan); probably also in Manchuria and N. China. In winter south to Burma, and S. China (Peters).

'Japan and northeastern Asia where it is highly migratory' (Vaurie & Amadon, Am. Mus. Novit., No. 2111, Oct. 29, 1962).

GENERAL HABITS, etc. Nothing specifically recorded. See 130.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail (Baker)
♂ ♀	432-483 (few 460+)	33-37	47-50	242-267 mm.

COLOURS OF BARE PARTS. As in 130.

130. **Crested Honey Buzzard.** *Pernis ptilorhynchus ruficollis* Lesson

Pernis ruficollis Lesson, 1830, Traité d'Orn., livr. 1: 77

('Patrie inconnue' = Bengal)

Baker, FBI No. 1819, Vol. 5: 167

Plate 24, fig. 1 and Plate 25, fig. 1

LOCAL NAMES. *Shahutela*, *Makkare* (Hindi); *Madhava* (Nepal); *Tenu geddu* (Telugu); *Ten parandu* (Tamil); *Jen alawa* (Kannada); *Jutalu* (Yerkali); *Malnecari* (Mhar); *Katta parantha*, *Ten kolichi* (Malayalam); *Rajaliya* (Sinhala).

SIZE. Same as 129; Pariah Kite \pm ; length c. 68 cm. (27 in.).

FIELD CHARACTERS. Extremely variable in coloration. One of the commonest phases greyish brown above with darker grey head; pale brown below narrowly cross-banded with white. A short blackish nuchal crest seen in profile when slightly raised. Underside of wings silvery grey with close dark barring; rounded greyish tail with broad blackish subterminal and median cross-bands separated by about equally broad pale ones; but tail pattern also variable. Sexes alike.

224

FALCONIFORMES

observed in January, and young ex nest being fed in May (Phillips 1953). Nest, a compact platform of sticks c. 40-45 cm. in diameter and 20 cm. deep, the inner cup lined with a thick layer of dry leaves; rarely green ones. Placed in large mango, banyan, and suchlike leafy trees, or in a casuarina, or even date or coconut palms, from 6 to 20 metres up. Eggs, normally 2, smooth-surfaced broad ovals, almost equal at both ends. Handsome but extremely variable in ground colour and markings: pale cream, pale reddish- or yellowish buff, speckled, mottled, or blotched in varying degree with reddish brown or chestnut-brown. Some eggs closely resemble those of Kestrel or Sparrow-Hawk; some are mistakable for those of the Kite, but Baker points out that the inner membrane is *always* yellow, never green as in the latter. Average size of 80 eggs 52.8 x 42.8 mm. (Baker). Both sexes share in nest-building, incubation, and feeding the young. Incubation period about 32 days. Chick when c. 15 days old, covered with white powder-puff down all over except head and neck, where it is buffy-cream colour.

MUSEUM DIAGNOSIS. According to Stresemann¹ the race *ruficollis* has 'tail-wing' index (length of tail multiplied by 100 and divided by length of wing) usually under 65. 'Wing-tip' (distance from tip of longest secondary to tip of longest primary) usually under 110 mm.; wing length 392-460 mm.

MEASUREMENTS (of Indian birds)

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	382-417	36-42	48-57	245-262 mm.
♀ ♀	398-445	38-42	50-60	250-276 mm. (SA)

COLOURS OF BARE PARTS. Iris golden yellow to orange-red, sometimes with a very fine golden ring round pupil; browner in young birds. Bill slaty black; lower mandible paler (whitish) with black tip; cere blackish plumbeous. Legs and feet yellow; claws black. In 15-day old downy chick: Iris brown. Bill black; cere greyish. Legs and feet pinkish flesh-colour.

MISCELLANEOUS. Nematode worms (*Pelecius* sp.) recorded from under skin of toes, especially at base of claws (Sálim Ali 1943, JBNHS 44: 23).

Genus *MILVUS* Lacépède

Milvus Lacépède, 1799, Tabl. Ois.: 4. Type, by tautonymy, *Falco milvus* Linnaeus

Hawks distinguished by their long, forked tails. Bill comparatively weak; culmen slightly curved at base, sharply rounded but distinct; cere well developed, with oval, oblique nostril at its anterior edge. Wing long and pointed, reaching almost to tip of tail; 3rd and 4th primaries (as.) longest. Tarsus short, feathered for about half its length, the naked lower portion with broad shields in front, reticulated

¹ Stresemann, E. (1940): Review of the genus *Pernis*. *Archiv für Naturgeschichte*, pp. 157-91.

HAWKS, VULTURES, ETC.

225

behind and at sides. Toes short, scutellate above; lateral toes uneven; claws moderately curved; middle claw dilated on the inside.

Represented throughout the Old World; within our limits by two species, one of which is of uncertain status.

Key to the Species

Depth of fork in tail (i.e. distance outer tail-feather projects beyond central tail-feather) greater than length of tarsus.....*M. milvus*
Depth of fork lesser than length of tarsus.....*M. migrans*

131. European or Red Kite. *Milvus milvus milvus* (Linnaeus)

Falco milvus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 89 (South Sweden)

Not in Baker, FBI

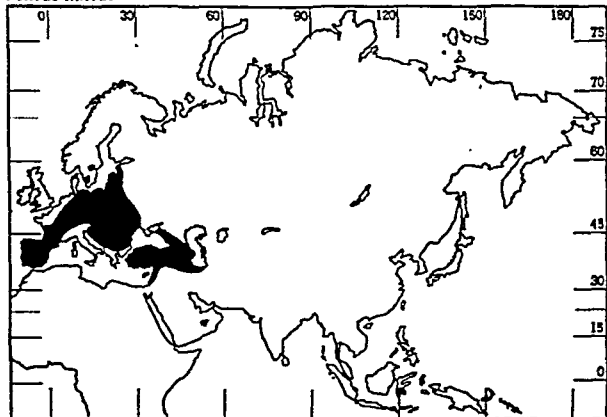
Plate 14, fig. 10, Plate 15, fig. 1 and Plate 17, fig. 3

LOCAL NAMES. As for Pariah Kite.

SIZE. Pariah Kite; length c. 61 cm. (24 in.).

FIELD CHARACTERS. Differs from the familiar Pariah Kite in being rusty brown overall, with paler (whitish) head, dark-streaked rust-red underparts, and bright rufous deeply forked tail. In overhead flight the reddish general coloration, pale head, black primaries ('splayed fingers'), with a prominent pale whitish patch at their bases, pale abdomen and vent, and red tail are diagnostic. Sexes alike, more or less also in size.

Milvus milvus



■ Breeding range

STATUS, DISTRIBUTION and HABITAT. Uncertain. Vagrant or irregular (?) winter visitor. Definitely identified at Pung Bet, Little Rann of Kutch, c.

HAWKS, VULTURES, ETC.

227

GENERAL HABITS etc. Same as of Pariah Kite q.v.

MUSEUM DIAGNOSIS. For details of plumages see Witherby 1939, 3: 96.

MEASUREMENTS

	Wing	Bill (from cere)	Tarsus	Tail	
				central	outer
♂♂	417-452	24-27	53-60	200-235	230-260 mm.
				Depth of fork 20-40 mm.	
♀♀	430-465	—	—	—	—

COLOURS OF BARE PARTS. As in Pariah Kite.

(Witherby)

133. Pariah Kite. *Milvus migrans govinda* Sykes

Milvus Govinda Sykes, 1832, Proc. zool. Soc. Lond.: 81 (Dukhrun)

Baker, FBI No. 1787, Vol. 5: 122

Plate 14, fig. 7, Plate 15, fig. 3 and Plate 17, fig. 1

LOCAL NAMES. *Chel* (Hindi and Bengali); *Kurit* (Santhali); *Il* (Chamba); *Malla gaddi* (Telugu); *Paria paranda*, *Kalu paranda* (Tamil); *Genda* (Mhari); *Rajaliya* (Sinhala); *Chilana*, *Mugacharani* (Assam); *Chakki paranda* (Malayalam); *Chir* (Marathi); *Sirin* (Sind).

SIZE. Length c. 61 cm. (24 in.).

FIELD CHARACTERS. A large dark fulvous-brown hawk distinguishable from all similar birds of prey by its deeply forked tail, particularly conspicuous in flight. Sexes alike.

Young (immature). Overall pale brown, speckled and streaked with fulvous. Head brown, streaked with pale fulvous; a white patch under eye.

Upper plumage brown, darker than adult, the feathers tipped or edged paler. Underparts brown with broad whitish or fulvous streaks. In older young these streaks narrower with black shafts. Tail more strongly barred or rayed.

STATUS, DISTRIBUTION and HABITAT.

Resident. Common throughout both Pakistans, all India (plains and to c. 2200 metres altitude in the Hima-

layan and peninsular hills), Nepal, Ceylon (low country Dry Zone), Andaman Is. Affects urban localities and human habitations on the countryside, including outlying nomadic herdsman's encampments.

Extralimital. Burma; Malaysia (occasional).

LOCAL MIGRATION from heavy-rainfall localities to drier areas observed before commencement of monsoon, but precise data lacking.

GENERAL HABITS. Gregarious about towns and villages. A confirmed commensal of man, and useful and efficient scavenger, haunting the precincts of slaughter-houses, fish markets, refuse dumps, harbours, and bazaars. Is an expert stunt flier possessing astonishing dash and manoeuvrability on the wing. Will swoop and carry off a dead rat or other titbit lying in



x c. 1

226

FALCONIFORMES

23°N., 70°E., March 1945 (Sálim Ali 1954, JBNHS 52: 393); Jaskan, Gujarat, March 1964 (Shivraj Kumar, ibid. 61(2): 446); Chilka lake and Puri, Orissa, January 1963, 1964 (Jayakar & Spurway, ibid. 62: 301).

Extralimital. Breeds in England (locally), Scandinavia north to lat. 61°N.; east to Russia, south to NW. Africa, Asia Minor and Palestine; Canary Is. Migratory in the northern part of its range but not crossing the Sahara (Peters).

GENERAL HABITS etc. In Kutch a loose gathering of over 50 birds had assembled for scraps around a shooting camp in lightly wooded semi-desert country surrounded by barren salt desert.

VOICE and CALLS. A squealing whistle similar to the Pariah Kite's but shriller.

MUSEUM DIAGNOSIS. For details of plumages see Witherby 1939, 3: 86-7.

MEASUREMENTS

	Wing	Bill (from cere)	Tarsus	Tail	
				central	outer
♂♂	480-500	27-30	58-64	220-250	300-345 mm.
				Depth of fork 60-110 mm.	
♀♀	480-515	—	—	220-260	310-365 mm.

COLOURS OF BARE PARTS. Iris amber-yellow; skin round eye yellow. Bill black at tip, yellow at base and cere. Legs and feet yellow (Witherby).

MILVUS MIGRANS (Boddaert)

Key to the Subspecies

		Page
A	Head in adults whitish with black streaks..... <i>M. m. migrans</i>	226
B	Head in adults fulvous with black streaks.....I	
1	Smaller; wing ♂ 420-475 mm., ♀ 432-499; white underwing patch inconspicuous..... <i>M. m. govinda</i>	227
	Larger; wing ♂ 475-529 mm., ♀ 480-552; white underwing patch conspicuous..... <i>M. m. lineatus</i>	229

132. Black Kite. *Milvus migrans migrans* (Boddaert)

Falco migrans Boddaert, 1783, Table Pl. enlum.: 28

(restricted type locality France, *apud* Hartert, *ex* Daubenton, pl. 472)

Baker, FBI No. 1786, Vol. 5: 121

Plate 14, fig. 8 and Plate 15, fig. 4

LOCAL NAMES. Same as for Pariah Kite.

SIZE. Pariah Kite; length c. 61 cm. (24 in.).

FIELD CHARACTERS. Differs from the Pariah Kite (No. 133) in having the head and neck in adults whitish (v. fulvous-brown) with black shaft streaks. Upperparts paler brown; underparts more rufous. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident (breeding) in W. Pakistan (Quetta, NE. Baluchistan); in winter probably spreading to Sind, Kutch (?).

Extralimital. Breeds from Spain, S. France, Germany, and Finland south to NW. Africa, SE. Europe, Asia Minor, Kirghiz steppes, and NE. Baluchistan. Winters in N. Africa (Peters).

228

FALCONIFORMES

the middle of a congested thoroughfare, turning and twisting with masterly adroitness to avoid the tangle of overhead electric wires and the bustling traffic below. Or one will bide his time and suddenly swoop down from nowhere before the picnicer's sandwich has reached his mouth, whisk it neatly out of his hand and decamp as suddenly as it came! Prefers garbage and offal to sharing large animal carcasses with vultures. Less given to soaring on thermals and circling aloft than vultures, but large rabbles or 'armadas' commonly seen high up, drifting with the wind on motionless wings at sunset. From time to time one individual will suddenly tumble sideways and dive at another, the attacked one turning over on his back, legs and claws outstretched to parry the onslaught, then as soon right himself to resume the sailing, both birds obviously enjoying the game. Has communal roosts in selected trees or groves at which large numbers — sometimes several scores — will flock at dusk and indulge in much wrangling, wing-flapping, and wheeling in the air before settling down for the night.

FOOD. Largely omnivorous. Chiefly offal and garbage in urbanized areas. When feeding nest-young, individuals sometimes become a serious menace to young chickens and ducklings in poultry runs. At this time also given to carrying off golf balls from links. Saunters about to pick up earthworms on watered lawns. Winged termites awkwardly hawked in the air, the insects seized in the talons and head bent down to transfer them to bill. Observed capturing *Rousettus leschenaulti* bats swarming out of a cave on disturbance during daytime; held in talons and torn up with bill in sailing flight. Among stomach contents the following insects have been identified: *Gryllotalpa africana*, *Chrotogonus* sp., *Brachytrypus achatinus*, in addition to remains of mice, lizards, frogs, chickens, and kitchen refuse (Mason & Lefroy 1912).

VOICE and CALLS. Normal call, more heard at commencement of breeding season, a shrill, almost musical whistle *ave-wir-r-r-r* uttered singly or in quick succession 4 to 7 times from perch as well as on wing. In defence of nest an agitated 'war cry' version of same, *ave-wi-wir*, while frantically diving at intruder. During copulation a series of six to ten excited squeals (uttered by female?) rising in crescendo and ending abruptly on completion of act.

BREEDING. Season prolonged, varying with latitude and locality; in the Himalayas March to May; in the Peninsula mainly between September and April; in Ceylon December to May. Nest, an untidy platform of sticks, iron wire, rags, tow, and rubbish of every description. Placed 7 to 14 metres up in a forking trunk, or crotch of branches of large trees — neem (*Melia*), banyan or peepul (*Ficus*), tamarind (*Tamarindus*), shisham (*Delbergia*), mango (*Mangifera*) or other, commonly near human habitations. Often in the head of a palm (*Cocos* or *Borassus*). Eggs, 2 or 3, rarely 4, broad ovals almost equal at both ends. Very variable in coloration and markings; usually greyish-, greenish-, or pinkish white, with blotches, smears, or freckles of blackish brown, reddish brown, purplish, or blood red. Average size of 200 eggs 52.7 x 42.7 mm. (Baker). Both sexes participate in nest-building, incubation and nest-feeding. Incubation period unrecorded. To copulate, the male alights directly from the air on the female's back in response to her peculiar squealing invitation, flapping his wings to steady

HAWKS, VULTURES, ETC.

229

himself. The length of the pre-incubation copulatory period (in one case 13 September to 21 January and then decreasingly on till 24 February), and the daily frequency of copulation (five to seven times in the early stages) is astonishing. (For details see Sálím Ali 1926, JBNHS 31: 524-6.)

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	420-475	32-36	49-58	250-289 mm.
♀♀	432-499	—	—	—

Six recent specimens give:

	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂	426-452	35-5-38	51 (1)	central 213-224 outer 246-284 mm. Depth of fork 33-63 mm.
3 ♀♀	418-458	37-38-5	53 (1)	217-227 244-290 mm. Depth of fork 27-42 mm. (SA)

COLOURS OF BARE PARTS. Iris brown. Bill black; cere, gape and extreme base of lower mandible yellow or greenish yellow. Legs and feet pale yellow; in young birds greenish yellow. Claws black.

134. **Blackeared or Large Indian Kite.** *Milvus (migrans)¹ lineatus* (Gray) *Haliastur lineatus* J. E. Gray, 1831, in Hardwicke, Ill. Ind. Zool., 1(8): 1, pl. 18 (China)

Baker, FBI No. 1788, Vol. 5: 124

Plate 14, fig. 9 and Plate 15, fig. 2

LOCAL NAMES. Same as for No. 133.

SIZE. Pariah Kite, slightly +; length c. 66 cm. (26 in.).

FIELD CHARACTERS. In overhead flight distinguishable from Pariah Kite by larger size and a conspicuous white buzzard-like underwing patch (lower wing-coverts) which is only dimly indicated in *gorinda*. At rest, larger size and somewhat paler underparts, without rufous tinge, are suggestive pointers. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Breeds in Ladakh and N. Kashmir, and possibly throughout the Himalayas, between c. 1500 and 4500 m. alt. Observed in Nepal at c. 5330 m. in May and collected at c. 4260 m. in July (Biswas). Breeds also in the higher hill ranges of Assam south of the Brahmaputra (vide Baker). Winter visitor in small numbers to W. Pakistan and northern and peninsular India south at least to about lat. 18°N. in the Deccan (Maharashtra, Andhra).

Extralimital. 'Breeds in W. Siberia from about lat. 58°N. east to Transbaikalia and Japan, south to Transcaspiia, Turkestan, and N. China. Winters south to N. India, Burma, Indochina, and Hainan' (Peters).

MIGRATION. No ringing data. Frank Ludlow (Ibis 1937: 493) witnessed a spectacular migration in Bhutan on 5 September. A continuous stream of

¹ Brackets as used by Stresemann in revised edition of Vol. 1 of Peters's *Checklist*. For explanation see Stresemann, E. (1959): 'Die Gliederung der Schlangengadler-Gattung *Spilornis*' *Vierteiljahrsschrift der Naturforschenden Gesellschaft in Zürich*, 104: 208-13.

HAWKS, VULTURES, ETC.

231

Gāruda laava, *Gāruda mantaru* (Telugu); *Sam parundu*, *Krishna paranthu* (Tamil); *Shemberid* (Yerkali); *Ranga cheelani* (Assam); *Garudan*, *Krishna parundu* (Malayalam); *Piljo*, *Rutta okāb* (Sind); *Ukusa* (Sinhala).

SIZE. Pariah Kite —; length c. 48 cm. (19 in.).

FIELD CHARACTERS. A handsome rusty red or deep chestnut hawk with white head, neck, upper back, and breast, and brown abdomen. Under aspect of wings in overhead flight greyish with a cinnamon tinge; black at tips (primaries). Sexes alike.

Young (immature). Brown, rather like Pariah Kite but always distinguishable by rounded (not forked) tail. Sometimes with whitish patches on underwing, confusingly like buzzard (*Buteo*).

STATUS, DISTRIBUTION and HABITAT. Resident — with some local seasonal movements governed by monsoon and water conditions — throughout India (up to c. 1800 m. in the Himalayas), both Pakistans (except Baluchistan and NW F. Province), Nepal (terai to c. 1400 m. alt.), Ceylon (low country Dry and Wet zones), Andaman Is. Affects well-watered localities inland, and sea coast.

Extralimital. Burma east to S. China, south to Tenasserim, N. Thailand, central Vietnam.

GENERAL HABITS. A water-loving hawk, haunting the vicinity of tidal creeks, fishing villages, docks, and harbours on the seaboard, and dammed reservoirs, rivers, jheels, inundated rice-fields, and flooded areas inland. Occasional pairs become parasitic on man like the Pariah Kite, scavenging about towns and villages far from any large body of water. Of comparatively timid disposition and largely subjected to piracy by kites and crows in seaports. Swoops to pick up in its talons floating jetsam or small fish off the surface, often commencing to demolish them in flight. Has been frequently observed to flop down on the water in the attempt, riding buoyantly even on a choppy sea, and taking off again without effort.

FOOD. Fish (chiefly dead or near the surface, or stranded high and dry by receding flood) including mud-skippers (*Periophthalmus*); frogs, land and strand crabs (*Paratelphusa* spp.), *Oryzodromus*, lizards, small snakes, garbage thrown overboard from ships in harbour, winged termites hawked in the air, orthopterous insects fleeing from fired grassland, young chicks of poultry, sickly birds (once *Alcedo althius*); rarely also carrion in company with vultures. Among stomach contents the following insects have been identified; *Schizodactylus monstruosus*, *Gryllotalpa africana*, *Liogryllus bimaculatus*, *Brachytrypus echinatus*, *Atractomorpha crenulata*, *Chrologonus* spp., in addition to remains of small birds, mice, frogs and lizards (Mason & Lefroy 1912). One caught a living garfish from surface of water with the action of a sea eagle; another seen attacking a hare (W. F. Sinclair).

VOICE and CALLS. A harsh wheezy squeal. When swooping to drive off intruding crow etc. from proximity of nest, a louder, agitated and bellicose version of the same.

BREEDING. Season, over the subcontinent as a whole during the cold weather, between December and March/April, varying locally; in Ceylon December to May. Nest, a rough untidy structure c. 30-60 cm. across and up to c. 20 cm. deep, lined with miscellaneous rubbish — wool, rags, bits of skin, tow, etc. — sometimes with green leaves. Placed c. 6 to 15 m. up in

230

FALCONIFORMES

these kites was coming from the north down the Kuru Chu Gorge to Bhutan, not in dense formation but a long-drawn line of 3 or 4 birds followed at intervals of a hundred metres or so by 3 or 4 more, and so on. Several hundreds of birds must have passed the observer thus during the half-hour he was watching, and the stream was continuing when he left.

GENERAL HABITS etc. Not appreciably different from Pariah Kite's, but both in its residential area and winter quarters more of a mountain bird, less commensal with man and less of a municipal scavenger.

BREEDING. Season, in Kashmir March/April; in Ladakh and the Himalayas April/May; in the Assam hills February to early April. In Kashmir Whistler found some nests in mulberry and poplar trees at moderate heights; Osmaston in huge chenars c. 20 to 30 metres up. Nest, of sticks lined with wool, hair, rags, etc. — not different from Pariah Kite's — perhaps with less sophisticated rubbish admixed than in urban localities. Eggs, 2 or 3, like the Pariah's in coloration and with the same range of variations; slightly larger. Average size of 100 eggs 57.3 × 45.2 mm. (Baker). Apparently both sexes share all the domestic chores, though as yet male's share proven only in incubation. Incubation period unrecorded.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	475-529	34-37	52-62	288-345 mm.
♀♀	480-552	—	—	—

COLOURS OF BARE PARTS. As in Pariah Kite. Legs and feet sometimes nearly white.

Genus *HALIASTUR* Selby

Haliastur Selby, 1840, Cat. Gen. Subgen. Types Aves: 2 (note), 3. Type, by original designation, *Haliastur pondicerianus* = *Falco indus* Boddaert

Bill fairly large, compressed, slightly curved near base, sharply so at tip; festoon on cutting edge of upper mandible small but distinct. Nostrils almost round and oblique. Wings very long, extending to or beyond tip of tail; 4th primary (as) longest; first about equal to two-thirds length of 4th. Tail moderately long, slightly rounded. Tarsi short and feathered above; the naked portion with broad transverse scutes in front and on toes, elsewhere with hexagonal scales, small at sides large behind, where in young birds they form broad scutes; soles furnished with tiny prickly scales; outer toe longer than inner; claws curved, moderately strong.

The genus contains two species found throughout the Oriental and Australian regions, one of which occurs within Indian limits.

135. **Brahminy Kite.** *Haliastur indus indus* (Boddaert)

Falco Indus Boddaert, 1783, Table Pl. enlum.: 25

(Pondicherry ex Daubenton, pl. 416 and Buffon 1: 490)

Baker, FBI No. 1784, Vol. 5: 118

Plate 14, fig. 11, Plate 17, fig. 2 and Plate 25, fig. 2

LOCAL NAMES. *Brahmini cheel*, *Sankar cheel*, *Dhobia cheel*, *Roo mibhāt* (Hindi); *Shankha cheel* (Bengal); *Kehe* (Santhali); *Khemankari* (Sanskrit); *Gāruda* (Kannada);

232

FALCONIFORMES

a large banyan or peepul (*Ficus*), tamarind, neem, casuarina, or other tree or in the head of coconut palm, preferably near water, often within or close to a village; rarely on a ruined building. Eggs, normally 2, sometimes 3, rarely 4, greyish white, feebly speckled and blotched with pale dingy reddish brown — poorly marked replicas of Pariah Kite eggs; variable. Average size of 100 eggs 50.7 × 40.2 mm. (Baker).

Both sexes share in nest-building, incubation¹, and feeding the young. Incubation period about 26/27 days.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	359-394	34-38	51-59	180-207 mm.
♀♀	379-403	35-38	51-59	189-205 mm. (SA)

Weight 10 ♂♀ 520-700 gm. (BNHS).

COLOURS OF BARE PARTS. Iris brown. Bill bluish horny, culmen and tip paler, sometimes yellowish; cere yellow (bluish in young). Legs and feet dull yellow, greyish yellow, or greenish yellow.

Genus *ACCIPITER* Brisson

Accipiter Brisson, 1760, Orn., 1: 28, 6: 310. Type, by tautonymy, *Accipiter Brisson* = *Falco nisus* Linnaeus

Astur Lacépède, 1799, Tabl. Ois.: 4. Type, by subsequent designation, Vigors, 1824, *Falco palumbarius* Linnaeus = *F. gentilis* Linnaeus

Bill short, powerful, curving sharply from cere and with a well-pronounced festoon. Nostrils large, oval, horizontal, thinly covered with bristles. Wings short, rounded; 3rd, 4th, or 5th primary (as) longest, or all three subequal. Tail long, extending beyond wing tips, rather graduated. Tarsus long, thin, unfeathered; scutellated in front and behind, reticulated on sides. Toes powerful; middle toe exceeding the lateral ones in length, greatly so in some species. Claws well curved, unequal; inner claw very large, about equal to that on hind toe.

Genus cosmopolitan; represented by six species within our limits.

Key to the Species

		Page
A	Small but distinct nuchal crest.....	<i>A. tringoides</i> 240
B	No definite crest.....	1
1	Middle toe without claw considerably longer than outer toe with claw.....	a
	Middle toe without claw about as long as outer toe with claw.....	b
a	Black mesial throat-stripe absent; wing ♂ 202-219 mm., ♀ 233-260 mm.....	<i>A. nisus</i> 241
	Black mesial throat-stripe generally present; wing ♂ 145-174 mm., ♀ 182-210 mm.....	<i>A. virgatus</i> 246
b	Third primary longest.....	<i>A. selousii</i> 249
	Fourth or fifth primary longest.....	1

¹ Male's participation needs confirming. Leslie Brown (personal communication) says 'Probably only the female incubates, which is fed on the nest by the male.'

HAWKS, VULTURES, ETC.

233

	Page
1 Larger; wing ♂ 290-324 mm., ♀ 353-362 mm. <i>A. gentilis</i>	233
Smaller; wing ♂ 168-206 mm., ♀ 180-226 mm.	
..... <i>A. badius</i>	235

136. Eastern Goshawk. *Accipiter gentilis schvedowi* (Menzbier)

Asur palumbarius schvedowi Menzbier, 1882, Orn. Geogr. Eur. Russl.: 439
(Transbaikalia)

Baker, FBI No. 1801, Vol. 5: 146

Plate 22, fig. 10 and Plate 23, fig. 11

LOCAL NAMES. *Jarra* ♂, *Baaz* ♀ (Hindi); *Zorrez* ♂, *Shāhbāz* ♀ (Sind).

SIZE. Pariah Kite — length ♂ c. 50 cm. (20 in.), ♀ c. 61 cm. (24 in.).

FIELD CHARACTERS.

Adult. Like a huge Shikra in shape and general aspect, with longish tail and short rounded wings. Above, dark grey, darker on crown, nape, sides of head and neck; edge of forehead and supercilium white. Below, white, cross-banded with black — narrowly on body, broadly on tail.

In overhead soaring flight the close-banded body and broad rounded wings, and longish fanned tail with 3 (or 4) black bands (subterminal broadest) are suggestive pointers. Sexes alike; female larger.

Young (immature). Above, light brown, the feathers edged or tipped buffy white; the markings broader on crown, nape, and hindneck. Tail mottled brown with 4 or 5 broad blackish bands. Below, buff or pale rufous, boldly streaked with blackish oval spots or drops; not barred.

STATUS, DISTRIBUTION AND HABITAT. Breeds sparingly in the NW. Himalaya above c. 2400 m. altitude; possibly also in high Garhwal and eastward. Chiefly a rare winter visitor to N. India and the lower Himalayas, from Kashmir to Sikkim and Assam. Vagrant in W. Pakistan (Sind, Bahawalpur), and Gujarat (Saurashtra). Affects Himalayan forests of oak (*Quercus*), spruce (*Picea*), silver fir (*Abies*), etc.

Extralimital. Central Asia from Barnaul and Krasnoyarsk to Yakutsk and the Aldan river, south to the Tien Shan and Altai mountains and the Amur river (Peters).

GENERAL HABITS. Like the Shikra and other 'true' hawks (*Accipiter*) and hawk-eagles, hunts from an ambush up in the branches of some thickly foliated tree, pouncing on its prey before it has realized the danger. If unsuccessful will pursue the quarry for distances up to several hundred metres before striking or abandoning the chase. If disturbed in its vigil, drops down from the perch and flies low and fast with rapid wing-beats close to the ground, shooting steeply up into the branches of another tree some distance away. In the High Himalayas above the tree-line uses rocks as look-out posts whence to pounce on snow partridges etc. coming out to feed in open ground. Often seen late morning or early afternoon soaring and circling at great heights, tail partly fanned, wings outspread and motionless.

Highly prized by falconers, and was in great demand when falconry was more popular in W. Pakistan and India. The more powerful female was

HAWKS, VULTURES, ETC.

235

137. Central Asian Shikra. *Accipiter badius cenchroides* (Severtzov)

Asur cenchroides Severtzov, 1873, Bull. Imp. Soc. Fr. Nat. Sci., Anthr. and Ethnogr. Moscow, 8 (2): 113 (Auljeata and Chinkent, Russian Turkestan. Restricted to the lower Syr-Darya by Heptner & Stachanov)

Baker, FBI No. 1804, Vol. 5: 150

LOCAL NAMES. *Shikra* ♀, *Chipka* ♂ (Hindi).

SIZE. House Crow —; length ♂ c. 31 cm. (12-13 in.), ♀ c. 36 cm. (14 in.).

FIELD CHARACTERS. Doubtfully recognizable from Indian Shikra (q.v.); somewhat larger and paler.

Adult also more brown less grey above and with the barring on underparts paler and extending to thigh coverts and vent. Sexes alike; female larger.

Young (immature). As in the Indian form (No. 138).

STATUS, DISTRIBUTION AND HABITAT. Resident in W. Pakistan (breeding in Baluchistan, NWF. Province, upper Sind (?) extending, at least in winter, to lower Sind, Bahawalpur, Punjab, but status here uncertain.

Extralimital. E. Iran, Afghanistan, Russian Turkestan. ('Syr-Darya Valley, W. Tien Shan, Ferghana' — Peters.)

GENERAL HABITS, etc. Same as No. 138.

BREEDING. Recorded in NWF. Province and Baluchistan between March and June. Nest and eggs as in Indian Shikra (q.v.). Average size of 30 eggs 40.4 × 31.3 mm. (Baker).

MUSEUM DIAGNOSIS. In the species *A. badius* the second primary (as.) is longer than sixth. For details of plumages and structure of *A. b. cenchroides* see Hartert 1912-21, Vög. pal. Fauna, 2: 1158-9.

MEASUREMENTS	Wing	Bill (from cere)	Tarsus	Tail
♂ ♂	185-197	12-13	45-46	c. 150-160 mm.
♀ ♀	210-222	—	—	180-192 mm.

Middle toe without claw: ♂ under 30 mm.; ♀ 31-35 mm. (Hartert).

COLOURS OF BARE PARTS. As in No. 138.

138. Indian Shikra. *Accipiter badius dussumieri* (Temminck)

Felco dussumieri Temminck, 1824, Pl. Col. Livr. 52, text to pl. 308 (adult), pl. 336 (immature). (India, type from Bengal)

Baker, FBI No. 1803, Vol. 5: 149

LOCAL NAMES. *Shikra* ♀, *Chipta* or *Chetpā* ♂ (Hindi and Marathi); *Shikre* (Bengal); *Kuthia* ♂, *Tunna* ♀ (Nepal); *Tinghyi* (Lepcha); *U-cham* (Sikkim).

SIZE. House Crow —; length ♂ c. 31, ♀ c. 36 cm. (12-14 in.).

FIELD CHARACTERS. A small, short and rounded-winged hawk with a longish multibanded (4 or 5) tail.

Adult. Above ashy blue-grey. Below, white closely barred with rusty brown, especially on breast. A median grey stripe on throat. Sexes more or less alike; female larger and dark smoky brown washed with grey above.

Difficult to distinguish in the field from migratory Sparrow-Hawk (147) (q.v.), but is somewhat paler in coloration, with stouter legs and shorter toes.

234

FALCONIFORMES

trained to strike hares, houbara bustards, ducks, herons, and other large birds. (For methods of catching goshawks in the Punjab see Donald, C. H., 1920, JBNHS 27: 133-4.)

FOOD. Birds and small mammals, such as pheasants, partridges, pigeon and hares.

VOICE AND CALLS. Unrecorded in India. Elsewhere a short squeal or scream like a buzzard's, a chattering *giak, giak, giak*, and others have been described.

BREEDING. Possibly nests less rarely in the higher NW. Himalayas than the paucity of records would indicate. According to Baker the only authentic one is Whymper's of a nest containing two young birds in Garhwal in March, though the altitude given as 'under 3000 ft.' (under c. 1000 metres) would seem unusual. The only eggs known are two (hard-set) taken by Hume's Indian collector from a nest about 40 ft. up in a deodar tree in 'Busahir' (Bashahr), c. 2700 m. altitude, on 15 April. The female parent was produced with the eggs to confirm identification. They were broad ovals, greyish white, one mottled and spotted with faint brown stains (possibly not natural). They measured '2.2 × 1.78 and 2.1 × 1.7 inches' (= 55.9 × 45.2 and 53.3 × 43.2 mm.) — Baker.

Share of the sexes in nesting activities, incubation period, etc. unrecorded.

MUSEUM DIAGNOSIS. No definite crest. 4th primary (as.) longest. [For detailed description of plumages etc. see Witherby 1939, 3:75-7 for the western (nominate) race which differs only in being slightly larger and paler, with the upperparts more brown less grey.]

MEASUREMENTS. Wing ♂ ♂ 290-323; ♀ ♀ 353-362 (Baker). An ad. ♂ from Sikkim has wing 324 mm. (Meinertzhagen).

Bill (from feathers) 21-24; tarsus 70-78; tail 210-230 mm. (for *A. g. gentilis* — Witherby).

COLOURS OF BARE PARTS. Iris, varying with age, lemon- or golden yellow to red (in old birds). Bill dark plumbeous slate, paler at base and often yellow at gape; cere yellow, greenish above. Legs and feet yellow; claws black.

ACCIPITER BADIUS (Gmelin)

Key to the Subspecies

	Page
A Tail of adult with more than one dark subterminal band and of the young with more than three cross-bands of dark hues.	1
B Tail of adult with no bars except the subterminal band; young with only three bands.	2
1 Underparts very richly barred with rufous. <i>A. b. poliopsis</i>	237
Underparts less richly barred with rufous; rufous nuchal collar well marked.	a
a Paler above. <i>A. b. cenchroides</i>	235
Darker above.	I
I Generally smaller, more grey above. <i>A. b. badius</i>	237
Generally larger, more ashy above. <i>A. b. dussumieri</i>	235
2 Breast rufous, wing under 190 mm. <i>A. b. butleri</i>	238
Breast pale grey, wing over 190 mm. <i>A. b. obsoletus</i>	239

236

FALCONIFORMES

Young (immature). Above, dark brown; tail with more bars (5-7). Below, white with broad brown vertical streaks and spots.

STATUS, DISTRIBUTION AND HABITAT. Resident. Sind (?), West Pakistan, Nepal (dun and Valley), all India excepting Kerala and Assam (where replaced by other races, q.v.), up to c. 1400 metres altitude in the Himalayas. Affects open wooded biotope, hill and plain, and the environs of villages and cultivation.

GENERAL HABITS. Uses the same surprise tactics in its hunting as the Goshawk, pouncing on unsuspecting quarry from its ambush up in a leafy tree. Sometimes stampedes small birds out of a thicket, selecting one from the flock, chasing it with speed and determination till struck. Normal flight swift, attained by rapid wing-strokes and punctuated with glides, the bird sweeping steeply up to alight on a branch, its progress through the trees often heralded by 'Ware hawk!' alarm-calls of squirrels and small birds. Much given to soaring on thermals and circling high up in the heavens, particularly during breeding season when also a pair will indulge in noisy and spectacular aerobatics, spiralling upwards, tumbling, and stooping at each other. At times during this season assumes a peculiar hovering flight: wings slightly bent and held above level of back, and flapped very slowly and deliberately. Possesses great pluck and dash; in heyday of falconry was commonly trained to strike quails, partridges, and crows, and even such large birds as young peafowl.

FOOD. All living animals of manageable size recorded: mammals (field rats and mice, striped squirrels), birds (sparrow, myna, babbler, quail, dove, black and racket-tailed drongo), lizards (*Calotes versicolor*, *Mabuya carinata*, *Hemidactylus* sp., *Lygosoma* sp.), frogs, locusts, grasshoppers, mantises, dragonflies, flying termites, etc. The following insects specifically identified among stomach contents: *Chrotogonus* sp., *Gryllobates melanoccephalus*, *Schizodactylus monstrosus*, *Gryllotalpa africana*, *Brachytrypus achatinus*, and geometrid caterpillars (Mason & Lefroy 1912). Observed walking about picking winged termites emerging from rain-sodden ground alongside bulbuls and jungle babblers. Individuals often become confirmed chicken-lifters and then a serious menace to poultry-keepers.

VOICE AND CALLS. Normal calls a loud, harsh, and challenging, *titu-titu* very like black drongo's, and long-drawn screams rendered by G. M. Henry as *ihya, ihya*, etc. During breeding season, in the aerial courtship display as well as when perched, a noisy sharp double note *ti-ti* constantly repeated.

BREEDING. Season, overall March to June, varying locally in different parts of the country; perhaps April and May most general. Nest, untidy crow-like structure of twigs lined with grass and roots, c. 30 cm. across and c. 10 cm. deep. Placed 7 to 15 metres up in a leafy mango, neem, tamarind, or other tree, or at the base of leaf stalks in a palmyra (*Borassus*) palm. Eggs, 3 or 4, rarely 5, pale bluish grey, sometimes finely stippled with blackish at the larger end, and blotched with pale grey or lavender. Average size of 100 eggs 38.8 × 31.1 mm. (Baker). Both sexes share nest-building (twigs carried in feet) and feeding the young. Male's part in incubation uncertain. Incubation period 18-21 days.

MUSEUM DIAGNOSIS. Smaller and purer grey on upperparts than *A. b. cenchroides*; larger and more ashy above than *A. b. badius*, with the rufous barring below paler.

HAWKS, VULTURES, ETC.

237

But all races subject to great individual variation; their gradual and complete intergradation precludes fixing of definite racial boundaries.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	176-206	18-21	50-54	157-166 mm.
♀♀	200-222	21-23	51-55	160-175 mm.

(SA)

Weight 4 ♂♂ 124-158 (av. 135), 5 ♀♀ 170-238 (av. 192) gm. (BNHS).

COLOURS OF BARE PARTS. Iris golden- or orange-yellow. Bill slaty blue, black at tip, paler at base, yellowish on gape; cere bright yellow to deep orange. Legs and feet yellow; claws black.

139. Ceylon Shikra. *Accipiter badius badius* (Gmelin)

Falco badius Gmelin, 1783, Syst. Nat., 1(1): 280 (Ceylon)

Baker, FBI No. 1802, Vol. 5: 147

Plate 22, fig. 4 and Plate 23, fig. 5

LOCAL NAMES. *Keloyi shikra*, *Keralia gya* (Sinhala); *Pirappilatt*, *Shikra* (Malayalam); *Jeli daga* (Telugu); *Vellara* (Tamil).

SIZE. House Crow —; length c. 30-34 cm. (c. 12-13 in.).

FIELD CHARACTERS. Slightly smaller than Indian Shikra (q.v.), with upperparts more grey, less ashy. Female and immature as in above.

STATUS, DISTRIBUTION and HABITAT. Resident. Ceylon (common in all zones up to c. 1800 m.); Kerala (low country and up to at least c. 1500 m. elevation). Affects open deciduous biotope. Groves near villages etc.

GENERAL HABITS etc. Same as Indian Shikra.

REPRODUCTION. *Sp. n.*, January to April/May. Nest and Eggs as in the Indian form. Average size of 18 eggs 59.0 × 31.8 mm. (Baker).

MUSEUM DIAGNOSIS. Smaller and distinctly darker above than ♂ *A. b. dinnieri*; darker barred with darker rufous below, leaving only narrow white lines between the bars. Kerala birds largely intermediate between Indian and Ceylonese races.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	170-182	19-21	c. 50-54	128-134 mm.
♀♀	186-206	22-23	—	145-161 mm.

(SA)

COLOURS OF BARE PARTS. As in the Indian form.

140. Burmese Shikra. *Accipiter badius poliopterus* (Hume)

Microtus poliopterus Hume, 1874, Stray Feathers, 2: 525 (Northern Pegu)

Baker, FBI No. 1805, Vol. 5: 151

LOCAL NAME. *Shikra shre* (Assam).

HAWKS, VULTURES, ETC.

239

pure white. 5th primary (as.) equal to or somewhat longer than 4th (equals other races). — Hartert.

MEASUREMENTS	Wing	Bill (from gape)	Tarsus	Tail
2 ♂♂	163, 178	22, 22	45 (1)	140 (1) mm. (Butler)
♀	167	—	43	152 mm. (Baker)

COLOURS OF BARE PARTS. Iris bright orange. Bill pale bluish horn; tip dusky; cere pale greenish. Feet yellow (Butler). Bill bright bluish (Hartert).

142. Katchal Shikra. *Accipiter badius elanoides* (Richmond)

Accipiter elanoides Richmond, 1902, Proc. U.S. Nat. Mus., 25: 306 (Katchal Island)

Baker, FBI No. 1807, Vol. 5: 152

LOCAL NAMES. Unrecorded.

SIZE. House Crow —; length c. 33-34 cm. (c. 13-14 in.).

FIELD CHARACTERS. Richly coloured above like *A. b. badius*, also with a single subterminal black band in tail. Somewhat larger.

STATUS, DISTRIBUTION and HABITAT. Resident (endemic?). So far known only from Katchal Island, Nicobars.

GENERAL HABITS etc. Unrecorded.

REPRODUCTION. Unrecorded.

MUSEUM DIAGNOSIS. Differs from *A. b. badius* in being paler on nape and sides of head; also in the indistinct white supercilial line, and white lores and throat. Underparts resembling *A. b. badius* in pattern but the reddish colour on breast almost entirely absent (Richmond).

MEASUREMENTS. Wing 192; culmen 21.5; tarsus 52; tail 157 mm. (Abbott).

COLOURS OF BARE PARTS. Iris dark crimson; eyelids greenish. Bill blackish at tip, horn-blue at base; cere greenish. Feet yellow (Abbott).

143. Horsfield's or Chinese Goshawk. *Accipiter soloensis* (Horsfield)

Falco soloensis Horsfield, 1821, Trans. Linn. Soc. London, 13: 137 (Java)

Baker, FBI No. 1808, Vol. 5: 153

Plate 22, fig. 6 and Plate 23, fig. 6

LOCAL NAMES. Unrecorded.

SIZE. House Crow —; length c. 30 cm. (c. 12 in.).

FIELD CHARACTERS.

Adult. Like the Shikra but slaty to ashy black above, with sides of head and neck ashy grey; throat buffy white streaked with grey. Scapulars and tertaries with broad white bars or patches. *Below*, breast and flanks variably tinged with vinous or pale ferruginous, paling to white on abdomen and vent.

In overhead flight reddish breast, barred tail, and buff lining to broad rounded wings suggestive. Orange cere prominent.

238

FALCONIFORMES

SIZE. House Crow —; length ♂ c. 31 cm., ♀ c. 36 cm. (12-14 in.).

FIELD CHARACTERS. Like Indian Shikra (q.v.) but darker.

STATUS, DISTRIBUTION and HABITAT. Resident. Assam, Bangladesh (plain and hills up to c. 900 m. altitude).

Extremities. Burma, Thailand, Malay Peninsula, east through the Indochinese countries to Hainan and Formosa.

GENERAL HABITS etc. As in Indian Shikra.

REPRODUCTION. *Sp. n.*, April-May. Nest and Eggs, as in the Indian form. Average size of 28 eggs 39.0 × 31.8 mm. (Baker).

MUSEUM DIAGNOSIS. As dark as the Ceylon race above, with crown and sides of head a purer grey. Underparts much more richly and broadly barred with rufous than any other race. Female and immature differ from adult in same way as in other races.

MEASUREMENTS

	Wing	Bill (from feathers)
♂♂	186-203	19-21 mm.
♀♀	221-226	20-22 mm.

(Baker)

COLOURS OF BARE PARTS. As in the Indian form.

141. Car Nicobar Shikra. *Accipiter badius badius* (Gurney)

Accipiter badius Gurney, 1893, Bull. Brit. Orn. Cl., 7: 27 (Car Nicobar Island)

Baker, FBI No. 1806, Vol. 5: 151

Plate 22, fig. 7 and Plate 23, fig. 8

LOCAL NAME. *Kadira* (Car Nicobar).

SIZE. House Crow —; length ♀ c. 30 cm. (12 in.).

FIELD CHARACTERS.

Male (adult). Like Indian Shikra (q.v.), but very small and much more richly coloured, and with only a single subterminal black band in tail.

Female and Young (immature). Much more rufous-chestnut and richly coloured everywhere than other races. 'Young birds on the wing looking as red as, or redder than kestrels' (Butler, A. L., 1899, JBNHS 12: 686).

STATUS, DISTRIBUTION and HABITAT. Resident (endemic?). So far known only from Car Nicobar, Nicobar Islands, Camorta (?).

GENERAL HABITS etc. Nothing specifically recorded except that 'young birds have a trick of fluttering on a bough exactly like a broken-legged bird, probably a trick practised when they are just out of the nest to first catch the eye of the old bird bringing food' (Butler, loc. cit.).

REPRODUCTION. Unknown. Butler found a nest (February?) just completed and apparently about to be laid in, c. 13 metres up at the end of a horizontal *Ficus* branch.

MUSEUM DIAGNOSIS. Male bright grey above, brightest on crown and sides of head and neck; the latter without reddish flecking on sides. Chin greyish cream with median stripe obsolete. Inner webs of primaries unbarred; under wing-coverts

240

FALCONIFORMES

Young (immature). Resembles immature *A. badius* but is darker above, especially on head (brownish slate), with broadly streaked or spotted underparts, and rufous-barred flanks.

STATUS, DISTRIBUTION and HABITAT. Uncertain. 'Common' (winter?) on Katchal I. and the Great and Little Nicobar Is. (Abbott & Boden Kloss). Andaman Is.

Extremities. 'Breeds from N. China and Korea south to Kwangtung and Formosa (?). In winter to the Malay Peninsula and the East Indies to Waigu' (Peters). Stragglers reaching E. Burma and N. Thailand.

GENERAL HABITS. Very little known. Apparently a shy forest-dweller.

MUSEUM DIAGNOSIS. 3rd primary (as.) longest; 4th almost subequal; both matched on outer webs. 2nd primary about equal to 5th. Cere orange; bright yellow even in museum skins.

MEASUREMENTS	Wing	Bill	Tarsus	Tail
♂♀	175-196	17-19	c. 39-44	120-139 mm.

(from feathers)

(occ. 147)

♂♀ Wing 180-202; tail 128-145; middle toe without claw 24-27 mm. (Hartert).

COLOURS OF BARE PARTS. Iris dark brown, pale yellow, or straw colour; eyelids yellow. Bill horny plumbeous, black at tip, yellowish at gape; cere orange or bright yellow. Legs and feet orange-yellow.

ACCIPITER TRIVIRGATUS (Temminck)

Key to the Subspecies

	Page
A Large; wing ♂ c. 229 mm., ♀ c. 254-260 mm. <i>A. t. infans</i>	18
B Medium; wing ♂ c. 196-208 mm., ♀ c. 214-237 mm. <i>A. t. penicillatus</i>	20
C Small; wing ♂ c. 183-184 mm., ♀ c. 198-206 mm. <i>A. t. lyonsi</i>	20

144. North Indian Crested Goshawk. *Accipiter trivirgatus infans* (Hodgson)

Accipiter infans Hodgson, 1836, Bengal Sporting Mag., 8: 177 (Nepal)

Spizacus ruficinctus McClelland, 1840 (1839), Proc. Zool. Soc. London, pt. 7: 153

(Banks of the Brahmaputra, Assam)

Baker, FBI No. 1810, Vol. 5: 155 (= *A. t. ruficinctus*)

Plate 22, fig. 5 and Plate 23, fig. 4

LOCAL NAMES. *Chavari*, *Jamal kanti*, *Jays* (Nepal); *Hagani daling* (Cachar).

SIZE. House Crow +; length c. 40-46 cm. (16-18 in.).

FIELD CHARACTERS. A medium-sized short-winged hawk. Above, dark brown with forehead, crown, and small nuchal crest blackish grey. Tail with four visible dark brown bars. *Below*, white, broadly streaked on breast and barred on rest of underparts with rich rufous-brown. Throat and under tail-coverts pure white, the former with a conspicuous blackish medial stripe from chin to breast. Sexes more or less alike; female larger. On casual observation could be mistaken for *Accipiter jerdoni* (No. 125, q.v.). Coloration rather similar and both also crested.

Young (immature). Above, brown; head and nape feathers edged with pale rufous; a broad fulvous supercilium. *Below*, buffy white or pale rufous

HAWKS, VULTURES, ETC.

241

with blackish mesial throat-stripe and broad streaks or drops on breast and sides of body. Thighs variably barred brown and buff.

STATUS, DISTRIBUTION and HABITAT. Resident. Northern India from Garhwal through Nepal, Sikkim, and Bhutan (?) (terai to c. 2000 m. altitude in the Himalayas) to E. and S. Assam, East Pakistan (?) (foothills and up to c. 1500 m.); south to the Godavari river. Affects fairly open deciduous and semi-evergreen forest.

Extralimital. '... Yunnan and Formosa, south to Burma [Thailand, Malay Peninsula] and Indochinese countries' (Peters).

GENERAL HABITS. A forest-dwelling hawk, otherwise of very similar habits to the Shikra, q.v. Employs the same tactics of Surprise in its hunting, pouncing on prey from a concealed perch up in a leafy tree overlooking a clearing. Sedentary and parochial; often seen in the same patch of jungle day after day. Also much given to circling high above forest in the characteristic manner of the genus — a few rapid wing-beats to spiral gradually upwards, followed by sailing and soaring.

FOOD. Chiefly small mammals, and birds. Green pigeons, wood partridges, and larger game birds such as junglefowl and pheasants recorded.

VOICE and CALLS. Described as 'a shrill prolonged yelp', 'a hoarse chuckling note', and loud screams and deep croaks as it swoops to attack nest-robbers.

BREEDING. Season, March through May. *Nest*, a massive structure of sticks, c. 50 cm. across and up to some 30 cm. deep, lined with leaves. Placed c. 9 to 13 metres up in a densely foliated tree standing in a ravine or broken foothills country. *Eggs*, 2 or 3, bluish white with a fine, smooth texture, usually without markings though often stained. Average size of 20 eggs 48.4 × 39.6 mm. (Baker). Share of the sexes in the domestic chores, and incubation period, unrecorded. The birds are bold and truculent in defence of nest.

MUSEUM DIAGNOSIS. In the species *A. trivirgatus* 4th primary (as.) longest; 5th subequal, 6th primary longer than 2nd (contra in *A. badius*). Adult male *A. t. indicus* differs from nominate *trivirgatus* of Sumatra in larger size, darker upperparts with blackish crown and short crest. Breast shield brownish rufous, rather extensive; barring of abdomen narrow and rather rufous; thighs strongly barred; under wing-coverts heavily marked. Adult female darker above and lighter below than *peninsular* (No. 145). Crown very blackish. Striping and barring of underparts reduced; no pronounced breast shield developed because brown stripes on breast rather narrow; bars on abdomen and flanks brownish and rather faded (Mayr, E., 1949 *Amer. Mus. Novitates*, No. 1415).

MEASUREMENTS (North Indian specimens)

	Wing	Tail
2 ♂♂ (ad.)	229.5	188-195 mm.
3 ♀♀ (ad.)	245-260	200-213 mm.
1 ♂ (imm.)	219	180 mm.

(Mayr)

COLOURS OF BARE PARTS. Iris golden yellow (brown in young); eyelids greenish yellow. Bill horny brown or plumbeous horny; culmen and tip blackish; gape yellowish; cere greenish yellow. Legs and feet dull pale yellow to fairly bright dark yellow; claws blackish horny (Baker).

HAWKS, VULTURES, ETC.

243

FIELD CHARACTERS. A medium-sized short-winged hawk.

Adults and Young like No. 144, but smaller even than 145. May be distinguished from Ceylon Shikra, of about same size, by pointed crest and boldly black-barred thigh coverts; in overhead flight by chequered pattern on the wing quills. Sexes more or less alike; female larger.

STATUS, DISTRIBUTION and HABITAT. Endemic in Ceylon. Resident, subject to certain seasonal movements. Affects forested areas in all zones, particularly in the hills and Wet Zone, to at least c. 1800 m. altitude.

GENERAL HABITS. As in 144.

FOOD. Mainly lizards, small birds, etc.

VOICE and CALLS. A shrill scream *he, he, hehehe* (Henry).

BREEDING. Season, February to July. *Nest* and *eggs* as in 145. Incubation period about 34 days (Phillips).

MUSEUM DIAGNOSIS. Small size the chief diagnostic character. Very similar to 144 and 145, but smaller even than the latter. Markings on breast, flanks and upper abdomen in adults much deeper more chocolate-brown, smaller and pear-shaped giving the impression of a white breast spotted with dark brown, contra *peninsular* Indian race, q.v. But see also Mayr, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
2 ♂♂ (ad.)	183-184	24-26	—	150-152 mm.
6 ♀♀ (ad.)	198-206	27-28	50-53 (2)	157-168 mm.

(Whistler)

COLOURS OF BARE PARTS. As in 144.

ACCIPITER NISUS (Linnaeus)

Key to the Subspecies

Much paler *A. n. nisosimilis*
 Much darker *A. n. melaschistos**

147. Asiatic Sparrow-Hawk. *Accipiter nisus nisosimilis* (Tickell)

Falco Nisosimilis Tickell, 1833, Jour. Asiat. Soc. Bengal, 2: 571

(Marcha, Borabhum, India)

Baker, FBI No. 1811, Vol. 5: 156

Plate 22, fig. 11

LOCAL NAMES. *Bāsha* ♀, *Bāshin* ♂ (Hindi); *Wannapa dega* (Telugu); *Prappidiam* (Malayalam); *Tanki* (Lepcha); *Uchum* (Sikkim).

SIZE. House Crow —; Shikra ±. Length c. 31-36 cm. (12-14 in.).

FIELD CHARACTERS. A medium-sized short-winged hawk.

Male (adult). Very like Shikra; somewhat longer in body but doubtfully distinguishable from it in the field by its darker, slatter upperparts (almost blackish on head), more barred tail-feathers, and only on a close and unobstructed view by its longer, slenderer legs. A white supercilium. Throat without black mesial line. Four or five blackish bands in tail.

Female (adult). Much larger than male, otherwise rather similar; more brown, less pure grey above; paler below.

242

FALCONIFORMES

145. South Indian Crested Goshawk. *Accipiter trivirgatus peninsulæ* Koelz

Accipiter trivirgatus peninsulæ Koelz, 1949, Auk, 66: 83

(Londa, Bombay district, peninsular India)

Baker, FBI No. 1809, Vol. 5: 154. (= *A. t. trivirgatus* in part)

LOCAL NAMES. *Gör besra*, *Manik besra*, *Kūteswar* (Hindi); *Kōkila dega* (Telugu).

SIZE. House Crow —; length c. 31-36 cm. (c. 12-14 in.).

FIELD CHARACTERS. A medium-sized short-winged hawk.

Adult and Young like No. 144, slightly smaller, but not distinguishable from it in the field. Sexes more or less alike; female larger.

STATUS, DISTRIBUTION and HABITAT. Resident. SW. India from about Goa and N. Mysore (c. lat. 16°N.) south through Kerala. The species has not been recorded east of the W. Ghats strip in this section. Affects moist deciduous and evergreen forested foothills and broken country and up to at least c. 1100 metres elevation in the Western Ghats system and Nilgiri Hills.

GENERAL HABITS etc. As in 144.

BREEDING. Season, nest, and eggs, as in 144, the last somewhat smaller. Average size of 24 eggs (from SW. India including those from Ceylon) 46.7 × 37.1 mm. (Baker).

MUSEUM DIAGNOSIS. Very similar to 144, but slightly smaller. Markings on breast, flanks, and upper abdomen in adult give the impression of a brown breast with the feathers edged white, contra Ceylonese race q.v. For additional details see Mayr, loc. cit.

MEASUREMENTS. (SW. Indian specimens)

	Wing	Bill (from skull)	Tail
6 ♂♂ (ad.)	196-208	26-28	159-168 mm.
6 ♀♀ (ad.)	214-237	c. 29-31	169-180 mm.

(Whistler)

Wing 1 ♂ (imm.) 211; 2 ♀♀ (imm.) 228-230 mm. (Mayr)

Tarsus c. 51-57 mm. (Baker)

COLOURS OF BARE PARTS. As in 144.

146. Ceylon Crested Goshawk. *Accipiter trivirgatus layardi* (Whistler & Kinnear)

Astur trivirgatus layardi Whistler & Kinnear, 1936, Jour. Bom. nat. Hist. Soc., 38: 434 (Gillymally, Peak Forest, Ceylon)

Baker, FBI No. 1809, Vol. 5: 154 (= *A. t. trivirgatus* part)

LOCAL NAMES. *Ukussa*, *Kurulla goya* (Sinhala); *Valluru* (Tamil).

SIZE. House Crow —; Ceylon Shikra ±; length c. 30-34 cm. (c. 12-13 in.).

* The distribution given by Mayr (loc. cit.), presumably based in part on FBI 5: 154, as 'Southern India approximately south of a line from Bombay to the mouth of the Krishna river' is not quite correct. In *Modification* (4: 107) Baker attributes 'Khandesh' to Davidson; the latter does not mention this species at all in his Khandesh list (SF, vol. 10) 1

244

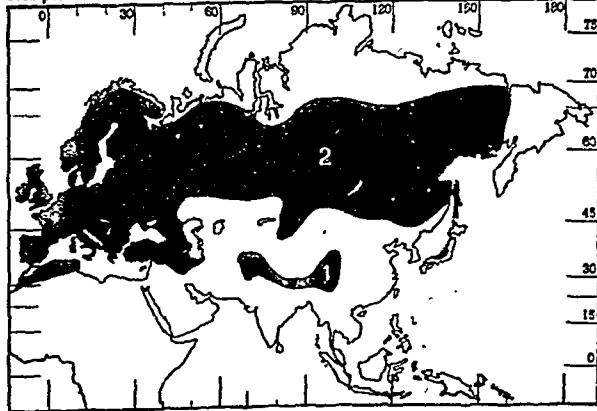
FALCONIFORMES

Young (immature). Above, dark brown, the feathers edged with rufous. White bases to feathers of nape and neck conspicuous. Tail with five bars. Below, breast with heart-shaped rufous-brown spots, turning to bars on abdomen, flanks and thigh-coverts.

STATUS, DISTRIBUTION and HABITAT. Rather sparse winter visitor (September/October to March). All India from c. 2400 m. alt. in Kashmir and along Himalayas, south to Kerala; both Pakistans, Nepal, Andaman Is. Not Ceylon. Affects well wooded, preferably broken and foothills country — light forest, groves, orchards, etc.

Extralimital. 'Breeds in N. and C. Asia from Turkestan to the Sea of Okhotsk, Japan, N. China, and E. China south to the Yangtze. Winters to India, Burma, and S. China' (Peters).

MIGRATION. No precise data.

Accipiter nisus

■ Breeding range 1 *A. n. melaschistos*; 2 *A. n. nisosimilis* and other races

GENERAL HABITS. Usually solitary. When disturbed, drops from a branch, flies very low and flat along the ground, shooting up almost vertically to alight in another tree. Method of hunting as of the genus — by Surprise tactics. Either pounces on quarry from an ambush up in a leafy tree or cruises at great speed close along the ground with rapid wing-beats and glides, 'hedge-hopping' to stampede little birds resting within a hedge-grove or bush or feeding unsuspectingly on the ground, getting a flying start on any that panic and dash out and striking in its stride, sometimes almost turning on its back to seize the quarry from underneath. Turns and twists skillfully in pursuit to avoid tree-trunks and other obstacles. The victim is carried off some distance and usually eaten on the ground, held underfoot and dismembered by upward pulls of the hooked bill. Often soars and

HAWKS, VULTURES, ETC.

249

COLOURS OF BARE PARTS. Iris golden yellow or orange-yellow; in young birds grey or greyish white, and later pale yellow. Bill slaty grey with black tip; cere lemon-yellow. Legs and feet bright yellow; claws blackish.

151. Southern Besra Sparrow-Hawk. *Accipiter virgatus. besra* Jerdon

Accipiter besra Jerdon, 1839, Madras Jour. Lit. Sci., 10: 84

(Soonda Jungles, South India)

Baker, FBI No. 1813, Vol. 5: 159

Plate 22, fig. 8 and Plate 23, fig. 9

LOCAL NAMES. *Vaishlapa dega* (Telugu); *Urchila* (Kannada); *Ukusa*, *Kurulla* (Sinhala); *Sinna palluru* (Tamil).

SIZE. House Crow —; Shikra ±. Length c. 29-34 cm. (c. 11-13 in.).

FIELD CHARACTERS. A medium-sized, short-winged Shikra-like hawk with conspicuous black mesial stripe on throat. Similar to No. 150 (q.v.) but somewhat smaller and paler.

STATUS, DISTRIBUTION and HABITAT. Resident in Ceylon (all zones) up to c. 1800 m. elevation, and the Western Ghats strip including Nilgiri and Palni Hills through Kerala north at least to Bombay. Once in Gujarat (Saurashtra). Sparingly in E. Ghats in Madras State, but status there uncertain. Confined to evergreen and moist deciduous biotope; affects heavy forest between c. 600 and at least 1200 metres elevation.

GENERAL HABITS, FOOD, etc. As in 150.

VOICE and CALLS. 'A frequently uttered squealing cry, rapidly repeated, *cheer-ichee-ichee*...' (Mrs Lushington).

BREEDING. Season, March to May. Nest and site as in 150, the former often lined with green leaves. Shabby old nests of other birds likewise repaired and utilized. Eggs, 3 or 4 — exceptionally 5 — like those of 150, similarly variable. Average size of 60 eggs 36.9 × 29.7 mm. (Baker). Share of the sexes in the domestic chores, and incubation period, unrecorded.

MUSEUM DIAGNOSIS. Male (adult) similar to 150 but differs in being smaller and much paler above, more slaty grey than blackish grey, the head, back, and lesser wing-coverts darker. Below also paler rufescent.

Female dark brown without the chocolate tint; the crown only slightly darker than back. In its smaller size it matches the more richly coloured nominate race (*virgatus*) of Java.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
4 ♂♂ (ad.)	148-155	17-18	45-54	112-119.5 mm.
1 ♀ (ad.)	183-5	22	—	142 mm.
4 ♀♀ (imm.)	178-187	21-22.5	52-55	137-148 mm.
				(Whistler)
Baker gives:	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	145-166	15-16	44-47	114-118 mm.
♀♀	182-189	18-20	46-53	136-145 mm.

Weight 1 ♀ 135 gm. (SDR).

COLOURS OF BARE PARTS. As in 150.

HAWKS, VULTURES, ETC.

251

MEASUREMENTS ¹	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	156-173	14-15	51-54	117-137 mm.
♀♀	182-198	16-18	—	—
				(Baker)

Three specimens collected recently by H. Abdulali in the Middle and South Andamans measure:

	Wing	Bill (from skull)	Tarsus	Tail
1 ♂ (ad.)	150	15	45	105 mm.
1 ♂ (imm.)	159 +	16	49	111 mm.
1 ♀ (ad.)	187	22	53	133 mm.
				(SA)

COLOURS OF BARE PARTS. Iris ♂ crimson (La Touche); ♀ straw yellow (Whitehead). Bill slaty blue, tipped black; cere yellow. Legs and feet yellow; claws black.

Genus BUTEO Lacépède

Buteo Lacépède, 1799, Tabl. Ois.: 4. Type, by tautonymy, *Falco buteo* Linnaeus

Very closely allied to *Aquila* (eagles) from which it differs in its weaker bill and feet, the absence of a regular immature plumage, and the extreme individual variation exhibited by the members in their coloration, largely independent of age or sex.

Bill moderate or small; culmen curved from cere; commissure almost straight; festoon on cutting edge obsolete. Nostrils oval and oblique. Wings long: 4th primary (m.) longest or about equal to 5th and 3rd. First four quills deeply notched on inner web near tip. Tail rather long, slightly rounded at end. Tarsus long, partly feathered in front, transversely scutellated behind. Toes short; inner toe much shorter than outer. (Tarsus and toes almost identical with *Haliastur*, q.v.)

Genus widely distributed in Europe, Africa, America, and Asia, but unrepresented southeast from India.

Key to the Species

		Page
A	Larger: Wing above 475 mm.	<i>B. hemilanius</i> 253
B	Smaller: Wing below 475 mm.	
	1 General colour of tail creamy rufous.	<i>B. rufinus</i> 252
	General colour of tail brown or bright rufous.	<i>B. buteo</i> 254

¹ Composite of *A. e. gularis* and *A. r. risoides*, now considered synonymous.

² For the sake of consistency, the measurements given above are taken from Stuart Baker, but those of Vaurie (*Am. Mus. Nov.* No. 2042, 1961, p. 9) seem a little more discrete and clear cut and are listed below for comparison.

B. rufinus — wing ♂ 343-370 (353); ♀ 358-383 (369)

B. buteo — wing ♂ 362-400 (375); ♀ 370-408 (389)

FALCONIFORMES

250

152. Eastern Sparrow-Hawk. *Accipiter virgatus gularis* (Temminck & Schlegel)

Astur (Nisus) gularis (Temminck & Schlegel), 1845, in Siebold, Fauna Jap., Aves, 5, pl. 2 (Japan)

Accipiter nisoides Blyth, 1847, Jour. Asiatic Soc. Bengal, 16: 727 (Malacca)

Baker, FBI Nos. 1815. 1817, Vol. 5: 162, 164

Plate 22, fig. 9 and Plate 23, fig. 7

LOCAL NAMES. None recorded.

SIZE. House Crow —; Shikra ±. Length c. 29-34 cm. (c. 11-13 in.).

FIELD CHARACTERS. As in 150, but adult male more or less uniformly blackish slaty above (black on crown), without white marks on nape. Below, chin and throat white with a narrow black mesial line. Rest of underparts varying from pale to intense rufous with faint traces of barring, often obsolete on lower breast, flanks, and abdomen. Tail with four blackish cross-bands.

Female (adult). Above, dark brown, blackish on head. Below, a distinct black mesial line on white chin and throat. Lower parts barred with grey-brown or rufous and white from foreneck to vent.

Young (immature). Above, brown, the feathers edged with buff or rufous. Below, black mesial streak on throat bolder. Breast with broad brown streaks or drops; abdomen broadly barred.

STATUS, DISTRIBUTION and HABITAT. Resident (breeding) in the Andaman Is.; not uncommon near Port Blair (B. B. Osmaston). Occurs in the Nicobars; probably breeding, but status unconfirmed.

Extralimital. Breeds also in Japan and China. Winter visitor to the Philippines. Scarce in Burma, apparently only in winter (?). Winter visitor and common passage migrant (autumn and spring) through Malaya where status undetermined.¹

MIGRATION. An immature male taken on board ship in the Bay of Bengal c. 10°N. lat., 90°E. long. on 22 April 1952 (F. Salomonsen, 1953, *Dansk. Orn. For. Tidr.*, 47: 138).

GENERAL HABITS and FOOD. As in 150.

VOICE and CALLS. Unrecorded.

BREEDING. Season in the Andamans principally March-April. Nest, crow-like, of sticks as in 150, often old nests of other birds; in roadside trees near habitation, mangrove forest, and padauk (*Pterocarpus marsupium*) plantation (Wickham; Osmaston). Eggs, 3, coloured as in the other races. Average size of 14 eggs 36.7 × 29.5 mm. (Baker). Owners plucky and aggressive in defence of nest. Other details unrecorded.

MUSEUM DIAGNOSIS. First primary (as.) about equal in length to longest secondary. 2nd primary equal to 6th or somewhat longer; 4th primary longest, 3rd and 5th only slightly shorter. Outer web of 2nd primary attenuated quite near its base; of 3rd, 4th and 5th more so and extending further upward from base (Hartert). Throat with narrow black mesial line.

¹ Gibson-Hill, C. A., 1949, *An Annotated Checklist of the Birds of Malaya, Raffles Mus. Bull.* No. 20, Singapore.

FALCONIFORMES

252

153. Longlegged¹ Buzzard. *Buteo rufinus rufinus* (Cretzschmar)

Falco rufinus Cretzschmar, 1826, in Reppell's Atlas Vög. 40, pl. 27

(Upper Nubia, Schendi and Sennar, and Ethiopia)

Baker, FBI No. 1796, Vol. 5: 137

Plate 24, fig. 6 and Plate 25, fig. 8

LOCAL NAME. *Chūhāmār* (Hindi).

SIZE. Pariah Kite; length c. 61 cm. (24 in.).

FIELD CHARACTERS. Like a small eagle or immature Brahminy Kite (*Haliastur indus*) in general aspect and proportions. Extremely variable in coloration, ranging from dark brown through reddish brown and fulvous to pale sandy, with brown or almost white head, neck, and breast, and sometimes blackish moustachial stripes. The heavy build and somewhat sluggish habit, coupled with variable chocolate- or cinnamon-brown plumage, pale or dark head and unfeathered legs are suggestive.

In overhead aspect the short neck, expanded, rounded, transversely barred tail — pale to bright rufous or rufous-brown — and whitish or dark brown halfmoon-shaped patches on the chestnutting underside of the broad 'splayed finger' wings are fairly diagnostic of a buzzard. But differentiation as to species with certainty impossible in the field, and not easy even with the bird in the hand (see Museum Diagnosis).

In Longlegged Buzzard pale creamy rufous tail with obsolete brown cross-bars and a broader prominent subterminal band are pointers to identify. In immature birds (?) tail ashy brown with numerous dark transverse bars.

STATUS, DISTRIBUTION and HABITAT. Within our limits breeds in the Himalayas in NW. Pakistan (Peshawar and Kohat dists.); reportedly also in Baluchistan (Ziarat and Chaman dists.), and in India in Ladakh (?), Kashmir and Garhwal, between c. 1500 and 3700 m. elevation. Winter visitor September/October to end March — to Nepal (terai and Valley) and Sikkim, the birds in the E. Himalayas being probably derived from the E. Turkestan-Mongolian breeding area. Fairly common in winter in Sind and N. India east to Upper Assam (N. Lakhimpur dist.) south to the Deccan and possibly further, but specific sight records of buzzards unsupported by skins unsatisfactory. In breeding area affects hilly forest country with open glades etc.; in winter range every type, from semi-desert and cultivation to deciduous forest.

Extralimital. Breeds from S. Russia, Kirghiz Steppes, Turkestan and W. Mongolia, south to Greece, Asia Minor, and the W. Himalayas. Winters chiefly in Africa from N. Sudan to the valleys of the White and Blue Nile, and in NW. India (Peters). Eastward to N. Burma.

GENERAL HABITS. More or less common to all buzzards. In winter range usually seen singly or in pairs perched sluggishly on a tree-top, or on a stone

¹ This is a misnomer. The name rightly belongs to *Buteo hemilanius* (154) which possesses the longest tarsi of all our buzzards.



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HAWKS, VULTURES, ETC.

253

or mound in open hummocky country. Numbers will sometimes collect (6 or 7 observed loosely together — SA) at jungle fires or fired grass patches to feast on the fleeing lizards, rats, and insects in company with other raptors and drongos, etc., frequently sauntering about on the charred ground to pick up their roasted remains. Hunts live prey by pouncing on it from a lookout post or from 30 metres or so up in the air where it sometimes hovers, head to wind like a kestrel, though rather cumbrously, to scan the ground. Much given to soaring and circling for hours on end high up in the heavens on outspread motionless wings. On approach of breeding season pairs indulge in spectacular acrobatic displays — flying round each other, plunging and stooping with wings half pulled in, shooting up with the momentum almost vertically to a wave crest, then tilting forward to nose-dive again. Occasionally a bird will do a perfect 'loop the loop', turning over completely on its back during the manoeuvre.

FOOD. Carrion, small mammals, sick and disabled birds, reptiles, frogs, locusts and other large orthopterous insects, etc. Occasionally takes domestic chickens and pigeons. In north-western semi-desert areas preys largely on gerbilles (*Meriones hurrianus*) and fat-tailed lizards (*Uromastix hardwickii*); in Kashmir (Gulmarg) on voles (*Microtinae*) and mouse-hares (*Ochotona*) — (Osmaston).

VOICE AND CALLS. A loud, wailing, kitten-like mewing uttered from time to time. Particularly noisy on approach of breeding season and during the aerial displays.

BREEDING. Authentic data very meagre. *Season*, c. March to May. *Nest*, a large stick structure built in a high tree growing on a forested hillside, or on a crag or shelf of rock. *Eggs*, 2 or 3, sometimes 4 (?), very broad ovals, variable in colour and markings: white to greyish or buff, blotched all over or only at larger end with deep rich brown with some obsolete grey smears. Average size of 8 Indian-taken eggs 59.6 × 47.6 mm. (Baker), which agrees fairly closely with the average of European eggs.

Share of the sexes in domestic chores, period of incubation, etc., unrecorded in India.

MUSEUM DIAGNOSIS. Tail in adult *rufinus* pale rufous with barring obsolete except for a dark subterminal band. For description of various plumage phases see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	415-431	32-34	56-62	228-250 mm.
♀♀	428-458	—	60-77	230-257 mm. (Baker)

COLOURS OF BARE PARTS. Iris golden brown or yellowish brown. Bill horny or brownish slate, black at tip, yellowish at base of lower mandible and gape; cere yellowish green. Legs and feet dingy or pale lemon-yellow.

154. Upland Buzzard. *Buteo hemiliasius* Temminck & Schlegel

Buteo hemiliasius Temminck & Schlegel, 1845 (1844), in Siebold, Fauna Jap., Aves: 18, pl. 7 (Japan)
Baker, FBI No. 1797, Vol. 5: 140
Plate 24, fig. 5 and Plate 25, fig. 9

HAWKS, VULTURES, ETC.

255

FIELD CHARACTERS. Similar to Longlegged Buzzard but smaller. Also variable in coloration. In a common phase:

Adult. Above, brown, the feathers largely edged with rufous. Below, rufous, paler on throat, faintly barred and spotted on abdomen. Tail diagnostic bright rufous (v. pale creamy rufous in Longlegged) with a dark subterminal band and generally one or two more visible on outer rectrices. Sexes alike.

Another phase (age ?) is whitish or pale buff below, more distinctly barred with light rufous-brown.

STATUS, DISTRIBUTION AND HABITAT. Claimed to breed in W. Pakistan (NWF. Province) and Kashmir, but records uncertain and conflicting. Occurrence south of the Himalayas unconfirmed.

Extralimital. 'Breeds from the Urals and SE. Russia east to the Kentei Mountains and Turkestan. Winters in E. Africa, Arabia, and W. India' (Peters).

GENERAL HABITS, FOOD, VOICE, etc. Nothing unequivocally recorded for India. 'A shrill, harsh *ky-yah*, much harsher than the mewing cry of *Buteo buteo*' (Kirke-Swann).

BREEDING. Doubtful. *Season* in NWFP. and Kashmir mentioned by Baker as March-May. Needs confirmation by collecting of breeding birds.

MUSEUM DIAGNOSIS. Tail bright rufous. Tarsus normally only one-third feathered in front; sometimes half. Naked portion scutellated in front; rarely reticulated (Baker). For description of plumages see Baker, loc. cit.; Withersby 1939, 3: 55-6.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	350-385	20-23	65-75	175-195 mm.
♀♀	350-390	—	—	—

(from cere)

(Withersby)

COLOURS OF BARE PARTS. Iris hazel to yellow. Bill dark plumbeous, lighter at base and gape; cere yellow. Legs and feet yellow; claws black.

156. Buzzard. *Buteo buteo japonicus* (Temminck & Schlegel)

Falco buteo japonicus Temminck & Schlegel, 1844,

in Siebold's Fauna Jap., Aves, p. 16 (Japan)

Buteo burmanicus Hume, 1875, Stray Feathers, 3: 30, in text
(Thayemyo, Upper Pegu)

Baker, FBI No. 1799, Vol. 5: 143

Plate 24, fig. 2 and Plate 25, fig. 5

LOCAL NAMES. For all buzzards *Chūhāmār* (Hindi); *Ukusa* (Tamil); *Parundu* (Tamil, Malayalam — apparently general for all hawks).

SIZE. Pariah Kite —; length c. 51-56 cm. (20-22 in.).

FIELD CHARACTERS. Like other buzzards has dark and light plumage phases. In one of these, with creamy brown head and patchy underwing, confusingly like immature Brahminy Kite (*Haliastur indus*). Field identification unreliable. (See Museum Diagnosis.)

STATUS, DISTRIBUTION AND HABITAT. Unsatisfactorily known owing to chaos in nomenclature, confusion in field identifications, and lack of better collected material. All Indian records of buzzards, especially of breeding, should be treated with reservation unless supported by skins.

254

FALCONIFORMES

LOCAL NAME. *Chūhāmār* (Hindi) for all buzzards.

SIZE. Pariah Kite +; c. 71 cm. (28 in.).

FIELD CHARACTERS. Similar to Longlegged Buzzard, slightly larger but also extremely variable in coloration and doubtfully identifiable in the field. A usual phase is pale greyish brown above, with some rufous on nape, upper back and upper tail-coverts. White bases of feathers conspicuous on head and neck. Below, streaked with brown on throat, and with large brown irregular spots on breast and abdomen. Sometimes underparts all brown. Tail brown rather than rufous, with a subterminal and seven other bars, somewhat more clearly visible than in immature Longlegged Buzzard.

STATUS, DISTRIBUTION AND HABITAT. Not satisfactorily worked out owing to possible confusion with other species. Evidently a rare winter visitor to the Himalayas. Very few records; specimens definitely identified only from Kashmir, Himachal Pradesh, Punjab, Nepal, Sikkim.

Extralimital. 'Breeds from Lake Baikal to Ussuri and the Amur south to Tibet and Mongolia, probably also in N. China. Winters south to India, Burma and C. China' (Peters).

GENERAL HABITS, FOOD, etc. Similar to 153. No information available specifically for India. Apparently more powerful than Longlegged Buzzard, reported in Tibet as preying on hares, Tibetan Sandgrouse (*Syrhaptes tibetanus*) and snowcock (*Tetraogallus tibetanus*), and alleged to take young lambs (F. M. Bailey).

VOICE AND CALLS. Unrecorded in India.

BREEDING. Extralimital as far as known, but possibly may nest in the higher Himalayas. *Nest*, a large stick structure on ledges of cliffs etc.

MEASUREMENTS	Wing	Bill	Tarsus	Tail
♂♂	480-501	34-36	81-90	255-282 mm.

(from feathers)

(Baker)

COLOURS OF BARE PARTS. Iris buff to golden yellow, or white. Bill bluish or dusky horn, paler and yellowish at gape and on base of lower mandible; cere greenish yellow. Legs and feet wax yellow, or yellowish grey; claws black.

BUTEO BUTEO (Linnaeus)

Key to the Subspecies

Tail more brown than rufous.....	<i>B. b. japonicus</i>
Tail more rufous than brown.....	<i>B. b. vulpinus</i>

MUSEUM DIAGNOSIS. Tail in adults with one subterminal and seven other bars; base and inner webs of rectrices white; flanks dark brown. Tarsi closely feathered in front down to bases of toes; naked and scutellated behind. For description of plumage phases see Baker, loc. cit.

155. Desert Buzzard. *Buteo buteo vulpinus* (Gloger)¹

Falco vulpinus 'Licht.' = Gloger, 1833, Das Abändern der Vögel: 141 (Africa)
Baker, FBI No. 1798, Vol. 5: 142

Plate 24, fig. 3 and Plate 25, fig. 4

LOCAL NAMES. *Dang pang ti on*, *Pang ti on nok* (Lepcha).

SIZE. Pariah Kite —; length c. 51-56 cm. (20-22 in.).

¹Now given specific status, *Buteo vulpinus*.

256

FALCONIFORMES

Winter visitor. Irregular and uncommon but widespread: N. India, Nepal (between c. 275 and 2240 m.), Sikkim, Bengal, Bhutan, Arunachal Pradesh, and hills south of the Brahmaputra to Manipur. Peninsular India south to Tamil Nadu and Kerala. Ceylon (all zones up to c. 2000 m.).

Extralimital. 'Breeds in Asia from E. Turkestan and the Upper Yenesei north to Dauria and Lake Baikal, east to Ussuriland, south to the Himalayas, Manchuria, Korea, and Japan. Winters south to India, Burma, and S. China' (Peters).

Common Buzzard (*B. buteo*)Roughlegged Buzzard (*B. lagopus*). SE

Overhead view
(Diagrammatic sketches by L. Tinbergen)

GENERAL HABITS, FOOD, VOICE, etc. Unrecorded specifically.

BREEDING. Extralimital. *Nest*, the usual stick structure built on ledges of cliffs or on the ground on steep hillsides.

MUSEUM DIAGNOSIS. Tail more brown than rufous, with 4 or 5 nearly obsolete dark bars; flanks and thighs rufous. Feathering on tarsus variable; in most birds covering half to two-thirds in front. For description of plumage phases see Baker, loc. cit.

Distinguished from immature Brahminy Kite (*Haliastur indus*) in comparative colour phase by longer tarsus: 63-74 mm. c. 51-59 mm.

MEASUREMENTS	Wing	Bill	Tarsus	Tail
♂♂	374-379	c. 29	63-65	198-209 mm.
♀♀	389-454	29-36	59-74	225-248 mm.

(from feathers)

(Baker)

COLOURS OF BARE PARTS. Iris brown. Bill plumbeous-brown to black, the base paler; cere yellow. Legs and feet yellow; claws black.

Genus BUTASTUR Hodgson

Butastur Hodgson, 1843, Jour. Asiat. Soc. Bengal, 12: 311. Type, by original designation, *Circus leuca* Franklin

Bill laterally compressed; culmen curved from base; festoon generally present on edge of upper mandible, sometimes well marked. Nostrils oval, oblique. Wing long: 3rd primary (as) longest, 4th almost subequal. 2nd primary only a little longer than 5th, these two much shorter than 3rd and 4th. First 3 primaries marked: 4th slightly, emarginate on inner web. Tail rounded. Toes short; tarsus considerably longer than middle toe, feathered only at extreme tip; covered with imbricated shields, rather larger in front.

Genus represented in Africa and the Oriental Region; only one species within our limits.

HAWKS, VULTURES, ETC.

257

157. White-eyed Buzzard-Eagle. *Butastur tessa* (Franklin)*Circus tessa* Franklin, 1832 (1831), Proc. zool. Soc. Lond., pt. 1: 115

(Farther India = Ganges-Nerbudda, apud Baker)

Baker, FBI No. 1774, Vol. 5: 104

Plate 25, fig. 3, Plate 28, fig. 3 and Plate 29, fig. 3

LOCAL NAMES. *Tisa* (Hindi); *Buda mali gedda* (Telugu); *Tellur* (Yerkali); *Parundu* (Malayalam, for all hawks).SIZE. Jungle Crow \pm ; length c. 43 cm. (17 in.).

FIELD CHARACTERS. A small greyish brown hawk with white throat, two dark cheek-stripes, and a third central stripe running down from chin. A small whitish patch on nape. Underparts brown and whitish. Orange-yellow cere and white (or pale yellow) eyes conspicuous at close range and through binoculars. At rest closed wings reach almost to end of rufous-tinged tail. Sexes alike.

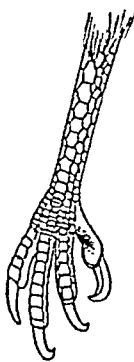
In overhead flight silvery grey-brown undersides of broad, blunt wings, contrasting with darker body, a suggestive clue. From above a patch of buffy grey on wing shoulder is conspicuous.

Young (immature). Feathers of crown and nape brown with broad pale edges. Forehead and a broad supercilium buffy white. Underparts variable, white to buff, the feathers more or less streaked with dark brown. Cheek-stripes narrow or absent.

STATUS, DISTRIBUTION and HABITAT. Resident practically throughout our area from about 1200 m. in the Himalayas (less common south of Madhya Pradesh) to Kanyakumari, and from W. Pakistan (Baluchistan) to Assam and E. Pakistan. Nepal. Absent in Ceylon. Affects open deciduous forest, and scrub-and-bush and cultivated country in the plains. Avoids moist forest biotope.

Extralimital. Northern and western Burma south to Tenasserim.

GENERAL HABITS. Sluggish and usually tame. Single birds seen day after day perched on the same stump, tree-top or telegraph pole in a chosen locality whence they pounce on any small animals of manageable size that show themselves in the surroundings below. Sometimes one will take up its position on the ground, on some mound or boundary stone in scrub jungle or cultivation whence to hurl itself on any lizard or grasshopper that stirs in the proximity, changing the coign of vantage from time to time. Occasionally walks about in the open, picking up flying termites as they emerge from their holes, or on charred ground after a forest fire, even while the rubbish is still smouldering, looking for roasted lizards and other titbits. Although somewhat sluggish, its flight is swift and direct, attained by rapid strokes of the rounded wings, reminiscent of a shikra. In the breeding season the birds become very noisy. Pairs commonly soar in circles high up in the sky for long periods and also indulge in spectacular aerial play, side-slipping, somersaulting, and stooping at each other with astonishing velocity.



x c. 1/2

HAWKS, VULTURES, ETC.

259

proportions. Tarsus long and slender; fully feathered. Toes short and stout; outer toe longer than inner; claws long and well curved.

A forest-haunting genus, represented in Africa, tropical America and throughout the Oriental Region.

Key to the Species

	Page
Feathering of tarsus extending to division of toes.....	<i>S. nipalensis</i> 259
Feathering of tarsus not extending to division of toes.....	<i>S. cirrhatus</i> 261

SPIZAETUS NIPALENSIS (Hodgson)

Key to the Subspecies

Darker and larger; wing σ \varnothing 440-502 mm.....	<i>S. n. nipalensis</i>
Paler and smaller; wing σ \varnothing 402-453 mm.....	<i>S. n. kelaarti</i>

158. Hodgson's or Feather-toed Hawk-Eagle. *Spizaetus nipalensis nipalensis* (Hodgson)*Nisaetus Nipalensis* Hodgson, 1836, Jour. Asiat. Soc. Bengal, 5: 229, pl. 7 (Nepal)

Baker, FBI No. 1760, Vol. 5: 89

Plate 20, fig. 4 and Plate 21, fig. 10

LOCAL NAMES. *Kanda panthiong*, *Kanzha chil* (Lepcha); *Reijore* (Sikkim); Spotted Hawk-Eagle of Jerdon.SIZE. Kite \pm ; length c. 72 cm. (c. 29 in.).

FIELD CHARACTERS. A comparatively slender forest-frequenting eagle with a prominent crest of a few long black feathers (white-tipped in young birds) sticking out from hindcrown, and long, slender, feathered legs. Above, dark brown, barred with white on rump and upper tail-coverts. Tail dark brown barred with dark grey. Below, two broad black moustachial streaks to foreneck and a third down centre of chin and throat. Foreneck and upper breast fulvous white, with broad black vertical streaks or oval drops, or (in very old birds) broken brown-and-white barring. Remainder of underparts chocolate-brown, paler on lower breast, darker on abdomen. Flanks, thigh- and under tail-coverts barred brown and white. Sexes alike; female larger.

Young birds till their second year show a confusing variety of plumages, and are difficult to tell in the field.

In overhead flight all hawk-eagles of this genus appear grey throughout, the body sometimes darker sometimes lighter than the wings, profusely barred and streaked ('spotted'). They may be further identified by the short rounded wings, upturned near the end, and the longish tail.

STATUS, DISTRIBUTION and HABITAT. Resident in the Himalayas between 600 and 2400 m. altitude from NW. Pakistan (Hazara dist.) and Kashmir to eastern Assam, north and south of Brahmaputra river; Nepal; Manipur; E. Pakistan (?). In winter wanders into the Gangetic Plain; has been taken as far south as Pachmarhi (lat. 22°30'N.). Affects hill forest.

Extralimital. Yunnan, N. Burma (?).

GENERAL HABITS. Very similar to the commoner Indian Crested Hawk-Eagle (*Spizaetus c. cirrhatus*) of peninsular India, q.v. Hunts from ambush

258

FALCONIFORMES

FOOD. Rats, and mice, small snakes, lizards, frogs, crabs. Also locusts grasshoppers and other large insects, and winged termites — sometimes hawked in the air. Though accused of destroying quails and partridges, it seldom takes any except a sickly or disabled one. On the contrary it is highly beneficial as a destroyer of rats and lizards which are proven enemies of ground game. Among stomach contents the following identified specifically: Mammals: *Meriones hurrianus*. Reptiles: *Natrix stolatus*, *Mabuya carinata*. Insects: *Chrologonus* sp., *Termes obesus*, *Catharsius sabarus*, *Anomala varians* (larvae), *Brachytrypes achatinus*, *Schizodactylus monstrosus*, *Gryllotalpa africana* (Mason & Lefroy); *Acridium peregrinum* (?), katydid grasshopper.VOICE and CALLS. A peculiar plaintive, mewing *pit-weer, pit-weer*, constantly uttered in the nest precincts in breeding season; also while the pair is circling aloft.

BREEDING. Season, chiefly between February and May, varying with locality. Nest, a loose unlined structure of twigs like a crow's. Placed fairly high up (9-12 m.) in the fork or thickly foliated branch of a tree such as mango or neem, preferably one of a clump. Eggs, normally 3; greenish white, broad ovals with a fairly smooth texture. Usually unmarked; rarely with flecks of pale reddish. Average size of 100 eggs, 46.4 x 38.4 mm. (Baker). Both sexes share in building the nest and feeding the young. Incubation by female alone; period about 19 days.

MUSEUM DIAGNOSIS. In newly hatched chick prepennae and preplumulae both present. Prepennae fairly long and plentiful over the whole body: white above, tinged with isabelline at tips; white below. Preplumulae short, tufted, white (C. B. Ticehurst).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
σ σ	278-304	28-32	62-67	169-180 mm.
\varnothing \varnothing	295-314	29-32	61-68	170-183 mm.

(SA)

COLOURS OF BARE PARTS. Iris: adult almost white or pale yellow; immature, brown. Bill black at tip, changing to yellow on gape, base of lower mandible, and cere. Legs and feet dingy orange-yellow; claws black.

Downy nestling. Iris dark brown. Bill bluish, black at tip; cere yellow. Legs yellow, claws slate.

Genus SPIZAETUS Vieillot

Spizaetus Vieillot, 1816, Analyse: 24. Type, by subsequent designation, *Falco ernatus* Daudin. (Gray, 1840, List Gen. Bds.: 2)*Limnaetops* Baker, 1930, Fauna Brit. Ind. Bds., ed. 2, 7: 408. Type, by original designation, *Limnaetops c. cirrhatus* (Gmelin) = *Falco cirrhatus* Gmelin

Cf. Amadon, D.; 1953, Ibis, 95: 492-500.

An occipital crest of several long black feathers (c. 10-13 cm.) generally but not always present. Bill short, rather deep at base; culmen laterally compressed; curved throughout, with a prominent festoon on edge of upper mandible. Nostrils round, ear-shaped. Wings short and rounded; 5th primary (as.) longest or 4th and 5th subequal. Longest primary exceeds longest secondary by less than length of tarsus. Tail longer than in most true eagles, approximating the Sparrow-Hawk in its

260

FALCONIFORMES

up in branches of leafy tree, at edge of forest clearing, pouncing on quarry coming out to feed in the open. Very tractable, and easily tamed and trained to hunt (Donald). 'The fastest eagle on the Indian subcontinent, with astonishing manoeuvrability' (M. Osman).

FOOD. Chiefly small mammals like hares and large game birds like pheasants. Once observed striking, carrying off and eating a fish (Ingilis).

VOICE and CALLS. 'A shrill metallic whistle which might easily be imitated on a penny whistle' (A. E. Jones). A sharp *kee-kikik*, like Green Magpie's, repeatedly uttered from perch or on wing (SA).BREEDING. Season, principally February and March, sometimes extending into April and even May. Nest, a large platform of sticks with a depression in the centre lined with green leaves; repaired and used in successive years. Some birds apparently have alternate nests used irregularly, one this season the other possibly the next. Built 12 to 25 metres up in large trees like sal (*Shorea robusta*) — in the higher Himalayas almost invariably deodar (*Cedrus deodara*) — in forest at the edge of a broad nullah or ravine overlooking forest and cultivation. Eggs, a single, rarely 2; mostly of two types (a) pale clay colour or reddish white, profusely stippled with red and spattered with darker red or red-brown blotches, (b) white, variously blotched and spotted with rich red, chiefly at the broader end. Average size of 16 eggs 69.9 x 53.8 mm. (Baker). Share of the sexes in building unrecorded. Apparently female alone incubates; period unknown. Birds very bold and truculent in defence of nest.MUSEUM DIAGNOSIS. In the species *nipalensis* feathering of tarsus extends to base of toes, *contra* in *cirrhatus* where it terminates just above them. For plumages and other details see Baker, loc. cit., and Amadon, loc. cit. *infra*.

	Wing	Bill (from feathers)	Tarsus	Tail
σ σ	475-491	38-39	c. 108	283-298 mm.

(Baker)

A sexed \varnothing (from Himalayas) has wing 502 mm.Amadon¹ gives for Indian examples:1 σ ad. Wing 440; 1 σ imm. 415 mm.2 \varnothing \varnothing ad. Wing 440, 480; 1 \varnothing imm. 440? mm.Weight 1 \varnothing c. 1825 gm. (SA).

COLOURS OF BARE PARTS. Adult: Iris brilliant golden yellow. Bill black; cere blackish grey. Feet pale dull yellow, yellowish white, or livid yellow; claws black (Baker).

Iris in nestling bluish grey; in young (1 to 2 years old) bright yellow; then bright golden and finally orange in very old birds (Donald).

159. Legge's or Ceylon Feather-toed Hawk-Eagle. *Spizaetus nipalensis kelaarti* Legge*Spizaetus kelaarti* Legge, 1878, Ibis: 202 (Ceylon)

Baker, FBI No. 1762, Vol. 5: 91

LOCAL NAMES. *Maha kende rajaliya* (Sinhala); *Priya kende rasali*, *Kalugu* (Tamil).SIZE. Kite \pm ; length c. 70 cm. (c. 28 in.).¹ Amadon, Dean (1953): 'Remarks on the Asiatic Hawk-Eagles of the genus *Spizaetus*', Ibis, 95: 492-500.

HAWKS, VULTURES, ETC.

261

FIELD CHARACTERS. As for the nominate race. Superficially a larger edition of Legge's Baza (126), q.v. See Museum Diagnosis, for differentiation from No. 158 in the hand.

STATUS, DISTRIBUTION and HABITAT. Resident. Ceylon (hill zone above c. 600 m.); Kerala, Nilgiris, W. Mysore (Malnad). Affects evergreen hill forest.

GENERAL HABITS. Same as of 158. Occasionally takes to poultry-lifting near forest villages.

FOOD. As in 158.

VOICE and CALLS. Normally silent. A 'loud scream' while soaring (Legge).

BREEDING. Season. December to February/March in Ceylon. Stewart found most eggs in Kerala to be laid in January. Nest and site similar to those of the nominate race, the former often at heights of 25 to 30 m. in lofty forest trees. Eggs, normally a singleton, white to greyish white lightly freckled or speckled with reddish; very similar to eggs of *S. cirrhatus*. Average size of 32 eggs 69.1 × 54.6 mm. (Baker). Said to be less bold than the northern bird in defence of nest.

MUSEUM DIAGNOSIS. Differs from the nominate race (158) in being smaller and paler, especially on the underparts. However, according to Amadon, loc. cit., the form *kelaarti* requires confirmation.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus
♂♂	427-453	c. 42	107-109
♀	442	—	—
			(Baker)

A ♂ from Kerala measures: Wing 402; bill (from skull) 46; tarsus 98.5; tail 261 mm. (SA). The only specimen (subadult ♂) examined by Amadon has wing 410 mm.

COLOURS OF BARE PARTS. As in 158.

SPIZAEUS CIRRHATUS (Gmelin)

Key to the Subspecies

	Page
A A long crest c. 10-14 mm. present..... <i>S. c. cirrhatus</i>	262
B Crest short or rudimentary..... 1	
1 Larger; wing over 400 mm..... <i>S. (c.) limnaeetus</i>	261
Smaller; wing under 400 mm..... <i>S. c. andamanensis</i>	265

160. Changeable Hawk-Eagle. *Spizaeus (cirrhatus) limnaeetus* (Horsfield)

Falco Limnaeetus Horsfield, 1821, Trans. Linn. Soc. London, 13(1): 138 (Java)

Baker, FBI No. 1758, Vol. 5: 87

Plate 20, fig. 5 and Plate 21, fig. 9

LOCAL NAMES. *Sadal* (Hindi, Bengali); *Morhaila* (Garhwal).

SIZE. Kite +; length c. 70 cm. (c. 28 in.).

FIELD CHARACTERS. Crest rudimentary or very small, seldom longer than about 3 cm. Otherwise bird similar to Crested Hawk-Eagle (No. 161) but

HAWKS, VULTURES, ETC.

263

FIELD CHARACTERS. A comparatively slender, crested forest eagle, normally brown above white below, with narrow black longitudinal streaks on throat, and broad chocolate streaks on breast. The prominent crest of a few long black feathers sticking out from hindcrown, and long slender but powerful feathered legs, are diagnostic. Sexes alike; female larger.



In overhead flight, the short, broad, rounded wings (upturned near tip), longish tail, white body (lightly or heavily spotted) are leading pointers to the adult.

Young (immature). Head buffy or brownish white; the long black crest feathers with whitish apical edges. Tips of greater wing-coverts largely buffy white. Underparts uniform buffy white with faint, sparse, fine shaft streaks on breast.

STATUS, DISTRIBUTION and HABITAT. Fairly common in well-wooded tracts throughout peninsular India roughly south of the range of *S. n. nipalensis* (No. 158), and in Ceylon. Its northern limit is fairly indicated by a line drawn from Mount Abu (Rajasthan) to Etawah (U.P.) and thence through Sherghati (Bihar) to Calcutta (Hume, SF, 3: 446). Affects deciduous and semi-evergreen forest biotope.

Extralimital. Burma (Myitkyina dist.), SE. Thailand — probably straggler.

GENERAL HABITS. Keeps to open forest and the neighbourhood of outlying forest villages and cultivation. Perches bolt upright on a horizontal bough up in the foliage canopy of a high tree overlooking a glade or clearing, not so much hidden by the leaves as backed and camouflaged by them. The bird thus remains surprisingly unnoticed till it flies out on the observer's approach to settle in another tree some distance away with a graceful upward sweep into the branches. From such ambush it surveys the surroundings for any small animal venturing into the open, pouncing on it with a whirlwind rush, smothering it with its wings, and bearing it away in its powerful talons. Perhaps less given to soaring than many other raptors except during the breeding season when pairs — even single birds (male?) — indulge in noisy aerial displays, zooming up vertically and nose-diving, or stooping at each other at lightning speed, sometimes doing a complete looping-the-loop turn in the air.

FALCONIFORMES

262

with paler underparts, and more or less barred with rufous-white on the brown abdomen and vent. Dimorphic: also commonly met in a melanistic phase with the entire plumage dark chocolate-brown, or almost black, the latter confusable with Black Eagle (No. 172), q.v. Intermediates between the two phases occur.

Young (immature). Lower parts often pure white without any spotting or barring.

STATUS, DISTRIBUTION and HABITAT. Resident in the sub-Himalayan terai and duars from Garhwal to Bengal, (E. Pakistan?), and Assam; Nepal. Affects forest biotope in the foothills and up to c. 1900 m. altitude.

Extralimital. Burma, Thailand, Malay Peninsula, Indochinese countries, Sumatra, Java, Borneo, Philippine Islands.

GENERAL HABITS. As in 161. Wild and wary, flying off to another perch a hundred metres away when approached, and so on, constantly maintaining distance between itself and observer. If persistently followed, becomes suspicious and flies away over the tree-tops, quickly spiralling upward to great height.

FOOD. As in 161. Often becomes a habitual and determined robber of domestic poultry from forest villages.

VOICE and CALLS. Silent except in the breeding season. When soaring aloft, utters 'a clear whistling call very closely resembling the cry of the curlew — *cur-lee-ee-ee*' (G. C. Madoc, Malaya). Also likened to the screams of the Serpent Eagle (*Spilornis cheela*).

BREEDING. From plains level to c. 1800 m. altitude, chiefly foothills between 300 and 900 metres. Season, January to April: principally February and March. Nest, the typical large platform of sticks and twigs, c. 1 metre across and 35 cm. deep, with a shallow depression for the eggs, lined with green leaves. Built high up in a forest tree. Egg, a singleton, indistinguishable from that of 161. Average size of 16 eggs 69.8 × 51.9 mm. (Baker). Share of the sexes in the domestic chores, and incubation period, unrecorded.

MUSEUM DIAGNOSIS. Considered by some authors as a crestless race of *S. cirrhatus*, by others as a valid species (*S. limnaeetus*) because of the apparent sympatry in parts of Burma and Thailand. Its true position needs further study.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	400-438	39-41	100-103	240-267 mm.
				(Baker)

COLOURS OF BARE PARTS. As in 161.

161. Indian Crested Hawk-Eagle. *Spizaeus cirrhatus cirrhatus* (Gmelin)

Falco cirrhatus Gmelin, 1788, Syst. Nat., 1(1): 275 (Ceylon)

Baker, FBI No. 1756, Vol. 5: 85

Plate 20, fig. 6, Plate 21, fig. 7 and Plate 28, fig. 12

LOCAL NAMES. *Shah baaz* (Hindi); *Jutu bhyri*, *Namli pari gadda* (Telugu); *Mir baaz* (Gujarat).

SIZE. Kite +; length c. 72 cm. (c. 29 in.).

FALCONIFORMES

264

FOOD. Hares, young peafowl, junglefowl, partridges, bush quails, squirrels, field rats, lizards, etc. Very destructive to domestic poultry around forest villages.

VOICE and CALLS. A loud high-pitched cry *Ki-ki-ki-ki-ki-ki-ki-ki-ki*, commencing short, rising in crescendo, and ending in a long-drawn scream. Mostly heard during the breeding season, from perch as well as from air. Also alleged, with some degree of plausibility, to be the enigmatical 'Devil Bird' which sometimes utters the weird nocturnal cries — a wailing *hoo-hoo* immediately preceded by a 'harsh cough' — as of a woman being strangled (JBNHS, 1925, 30: 914-15). Final confirmation of identity is lacking.

BREEDING. Season, in peninsular India overall November to April, chiefly January and February; in Ceylon continuing till June. Nest, a large platform of sticks and twigs, c. 95 cm. across and some 45 cm. thick with a central depression lined with fresh green leaves kept renovated (by ♂?) during incubation. Built between 12 and 30 metres up in a tall *Ficus*, *Bastia*, *Dipterocarpus*, *Albizia* or similar tree generally on a hillside or edge of a ravine and commanding a wide view. Egg, a singleton, white, feebly speckled and blotched with light reddish at the larger end; sometimes sparingly all over. Average size c. 64.0 × 50.5 mm. Ceylon eggs generally smaller. Both sexes share in building the nest, but apparently female alone incubates. Incubation period undetermined; in one case calculated as over 40 days (Phillips).

MUSEUM DIAGNOSIS. As for the genus. The species differs from *S. nipalensis* (158) by the feathering of the tarsus terminating just above the toes, not extending down to their base. Resemblance between immatures of the two species particularly striking. Ceylon and S. Indian birds are smaller but otherwise identical with the peninsular population. Size difference clinal, not meriting racial separation as hitherto done. For plumage and other details see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂ ad.	351-442	35-44	90-106	229-285 mm.
♀♀ ad.	353-462	37-46	96-106	266-300 mm.
				(SA)

COLOURS OF BARE PARTS. Adult. Iris pale khaki to bright orange-yellow varying with age. Bill horny black; cere greyish to greenish brown. Gape and eyelids greyish green. Feet lemon-yellow; claws horny black.

Downy nestling. Iris greyish brown. Bill horny black; cere and bare skin in front of and around eyes slaty grey; gape greenish grey; mouth pink. Feet pale greenish grey; claws horny black.

Chick (in down, c. fortnight old). Prepennae and preplumulae white. A thick rudimentary tuft of white down at nape where crest in adult. Brown primaries sprouting; also bastard wing quills, secondaries, upper wing-coverts, dark brown scapulars, upper tail-coverts and rectrices. A central (spinal) tract of brown feathers down back of neck to midway between the scapulars, and two tracts of fulvous brown feathers on either side of breast.

MISCELLANEOUS. A downy nestling being hand-reared drank water regularly — avidly and copiously — which shows the obvious need for it and poses the question: How do eagles carry water to their must surely do?

HAWKS, VULTURES, ETC.

265

162. Andamans Crested Hawk-Eagle. *Spizaetus cirrhatus andamanensis* Tytler

Spizaetus Andamanensis Tytler, 1865, Proc. Asiat. Soc. Bengal: 112
(Port Blair, S. Andaman Island)
Baker, FBI No. 1759, Vol. 5: 88

LOCAL NAME. *Arungdda* (Andamans, near Port Blair).

SIZE. Kite; length c. 61 cm. (24 in.).

FIELD CHARACTERS. Smaller even than Ceylon examples of Indian Crested Hawk-Eagle (No. 161) and with a markedly shorter crest; otherwise quite similar.

STATUS, DISTRIBUTION and HABITAT. Rather rare resident. Race endemic to the Andaman group of islands. (Nicobars?). Generally keeps to outskirts of forest near open places (Davison).

GENERAL HABITS. Nothing specifically recorded as different from No. 161.

FOOD. Frequently takes a chicken or pigeon close to a bungalow. One observed to capture a Myna (*Acridotheres tristis*), and another devouring a Koel (*Eudynamis*) — A. L. Butler.

VOICE. Unrecorded.

BREEDING. The only nest known was found by B. B. Osmaston at Haddo, near Port Blair, containing a single egg on 21 January. It was the typical twig structure c. 10 metres up in a teak tree, lined with green jamun (*Eugenia*) leaves. Egg, as of the peninsular race (161), measuring 62.2 × 50.1 mm.

MUSEUM DIAGNOSIS. Size smaller than *S. c. cirrhatus*; length of crest intermediate between it and *S. c. himalaetus* (160).

MEASUREMENTS. Wing 1 ♂ 355, 1 ♀ 377 (Amadon, loc. cit.).

A sexed ♂ in the British Museum collection has wing 375, and a sexed ♀ 366 mm.; bill from feathers 38 and 37 mm. respectively (Baker).

COLOURS OF BARE PARTS. As in 161.

Genus *HIERAETUS* Kaup

Hieraetus Kaup, 1844, Classif. Säugeth. u. Vög.: 120. Type, by original designation, *Falco pennatus* Gmelin

Like *Spizaetus* contains hawk-eagles which differ from true eagles (e.g. *Aquila*) in their lighter and slenderer build, smaller bills, longer and slenderer tarsi, and proportionately longer tails. Most species have a phase of plumage in which the underparts are partly or wholly white. The emarginations of the primaries are generally much deeper than in the genus *Aquila*.

Bill moderately strong, much hooked at the end and with a prominent falcate to upper mandible. Nostrils elliptical and oblique. Tarsi feathered to the toes. Toes long; outer toe somewhat longer than inner. Claws sharp and well curved; inner and hind claw both large, the latter larger. Wing long; 4th primary (as.) longest, exceeding secondaries by more than length of tarsus. Tail nearly square, equal to more than half the length of wing.

Genus represented in Europe, Asia, Africa and Australia. Three species occur in India.

Key to the Species

- Larger; wing over 480 mm. *H. fasciatus*
Smaller; wing under 450 mm. *H. pennatus*
Underparts rufous-chestnut. *H. kienerii*

HAWKS, VULTURES, ETC.

267

in the Himalayas south to Kanyakumari; Nepal. Ceylon (rare vagrant; once). Affects well wooded country, hill and plain.

Extralimital. Southern Europe south to N. Africa and east to southern China (Peters).

GENERAL HABITS. A bold and active hunter, often killing mammals and birds much heavier than itself. Either pounces on them from an ambush up in a leafy tree like the Crested Hawk-Eagle, or strikes them by aerial pursuit. The victim is killed by being gripped fiercely with both feet, the claws dug deeply in. Frequently a pair will hunt in concert, one bird swooping at and scattering a flock, e.g. of roost-bound crows, picking on an individual thus isolated for determined chase and harrying — turning and twisting after it, high and low — while its partner short-circuits the quarry by off-side tactics, both birds then sharing the spoils. In chasing large birds, gets under them and turns over on its back to bind from below (Osman). Pairs indulge in spectacular courtship (also distraction?) displays, swishing down through space almost perpendicularly for 50 metres or more, wings pressed to the sides, then zooming vertically skyward again. On the crest of the wave the bird 'stands on its tail' for a split second then tumbles over to repeat the dive or resume sailing. They frequently soar and circle aloft like most raptors.

FOOD. Mainly large birds and small mammals like hares. Recorded prey includes myna, house crow, green pigeon, crow-pheasant, partridges, spurfowl, junglefowl, pheasant, florican, houbara bustard, pond heron, painted stork, kite and other raptors. Wounded or disabled waterfowl as large as Greylag goose (*Anser anser*) are frequently carried off with great audacity from almost under the sportsman's nose. Crows are at all times a favourite food item. Occasionally becomes a scourge to domestic poultry including young turkeys, and is particularly destructive to dove-cock pigeons. Lizards also taken, but it seldom if ever descends to carrion-eating.

VOICE and CALLS. Seldom heard. Described as a shrill creaking cry; a chattering *kie, kie, kikiki*.

BREEDING. Season, principally December and January; sometimes a couple of months later locally. Nest, a massive platform of sticks with a central depression lined with fresh green leaves. Added to in successive seasons, sometimes the pile assuming enormous thickness. In S. India (Kerala and the Nilgiris) built most commonly on lofty trees; elsewhere and in the Himalayas chiefly on ledges of cliffs. Eggs, normally 2, broad ovals, white, almost unmarked or faintly blotched with pale brown or reddish brown. Average size of 46 Indian-taken eggs 69.1 × 53.4 mm. (Baker). Both sexes share in nest-building, the male bringing large sticks and tangles of branches in his feet, often with green leaves adhering, the female arranging them. Incubation apparently by both, but mostly by female. Period unrecorded. Nest-feeding by both parents, the male procuring the booty, the female tearing it up and giving pieces to the small young.

266

FALCONIFORMES

163. Bonelli's or Slender Hawk-Eagle. *Hieraetus fasciatus fasciatus* (Vieillot)

Aquila fasciatus Vieillot, 1822, Mém. Soc. Linn. Paris, 2(2): 152 (Montpellier, France)
Baker, FBI No. 1752, Vol. 5: 77

Plate 20, fig. 1, Plate 21, fig. 2 and Plate 28, fig. 11

LOCAL NAMES. *Morangi* (Hindi); *Kundeli salara* (Telugu); *Rajali* (Tamil). Crestless Hawk-Eagle of Jerdon.

SIZE. Kite +; length c. 68–72 cm. (27–29 in.).

FIELD CHARACTERS. A comparatively slender but powerful uncrested raptor with a proportionately longer tail than in true eagles, extending 5 to 8 cm. beyond tips of closed wings.

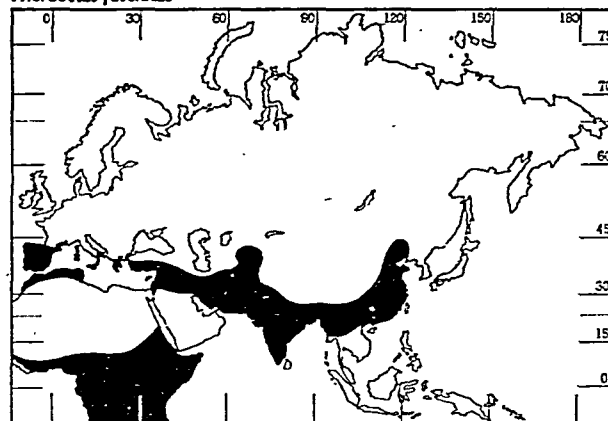
Adult. Above, dark umber-brown. Below, white to rufous-buff, streaked with blackish. Tail dark grey above, whitish below with a broad black subterminal band and several others narrower and ill-defined. Sexes alike; female larger.

In overhead aspect the silvery white body, dark brown under wing-coverts, finely grey-barred flight feathers, and broad black subterminal band in the longish tail are suggestive pointers for the adult.

Young (immature). Above, paler brown, the feathers of head and nape with still paler edges. Below, rufous or rufous-buff, streaked with blackish. Tail narrowly barred and mottled; without the broad subterminal band.

Distinguished in flight from Tawny Eagle in comparable colour phase by slenderer build, narrower wings and relatively longer square-ended tail.

STATUS, DISTRIBUTION and HABITAT. Resident. Widespread but not common. West Pakistan (Baluchistan, Sind, NWFP), India from Kashmir and Punjab to W. Bengal. Assam (?); East Pakistan (?), and from c. 2400 m.

Hieraetus fasciatus

Residential range

268

FALCONIFORMES

MUSEUM DIAGNOSIS

MEASUREMENTS	Wing	Bill	Tarsus	Tail
♂♂	458–520	42–49	100–104	246–266 mm.
♀♀	490–550	47–49	106–110	254–285 mm.
		(from skull)		(SA)

COLOURS OF BARE PARTS. Iris yellowish brown to orange-yellow. Bill bluish grey at base, horny black distally; cere and gape pale sulphur-yellow. Feet pale sulphur-yellow; claws horny brown.

164. Booted Hawk-Eagle. *Hieraetus pennatus* (Gmelin)

Falco pennatus Gmelin, 1788, Syst. Nat., 1(1): 272 (No type locality given)
Baker, FBI No. 1753, Vol. 5: 79

Plate 17, fig. 5, Plate 20, fig. 2 and Plate 25, fig. 11

LOCAL NAMES. *Baghati*, *Jumiz*, *Gilehri rair* (Hindi); *Udatal gedda* (Telugu); *Purja paranda*, *Rasali*, *Kalugu* (Tamil); *Rajaliya* (Sinhala).

SIZE. Kite —; length c. 50–54 cm. (20–22 in.).

FIELD CHARACTERS. Superficially a smaller edition of Bonelli's Hawk-Eagle, also with long feathered tarsus. In two very distinct plumage phases:

(1) Light phase. Above, from pale buffy or rufous-white to umber-brown, darkest (blackish) on the primaries. Top of head, nape, sides and back of neck pale rufescent buff, the feathers with darker centres. Forehead and lores buffy white; a narrow black streak running between the eyes and the lores, and similar streaks both above and below the eyes. Below, buffy white with blackish streaks, particularly on chin and upper breast. In overhead aspect colour pattern of light phase reminiscent of dirty white Neophron vulture with blackish band along trailing edges of wings.

(2) Dark phase. Above, brown with dark shaft-stripes, and whitish upper tail-coverts. Below, either dark brown or pale rufous with blackish streaks on breast. Tail greyish brown above, pale below, banded and tipped paler. Sexes alike; female larger.

Young (immature). More or less like (2) above. On the wing, dark and immature phases very like immature Brahminy Kite, but the relatively slenderer proportions and markedly longer and square-ended tail (contra rounded) usually diagnostic. Often flies with Pariah Kites in urban localities and is frequently mistaken for one; also because of its kite-like flight. But shape of tail, square-ended r. forked, establishes its identity.

STATUS, DISTRIBUTION and HABITAT. Partly resident; chiefly winter visitor (fairly common). Indian range practically as for Bonelli's Eagle: W. Pakistan (Baluchistan, Sind, NWFP), and all India from c. 2400 m. in the Himalayas south through the Gangetic Plain and Deccan to Kanyakumari. Nepal; Ceylon (occasional in winter). Not specifically recorded in Assam or E. Pakistan, but doubtless occurs. Affects well-wooded country, hill and plain. Commonly also semi-desert with *Dalbergia* and other forest plantations, and groves of trees around human habitations or within cultivation.

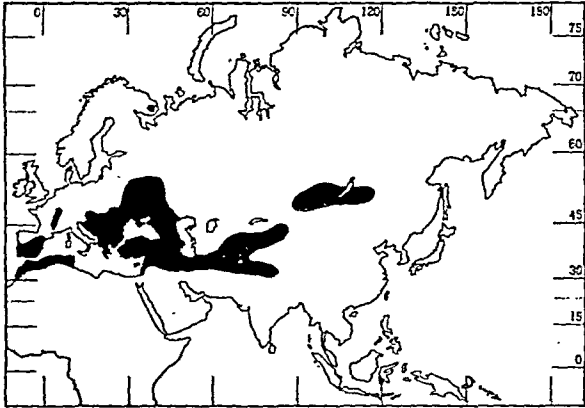
Extralimital. 'Breeds in the Iberian Peninsula, S. France, SE. Europe and S. Russia east to S. Transbaikalia, south to N. Africa and India. Winters chiefly in India and NE. Africa' (Peters). Also Burma and Malay Peninsula.

GENERAL HABITS. The smallest of our 'stockinged' eagles. Though superficially a miniature of Bonelli's at rest, its flight is much more like a kite's, light and wavering, the bird constantly swerving in its course. Takes its prey on the ground or in the air, either pouncing on it from an ambush or chasing it on the wing like a falcon. Regularly hunts in couples (whence known as *Dū bārdārān* = two brothers, in Iran), the birds stooping alternately on the quarry till struck, then sharing the spoils. Collects in numbers to roost at night in groves of large leafy trees. Invariably mobbed by crows who evidently differentiate it readily from the Pariah Kites with whom it may be associating.

FOOD. Small mammals, birds and reptiles. The following specifically recorded: squirrel, rat, lark, pipit, barbet, chukor, bulbul, dove, pigeon, domestic chicken. Often becomes a serious marauder of the poultry yard.

VOICE AND CALLS. 'A very harsh falcon-like cry *kik-kik-kik* oft repeated' (A. E. Jones). Very noisy in the breeding season 'with a shrill piercing call' (Donald). 'Series of calls like Himalayan Pied Woodpecker, louder, more musical and varied.' 'Striking whistling notes' while going through aerial evolutions in breeding season (Whitehead).

Hieraetus pennatus



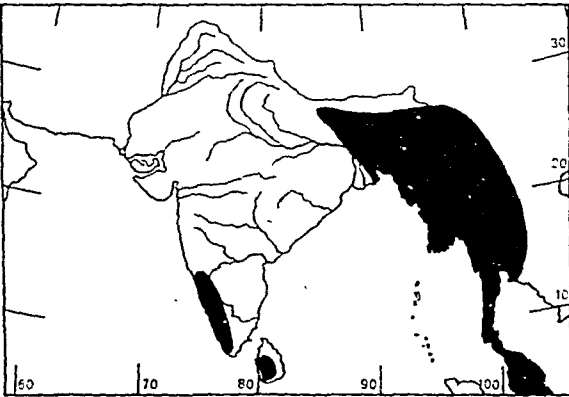
Breeding range

BREEDING. Breeds freely in NWFP. and the high Himalayas in Kashmir Himachal Pradesh, Garhwal, etc. between 1800 and 3000 m. altitude (Whitehead, Donald, Osmaston, Jones, and others). Possibly also nests sparingly and locally in peninsular India, doubtfully recorded as such in Salem in Madras State (Theobald), and circumstantially in Gujarat (SA).

Extralimital. Burma, Thailand (?), Malay Peninsula.

GENERAL HABITS. A forest eagle, usually seen soaring or flying with rapid falcon-like wing-beats above the tree-tops on forest-clad hillsides or over wooded valleys. Or it may perch bolt upright and alert on a horizontal bough up in the foliage canopy of some lofty tree overlooking a glade or clearing, watching for prey venturing into the open. From this ambush it pounces on its quarry, killing it on the ground, or striking in the air before the victim has time to get properly under way by a thunderbolt stoop reminiscent of a peregrine falcon.

Hieraetus kienersi



Residential range

FOOD. Chiefly large birds and small mammals. Kaley pigeons, jungle-fowl, spurfowl, wood partridge, green pigeon, squirrel have been specifically recorded. Destructive to domestic pigeons and poultry in forest habitations.

VOICE AND CALLS. Various described as 'a plaintive scream not unlike a kite's' (Baker); 'a piercing scream' (H. C. Smith) and 'a wild resounding call' (H. Stevens). Normally silent.

BREEDING. Very little data concerning the northern population, and apparently no nest ever taken. Better known in Kerala where it breeds at elevations between 300 and 1200 m., principally 500 to 900. *Season*, c. December to March. *Nest*, a large platform of sticks, some often with green leaves still attached, the central depression lined with green leaves which are frequently renewed during incubation. Built high up (24-30 m.) in a tall tree in dense forest. As with some other raptors it occasionally has two nests at varying distances from each other, used in successive or alternate seasons. *Egg*, a singleton, broad oval, white, almost unmarked or densely blotched with pale reddish brown primary and lavender-grey secondary markings. Average size of 19 eggs 61.2 x 48.1 mm. (Baker). Share of sexes

Season, c. March to June in the Himalayas. *Nest*, a platform of sticks with a central depression lined with fresh green leaves or pine or deodar needles. Built high up (25-35 m.) in a lofty chenar, deodar or pine, or in a tree growing out of a precipice. *Eggs*, normally 2, white or skim-milk blue faintly and evenly stippled and blotched with pale rusty red. The edges of the nests and ground underneath, even before the eggs hatch, are often littered with feathers and remains of doves and other victims of the eagles. Average size of 6 Indian-taken eggs 56.7 x 44.2 mm. (Baker). Share of the sexes in the domestic chores, and incubation period, unrecorded.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	370-412	31-33	61-64	188-192 mm. (Baker)
		(from skull)		
♀♀	385-423	34-36	65-69	204-225 mm. (SA)

COLOURS OF BARE PARTS. Iris brown. Bill bluish grey or pale blue with black tip; cere and gape yellow. Feet dull yellow.

165. **Rufousbellied Hawk-Eagle.** *Hieraetus kienersi kienersi* (E. Geoffroy) *Astur kienersi* G. S. (= E. Geoffroy), 1835, Mag. Zool., cl. 2, pl. 35 (Himalayas) Baker, FBI No. 1754, Vol. 5: 80
Plate 20, fig. 3 and Plate 25, fig. 10

LOCAL NAMES. None recorded.

SIZE. Kite ±; length c. 53-61 cm. (21-24 in.).

FIELD CHARACTERS. A handsome slender eagle with a distinct occipital crest as in 161, but shorter. *Above*, including crown, crest, and sides of head glossy black. *Below*, chin, throat and upper breast white with long black stripes. Rest of underparts deep rufous-chestnut, streaked with black on abdomen and flanks. In flight a large pale brownish patch (secondaries) on upper side of wing conspicuous. In overhead aspect the long wings and comparatively short tail give it the look of a large falcon, but pale grey underside of wings and tail, contrasting with white breast and rich ferruginous abdomen, are diagnostic points. Sexes alike; female larger.

Young (immature). *Above*, brown, the feathers dark centred. A line across forehead, and broad supercilium white. Tail dark brown, tipped paler and broadly barred with grey. *Below*, white, sparsely streaked with black.

STATUS, DISTRIBUTION AND HABITAT. Resident. With a curiously discontinuous Indo-Malayan distribution: Eastern Himalayas, from (Nepal?), Sikkim to E. Assam, Manipur, E. Pakistan; the Western Ghats strip in south India from c. Goa and N. Mysore through Kerala (up to c. 1200 m.), and Ceylon (all zones). Absent in the intervening country. Affects evergreen and moist deciduous forest biotope; occasionally lowlands (Ceylon), but chiefly foothills and up to c. 1500 m. altitude in the E. Himalayas and to c. 1200 m. in SW. India.

in the domestic chores, and incubation period, unrecorded. The birds are said to be fierce in defence of their nest and eggs.

MUSEUM DIAGNOSIS. Owing to inadequate comparative material it is uncertain whether the populations in the north and south are identical, as presumed.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	c. 380	c. 33-35	c. 76	c. 204 mm.
♀♀	405-433	35-37	79-82	228-242 mm. (Baker)

COLOURS OF BARE PARTS. Iris dark brown. Bill plumbeous grey, black at tip; cere yellow. Legs and feet dull yellow.

Genus *Aquila* Brisson

Aquila Brisson, 1760, Orn., 1: 28, 419. Type, by tautonymy, *Aquila* Brisson = *Falco chrysaetos* Linnaeus

Large and powerful raptors. Bill strong, rather long and curved from the cere; margins of upper mandible straight or with a very slight falcation. Wings long; 4th and 5th primaries (as.) longest; first primary generally more or less equal to 6th. Tail moderate; slightly rounded or almost square-ended. Tarsus feathered to toes; claws curved, strong and sharp, the hind toe and claw especially powerful.

The genus is found throughout Europe, Asia and N. America. Represented in our area by six species.

Key to the Species

	Page
A. Nostrils elliptical or ear-shaped, higher than broad.....	1
B. Nostrils round, as high as broad.....	2
I. Claws very large; hind claw over 50 mm.....	a
Claws moderate; hind claw under 50 mm.....	b
a. Base of tail white.....	<i>A. chrysaetos</i> (juv.)
Base of tail not white.....	<i>A. chrysaetos</i> (ad.)
b. Wing ♂ under 530 mm., ♀ under 575 mm.....	I
Wing ♂ over 530 mm., ♀ over 600 mm.....	II
I. Barring on tail faint or lacking.....	<i>A. rapax</i> (ad.)
Barring on tail conspicuous.....	<i>A. rapax</i> (juv.)
II. Plumage deep brown; crown and nape tawny.....	<i>A. heliaca</i> (ad.)
Plumage pale umber brown.....	a ¹
a ¹ Underparts striated.....	<i>A. heliaca</i> (juv.)
Underparts not striated.....	a ²
a ² Edges of secondary wing-coverts narrowly tipped paler or not at all.....	<i>A. r. nipalensis</i> (ad.)
Edges of secondary wing-coverts widely tipped paler.....	<i>A. r. nipalensis</i> (juv.)
2. Longest primary extending 70-80 mm. beyond seventh.....	c
Longest primary extending 80-90 mm. beyond seventh.....	d
c. Upperparts dark chocolate-brown, underparts streaked with paler.....	<i>A. clanga</i> (ad.)
Upperparts heavily spotted with white; underparts contrastingly streaked with chocolate and pale rufous.....	<i>A. clanga</i> (juv.)

HAWKS, VULTURES, ETC.

273

Page

d Unspotted and unstreaked above and below.....	281
..... <i>A. pomarina</i> (ad.)	
Underparts narrowly streaked and upperparts faintly spotted....	281
..... <i>A. pomarina</i> (juv.)	

166. **Himalayan Golden Eagle.** *Aquila chrysaetos daphanea* Severtzov
Aquila daphanea Severtzov, 1888, Nouv. Mém. Soc. Imp. Nat. Moscou, 15 (livr. 5) :
 190 (Russian Turkestan, Mongolia, Himalayas, Transbaikalia and Ala-shan
 Mountains)

Aquila chrysaetos hodgsoni Ticehurst, 1932, Bull. Brit. Orn. Cl. 52: 25 (Hazara). New
 name for *A. daphanea* Hodgson, 1844, in Gray's Zool. Misc.: 81, *nomen nudum*
 Baker, FBI No. 1746, Vol. 5: 68
 Plate 26, fig. 6, Plate 27, fig. 6 and Plate 28, fig. 9

LOCAL NAMES. *Mūriari* (Chamba); *Dhungthoorish* (= 'monal tiger' or monal
 killer — Bashahr, Himachal Pradesh).

SIZE. Vulture ±; length c. 90–100 cm. (c. 35–40 in.).

FIELD CHARACTERS. A very large and powerful eagle, deep chocolate-
 brown (almost black) with golden or tawny-rufous hindcrown, nape and
 hindneck. Thighs, upper and under tail-coverts, and shoulders of wings
 rufous-brown. Sexes alike; female larger.

In soaring overhead flight the broad wings, held in a wide open V slightly
 above line of back (as in King Vulture and Black Eagle) and ending in
 upturned widely splayed 'fingers', make it distinctive. Confusion possible
 with adult Imperial Eagle (167) as when flying in high wind the
 white bases of scapulars and back feathers may show up like the irregular
 white marks on back of Imperial; but rufous-buff feathers on hindcrown
 and nape of Golden are usually suggestive of its identity. Also tail relatively
 longer, and wings narrower than in Imperial.

Young (immature). Glossy brownish black with tawny head and neck.
 In flight a white moon-shaped patch in centre of wings both above and below
 (bases of primaries), and white tail with broad blackish terminal band,
 are revealing features. No confusion possible with young Imperial Eagle
 which has a brown lined plumage, much lighter below.

STATUS, DISTRIBUTION AND HABITAT. Resident. Baluchistan and the
 Himalayas from W. Pakistan (NWFP, Province) to eastern Assam (including
 Nepal), from c. 1850 metres altitude to summer snowline, c. 3000–5500 m.
 Affects desolate, rugged high mountain country with crags and precipices,
 and sparse stunted vegetation. Unlikely to be found near any hill-station.

Extralimital. Turkestan and E. Persia to C. Asia, south to the Himalayas
 (Peters).

GENERAL HABITS. In its typical Himalayan habitat perhaps less un-
 common than generally supposed. Pairs hold sway over enormous territories,
 occupying them throughout the year for many years in succession — almost
 traditionally. Flight direct and seemingly unhurried, with powerful wing-
 beats and long glides. Method of hunting very falcon-like. Sometimes
 chases its quarry with speed and determination, but usually stoops at it
 from a height at terrific velocity, striking with the huge hindclaw and vir-

HAWKS, VULTURES, ETC.

275

FIELD CHARACTERS. Adult, deep glossy blackish brown with paler
 (tawny-buff to whitish) head and neck. Tail with mottled bands of grey
 and brown, tipped whitish and with a broad blackish subterminal band.
 Irregular white marks on back (scapulars). Vent and under tail-coverts
 dull buff. Sexes alike; female larger.

Confusable with adult Golden Eagle, q.v., but head much paler. At one
 stage of plumage — dark chocolate with golden whitish head — reminiscent
 of colour pattern of immature Marsh Harrier. In flight the relatively shorter,
 less protruding tail and broader wings (held in line with body not in flat
 V above it) are suggestive pointers.

Young (immature). *Above*, light to dark brown, feathers of head and
 nape with paler edges. Upper tail-coverts whitish. Tail light brown tipped
 with fulvous, with pale bars towards base. *Below*, always conspicuously
 paler and lined or streaked, i.e. with lines of darker brown spots running
 down entire underside.

Confusion of immature possible with adult Steppe and Tawny, but its
 lined or streaked underparts diagnostic.

STATUS, DISTRIBUTION AND HABITAT. Rare resident (?), but mainly
 winter visitor. W. Pakistan (Baluchistan, Sind, NWFP), N. and NW. India
 (Kashmir, Himachal Pradesh, Nepal) south to Gujarat (Kutch, Saurashtra).
 How much further east and south uncertain due to records being vitiated
 by confusion in field identifications. Affects open treeless country.

Extralimital. 'S. Europe from Hungary to S. Russia, thence eastward
 to Lake Baikal; south to Greece, Cyprus, Asia Minor, N. India, and
 China. South in winter to Sudan and Somaliland, India, and SE. China'
 (Peters).

MIGRATION. Absent in the Himalayas (NWFP, Kashmir, Himachal
 Pradesh, etc.) and the Indian plains between March and September.
 Migration (evidently of this species) observed by C. H. Donald in Himachal
 Pradesh on 9 November 1923; many birds flying steadily and purposefully
 in single file c. 100 m. up, spaced out at a few minutes' interval each, in an
 ENE. to WSW. direction (JBHNS, 1924, 29: 1054).

GENERAL HABITS. A heavy sluggish eagle, normally seen perched for hours
 on end on a stump or tree-top, or on the bare ground, in open semi-desert
 or flat featureless country such as at the edge of the Rann of Kutch. Obtains
 its food by pouncing on any small animal that may show itself in its vicinity,
 but mostly by pirating — chasing other hawks and eagles (including Laggar
 Falcon) and forcing them to surrender what they have hunted. Also very
 largely a carrion eater, commonly seen at animal carcasses and about
 slaughter-houses and municipal refuse dumps. Flight slow and heavy like
 a vulture's.

FOOD. Apart from carrion and miscellaneous booty procured by piracy,
 occasionally kills rodents, reptiles and ground birds. Stomach of a specimen
 taken in Kutch contained a freshly swallowed Russell's Viper (*Vipera*
russelli) c. 36 cm. long, and remains of a Common Sandpiper (*Tringa hypo-*
leucos), the latter doubtless pirated. Another held remains of two large Fat-
 tailed lizards (*Uromastix hardwickii*).

VOICE AND CALLS. Unrecorded in India. In Europe 'a quick barking
 cuck-cuck-cuck'.

274

FALCONIFORMES

tually splitting open the largest prey. Pairs often hunt in concert, one bird
 driving and harrying the quarry while its mate stoops from above and
 strikes. Circles aloft singly or in pairs, and in breeding season indulges
 in the spectacular stooping and nose-diving displays common to many of
 its lesser relatives.

FOOD. Mainly game birds and mammals, of which the following speci-
 fically recorded: pigeon, chukor, snowcock, monal and other pheasants;
 nest young fed predominantly on crows, chiefly *Corvus macrorhynchos*. Also
 kills foxes, marmots, pine martens, hares, flying squirrels (*Petaurista* spp.),
 young bharal (*Naemorhaedus*), and fawns of musk deer (*Moschus*). Occasion-
 ally new-born lambs of domestic sheep and full-grown tahr (*Hemitragus*),
 the latter attacked on the edge of a cliff and hurtled to its death below
 (C. H. Donald). Hardly ever carrion.

VOICE AND CALLS. Normally very silent. A thin shrill yelp as of a dog,
 and 'barking cries' have been described.

BREEDING. *Season*, principally January to March; somewhat later at
 higher altitudes than at lower. *Nest*, a huge platform of sticks on a ledge of
 a cliff, but more usually in a deodar, juniper or such-like tree overhanging
 a steep precipice or growing out of a cliff-face in difficult and fearsome situa-
 tions. *Eggs*, almost invariably 2, white, marked with fairly large blotches,
 and freckles and spots of light reddish brown. One of the pair usually more
 darkly marked, the pale one with very faint lavender secondary markings.
 Average size of 10 Indian-taken eggs 77.1 × 61.7 mm. (Baker). Share of
 the sexes in the domestic chores and other details unrecorded in India. In
 Europe incubation mostly by female; period in wild state estimated as c.
 40 days (Witherby).

MUSEUM DIAGNOSIS. Primaries exceed secondaries by more than length of tarsus;
 in closed wing reach to within 3 cm. of tail-tip. Nostril elliptical, higher than broad.
 Hind claw much curved, enormous, over 63 cm. round curve (*vide* Donald). For
 detailed description of plumage and structure see Witherby 1939, 3: 41–2 for
 nominate race, from which *A. c. daphanea* differs only in being somewhat larger
 and paler.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	630–655	53–56	89–95	315–335 mm.
♀♀	660–700	58–60	95–105	350–365 mm. (Baker)

COLOURS OF BARE PARTS. Iris dark brown; eyelids yellow. Bill dark horn or
 bluish horn, black at tip; cere yellow. Feet yellow; claws horny black.

167. Imperial Eagle. *Aquila heliaca heliaca* Savigny

Aquila heliaca Savigny, 1809, Descr. Egypte, Ois., 82, pl. 12 (Upper Egypt)
 Baker, FBI No. 1747, Vol. 5: 69

Plate 26, fig. 7, Plate 27, fig. 7 and Plate 28, fig. 10

LOCAL NAMES. *Jūmiz*, *Bādd jūmiz*, *Satangal* (Hindi); *Frus* (Bengal).

SIZE. Vulture —; length c. 81–90 cm. (32–35 in.).

276

FALCONIFORMES

BREEDING. In view of past misidentifications, old breeding records not
 completely trustworthy. The only two dependable ones, both from Punjab,
 seem to be (1) from Hansi (February, Blewitt), (2) from near Jhelum
 (April, Rattray) when the incubating females were shot and identified.
 The nests were large compact masses of sticks and twigs built c. 6 and 9 m.
 respectively up in trees. *Eggs*, 2 (?), generally broad ovals, dull white
 scantily spotted and blotched with pale lavender-grey. Average size of
 eight 'Indian' eggs 70.9 × 54.6 mm. (Baker). No other information
 recorded.

MUSEUM DIAGNOSIS. As in No. 166, but toes somewhat shorter and hind claw
 markedly so — under c. 63 mm. round curve (*vide* Donald).

MEASUREMENTS OF Indian specimens

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	575–600	c. 54–55	c. 91–95	253–270 mm.
♀♀	605–630	c. 60–66	—	—
2♀♀ (Gujarat)	630–632	60–66 (from skull)	102–105	284–328 mm. (Baker) (SA)

A ♀ shot in Kohat weighed 8 lb. = 3630 gm. — Whitehead.

COLOURS OF BARE PARTS. Iris: adult, hazel or brownish yellow; immature, duller
 and browner. Eyeshade and eyelids yellow. Bill bluish horny, tipped blackish;
 cere yellow to greenish yellow. Legs and feet chrome-yellow; claws black.

168. Tawny Eagle. *Aquila rapax vindhiana* Franklin

Aquila Vindhiana Franklin, 1831, Proc. zool. Soc. Lond. pt. 1: 114
 (Vindhya Hills, central India)

Baker, FBI No. 1749, Vol. 5: 72

Plate 26, fig. 4, Plate 27, fig. 5 and Plate 28, fig. 8

LOCAL NAMES. *Okaab*, *Ragar* (Hindi); *Dhela* (Wagri); *Bursauwl* (Yerkali);
Alāwa, *Sālāwa* (Telugu); *Ali* (Tamil, for all eagles); *Parmar* (Sind); *Deshi jummas*
 (Gujarat).

SIZE. Pariah Kite +; length c. 63–71 cm. (c. 25–28 in.).

FIELD CHARACTERS. Our commonest and most widely distributed eagle
 in the plains. A heavy and extremely variable-coloured raptor ranging from
 dirty buff (almost whitish) to brownish black. Legs feathered down to toes.
 Tail rounded like vulture's but relatively longer. Wings long, reaching
 almost to tail-tip when bird at rest. Sexes alike; female larger.

In sailing flight wings held in line with body. Easily confused with the
 migratory Steppe Eagle (No. 169, q.v.), especially when the two whitish
 wing-bars of the latter are not conspicuous.

Whether, and to what extent, colour variability due to age is uncertain.
 Juvenile plumages in this and other eagles impossible to study without good
 series of fledged juveniles of properly identified parents actually collected
 from nest. This is a poser for Indian ornithologists.

STATUS, DISTRIBUTION AND HABITAT. Resident. W. Pakistan (Baluchistan,
 Sind, NWFP, Province), and the drier parts of the subcontinent. Nepal terai,
 Assam, and east to Bangladesh. South to N. Kanara and northern Tamil

HAWKS, VULTURES, ETC. 277

Nadu. Affects semi-desert and dry deciduous country, chiefly plains and plateaux.

Extralimital. North central Burma; dry parts.



GENERAL HABITS. Usually seen perched singly on a tree-top in the mids of ploughed fields, fallow land, or low scrub jungle. Often on the outskirts of villages at animal carcasses or scavenging at refuse dumps in association with vultures, kites, and crows, by the last of whom it is invariably chivvied. Like most eagles, performs spectacular aerobatics in the breeding season consisting of series of steep nose-dives and upsweeps. At crest of every wave, just when reversing to vertical with wings closed, utters a harsh grating kekeke. The display (by ♂?) often lasts for ten minutes or more at a time even when no mate participating. Obtains its food largely by piracy, chasing with speed and determination smaller hawks and falcons and bullying them into surrendering their lawful prize. Rarely also hunts small mammals or disabled birds. Has been observed to catch an unwounded Purple Coot (*Porphyrio*) and Florican (*Sypheotides*). On account of this pirating habit it sometimes becomes a nuisance to falconers, mistaking the jesses of a trained falcon for captured prey and chasing it till lost to sight and unrecoverable. Individuals occasionally take to habitual chicken-lifting, especially when feeding nest-young, and then become a serious menace to poultry keepers. Numbers roost collectively in groves of leafy trees in company with other raptors, e.g. Honey Buzzards.

FOOD. Small mammals, birds, and reptiles, mostly robbed from kites and other hawks; carrion and garbage. Among crop and stomach contents the following identified: Short-tailed Bandicoot (*Nesokia* sp.), Gerbille (*Meriones*), Grey Quail (*Coturnix*), Bush Quail (*Perdicula*).

VOICE AND CALLS. A variety of loud raucous cackles; a distinctive guttural kra as 'war cry' while in pursuit; a harsh grating kekeke in display flight. Fledged young in nest when hungry and calling for food utters loud cheeps like a two-month-old chicken separated from its mother hen.

BREEDING. Season, overall November to March/April, varying locally. Nest, a large platform of sticks and twigs, sometimes thinly lined with grass and leaves. Built at or near the top of a babool (*Acacia arabica*), kandi (*Prosopis spicigera*), sheesham (*Dalbergia sissoo*), peepul (*Ficus religiosa*) or similar tree, preferably standing by itself, often close to a village. Eggs, 2 or 3, white or greyish white with a few reddish brown spots and specks. Average size of 80 eggs 66.0 x 52.8 mm. (Baker). Both sexes share in nest-

HAWKS, VULTURES, ETC. 279

by a Swiss expedition in autumn 1952. The South Col would therefore seem to lie on one of the regular routes of this eagle across the Himalayas between its summer and winter habitats.

GENERAL HABITS. More closely resemble those of Imperial than of Tawny which usually occupies a somewhat different ecological niche—more wooded country. But the two often occur side by side in winter. Said to be more active in its hunting than Imperial; but living largely by piracy and carrion-eating.

FOOD. As in 167. Nothing specifically different recorded.

VOICE AND CALLS. Unrecorded.

BREEDING. Extralimital. Its alleged occasional breeding in India requires confirmation by actually nesting specimens.

MUSEUM DIAGNOSIS. Nostrils elliptical or ear-shaped, higher than broad. Two whitish bars on upperside of wings formed by pale tips to secondaries and greater coverts. Hindclaw about same size as in Imperial (35-45 mm.) but foot smaller and weaker. Considered by some authorities conspecific with *A. rapax*, q.v.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	510-595	50-56	85-89	250-290 mm.
♀♀	602-625	56-58	—	—

(Baker)

Tarsus of specimens in BNHS collection 2 ♂♂ 92-96; 4 o? (84) 92-98 mm. The South Col specimen (sex ?) measured: Wing 585; bill (from skull) 55; tarsus 98; hindclaw 35; tail 290 mm.

Weight of one from Punjab 3060 gm. (Whistler).

COLOURS OF BARE PARTS. Iris hazel to dark brown. Bill black; cere deep yellow. Legs and feet dull yellow or greenish yellow to bright yellow; claws black (Baker).

170. Greater Spotted Eagle. *Aquila clanga* Pallas

Aquila Clanga Pallas, 1811, Zoogr. Rosso-Asiat., 1: 351 (Russia and Siberia)

Baker, FBI No. 1750, Vol. 5: 74

Plate 26, fig. 3, Plate 27, fig. 3 and Plate 28, fig. 7

LOCAL NAMES. *Kāljāngā* (Hindi); *Nālla gāddā* (Telugu).

SIZE. Kite+; length c. 64-72 cm. (c. 25-28 in.).

FIELD CHARACTERS. A very dark eagle without whitish head seen in the vicinity of a jheel is pretty certain to be an adult Greater Spotted.

Adult. Above, dark blackish brown with purplish or maroon reflections on mantle. Usually a little white visible in upper tail-coverts, and sometimes minute white specks on body and wings (due to white bases of feathers showing through). Below, slightly paler. Sexes alike; female larger.

In sailing flight wings held in line with body with the tips slightly downcurved. Two pale bands visible on upper side of wings. But indistinguishable with certainty in the field from adult Lesser Spotted except when upper tail-coverts are pure white; dingy white may apply to both species.

Young (immature). Above, dark blackish brown sometimes with paler crown and nape due to buff tips to the feathers. Back and wings sparsely

278 FALCONIFORMES

building and feeding young; evidently female alone incubates and is a close sitter. Incubation period unrecorded.

MUSEUM DIAGNOSIS. Usually distinguishable from Steppe Eagle (169) by somewhat smaller size and absence of the two whitish bars on upper side of wing (tips of secondaries and greater coverts). But in borderline cases there seems to be no character by which the two can be told with certainty; hence considered conspecific by some authorities.

Chick (in down). 'Prepennae and preplumulae present—white, sparse on cere and round orbit, otherwise completely covering body. Preplumulae make up the bulk of the down. Iris bluish brown; bill dull black; cere, gape and legs yellow' (C. B. Ticehurst).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	500-535	c. 48-51	80-87	242-258 mm.
♀♀	510-560	48-56	84-91	242-285 mm.

(Baker and SA)

COLOURS OF BARE PARTS. Adult. Iris yellow-brown. Bill horny black, plumbeous at base of lower mandible; cere and gape lemon-yellow. Feet yellow; claws black. (One in very pale buff plumage had the cere ivory white.)

169. Eastern Steppe Eagle. *Aquila rapax nipalensis* Hodgson

Aquila nipalensis Hodgson, 1833, Asiat. Res., 18(2): 13, pl. 1 (Nepal)

Baker, FBI No. 1748, Vol. 5: 70

Plate 26, fig. 5, Plate 27, fig. 4 and Plate 28, fig. 6

LOCAL NAMES. *Jūmiz* (Hindi); *Cong-au* (Lepcha).

SIZE. Kite+; c. 76-80 cm. (30-32 in.).

FIELD CHARACTERS. Very similar to the Tawny Eagle (168) and like it variable in coloration, ranging from deep blackish brown to pale, almost buffish brown; often with a rufous patch on nape. Usually two diagnostic pale bars on upper as well as underside of wings formed by whitish tips of secondaries and coverts. Connexion, if any, between colour phases and age not properly understood.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor. Common in W. Pakistan, Nepal and N. India, wandering south at least to the Bombay Deccan, east to S. Orissa (to c. 22°N. lat.). Said to occur uncommonly in Assam. E. Pakistan(?). Affects open treeless country in its breeding range; more or less the same biotope as Imperial and Tawny in its winter quarters.

Extralimital. 'Breeds from the Altai to Mongolia and SE. Siberia, south to NW. India and Himalayas[?]. Winters to India and S. China' (Peters).

MIGRATION. Donald shot one on a high pass in Bashahr (Himachal Pradesh) in October where southward migration was in progress. The 1960 Indian Mt Everest Expedition found three large eagles lying dead on the South Col c. 7925 m. (26,000 ft.) altitude on 23 May, which had obviously perished while on passage over this difficult pass. One of these was brought down to the Bombay Natural History Society and identified as this species. Another eagle, possibly also Steppe, had been found dead in the same pass

280 FALCONIFORMES

streaked and spotted with buff or white. Rump pale brown; upper tail-coverts whitish, showing up prominently in flight as a broad crescentic patch above base of tail. Below, dark brown broadly streaked with buff.

'Separable from immature Lesser Spotted Eagle (171) by darker coloration with more pale spots and streaks on upperparts, and (usually) more distinct white crescent above base of tail.

Many confusing intermediate colour phases between the above two, presumably according to age.

STATUS, DISTRIBUTION AND HABITAT. Resident and breeding in W. Pakistan (Baluchistan, Sind, Punjab) and N. India (Gangetic Plain). Nepal (lowlands), east through Bihar, W. Bengal, and Assam. Manipur; E. Pakistan. South to about 22°N. lat. (Khandesh, N. Gujarat, etc.). Wandering south in the Peninsula in winter when population augmented by influx of migrants. No recent records from the Carnatic and Malabar coasts where a hundred years ago Jerdon (1862) described it as 'tolerably common'. This change in status doubtless due, as noticeable even today, to altering ecological conditions, natural or man-made, the Greater Spotted—a predominantly water- and marsh-linked eagle—being particularly vulnerable to draining and marsh reclamation. A specimen taken at Londa, N. Mysore (15°31'N., 74°32'E., Koelz c. 1941), is perhaps the southernmost recent record in the Peninsula. Absent in Ceylon. Restricted to well-watered tracts; affects the neighbourhood of jheels, canals and marshes.

Extralimital. 'Breeds in European Russia from lat. 60°N. south to the Balkan States; east through Turkestan, S. Siberia and Transbaikalia to Amurland, south to NW. India and N. China. Winters south to NE. Africa, India and S. China' (Peters).

GENERAL HABITS. Keeps to well-wooded, well-watered tracts with perennial rivers, canals, swamps, and jheels. Usually perched singly on a tree-top, stump, or canal bank on the look-out for prey. Heavy movements much resemble a buzzard's. Flight less sluggish than Tawny Eagle's, and though largely a frog-eater it also actively hunts waterfowl such as coots and moorhens. The usual method with coots is first to stampee a compact herd floating on the water by swooping low over ('buzzing') it and scattering the birds. While some of the coots patter away and others dive, the eagle repeats the attack again and again until it has managed to isolate one individual. It stoops on the quarry repeatedly whenever it surfaces for breath, and after maybe a number of unsuccessful assaults pounces on it like a hurricane immediately the harassed bird breaks the surface again, and leisurely bears it away in its talons.

FOOD. The following items have been recorded: frogs (mainly), fish, chameleon, *Coleles* lizard, Purple and Indian Moorhens (*Porphyrio* and *Gallinula*), Coot (*Fulica*), Tree Pie (*Dendrocyitta vagabunda*), Kingfisher (*Halcyon smyrnensis*)—complete head with bill in stomach! Frequently makes off with waterfowl falling to a sportsman's gun with great audacity.

VOICE AND CALLS. A wild, clanging jeb, jeb, jeb (Pallas) frequently uttered from a tree-top.

BREEDING. Season, mainly April to June, but may begin a month or two earlier. Nest, the usual massive circular platform of sticks and twigs, the central depression lined with a few leaves. Normally built at or near the

HAWKS, VULTURES, ETC.

281

top of a tree 10 to 15 metres up, standing by itself or in a clump in open marshy or pasture land. Eggs, 1 or 2, broad ovals, white, sometimes faintly freckled with reddish or blotched with grey or reddish grey. Average size of 72 eggs (including European) 68.3 × 54.1 mm. (Baker). Shape of the sexes in the domestic chores, and incubation period, unrecorded.

MUSEUM DIAGNOSIS. Nostrils round; as high as broad. 7th primary (as.) usually less than 6 cm. shorter than longest. Outer web markedly narrowed and steeply notched near tip. For description of plumages etc. see Witherby 1939, 3: 45-6.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	486-501	45-50	103-106	240-260 mm.
♀♀	542-565	48-52	—	250-276 mm. (Baker)

It is uncertain whether extralimital birds are included above. Specimens recently collected in India measure:

	Wing	Bill (from skull)	Tarsus	Tail
2 ♂♂	485-500	47-53	85(1)	227-242 mm.
4 ♀♀	514-545	52-55	90-110	242-272 mm. (SA)

COLOURS OF BARE PARTS. Iris brown. Bill slaty blue, black at tip of both mandibles, paler or greenish yellow near gape; cere greenish sulphur-yellow. Feet dull sulphur-yellow; claws black.

171. Lesser Spotted Eagle. *Aquila pomarina hastata* (Lesson)

Morphnus hastatus Lesson, 1834, in Bélanger, Voy. Ind.-Orient., Zool.: 217 (Bengal)
Baker, FBI No. 1751, Vol. 5: 75
Plate 26, fig. 2 and Plate 27, fig. 2

LOCAL NAMES. *Gūtīmār* (= 'cocoon destroyer' in Bengal); *Pahāri teesa* (Hindi); 'Longlegged Eagle' of Jerdon.

SIZE. Kite; length c. 61-66 cm. (24-26 in.).

FIELD CHARACTERS. A large blackish brown or dark chocolate-brown eagle.

Adult. Slightly smaller but indistinguishable in the field with certainty from Greater Spotted (170). Both may have dingy white upper tail-coverts, but Lesser never has them pure white as is diagnostic of typical examples of *A. clanga*. Difference in ecology usually a more dependable guide. Greater Spotted never met away from water; Lesser normally in open wooded country.

Young (immature). Separable from immature Greater Spotted (170) by somewhat less dark coloration, with the paler spots and streaks on upper plumage smaller and fewer.

Also found in many puzzling intermediate colour stages.

STATUS, DISTRIBUTION AND HABITAT. Rare resident in Saurashtra and the western side of the Peninsula south to Bombay. Comparatively rare wherever it occurs, viz. chiefly the Gangetic Plain east through Bihar, Bengal, and Bangladesh; south to Madhya Pradesh and Orissa. How much further

HAWKS, VULTURES, ETC.

283

In the race *hastata* adult similar to nominate *pomarina* though somewhat slimmer: crown and upper wing-coverts same colour as back; underside with distinct dark shaft stripes. Immatures of the two readily separable. In *hastata* crown and nape feathers only tipped with rufous (not streaked); likewise lesser wing-coverts. Upper tail-coverts distinctly cross-barred (Hartert).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	470-505	40-43	100-104	230-248 mm.
♀♀	493-508	48-52	—	— mm. (Baker)

COLOURS OF BARE PARTS. Iris brown. Bill slaty blue, black at tip of both mandibles; cere and gape yellow. Feet dull yellow; claws black.

Genus *ICTINAEETUS* Blyth

Ictinaetus Blyth, 1843, Jour. Asiat. Soc. Bengal, 12: 128. Type, by monotypy, *Ictinaetus orivorus* Blyth = *Aquila pennigra* Hodgson

Tarsi feathered to toes. Shape of foot peculiar and diagnostic. Outer toe and claw very small. The other toes also short, inner toe stouter, but nearly equal in length to middle toe. Claws less strongly curved than in other genera of eagles. Inner claw longest, longer even than hind claw. Bill rather small; edge of upper mandible almost straight. Nostrils broadly oval and oblique. Wing long; 5th or 6th primary (as.) longest; first primary a little longer than secondaries. Tail long, somewhat rounded.

The genus contains a single Indo-Malayan species.

172. Black Eagle. *Ictinaetus malayensis penniger* (Hodgson)

Aquila Pennigra Hodgson, 1836, Jour. Asiat. Soc. Bengal, 5: 227 (Nepal)
Baker, FBI No. 1755, Vol. 5: 83

Plate 26, fig. 1 and Plate 27, fig. 1

LOCAL NAMES. *Laknanghang* (Lepcha); *Hugong* (Nepal); *Ādāri nālla gā'āi* (Telugu); *Kūzhūgū* (Tamil); *Daoling gashim* (Cachari); *Karimparundu* (Malayalam).

SIZE. Kite +; length c. 69-81 cm. (27-32 in.).

FIELD CHARACTERS. A large black eagle, with wings reaching to end of tail at rest. Superficially confusable with melanistic form of Changeable

282

FALCONIFORMES

south is uncertain since not obtained by the recent scientific bird surveys in Andhra, Madras, Mysore or Kerala. Absent in Ceylon. There is an old specimen from Kotagiri, Nilgiri Hills, from the Hume Collection in the British Museum, and another recorded as shot off a nest in Mysore by J. Davidson some 70 years ago. In Assam it occurs (*vide* Baker) north and south of the Brahmaputra river, and also in Manipur. Affects wooded country, chiefly plains, with open expanses and cultivation, *contra* the Greater Spotted which is restricted to the neighbourhood of jheels and marshes; to confound the observer, however, it is sometimes also found side by side with the latter!

Eagles are notoriously difficult birds to identify in the field, and often even in the hand, without experience and adequate comparative material. There has undoubtedly been a great deal of confusion in their identification and distributions in the past, which partly persists today. Therefore all records unsupported by specimens, except in the case of very common and well marked species, must be treated with caution.

Extralimital. N. Burma (needs confirmation).

GENERAL HABITS. Not markedly different from *A. clanga* (170) except that it is not so narrowly dependent on jheels and marshes. A courtship display of nose-dives and upsweeps — of a pattern common to many raptorial birds, e.g. Tawny Eagle q.v., has been described for the nominate race in Europe (H. Siewert 1932, *Jour. Orn.*: 9-10). Prey is largely captured on the ground while the bird saunters about in the open in its search, bill pointing intently downward. It is seized in the claws.

FOOD. Frogs, lizards, young or weakling birds, field rats and mice, etc. Apparently silkworm pupae from cocoons largely eaten in Bengal. Has been observed purposefully tearing open the globular nests of Pied Mynas (*Sturnus contra*) to get at the young. Often lives by piracy, chasing and bullying Pariah Kites into jettisoning their lawful prize.

VOICE AND CALLS. 'A very high-pitched cackling laugh' (Baker). Nothing else specifically recorded.

BREEDING. Season, April to July, the majority of birds apparently laying in May. Nest, a large platform of sticks and twigs, some with leaves attached — of the typical eagle pattern. Built between c. 10 and 25 m. up in a large tree — simul (*Salmalia*), sal (*Shorea*), mango (*Alangifera*), peepul (*Ficus*), and such-like — either standing by itself or one of a clump in cultivated country, often near a village. Eggs, normally 1, sometimes 2, rarely 3. Similar to those of *A. clanga* (170) but readily distinguished by smaller size and richer marking; also resembling Tawny Eagle's, q.v. Average size of 22 eggs 63.8 × 49.8 mm. (Baker). Both sexes share in the domestic chores; the male chiefly collecting material and foraging, the female building the nest and feeding the young. Incubation by female alone; period c. 42-44 days (in nominate race *vide* Siewert). Circumstantial evidence (as yet unproven) that if disturbed at nest, e.g. by man climbing up, the bird will transfer its eggs to an alternative old nest in the vicinity.

MUSEUM DIAGNOSIS. As in *A. clanga* nostrils round; as high as broad. Differs from it by smaller size and slenderer bill, less high at base. 7th primary (as.) usually more than 6 cm. shorter than longest, with its outer web only slightly narrowed and notched near tip, *contra* in *A. clanga*, q.v.

284

FALCONIFORMES

Hawk-Eagle (160), but its much broader-wings are a leading clue. Mostly seen in flight when black plumage, narrowly grey-barred tail — longer than most eagles' — and bright yellow cere and feet are diagnostic. Wings very long and broad with rounded tip and exceptionally widely splayed and upturned primaries. Sexes alike; female larger.

At a distance, in sailing flight, outlines reminiscent of Golden Eagle — broad wings held in a wide V above line of back. When overhead a pale patch on dark underside of wings conspicuous, as also is, at close range, a white patch under the eye.

Young (immature). Above, paler brown stippled with buffy brown on head, nape, and neck. Upper tail-coverts fringed with white. Below, throat and breast with oval drops of fulvous-brown. Abdomen and flanks dark-streaked.

STATUS, DISTRIBUTION AND HABITAT. Resident. Widely but patchily distributed in evergreen and moist deciduous forest biotope; foothills and up to c. 2700 metres altitude in the Himalayas, and c. 2000 m. in the peninsular hills. From W. Pakistan (Murree, Rawalpindi dist.), through Himachal Pradesh and Nepal to E. Assam, E. Pakistan (?), W. Bengal, Orissa, E. Ghats in Andhra and Madras (including Shevaroy Hills), Madhya Pradesh (Hoshangabad and Bastar dists.). Ceylon and the W. Ghats strip from Kanyakumari northward at least to Goa and N. Mysore (including the Nilgiri and Palni Hills). Well documented sight records from Gujarat (Jambughoda, c. 22°26'N., 73°48'E.) and from within a 50 km. radius of Bombay City.

Extralimital. Burma (Chin Hills and Tenasserim), Thailand, Malay Peninsula. The somewhat smaller nominate race occurs in Java, Sumatra, Borneo, Celebes, and Sula Islands.

GENERAL HABITS. Partial to hill forest. Usually seen in pairs sailing gracefully and effortlessly on the enormous outspread wings within a foot or two above the forest canopy or gliding expertly in and out among the boles and foliage of the lofty trees, side-slipping and diving to avoid obstructions. The exceptionally widely splayed and upturned primaries function as ailerons and enable sailing at very low air speeds over and through the tree-tops while methodically searching for birds' nests — eggs and nestling birds forming an important part of its dietary. It has been observed flying off with entire nests of small birds in its claws examining the contents while sailing lazily away. The peculiar foot is believed to have some adaptive significance for nest robbing. Nearer the ground its hunting is very much like a harrier's — sailing on motionless wings up and down along the contours of a grassy hillside, peering intently below for movement, checking suddenly and turning upon itself when opportunity offers, and dropping into the grass to seize the quarry.

In the breeding season pairs indulge in impressive aerial displays, plunging with wings held down and forward, circling round each other and mutually stooping with wings folded to tail-tip, at astounding velocity. These manoeuvres are accompanied by shrill yelping cries.

FOOD. Large insects, frogs, lizards, rodents, birds — sometimes reportedly kills junglefowl and pheasants. But chiefly birds' eggs and nestlings. Among crop and stomach contents specifically recorded are: nestlings and incubated

eggs of *Garrulax* spp., eggs of *Perdica erythrorhynchos*, *Turdoides* spp., *Streptopelia* spp., small bats (sp. ?) and in one case 'six or more young field mice'.
VOICE AND CALLS. Normally silent. Shrill yelping cries uttered while darting and swooping at each other in aerial courtship — *kíp, kíp, kíp* or *kee, kee, kee* slowly repeated.
BREEDING. Season, mainly November to March in South India; apparently between January and April in the north. Curiously enough nesting not yet recorded in Ceylon. Nest, a rather neat and compact platform of sticks and twigs lined with green leaves. Built high up in a lofty tree in evergreen hill forest between c. 300 and 1200 metres altitude, usually hidden by the foliage. As in several other eagles, e.g. *Lophotriorchis* (1965), sometimes has two alternate nests, a short distance from each other, repaired and used irregularly in successive years. Eggs, normally a singleton, very rarely 2, broad oval in shape, handsome and variable in coloration. Most commonly whitish or pinkish in ground colour, finely and densely stippled with pale brick-red. Average size of 22 eggs 62.7 × 49.9 mm. (Baker). Although usually keeping in pairs and seemingly paired for life, if one bird is killed the survivor secures a new mate within a surprisingly short time. Share of the sexes in the nesting activities, period of incubation and other details unrecorded.

MUSEUM DIAGNOSIS. As for the genus. A whitish area, including upper throat, from base of bill to around eyes and behind ear-coverts. Chin and gular stripe black.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	520-523	37-38	69-73	285-312 mm.
♀♀	538-568	—	—	(Baker)

It is clear that Baker's measurements (above) refer only to the smaller South Indian and/or Ceylon birds. Specimens from Ceylon in the British Museum give:

	Wing	Bill (from feathers)	Tarsus	Tail
2 ♂♂	543, 547	40, 40.5	30, 30	303, 307 mm.
1 ♀	558	43	33	312 mm.
2 o?	522, 538	39, 40.5	28.5, 30	295 (1)mm.

As against this 4 specimens recently collected by Biswas in Nepal measure:

	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂	563-580	40-43	—	315-326 mm.
1 ♀	600	46	—	350 mm.

and six specimens from Sikkim and Dhutan:

	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂	563-576	42(1)	94(1)	379(1) mm.
3 ♀♀	580-610	48(1)	86(1)	335(1) mm.

Wing span 1 ♀ 187 cm.
Weight 1 ♂ 1000, 1 ♀ 1600 gm. (SA).

COLOURS OF BARE PARTS. Iris dark brown. Bill greenish- or plumbeous-horny with black tip; cere and gape yellow. Legs yellow; claws black.

water; only rarely by plunging. But will also take duck and small mammals on occasion; and carrion. One has been recorded frequenting a rubbish dump near Quetta Cantonment.

VOICE AND CALLS. A low yelping noise reminiscent of a puppy dog (T. J. Roberts).

BREEDING. Extralimital.
MUSEUM DIAGNOSIS. Feathers of hindneck and breast long lanceolate, but not forming a ruff as in *H. leucopyphus*. Upper tail-coverts very long and broad. For details of plumages, structure, etc. see Withersby 1939, 3: 93-5.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	593-632	c. 61	c. 85	285-325 mm.
♀♀	640-686	c. 65	—	318-352 mm.

(Baker)

COLOURS OF BARE PARTS. Iris, adult yellow, imm. brown. Bill and cere yellow; browner in young birds and blackish brown in the youngest. Feet yellow (Baker).

173. **Whitebellied Sea Eagle.** *Haliaeetus leucogaster* (Gmelin)
Falco leucogaster Gmelin, 1788, Syst. Nat., 1(1): 257
(Prince's Island, Indonesia, designated by Stresemann, 1950, Auk, 67: 82)
Baker, FBI No. 1778, Vol. 5: 111
Plate 14, fig. 1 and Plate 15, fig. 6

LOCAL NAMES. *Kohassa* (Hindi); *Sāmp mār* (in Orissa); *Āla gāddā* (Telugu); *Kāddā āli* (Tamil); *Muhudu rajaliya* (Sinhala); *Kānkan* (Kanara and Konkani); *Muttayya* (in Car Nicobar). Greybacked Sea Eagle of Jerdon.

SIZE. Kite +; length c. 66-71 cm. (26-28 in.).
FIELD CHARACTERS. A large, handsome eagle, ashy brown above with pure white head, neck, underparts, and terminal third of tail. Sexes alike; female larger.

In overhead aspect the broad blackish border on trailing edge of white underwing, and white wedge-shaped tail, are diagnostic features. In sailing flight wings held in a wide V above line of back. At rest, closed wings reach end of tail or a little beyond.

Young (immature). Dark brown with head and neck fulvous (almost whitish). Wedge-shaped tail white or whitish, with the terminal portion brown but pale tipped. Upper breast brown; rest of underparts fulvous or rufous-white, mixed with brown.

STATUS, DISTRIBUTION AND HABITAT. Resident. The seaboard and offshore islands from about the latitude of Bombay (c. 19°N.) down the west coast and up the east to E. Pakistan. Laccadive Is., Ceylon, Andaman and Nicobar Islands. Affects sea coast, and tidal creeks and estuaries. Occasionally met a few miles inland along tidal rivers and at freshwater lakes. A vagrant in Gujarat, one recorded near Ahmedabad c. 80 km. inland from sea coast, and another at the mouth of Shatrungi river, Saurashtra.

Extralimital. Coasts of Burma, Malay Peninsula and Archipelago east to Australia, Tasmania and W. Polynesia (Peters).

GENERAL HABITS. Usually seen in pairs or singly, perched upright on a fishing stake or islanded rock or tall tree overlooking the sea, or sailing majestically along the shoreline beyond the surf zone. From a height of

Genus *HALIAEETUS* Savigny

Haliaeetus Savigny, 1809, Descr. Egypte, Ois., 1: 68, 85. Type, by monotypy, *Haliaeetus* *minor* Savigny = *Falco albicilla* Linnaeus

Bill stout; culmen straight at base, then greatly curved; festoon generally well marked but variable. Nostrils rounded. Wings very broad; primaries comparatively little longer than secondaries. 3rd primary (as.) longest; 4th and 5th only slightly shorter. Tail rounded or wedge-shaped. Tarsus stout, moderately long; 1/8 to 1/4 feathered in front; rest scutellated in front and on toes, reticulated elsewhere. Claws grooved underneath.

Genus almost cosmopolitan, absent in S. America. Three species in Oriental Region.

Key to the Species

A	Tail all white.....	<i>H. albicilla</i> (ad.)	Page 286
B	Tail brown with white end.....	<i>H. leucogaster</i> (ad.)	287
C	Tail brown with a white cross-band.....	<i>H. leucopyphus</i> (ad.)	289
D	Tail variegated and mottled brown and white.....	1	
1	Head nearly always lighter than back.....	<i>H. leucogaster</i> (juv.)	287
	Head and back similar in colour.....	a	
a	Feathers of breast lanceolate but no ruff.....	<i>H. albicilla</i> (juv.)	286
	Feathers of breast lanceolate with distinct ruff.....	<i>H. leucopyphus</i> (juv.)	289

172a. **Whitetailed Sea Eagle.** *Haliaeetus albicilla* (Linnaeus)

Falco albicilla Linnaeus, 1758, Syst. Nat., ed. 10, 1: 89 (Sweden)
Baker, FBI No. 1777, Vol. 5: 110
Plate 14, fig. 4 and Plate 15, fig. 8

LOCAL NAMES. None recorded.
SIZE. Kite +; length c. 69-86 cm. (27-34 in.).

FIELD CHARACTERS. A huge dark brown eagle with paler (whitish) head, neck and upper breast, and shortish distinctive white wedge-shaped tail. Sexes alike; female larger.

In overhead aspect the very broad wings, and comparatively short tail give a vulture-like appearance, but shape and colour of tail diagnostic.

Young (immature). Variable dark brown. Pale fulvous bases of feathers showing through, especially on underparts which look fulvous broadly streaked with dark brown. Tail mottled and edged with brown.

STATUS, DISTRIBUTION AND HABITAT. Casual winter visitor to Pakistan — Baluchistan, Sind, Punjab, NWFP. For specific occurrences see Roberts & Savage, 1969, JBNHS 66(3): 619-21. Recorded also in Himachal Pradesh (Kulu, Donald); Kutch (Mundra, Himmatsinhji, 1970, ibid. 67(2): 330); and Rajasthan (Bharatpur, Duke *et al.*, ibid. 72(1): 199). Essentially a sea eagle but wanders from the coast up large rivers and to jheels and inundations.

Extralimital. 'Breeds in Greenland, Iceland, northern British Isles (formerly), N. Europe and Asia east to Anadyr and Kamchatka south to the eastern Mediterranean (formerly Egypt and the Red Sea), Iraq, Iran, and Japan. Casually or in winter to N. Africa, NW. India, S. China and Aleutian Islands' (Peters).

GENERAL HABITS. Sluggish. Will sit hunched up and inert for hours together on a stump or on ground at edge of water. Lives largely on fish which is scooped up in its talons from near the surface while sailing close above

15 or 20 metres, with wings pulled in, a bird will stoop at tremendous speed and cleanly pick up in its stride a sea snake or fish from near the surface, its feet seeming hardly to touch the water before it deftly rises again with the quarry dangling from its talons. It is carried to a favourite branch or rock — strewn with bones of sea snakes and fish and whitened with evidences of numerous past meals — and torn to pieces and devoured. Does not plunge for fish like osprey. In the non-breeding season the old nest frequently serves as dining table, larder, and refuse dump, the leavings providing an excellent index to the ornithologist of the food items and their abundance at any particular time and place. In courtship, pairs indulge in the same pattern of aerobatics common to many birds of prey — stooping playfully, somersaulting, side-slipping, looping-the-loop and similar antics. Pairs keep together throughout the year, and roost on or near the traditional nest tree.

FOOD. Predominantly sea snakes (Hydrophiinae); largely also fish, some of considerable size. Reported to take crabs, rats, and any living thing it can catch, besides dead fish cast overboard from fishing boats. When feeding nest-young occasionally becomes a serious chicken robber near fishing villages; recorded carrying off a domestic duck and a striped piglet.

VOICE AND CALLS. Very noisy during breeding season. At this time, particularly just prior to copulation, the female utters a loud, nasal, metallic *kānk-kānk-kānk-kānk*, etc. the male responding with a shorter quick-repeated *ken-ken-ken-ken*, etc. (up to ten times) and continued for over three minutes or more with short breaks; this in an uneven duet. Female also utters *kānk-kānk-kānk* during copulation, now rather long drawn and slower in tempo, ending up ecstatically as in young koel (*Eudynamis*) receiving food from fosterer. Whether calls of male and female different, or common but dependent on context and occasion, uncertain. A single loud nasal clang also uttered from time to time reminiscent of Black Ibis's call (*Pseudibis papillorotus*), but louder.

BREEDING. Season, October to January. Nest, an enormous platform of sticks and twigs, often 1-25 to 1-50 metres across and some 50 to 75 cm. thick, the result of repairs and annual accretions. Placed 10 to 50 metres up in lofty trees such as casuarina growing on the coast or on an off-shore islet; sometimes directly on a rocky stack in the sea. Usually a single pair with a vast territory, but not uncommonly several pairs and nests on the same small island. The same nest and site are used year after year, sometimes becoming traditional and legendary, and occupied by 'the same' pair for 50 years and more. It is not known how the tenancy of a nest passes from one pair to its successor when the need arises. Nor where the young disperse after fledging, since local populations do not show any appreciable fluctuation. Evidently infertility in eggs is high and mortality among nestlings heavy. Eggs, almost invariably 2, broad to longish white ovals, unmarked. Average size of 32 eggs 77.7 × 53.4 mm. (Baker). Both sexes share in

HAWKS, VULTURES, ETC.

289

building and repairing the nest; apparently the male does some of the incubating as well. Period unrecorded.

MUSEUM DIAGNOSIS. No lanceolate feathers on breast or hindneck. Legs exceptionally powerful. Adult: tail brown with broad white ending. Immature: tail variegated and mottled brown and white. Head nearly always lighter than back.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	526-589	c. 48-55	c. 92-99	208-260 mm. (Baker)
♀♀	588-606			

COLOURS OF BARE PARTS. Iris hazel-brown. Bill dark leaden; cere paler bluish grey. Legs and feet pale yellowish white to greyish white; claws darker.

174. Ringtailed or Pallas's Fishing Eagle. *Haliaeetus leucoryphus* (Pallas)

Aquila leucorypha Pallas, 1771, Reise Versch. Prov. Russ. Reichs, 1: 454
(Lower Ural river)

Baker, FBI No. 1779, Vol. 5: 112.

Plate 14, fig. 5 and Plate 15, fig. 9

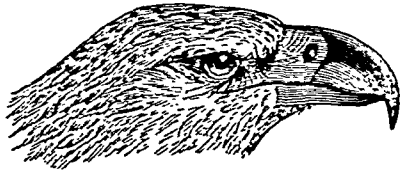
LOCAL NAMES. *Machharang*, *Machhmanga*, *Dhank*, *Patras* (Hindi); *Koral*, *Machhal* (Bengal); *Kankam* (Nepal); *Kural haaz* (Sind); *Kokna*, *Ugur* (C. India and on the Ganga at Rajmahal); *Sorail*, *Koolais* (local in Bihar).

SIZE. Kite+; length c. 76-84 cm. (c. 30-33 in.).

FIELD CHARACTERS. A large dark brown eagle with pale golden brown head and neck, and a broad white subterminal band across rounded (not wedged-shaped) tail, particularly conspicuous in flight though tail seldom spread out, and appearing rather narrow. Sexes alike; female slightly larger.

When sailing, wings held in same plane as body, the tips of the primaries slightly downcurved.

Young (immature). Dark brown, the wing quills and tail (unbanded) very dark. Ear-coverts dark. Underparts paler and greyer.



x.c.1

STATUS, DISTRIBUTION and HABITAT. Resident and partly migratory—W. Pakistan and N. India up to c. 1800 m. alt. in the Himalayas, from Kashmir, Himachal Pradesh, Punjab, Nepal (Valley and lowlands) through the Gangetic Plain east to Assam and E. Pakistan, south to a line roughly from Surat (21°10'N.) to Gopalpur (19°20'N.) south of Chilka lake in

HAWKS, VULTURES, ETC.

291

prize. At large breeding heronries, e.g. Keoladeo Ghana, Bharatpur, obtains good and easy living by marauding nests of white ibises, openbill storks, etc. Young darters (*Anhinga*) when half to three-quarters grown are particularly relished, the eagle sailing leisurely over the nest trees and picking its choice of the fat squabs. Every time it sails or skims over the nest colony the adults set up a chorus of deep long-drawn grunting 'alerts' which sounds like a continuous roar heralding the marauder's progress. At the same time all the birds train their bill-points at the eagle as if to ward off the threatened onslaught. Also works havoc among flightless young terns in river-bed colonies. In winter subsists largely on immigrant coots, making constant raids on the swimming herds and scattering them. Its strategy is to isolate one individual and stoop on it repeatedly as it surfaces for breath until it is exhausted and can be seized and borne away hanging limply from the talons. Occasionally both birds of a pair will take turns in this process of attrition. Has been observed to sit on a struggling victim in shallow water for some minutes in a seemingly deliberate attempt to drown it.

FOOD. Chiefly fish, but also water-birds such as coots and purple moorhens. Wildfowl as large as Barheaded Goose falling to a sportsman's gun snatched from almost under his nose. Sometimes even large uninjured birds like Demoiselle crane are killed. Snakes, frogs, mud turtles and carrion also recorded, and in one case an entire dead cat was carried off. In a nest near Hardwar (U.P.), B. B. Osmaston found three young eaglets together with the arm of a man, doubtless off a corpse floating in the Ganges. Takes heavy toll of young geese (*Anser indicus*) in Ladakh.

VOICE and CALLS. Loud, far-carrying raucous shrieks very like the creaking of the unoiled wooden block tackle of a village well. Reminiscent of 'a hoarse Pekinese barking and very similar to the call of the Whitetailed Sea Eagle, *H. albicilla*' (P. I. R. MacLaren). At very close range, a preliminary low croaking audible; also another note exactly like a hen clucking to her chickens only repeated rhythmically (H. A. F. Magrath).

BREEDING. Commonly to c. 1800 m. alt. in the Himalayas, and more or less wherever found in the plains. *Season*, October to February; mainly November, December, January. *Nest*, a huge stick platform as of No. 173 usually lined with green leaves. Built c. 15 to 35 metres up in a large simul (*Salmaal*), peepul (*Ficus*), chenar (*Platanus*) or other tree, or *Borassus* or coconut palm standing in or near a swamp, river, or lake often on village outskirts. *Eggs*, 2 to 4, usually 3, white, unmarked. Average size of 60 eggs 69.7 x 55.1 mm. (Baker). Both sexes share in building the nest and incubation. Period unrecorded. Both parents forage for and feed the young.

MUSEUM DIAGNOSIS. Adult, with a well-marked ruff of lanceolate feathers. Tail brown with a white cross-band c. 10 cm. broad, c. 8 cm. up from the end. Immature: Feathers of breast lanceolate; with a distinct ruff. Tail variegated and mottled brown and white.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	555-578	50-55	100-103	271-275 mm.
♀♀	558-598	59-62	98-106	274-291 mm. (Baker)

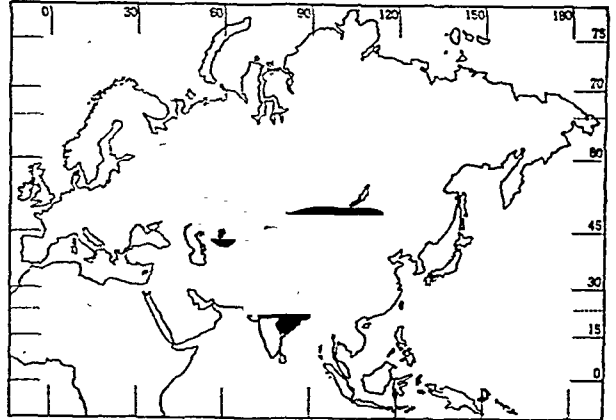
290

FALCONIFORMES

Orissa. Affects the neighbourhood of large rivers, tidal creeks, and inland lakes and jheels.

Extralimital. 'S. Russia through C. Asia to Transbaikalia and south to the Persian Gulf, N. India and N. Burma' (Peters).

MIGRATION. No specific data, but from the large numbers to be seen in summer in the treeless Kailas-Manasarovar region of W. Tibet, dotted about the meandering streams and bogs (Sálim Ali, JBNHS 46: 304) it is reasonable to surmise that these eagles migrate for reproduction purposes to our area. Suitable conditions for this include not only tree sites but also a plentiful fish supply for the young, which is unlikely to be obtainable in Tibet in winter due to freezing of the streams. According to Biswas it is very common and conspicuous [breeding] about the 'Salt Lakes' near Calcutta between October and April, but disappears during the hottest months, about May to September. This is good corroborative evidence.

Haliaeetus leucoryphus

Overall range

GENERAL HABITS. Normally seen perched on a mound, fishing stake or tree-top by a jheel, or on a sandbank in a river, or sailing aloft in wide circles uttering its loud creaking call from time to time. Particularly noisy during the breeding season when pairs indulge in aerobatics of the typical raptor pattern. Hunts fish by hurling itself on one near the surface and carrying it off in its talons. Does not plunge in like Osprey. Sometimes fish of large size are struck—once one weighing 6 kg. Being unable to lift such heavy weights clear, the bird is obliged to drag the quarry along the water till it can be beached on a shelving bank, and there devoured. Also obtains its food by pirating on ospreys, Brahminy kites, and marsh harriers, attacking and chasing them with determination and depriving them of their lawful

FALCONIFORMES

292

COLOURS OF BARE PARTS. Iris greyish yellow to yellow. Bill dark slaty black or plumbeous; cere and gape paler. Legs and feet dull white, yellowish white, or dull yellow; claws black.

Genus *ICTHYOPHAGA* Lesson

Ichthyophaga Lesson, 1843, Echo du Monde Savant (2), 7: col. 14. Type, by monotypy, *Ichthyophaga javana* Lesson = *Falco ichthyaeetus* Horsfield

In some respects very close to *Pandion*, but unlike it the feathers have aftershafts as in true eagles (*Aquila*). Tarsus very powerful, feathered on upper third or half; scutellated in front and behind, reticulated at sides. Toes equally powerful, scutellated above, with enormous strongly curved claws not grooved underneath. Soles of feet densely covered with little spicules for grasping slippery prey (fish). Outer toe reversible as in *Pandion* but to a lesser extent. Wing rounded; 4th and 5th primaries (as) longest and subequal; 1st primary shorter than secondaries. Tail moderately long; slightly rounded.

The genus contains two species confined to the Oriental Region.

Key to the Species

	Page
All tail-feathers tipped with brown, white on basal two-thirds.....	
..... <i>I. ichthyaeetus</i>	292
Central tail-feathers brown throughout.....	
..... <i>I. nana</i>	294

ICTHYOPHAGA ICTHYAEETUS (Horsfield)

Key to the Subspecies

Larger; wing 450 mm. or over.....	<i>I. i. ichthyaeetus</i>
Smaller; wing 440 mm. or under.....	<i>I. i. plumbeiceps</i>

175. Greyheaded Fishing Eagle. *Ichthyophaga ichthyaeetus ichthyaeetus* (Horsfield)

Falco Ichthyaeetus Horsfield, 1821, Trans. Linn. Soc. London, 13(1): 136 (Java)
Baker, FBI No. 1780, Vol. 5: 114

Plate 14, fig. 2 and Plate 15, fig. 7

LOCAL NAMES. *Madhura* (Hindi); *Machmoral* (Bengal); *Na dooling gadaba* (Cachari).

SIZE. Kite+; length c. 74 cm. (29 in.).

FIELD CHARACTERS. Adult. *Above*, head and neck grey; crown, nape, and upper back light brown. Rest of upperparts dark brown; wing quills blackish. *Below*, breast paler brown than back. Abdomen, flanks and tail white, the last with a blackish terminal band 5 to 8 cm. broad. Sexes alike

In overhead aspect the comparatively short white black-bordered tail, brown breast, and white abdomen and vent diagnostic.

Young (immature). *Above*, Dark brown, the feathers edged with pale greyish. Wing quills barred. Head and neck brown streaked with whitish. *Below*, chin, throat, and sides of head greyish. Breast and flanks pale brown broadly streaked with white. White portions of abdomen, flanks and tail heavily mottled with brown.

HAWKS, VULTURES, ETC.

293

STATUS, DISTRIBUTION AND HABITAT. Resident. Widely though sparsely distributed except in W. Pakistan and north-west of Delhi (Punjab etc.), and in arid semi-desert biotope. East to Assam and E. Pakistan (commonest in W. Bengal, Bihar, E. Pakistan and Assam), south from the Himalayan terai and foothills to Kerala. Also Nepal (though no recent record). Affects the neighbourhood of perennial, comparatively sluggish streams, rivers, and lakes and tidal lagoons (Bengal), in well-watered, well-wooded plains country.

Extralimital. Burma, Malay Peninsula, Philippines, Greater Sunda Islands and eastward to Celebes (Sulawesi).

GENERAL HABITS. A predominantly fish-eating eagle, met singly or in widely spaced pairs sitting bolt upright on boughs overlooking clear shingly perennial streams and rock pools in forest — in more or less the same facies as favoured by the Storkbilled Kingfisher. Rather sluggish, and with a heavy-looking though rapid flight, the wing-beats sharp and full. Soars and circles aloft much less frequently, and for shorter periods, than most other eagles. Fish captured from near the surface by swooping from the air, while quartering a likely reach of river, but chiefly from a lookout perch. Does not plunge like osprey. Very noisy during breeding season. Courtship display not recorded.

FOOD. Almost exclusively fish, some of very large size which, being too heavy to lift clear of the water, are dragged along to the bank. When feeding nest-young may take birds and small mammals; thus remains of junglefowl and squirrels recorded near nest.

VOICE AND CALLS. A weird, clanging cry, loud and far-carrying, of the timbre of a Grey Hornbill's (*Tockus birostris*) 'laugh' or peacock's *may-awe*. Uttered singly as a shout or a succession of screams, on the wing or from a concealed perch.

BREEDING. *Season*, mainly November to January. *Nest*, an enormous platform of sticks and twigs sometimes up to 1.50 m. across and 1 m. thick — the result of additions year by year. Frequently maintains two (or three?) alternative nests within a mile or so of each other, used irregularly in successive seasons. Built 10 to 30 metres up in or at the top of large trees such as *Salmaal*, *Terminalia* or *Albizzia* near a forest stream or tank. The pair roosts in the proximity of one of the nests throughout the year. *Eggs*, normally 2, occasionally 3, very rarely 4. White, unmarked, similar to but proportionally longer than those of *Haliaeetus leucorhphus*. Average size of 20 eggs 68.5 × 51.9 mm. (Baker). Both sexes share in nest-building and repair, as well as in incubation and nest-feeding. Incubation period 28–30 days; young remain in nest c. 10 weeks (*vide* Baker).

MUSEUM DIAGNOSIS. All tail-feathers white on basal two-thirds; blackish brown on terminal one-third. Differs from the Ceylon race (176) in being larger.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	450–515	47–54	92–100	248–280 mm. (Baker)

COLOURS OF BARE PARTS. Iris: adult, bright golden yellow; immature, brown or mottled with brown; nestling, blue-brown. Bill dark horny brown; base bluish

HAWKS, VULTURES, ETC.

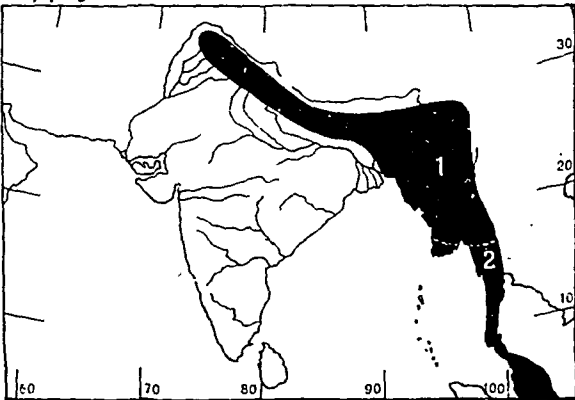
295

pair of tail-feathers dark brown throughout, with broad blackish subterminal band and pale tip. Sexes alike.

In overhead aspect the different tail pattern readily distinguishes it from 175.

Y o u n g (immature) differs from adult as in 175.

Ichthyophaga nana



Residential range I. n. plumbea, 2 I. n. nana

STATUS, DISTRIBUTION AND HABITAT. Resident, Kashmir and Himachal Pradesh, east through Nepal to eastern Assam and E. Pakistan (?), from the foothills to c. 2400 metres altitude. The optimum zone is apparently between c. 1000 and 1500 m. in Kashmir; under 1000 m. in the eastern Himalayas. In winter wanders into the adjoining terai and plains of the Punjab, Rajasthan (Sariska), U.P. and Bihar — once as far south as Melghat (c. 21°40'N., 77°10'E.), Madhya Pradesh (D'Abreu). Affects clear rapid forest streams in the foothills and terai, and jheels and irrigation tanks rarely even comparatively open reaches of rivers.

Extralimital. Upper Burma. Represented in L. Burma and Malaysia to Sumatra by the smaller nominate race.

GENERAL HABITS. Not appreciably different from 175. When disturbed sitting rather hunched up on a low snag or rock amid stream in forest, rises perpendicularly with a series of slow owl-like flaps to clear the tall trees fringing the banks.

FOOD. Like 175, almost exclusively fish. Sometimes destructive to trout in Himalayan streams.

VOICE AND CALLS. Very noisy when nesting. Incubating bird greets arrival of mate at nest by 'a succession of querulous shouts and cackles,

FALCONIFORMES

294

plumbeous; cere brown. Legs and feet china white to dull pale yellowish grey; claws black.

176. Ceylon Greyheaded Fishing Eagle. *Ichthyophaga ichthyaetus plumbeiceps* Baker

Ichthyophaga ichthyaetus plumbeiceps Baker, 1927, Bull. Brit. Orn. Cl., 47:150 (Trincomalee, Ceylon)

Baker, FBI No. 1781, Vol. 5: 116

LOCAL NAMES. *Wēwa rājaliya*, *Lāl māra* (Sinhala); *Vidai āli* (Tamil). 'Tank Eagle' of local birdwatchers.

SIZE. Kite+; length c. 69 cm. (27 in.).

FIELD CHARACTERS. As in 175.

STATUS, DISTRIBUTION AND HABITAT. Race peculiar to Ceylon. Fairly plentiful. Affects the jungle borders of irrigation tanks, coastal lagoons and estuaries, and the larger rivers in the low-country dry zone.

GENERAL HABITS AND FOOD. As in 175.

VOICE AND CALLS. 'A loud unmusical, rather weird shout with a curious gurgling quality — *awh awhrr*, etc. Uttered early morning and late evening and sometimes far into the night — especially in the breeding season' (G. M. Henry).

BREEDING. *Season*, December to March. *Nest* and site similar to those of the Indian bird. *Eggs*, only 1 or 2 recorded; dirty white measuring c. 64 × 51 mm. (Baker).

MUSEUM DIAGNOSIS. Differs from the nominate race by smaller size, and in most adult birds being perhaps less cinereous brown above.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	420–435 (once 445)	c. 46	c. 85–90	232–242 mm. (Baker)

COLOURS OF BARE PARTS. As in Indian birds.

177. Himalayan Greyheaded Fishing Eagle. *Ichthyophaga nana plumbea* (Jerdon)

Polioetus plumbeus 'Hodgson' = Jerdon, 1871, Ibis: 336 (North-western Himalayas) Baker, FBI No. 1783, Vol. 5: 117

Plate 14, fig. 3 and Plate 15, fig. 5

LOCAL NAME. *Na daoling kashiba* (Cachari).

SIZE. Kite±; length c. 64 cm. (25 in.).

FIELD CHARACTERS. Very similar to Greyheaded Fishing Eagle (175) except that the head is purer grey, less brown on crown, with the feathers black-shafted above and below. Basal two-thirds of tail mottled brown and white looking greyish instead of pure white; terminal third blackish. Central

FALCONIFORMES

296

not unlike a very small child crying. In the distance this sounds distinctly plaintive and childlike, but at close quarters querulous and unpleasant' (C. H. Donald).

BREEDING. *Season*, chiefly March, April, May. *Nest*, as in 175 a huge pile of sticks and twigs attaining enormous proportions by addition of more material year by year since the same nest is used for a great many years in succession; usually well lined with green leaves. Built in tall trees in forest on or near a river bank. *Eggs*, 2 or 3, small replicas of those of the larger Greyheaded species. Average size of 28 eggs 65.2 × 50.3 mm. (Baker). Share of the sexes in the domestic chores unrecorded.

MUSEUM DIAGNOSIS. Central tail-feathers brown throughout, darker and paler-tipped on terminal third, *contra* white with broad blackish terminal band in *l. ichthyartus*.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	435–495	40–46	78–91	223–248 mm. (Baker)
3 ♂♂ recently collected in Nepal measure:		(from skull)		
	426–467	43–48	—	215–238 mm. (Biswas)

COLOURS OF BARE PARTS. 'Iris golden yellow. Bill black, plumbeous on base and lower mandible; cere slaty. Legs and feet dull white with bluish tinge at "knees" and on the digits; claws black; pads dirty white' (Biswas).

Genus SARCOGYPS Lesson

Sarcogyps Lesson, 1842, Echo du Monde Savant (2), 6, col. 1038. Type, by monotypy *Vultur ponticrianius* Latham = *Vultur calvus* Scopoli

Distinguished by the possession of a large wattle of skin behind and below each ear. Skin of head and neck bare without any down. Ruff even smaller than in *Aegypius*, q.v.

See Field Key in Appendix.

178. Black or King Vulture. *Sarcogyps calvus* (Scopoli)

Vultur calvus Scopoli, 1786, Del. Faun. et Flor. Insubr., 2: 85 (Pondicherry, ex Sonnerat)

Baker, FBI No. 1706, Vol. 5: 9

Plate 16, fig. 7, Plate 17, fig. 8 and Plate 18, fig. 4

OTHER NAME. Pondicherry Vulture.

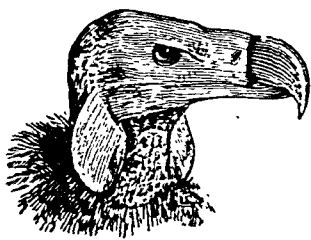
LOCAL NAMES. *Rāj gūh*, *Mulla gūh*, *Bhōorra* (Hindi); *Rāj shaloon*, *Kāla shaloon* (Bengal); *Kannara gūh* (Bihar); *Lāl gūh* (Cachar); *Rāj hegōn* (Assam); *Loong nong loong* (Lepcha); *Nilla tōra d* (Telugu).

SIZE. Whitebacked Vulture ±; length c. 81 cm. (c. 33 in.).

HAWKS, VULTURES, ETC.

297

FIELD CHARACTERS. A huge black vulture readily identified by its deep yellowish red naked head and neck, thighs and legs. White patches at base of neck and on upper thighs are additional pointers. When sailing aloft the red head, white breast- and thigh-patches, and a thin whitish band along underside of outstretched wings conspicuous, even at long range. Wings rather pointed with moderately splayed 'fingertips'; held above plane of back in a wide V. Sexes alike.



x c. 1

Young (immature). Above, brown, scalloped paler. Crown covered with white down; neck partly feathered. Below, crop white; breast, anterior flanks and abdomen pale brown; posterior flanks and abdomen, and under tail-coverts, white.

STATUS, DISTRIBUTION and HABITAT. Resident. Throughout the Indian Union, both Pakistans, Nepal, up to c. 2000 metres altitude in the Himalayas locally. Not Ceylon. Sparse and nowhere numerically abundant. Affects the open countryside — chiefly deciduous and semi-desert biotope — in the neighbourhood of habitations.

Extralimital. Burma, Thailand, Malay Peninsula, S. Viet Nam.

GENERAL HABITS. Much less gregarious than the other large vultures. Even at animal carcasses seldom more than a solitary or a couple present among the seething rabbles of Whitebacks and others. Very rarely, however, pure gatherings of up to 20 or 30 birds may be met. Called 'King' Vulture because of a spurious reputation for boldness and overbearing pugnacity inspiring awe amongst its fellow feasters and thus monopolizing a carcass until it has had its pick of the choicest titbits. In actual fact it may usually be marked out as the timidest member of the vulture gatherings at wayside carcasses. It keeps itself deferentially aloof of the scrimmage, only venturing forward surreptitiously now and again in obvious nervousness to tug at a goblet, and withdrawing hurriedly when overwhelmed by the press. It is a powerful bird and in spite of its size and weight can lift itself off the ground by a few wing-strokes even when fully gorged.

FOOD. Almost exclusively carrion. In common with other vultures highly beneficial as a scavenger, disposing quickly of animal carcasses from the precincts of villages where they would otherwise putrefy and breed disease. Once recorded swooping on a wounded Greenshank (*Tringa nebularia*)!

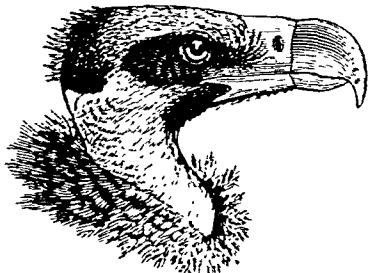
VOICE and CALLS. 'A hoarse croak, with a sort of scream affixed to it when quarrelling at a carcass' (T. R. Bell). A raucous 'roaring' during copulation.

BREEDING. Season, overall December to April, earlier in the plains, later in the lower Himalayas; most generally February and March. Nest, a large platform of sticks and twigs, untidily lined with straw and leaves; less massive and thick than of many eagles. Built c. 9 to 12 metres up on the top of a large tree like peepul (*Ficus*) or mango (*Mangifera*) often near a village.

HAWKS, VULTURES, ETC.

299

FIELD CHARACTERS. A huge, uniformly black or blackish brown vulture with naked leaden pinkish neck surrounded by a distinct blackish (not white) ruff. Partially naked head conspicuously broader than in other vultures. Crown, occiput, lores and cheeks covered with black fur-like feathers and down. No fleshy wattles on sides of neck. Sexes alike.



x c. 1

In overhead aspect dark plumage above and below, absence of white crop- and thigh-patches, broader wings without whitish stripe, and slightly wedge-shaped (v. rounded) tail distinguish it from King Vulture (178).

Young (immature). Paler and browner.

STATUS, DISTRIBUTION and HABITAT. Resident (breeding) in the high mountains of W. Pakistan (Baluchistan) and India in Gilgit, Punjab (Lahul), Assam (N. Cachar) and possibly elsewhere along the stretch of the Himalayan Dry Temperate zone between c. 1800 and 3600 m. alt. Rare and sparse winter visitor to Sind, NW, and northern India (including Nepal), Kutch, N. Gujarat and central India, south to about the latitude of Dhulia in Khandesh (c. 21°N.). Affects open savannah and semi-desert country; avoids forest.

Extralimital. 'Breeds locally in S. Europe from Portugal to the lower Danube, the Caucasus and southern Urals to NE. Tibet and E. China, south to N. Morocco, Asia Minor, and the Himalayas' (Peters).

GENERAL HABITS. Very little recorded in India. A rare vulture, seen singly in winter perched on mounds etc. where its enormous size and all-black coloration immediately attract attention. Joins the vulture mobs feasting on wayside animal carcasses where it seems to command a distinct deference from the other species, boldly striding forward through the jostling rabble and helping itself to the repast without let or hindrance. **FOOD.** Carrion. One feeding on dead Painted Stork (*Ibis leucocephalus*) (E. A. Butler). Elsewhere recorded as hunting tortoises and extracting the meat from under the carapace.

VOICE and CALLS. Unrecorded.

BREEDING. Within our limits only recorded in Baluchistan, between c. 2400 and 3000 metres elevation, and in the Barail Range of N. Cachar

298

FALCONIFORMES

In semi-desert areas even on bushes or small trees, e.g. *Prosopis*, barely 2 or 3 metres up. Same nest and/or site used year after year. Egg, a singleton, roundish oval, white, becoming stained and discoloured during incubation. Average size of 60 eggs 83.9 × 66.0 mm. (Baker). Both sexes share in building the nest, incubation, and feeding the young. Incubation period about 43 days.

Copulation on the wing has occasionally been reported, but in the case of such ponderous birds this seems an incredible feat of jugglery! Perhaps only slow-motion cinematography can reveal the actual details of the 'plunges and wing-flappings' of the birds (pair?) towards the ground with claws interlocked — not infrequently seen during aerial courtship in the breeding season — and of two birds sailing with outstretched motionless wings one over the other, so close as to appear almost in contact.

MUSEUM DIAGNOSIS

Chick (in down). 'Crown from level of eyes, and nape, clothed with short close grey-white down; rest of upperparts with longer grey-white. Centre of chin and throat sparsely tufted same. Crop with thicker buff-tinged down; sides of breast and flanks longer pale buff down. Bare skin of face, and upperparts of head and cere pale bluish lead colour in contrast to skin of throat, chin, and neck which is pinkish lead. A bare ring c. 32 mm.-wide round neck from nape, bare with longitudinal flaps of loose skin, a prominent one on each side, being probably the origin of the adult wattles' (Whistler).

MEASUREMENTS

	Wing	Bill (from forehead)	Tarsus	Tail
♂ ♀	600-625	74-80	108-116	226-257 mm. (Baker)

Two recent specimens from Nepal have Wing ♂ 566, ♀ 592; tail ♂ 248, ♀ 250 mm. (Biswas).

COLOURS OF BARE PARTS. Iris yellow, red-brown or crimson. Bill dark brown, yellowish at base of lower mandible. Cere and bare skin of head and neck deep yellowish red; wattles redder. Bare skin on either side of crop and inside thighs duller yellowish red. Legs dull livid fleshy to dull red.

Genus *AEGYPIUS* Savigny

Aegyptus Savigny, 1809, Descr. Egypte, Ois., 1: 68, 73. Type, by monotypy, *Vultur niger* Daudin = *Vultur monachus* Linnaeus

Bill comparatively short, very strong, deep and arching from the cere. Nostrils almost square (with rounded corners); oblique. Head broad and covered with down, short on crown longer on nape. Neck naked with a moderate ruff at base reaching up to its back. Claws grooved below.

Genus monotypic. Found in Southern Europe, temperate Asia, N. Africa.

179. Cinereous Vulture. *Aegyptus monachus* (Linnaeus)

Vultur Monachus Linnaeus, 1766, Syst. Nat., ed. 12, 1: 122

(Arabia, ex Edwards, pl. 290)

Baker, FBI No. 1705, Vol. 5: 7

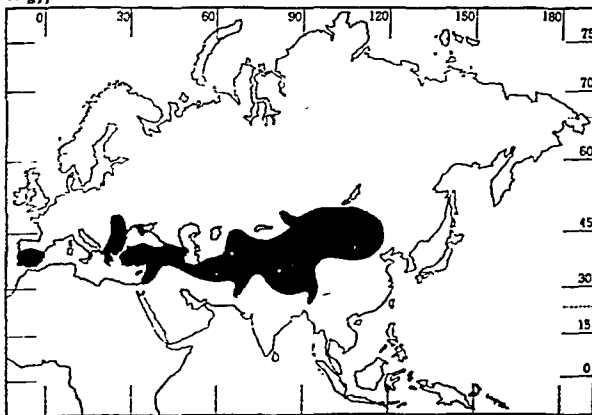
Plate 16, fig. 6, Plate 17, fig. 7 and Plate 18, fig. 3

LOCAL NAMES. *Kāla gidh* (Hindi); *Gat panom* (Lepcha).

SIZE. Vulture +; length c. 100-110 cm. (40-42 in.).

300

FALCONIFORMES

Aegyptus monachus

■ Breeding range

at c. 1800 m. Season, apparently March and April though eggs have been taken in Assam in January and May. Nest, an enormous mass of sticks and twigs added to year after year; in one case c. 2 metres deep (from base to top) and c. 1.5 m. in diameter. Built right on top of a juniper or suchlike tree 8 to 12 m. high or more, growing on a steep hillside or out of a cliff. Egg, a singleton, very handsome, varying in ground colour from pure white to pale buff or creamy buff and richly marked with deep red, red-brown or purplish brown. Sometimes white, quite unmarked. Average size of 18 eggs taken in India and Turkestan 90.6 × 69.5 mm. (Baker). Share of the sexes in the domestic chores, and incubation period, unrecorded.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.

Chick (in down) about one week old, smoky grey. Cere light pink; bill darkish at tip. Iris yellowish. Legs and feet creamy white; claws black (F. L. Hughes).

MEASUREMENTS

	Wing	Bill (from forehead)	Tarsus	Tail
♂ ♀	756-843	c. 80-88	c. 132-146	350-400 mm. (Baker)

An adult measured 8 ft. 11½ inches (273 cm.) from wing-tip to wing-tip (Delme-Radcliffe).

COLOURS OF BARE PARTS. Iris brown. Bill blackish brown, sometimes yellowish at base and on lower mandible; cere pale mauve, plumbeous grey, or almost salmon pink. Naked skin of neck dirty white slightly tinged with red, or livid flesh colour. Legs and feet creamy or pearl white.

HAWKS, VULTURES, ETC.

301

Genus *Gyps* Savigny

Gyps Savigny, 1809, Descr. Egypte, Ois., 1: 63, 71. Type, by monotypy, *Gyps calcaris* Savigny = *Vultur falcatus* Hablitzl

Pseudogyps Sharpe, 1873, Ann. and Mag. Nat. Hist., 11(4): 133. Type, by subsequent designation, *Vultur bengalensis* Gmelin. (Sharpe, 1874, Cat. Bds. Brit. Mus., 1: 11) Distinguished from *Sarcogyps* in having no ear lappets. Head narrower and longer in proportion; bill slenderer and longer. Nostrils very narrow slit-like, vertical or slightly oblique. Ruff at base of neck well developed, consisting of long narrow feathers. Tail-feathers 12 or 14.

Genus represented throughout Africa, S. Europe, SW. and C. Asia.

Key to the Species

	Page
A Tail-feathers twelve..... <i>G. bengalensis</i>	307
B Tail-feathers fourteen.....1	
1 Bill smaller and more slender; depth of base of bill less than length of cere..... <i>G. indicus</i>	304
Bill larger and less slender; depth of base equal to length of cere.....a	
a Lower plumage with narrow shaft-stripes..... <i>G. falcatus</i>	301
Lower plumage with broad shaft-stripes..... <i>G. himalayensis</i>	302

180, 183. Indian Griffon Vulture. *Gyps fulvus fulvescens* Hume

Gyps fulvescens Hume, 1869, Rough Notes 1: 15, 19 (Punjab)

Gyps indicus jonesi Whistler, 1927, Bull. Brit. Orn. Cl. 47: 74 (Margala Range, Rawal Pindi district)

Baker, FBI No. 1707, Vol. 5: 11

Plate 16, fig. 5, Plate 17, fig. 10 and Plate 18, fig. 8

LOCAL NAMES. Unrecorded.

SIZE. Whitebacked Vulture +; length c. 110-122 cm. (40-48 in.).

FIELD CHARACTERS. Adult. An enormous cinnamon-brown vulture with scrawny, almost naked neck. Head covered uniformly with yellowish white hair-like feathers and down. Underparts pinkish brown with narrow pale shaft-stripes. A prominent whitish ruff of lanceolate downy feathers at base of neck. Sexes alike.

In overhead aspect looks a dirty white with the quills forming a broad black apex and trailing edge to the broad 'splayed finger' wings, and black tail. Cannot be differentiated from Himalayan Griffon (181) on the wing; distinguishable from Cinerous Vulture (179) by whitish underparts and square or slightly rounded (v. slightly wedge-shaped) tail.

Young (immature). Darker fulvous-brown with the ruff browner than in adult.

STATUS, DISTRIBUTION and HABITAT. W. Pakistan (Baluchistan, Sind, Punjab Salt Range) and northern India (including Nepal lowlands). Commoner in the semi-desert areas of W. Pakistan and N. Gujarat, straggling east to W. Assam, south to c. latitude 20° N., occasionally further in the Deccan. Southernmost authentic record, a specimen from Bombay (Kurla) in BNHS coll. Owing to constant confusion in sight records and paucity of collected

HAWKS, VULTURES, ETC.

303

FIELD CHARACTERS. Virtually the largest bird in the Himalayas. A typical vulture, very like 180, but adult sandy white or pale khaki above instead of cinnamon-brown. Below, pale brownish buff with conspicuously broader whitish shaft-streaks than in *fulvescens*. Ruff longer, pale brown streaked with white. Sexes alike. Many intermediate colour phases depending on age.

In overhead aspect, large size, very pale (almost whitish) underside, black tail, black trailing edges of the broad, almost rectangular wings together with their 'splayed finger' tips, and High Himalayan domicile are diagnostic.

Young (immature). Dark brown and chocolate-brown with whitish shaft-stripes, especially broad on ruff and underparts. Wing and tail-feathers nearly black. Overhead aspect very like *Aegypius monachus* except for the white round the crop-patch, the less uniformly dark colouring produced by striped underparts, and the somewhat less broad wings. Confusable also with immature Whitebacked and Longbilled vultures, but much larger and seldom likely to be met together in same habitats.

STATUS, DISTRIBUTION and HABITAT. A purely mountain bird. Resident in the Himalayas from W. Pakistan (NWFP) to Bhutan and E. Assam, normally between c. 600 and 2500 m. altitude, foraging up to 4500 m. and even higher.

Extralimital. Mountains of Afghanistan and Turkestan, Tibet, the Pamirs, and the Himalayas east to W. China.

GENERAL HABITS. Similar to those of Whitebacked Vulture (185) and others of the genus. Normally seen singly or in twos and threes sailing majestically on outspread motionless wings over mountaintop and valley, or sweeping round the rugged contours with astonishing speed and grace, scouting for food. Or it rises on the thermals to immense heights, circling for hours together in the heavens, obviously for fun. Commonly keeps in the neighbourhood of high mountain passes and along well-used trade routes where the stricken pack animals of the caravans provide it with regular sustenance. The birds also follow the flocks and herds of the graziers up to the alpine pastures in spring for any of the animals that may die. The way in which a rabble of 10 to 20 of the great birds will materialize at a carcass on a remote mountain pass from out of the clear blue sky, and the speed and thoroughness with which they will demolish it, is a source of never-failing wonderment. In a few short minutes all that is left of the animal is odd bits of skin, and bones stripped of everything that can be eaten.

BREEDING. Season, chiefly January to March or April. Nest, a large rough and untidy pad of sticks and rubbish placed on the ledge of a cliff, often inaccessible. Singly, or in small colonies of 5 or 6 nests spaced out on the same cliff-face. Favourite sites, advertised in the distance by the whitewash of the occupants' droppings, are resorted to year after year, the old nests being reconditioned by adding to the ragged remnants of the previous season. Egg, a singleton, white, usually unmarked; sometimes handsomely blotched with pale reddish to deep reddish brown. Inside membrane of all *Gyps* eggs dark bright green. Average size of 50 eggs 94.8 x 70.1 mm. (Baker). Share of the sexes in the nesting chores, and period of incubation, unrecorded.

302

FALCONIFORMES

material, accurate range difficult to define; also to determine whether this or the nominate race (found in Iran) breeds in Baluchistan. Affects bare mountains and open savannah and semi-desert country.

GENERAL HABITS. Small numbers usually present among the gatherings at animal carcasses of the commoner Whitebacked and Longbilled species, in the semi-desert parts of north-western India. Easily recognized from them by its great size and warm cinnamon coloration. Habits similar to those of other members of the genus, described under the Whiteback (185), q.v.

FOOD, VOICE and CALLS. As in 185.

BREEDING. Breeds in the Kala Chita Reserve in Campbellpur district, W. Pakistan. Old records of breeding in Bihar, Oudh and Madhya Pradesh, etc., are generally vitiated by doubtful identification as pointed out above. However, breeding in the mountains of Baluchistan, at c. 2500-3000 m. elevation, and in Kashmir, well authenticated though race merely presumed (probably correctly) as the Indian *fulvescens*. Probably also breeds in the Kirthar Hills between Sind and Baluchistan. Season, January to April. Nest, a large platform of sticks on ledges of cliffs, built singly or in small colonies.

Eggs, a singleton, white, occasionally flecked with red; rarely blotched and spotted with the same. Average size of 25 eggs 90.7 x 70.2 mm. (Baker). Both sexes said to assist in building the nest. Incubation period and other details unrecorded.

MUSEUM DIAGNOSIS. Differs from the nominate European race in being more cinnamon-brown than isabelline. For description of plumage etc. see Baker, loc. cit. Easily confusable with sub-adult *G. indicus*; may be differentiated as follows:

<i>indicus</i>	<i>fulvescens</i>
1. Smaller	1. Larger
2. Down on head more patchy; starred rather than a uniform covering	2. Head uniformly covered with down
3. General colour dirty earth-brown	3. General colour warm cinnamon-brown

MEASUREMENTS	Wing	Bill (from forehead)	Tarsus	Tail
♂ ♀	675-740	c. 71-74	c. 100-120	302-330 mm. (Baker)

Wing ♂ ♀ 685-747 mm. (both extremes ♂) (Kirke-Swann).

Weight 1 ♂ 7090 gm. (Grubb).

COLOURS OF BARE PARTS. Iris yellow-brown to brown. Bill yellowish or greenish horny to dusky brown sometimes paler along edge of culmen; cere black. Legs and feet dirty yellow to greenish grey (Baker).

181. Himalayan Griffon Vulture. *Gyps himalayensis* Hume

Gyps himalayensis Hume, 1869, Rough Notes, 12, 15

(Himalayas from Kabul to Bhutan)

Baker, FBI No. 1709, Vol. 5: 13

Plate 16, fig. 8, Plate 17, fig. 9 and Plate 18, fig. 6

LOCAL NAMES. *Bādā gīh* (Chamba); *Grāl* (Kashmir).

SIZE. Whitebacked Vulture +; c. 122 cm. (48 in.).

304

FALCONIFORMES

MUSEUM DIAGNOSIS. Bill large and stout; depth at base equal to length of cere. Lower plumage with broad shaft-stripes. For details of plumage etc. see Baker, loc. cit.

MEASUREMENTS	Wing	Bill (from forehead)	Tarsus	Tail
♂ ♀	755-805	71-77 (once 81)	c. 110-126	365-402 mm. (Baker)

Middle toe and claw 121-135 mm.

Wing ♂ ♀ 790-810 mm. (Kirke-Swann).

COLOURS OF BARE PARTS. Iris dull yellow or creamy yellow to pale brown. Bill horny green, dull yellowish horny or yellowish plumbeous; cere pale brown or greenish brown. Legs and feet dingy greenish grey or white (Baker).

Gyps indicus (Scopoli)

Key to the Subspecies

	Page
Crown of head almost or quite bare..... <i>G. i. tenuirostris</i>	306
Crown of head well covered with hair-like feathers..... <i>G. i. indicus</i>	304

182. Indian Longbilled Vulture. *Gyps indicus indicus* (Scopoli)

Vultur indicus Scopoli, 1786, Del. Faun. et Flor. Insubr., 2: 85 (India, ex Sonnerat)

Baker, FBI No. 1710, Vol. 5: 16

Plate 16, fig. 4, Plate 17, fig. 12 and Plate 18, fig. 7

LOCAL NAMES. *Gīh* (Hindi); *Gīhād*, *Mahā dū* (Marathi).

SIZE. Whitebacked Vulture +; length c. 92 cm. (38 in.).

FIELD CHARACTERS. Adult. Above, light to dark brown, the feathers edged paler (scalloped). Head, nape, and neck patchily covered with white brown hair-like feathers or down. Below, a distinct ruff of soft white feathers at base of neck. Underparts pale brown, almost sandy, with broad pale shaft-stripes. Sexes alike.

Easily confused with Indian Griffon Vulture (180). Differs from it in much smaller size; head not uniformly covered but 'starred' with down; general coloration dirty earth-brown v. warm cinnamon-brown.

In overhead aspect pale underparts and underwing with broad black trailing edge as in Griffon, v. a prominent white band stretching along underwing, distinguish it from adult Whitebacked Vulture (185) even at great height. Immature birds of the two species impossible to tell with certainty.

Young (immature). Chocolate-brown. Head and neck more thickly down-clad. Resembles immatures of both Whitebacked Vulture (185) and young Himalayan Griffon (181) but is much smaller than latter.

STATUS, DISTRIBUTION and HABITAT. Resident. Rajasthan, Gujarat and peninsular India south of the Gangetic Plain. Not in extreme SW. India or Ceylon. Wide ranging, with no perceptible habitat preferences.

Owing to paucity of collected material, ranges of this and the next race can only be approximately assigned.

HAWKS, VULTURES, ETC.

305

306

FALCONIFORMES

GENERAL HABITS. Gatherings, sometimes of 20 to 30 birds or more, commonly seen at animal carcasses on the countryside or on outskirts of towns and villages, in more or less equal numbers with the Whitebacked species (185) q.v., from which its habits do not appreciably differ.

FOOD. Carrion exclusively; sometimes at tiger or panther kills in forest.

VOICE AND CALLS. Not specifically recorded.

BREEDING. *Season*, overall November to March; principally December/January. *Nest*, a sketchy platform of sticks and twigs lined with straw invariably built on ledges of precipitous cliffs and hill forts. Usually in small colonies, the same cliff-faces and sites being occupied traditionally; easily identified in the distance by the excrementary whitewash of past and continuing vulture generations. By the time the young is fledged practically nothing is left of the nest, the materials being pushed off the ledge by the movements of the youngster or blown away by the wind. *Egg*, a singleton, generally white; sometimes spotted, blotched or freckled with reddish brown in varying degree: Average size of 20 eggs 86.6 × 67.3 mm. (Baker). Share of the sexes in the domestic chores, and period of incubation, unrecorded.

MUSEUM DIAGNOSIS. Bill smaller and less stout than in Griffon (181); depth at base less than length of cere.

MEASUREMENTS

	Wing	Bill (from forehead)	Tarsus	Tail
♂ ♀	560-650 (mostly 600-625)	c. 66-69	c. 90-94	238-274 mm. (Baker)

Wing ♂ ♀ 575-679 mm. (Kirke-Swann).

Weight 5 ♂ ♀ 5540-6250 (av. 5515) gm. (Grubb).

COLOURS OF BARE PARTS. Iris brown. Bill greenish or yellowish horny, darker on culmen; cere dull dirty greenish. Bare skin of head and face plumbeous ashy.

The description of *Gyps indicus jonesi* is omitted as the subspecies has been synonymized with No. 180, *Gyps fulvus fulvescens*, q.v.

184. Himalayan Longbilled Vulture. *Gyps indicus tenuirostris* G. R. Gray

Gyps tenuirostris 'Hodgson' = G. R. Gray, 1844, *Genera of Birds*, 1: 6, pl. 3 (Nepal)

Gyps indicus nudiceps Baker, 1927, *Bull. Brit. Orn. Cl.*, 47: 151 (New name for *Gyps tenuirostris* Hume, Khatmandoo, Nepal)

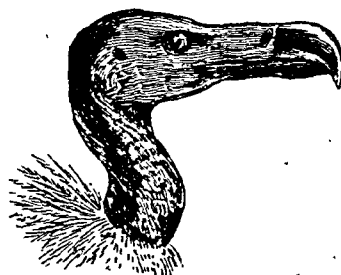
Baker, FBI No. 1711, Vol. 5: 17

LOCAL NAMES. Sakun (Bengal); Hagon (Assam); Gut (Lepcha).

SIZE. Whitebacked Vulture+; length c. 92 cm. (38 in.).

FIELD CHARACTERS. A d u l t and Y o u n g (immature) as in the Indian race (182), but with the head and neck entirely bald and shiny.

STATUS, DISTRIBUTION AND HABITAT. Resident. The Gangetic Plain north to and along the lower Himalayas from Kashmir through Nepal, Bengal and Assam. Very common in eastern Assam and East Pakistan.



HAWKS, VULTURES, ETC.

307

Extralimital, Burma, Malay Peninsula and Indochinese countries.

GENERAL HABITS. As of the Whitebacked Vulture (185), q.v.

FOOD. Carrion exclusively. While it would seem safe enough to tackle dead or dying animals, some curious accidents to feeding vultures have been reported. One got entrapped within the belly of a defunct horse; another had its head caught inside the mouth of a moribund ox which it had been too impatient to allow to die completely. The bird was found in this predicament flapping its wings helplessly to free itself! (Allen, JBNHS 26: 1045).

VOICE AND CALLS. Nothing specifically recorded.

BREEDING. Contrary to the other race, seems to nest exclusively on trees. *Season*, November to end February. *Nest*, of sticks and twigs sometimes with leaves attached, rather more compact than of the cliff-nesting race, built 7 to 14 metres up in large leafy trees, such as silk cotton, banyan and peepul; often several nests scattered over a small area, and frequently near a village. *Egg*, a singleton, broad oval, unspotted white, sometimes flecked and blotched with light reddish in varying degree. Average size of 100 eggs 84.7 × 63.6 mm. (Baker). Both sexes share in all the domestic chores. Incubation period unrecorded.

Chick (about a week old): covered with yellowish brown down (E. H. N. Gill).

MUSEUM DIAGNOSIS. Upper plumage usually darker and browner than in nominate *indicus*. No hairy down on crown and nape; very little or none on neck. Bill slenderer; with larger, more open nostrils.

MEASUREMENTS

	Wing	Bill (from forehead)	Tarsus	Tail
♂ ♀	590-630	66-68	c. 110	237-256 mm. (Baker)

COLOURS OF BARE PARTS. Iris dark brown. Bill brownish dusky horny; cere horny black; skin of head and neck dark muddy; tarsi and toes black; claws dusky and horny black (Hume).

185. Indian Whitebacked Vulture. *Gyps bengalensis* (Gmelin)

Vultur bengalensis Gmelin, 1788, *Syst. Nat.*, 1(1): 245 (Bengal)

Baker, FBI No. 1713, Vol. 5: 19

Plate 16, fig. 3, Plate 17, fig. 11 and Plate 18, fig. 5

LOCAL NAMES. Gidh (Hindi); Gidhid (Marathi); Sakun (Bengal); Mātī pūdm-gādu (Telugu); Wālorja (Yerukali); Kāzhūkan (Malayalam).

SIZE. Peacock minus train ±; length c. 90 cm. (35 in.).

FIELD CHARACTERS. A d u l t. Heavy brownish black with naked scrawny neck and head sunk into the shoulders while bird at rest. A white or whitish ruff of soft feathers round base of neck, broken in front by a black crop-patch. Sexes alike.

When perched, as well as in flight below eye level, or when banking high up in the air, white lower back diagnostic. In overhead aspect a broad whitish band along underside of wings distinguishes this species.

308

FALCONIFORMES

Young (immature). More brownish than black, without white back or underwing bands. Head and neck more or less covered with dirty white fluffy down. Impossible to distinguish with certainty in the field from Longbilled Vulture, with which it is commonly associated over most of its range.

STATUS, DISTRIBUTION AND HABITAT. Resident; our commonest vulture. Found more or less throughout the area from W. Pakistan (Baluchistan) east through Assam and Manipur; south from Kashmir and along the Himalayas between c. 1500 and 2500 m. elevation (including Nepal), through the Peninsula to Kanyakumari. Not Ceylon. Where absent or rare in pure desert facies a few years ago, e.g. Sind, Punjab, and Rajasthan, now well established and expanding with advent of river barrages, canal cultivation, populous villages with livestock, and trees for nesting.

Extralimital. East to Yunnan, south to Siam, and Cochinchina [S. Viet Nam], Malay Peninsula to Penang (Peters).

GENERAL HABITS. Usually seen in small groups, commonly in association with the Longbilled and other vultures, perched lunched-up on tree-tops and palms on the countryside, on roofs or walls in the vicinity of slaughter-houses, municipal refuse dumps, and outskirts of villages and habitations. Favourite roosts and the ground underneath become besmirched and reeking with the birds' acrid excreta, presenting a sepulchral whitewashed appearance, which kills off the trees if too long patronized. And in this way vultures sometimes become a serious local nuisance in coconut groves, mango orchards, forest plantations, etc.

Though a repulsive creature at close quarters, a vulture gliding majestically in the sky on outspread motionless wings looks the embodiment of grace and buoyancy. Unless busy feeding, or fully gorged and grounded, they spend most of the day scouting the countryside for food, covering immense distances in the quest. Or they will soar for hours on end and circle aloft in the sky with no other apparent motive than fun. Their eyesight is remarkably keen yet perhaps less phenomenal than popularly believed. That they are so quick to discover a carcass on the countryside, even though hidden under forest, and to gather at it from almost nowhere in such an incredibly short time, is usually due not so much to keenness of sight directly as to the low-flying birds being guided by the movement of crows, village dogs and jackals. These birds in turn are being watched by their fellows in the air above, and so on, till from tier to tier the message reaches the tiniest speck in the heavens. When following one another down to a carcass some birds make a wide spiral descent while others hurtle down through space more or less perpendicularly, wings half pulled in, legs dropped and dangling. Even while still quite high up in the air this dropping of the 'undercarriage' clearly proclaims a bird's intentions. No less astonishing is the speed and thoroughness with which a party of vultures will demolish the largest carcass. A mixed rabble of 60 to 70 birds (mostly of this species, and including a few kites and crows) was timed to strip the skinned carcasses of two sloth bears weighing not less than 125 kg. so thoroughly in the space of about 40 minutes that late comers at this stage had to stand around disappointed (Sālim Ali). In another case a mixed pack of this with a few Fulvous and King Vultures was timed to finish off a whole bullock in about

HAWKS, VULTURES, ETC.

309

20 minutes (T. R. Bell). This activity is attended by incessant jostling and squabbling amongst the feasters to a great deal of raucous braying, screeching and hissing as one bird jumps on another's back to dislodge it from a coign of vantage, or deprive it of a goblet of flesh. The combatants often spread out their wings and prance around, ludicrously tugging at the morsel with their beaks at either end. In order to take off from the ground, vultures are obliged to run and hop along for some distance against the wind aided by powerful wing-flaps. When fully gorged they are sometimes totally unable to get airborne, and often have to spend the night on the ground. Occasionally they feed throughout the night, whether moonlit or dark. It has been suggested that vultures properly gorged can go without a meal for several days. Such a facility could be of distinct survival value to birds which must frequently have to face feast-and-famine conditions.

In spite of foul feeding habits which often entail the head, neck and other parts becoming besmeared with gore, the Whiteback like the other large vultures is a comparatively cleanly bird and misses no opportunity for a bath. The birds wade into shallow water and douse themselves with the customary head-dipping, wing-fluttering and plumage-shuffling, drying themselves in the sun afterwards with open wings, like a cormorant. Possibly dependence on thermal currents contributes to their being late risers; individuals may frequently be seen fast asleep on a branch with head tucked under the wing till the sun is well up in the morning.

FOOD. Birds in aviary also avidly swallowed dry bone splinters 1-3 cm, washing them down with draughts of water (Grubb, 1973, JBNHS 70(1): 199).

VOICE AND CALLS. Raucous, strident, creaky screeches or 'laughter' kakakaka while one bird is supplanting another at a carcass or roost. Long-drawn grating noises, as of a hoe being scraped over a cement floor, uttered by female during copulation.

BREEDING. Season, principally October to March. Nest, a large untidy platform of sticks and twigs often with green leaves attached, with a shallow central depression lined with green leaves. Leafy twigs collected from living tree by bird (♂?) tugging at it with bill, assisted by vigorous wing-flapping. Nest built c. 10 to 18 m. up at or near the top of a large banyan or peepul (*Ficus bengalensis* or *F. religiosa*), mango (*Mangifera indica*), sheesham (*Dalbergia sissoo* or *D. latifolia*), casuarina, or similar tree growing in or near a village, or lining a road or canal bank. Sometimes in scattered colonies of up to 25 or 40 nests in a grove or small patch of forest. Nest added to and enlarged as the young occupant gets older and heftier (C. M. Inglis). Eggs, normally a singleton, very rarely 2, thick-shelled, glossless white unmarked, or variably and faintly so with reddish brown, grey-brown, or lavender. Average size of 100 eggs 85.8 × 64.2 mm. (Baker). Both sexes share in all the domestic chores. Incubation period about 45 days. Nest young fed on regurgitated gobbets of flesh. Several foraging birds of a colony often return together with food in spectacular high-flying armadas, sometimes over enormous distances. Copulation takes place close to the nest and often actually on it while the female is incubating; sometimes during moonlit nights. During the act the female flattens herself on the perch with neck stiffly stretched forward, uttering the harsh scraping screams. Male balances himself on her back with heavy flapping and performs with distinct jerks

HAWKS, VULTURES, ETC.

311

FIELD CHARACTERS. A small, rather kite-like vulture with naked head but without the long scrawny neck.

Adult. Overall dirty white (except for black wing-quills) with naked yellow head, face, and foreneck. In this race bill dark horny at all ages v. yellow in adult *ginginianus*. Sexes alike.

In overhead aspect white with wedge-shaped tail and broad black apex and trailing edge to pointed wings.

Young (immature). Blackish or chocolate-brown mottled with whitish blotches on back, breast, and greater wing-coverts. Many other intermediate colour phases during gradual transition to adult white plumage.

In overhead aspect looks like some eagle, but longer, narrower, wings and wedge-shaped tail always diagnostic. Also very like Lämmergeier, but is much smaller.

STATUS, DISTRIBUTION and HABITAT. Resident and partial altitudinal migrant; from plains level to c. 2500 metres in West Pakistan (Baluchistan, Sind, NWFP Province, W. Punjab) and NW. India (Kashmir, Punjab, Himachal Pradesh) possibly straggling into U.P., Kutch, W. Rajasthan, etc. Due to paucity of collected material and reliable specific observation, status of the two races impossible to unravel accurately. Probably both occur together and interbreed over large marginal areas in the north-west. Affects the neighbourhood of human habitations.

Extralimital. 'S. Europe north to S. France, Bukovina and S. Russia, east to Turkestan, Afghanistan and NW. India; south to Morocco, Egypt (and thence to S. Africa), Arabia, Persia, Sind, Canary and Cape Verde Islands' (Peters).

GENERAL HABITS. As in the commoner Indian race (187), q.v. Occurs in summer up to c. 2500 metres in the hills of N. Baluchistan, NWFP and Punjab between March and September; descending to lower levels for the winter. Also in Himachal Pradesh and Kashmir, where recorded in the Lidar Valley in summer as high as c. 3600 m. (R. S. P. Bates).

FOOD. Chiefly carrion and offal as in 187.

VOICE AND CALLS. Unrecorded.

BREEDING. Up to elevations of c. 2600 metres. Season, principally February to April. Nest, eggs, and other details as in No. 187. Average size of 100 'Indian' eggs 65.2 × 51.2 mm. (Baker).

MUSEUM DIAGNOSIS. Larger than *N. p. ginginianus*. For other differences between the races see Whistler 1922, *Ibis*: 414; for description of plumages etc. of nominate race, Baker, loc. cit.; Witherby 1939, 3: 105-6.

MEASUREMENTS

	Wing	Bill (from cere)	Tarsus	Tail
♂♂	470-520	31-34	75-88	220-260 mm.
♀♀	460-510	—	—	—

(Witherby)

COLOURS OF BARE PARTS. Iris yellow or dark brown. Bill dusky black; cere reddish yellow. Naked parts of head yellow. Legs and feet dusky yellow; claws black (Baker).

310

FALCONIFORMES

and pushes. One of a pair shot at nest brought a new mate on the 5th day, unless both the birds were new (Sálim Ali). Breeding has been observed in immature plumage (A. E. Jones).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). Down covers whole body except a track from base of neck broadening to vent. Down of head and neck shorter than the rest. Mouse-grey in colour except darker patches to the uropygium and along ulnar border. Cere and base patch round eye blue-lead' (C. B. Ticehurst).

MEASUREMENTS	Wing	Bill	Tarsus	Tail
♂♀	535-578	71-81	108-124	217-232 mm.

(from forehead)

(Baker)

Middle toe and claw 121-136 mm.

The figures for bill and tarsus given above are erroneous as pointed out by Biswas (JBNHS 57: 290, 1960). A specimen (♀) from Nepal measured by him gave wing 555, bill (from nostril) 62, tarsus 94, tail 238 mm. A young non-breeding male from Nepal measured wing 590 mm. (Ripley). Wing 557-608 mm. (Kirk-Swann).

Weight 29 ♂♀ 3500-3560 (av. 4385) gm. (Grubb).

COLOURS OF BARE PARTS. Iris yellowish brown or pale brown. Bill dark plumbeous or greenish plumbeous; culmen greyish or yellowish white; cere shining horny black. Naked skin of head and neck dusky plumbeous. Legs and feet greenish plumbeous to almost black (Baker).

Genus NEOPHRON Savigny

Neophron Savigny, 1809, Descr. Egypte, Ois., 1: 68, 75 and 76. Type, by monotypy, *Vultur percnopterus* Linnaeus.

Bill slender, long; cere and culmen straight at first, greatly hooked at tip. Nostrils elongate, horizontal, slit-like. Crown, sides of head, chin, throat and upper foreneck naked. Neck surrounded by a ruff of lanceolate hackle-like feathers extending up to the nape and round all the lower part of the neck; crop naked. Wings long and pointed; 3rd primary (as.) longest. Tail graduated; wedge-shaped. 3rd and 4th toes united by a web over the length of the basal phalange. Claws rather long, straight, and sharp.

The genus extends over the southern Palaearctic Region, Africa, and W. Asia.

NEOPHRON PERCNOPTERUS (Linnaeus)

Key to the Subspecies

Bill dark horny-blackish at all ages.....	<i>N. p. percnopterus</i>
Bill yellow in adults.....	<i>N. p. ginginianus</i>

186. Egyptian Vulture. *Neophron percnopterus percnopterus* (Linnaeus)

Vultur Percnopterus [sic] Linnaeus, 1758, Syst. Nat., ed. 10, 1: 87 (Egypt)
Baker FBI No. 1714, Vol. 5: 22

Plate 16, fig. 1, Plate 17, fig. 4 and Plate 18, fig. 1

LOCAL NAMES. *Sifed gidh*, *Kol murghab* (Hindi); *Hil* (Sind).

SIZE. Pariah Kite ±; length c. 66 cm. (26 in.).

FALCONIFORMES

312

187. Indian Scavenger Vulture. *Neophron percnopterus ginginianus* (Latham)

Vultur ginginianus Latham, 1790, Index Orn., 1: 7
(Gingee, Coromandel, ex Sonnerat)
Baker, FBI No. 1715, Vol. 5: 23

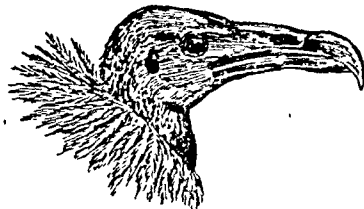
LOCAL NAMES. *Safed gidh*, *Kal murgh* (Hindi); *Suet sakun* (Bengal); *Gat gidh* (Bihar); *Tella bōrūā*, *Peethiri gādda* (Telugu); *Thottī kākhuān* (Malayalam); *Mānjāl thirudi* (Tamil); 'Pharaoh's Chicken'.

SIZE. Pariah Kite; length c. 61 cm. (24 in.).

FIELD CHARACTERS. As for No. 186 only slightly smaller. This race more-over has the bill yellow in adults as against dark horny at all ages in the nominate form.

Young (immature). Differs from young of *percnopterus* only in smaller size.

STATUS, DISTRIBUTION and HABITAT. Resident. All India (except the portions in the NW. occupied by nominate *percnopterus*) from c. 2000 m. up along the Himalayas locally, including Nepal, south to Kanyakumari, east to Bihar and western part of W. Bengal. Not E. Pakistan or Assam. Rare vagrant to Ceylon. Affects the drier peninsular hills (up to c. 2000 m., e.g. in the Nilgiris) and plains in the neighbourhood of human habitations.



x 4

GENERAL HABITS. A useful scavenger, invariably keeping to the neighbourhood of human settlements whether town, village, or shifting encampment of gypsies, pilgrims, or herdsmen. Here seen perched on mounds, ruined buildings and the like, or sauntering about on the ground—body held horizontal like a duck's and with a ludicrous, waddling, 'goose-stepping' gait—looking for food. Flight buoyant, easy and graceful, wings held level with body. Spends much time gliding aloft, but seldom at very great heights. Not gregarious; usually seen in twos and threes, but numbers will gather where prospects of food are promising, often associating with kites, crows, and other vultures at animal carcasses and municipal refuse dumps.

FOOD. Carrion, offal and garbage, and to a large extent human ordure. Occasionally takes frogs and large crickets on grassland; in one case *Brachytrypus achatus* (Mason & Lefroy). Also winged termites emerging from the ground (C. E. Fischer).

HAWKS, VULTURES, ETC.

313

VOICE and CALLS. Very silent. Unrecorded.

BREEDING. Season, February to May, chiefly March and April. Nest, a filthy, shabby platform of twigs, lined with rags, matted hair, scraps of mammals' skin, and other rubbish including sometimes dried dung of carnivores. Placed on a ledge or cornice, or in a niche, on cliffs, dilapidated mosques, tombs and other buildings or crumbling walls and battlements of ancient forts. Sometimes in the fork of a large banyan, peepul, or similar tree c. 4 to 6 metres up. The same sites are occupied year after year, the old nests being renovated by additions to the remnants. Old eagles' nests occasionally utilized. Exceptional sites recorded (1) on the ground at the base of a tree in the Ganges *khadar* (W. P. Paynter), and (2) on top of a termite mound c. 1.5 metres high islanded in the waterspread of a small irrigation tank (C. H. Biddulph). Eggs, 2, inconspicuously handsome for so unlovely a bird, varying in coloration from white to pale brick-red, blotched with reddish brown or blackish, rather densely at the broad end. Indistinguishable from those of the nominate race, only smaller. Average size of 100 eggs 64.3 × 49.3 mm. (Baker). Both sexes share all the domestic chores. Incubation period believed to be about 42 days. Incubating bird sits very close, but does not demonstrate against nest robber once disturbed off nest.

MUSEUM DIAGNOSIS. Smaller than nominate race with bill always yellow in adult.

MEASUREMENTS

	Wing	Tarsus	Middle toe and claw	Tail
♂ ♀	443-462	72-85	73-85	228-251 mm. (Baker)

Bill (from cere) 31-35 mm.

Paucity of skins in Indian collections does not permit checking the above figures, but it may be pointed out that a recent specimen from Nepal (sex?) measured: wing 434; bill from skull 57; tail 210 mm. (Biswas), showing a considerable divergence from Baker's figures.

COLOURS OF BARE PARTS. Bill in adults yellow. Skin of head yellow with no red tinge. Legs, feet and claws paler, otherwise as in 186.

MISCELLANEOUS. The Hindu hill temple at Thirukalikundram, some 55 km. from Madras, enjoys countrywide fame and added sanctity by virtue of two Neophron vultures that come there every day punctually between 11 a.m. and noon to be fed by the presiding priest. This is alleged to have been going on for 'centuries', and the birds are alleged to commute daily from Banaras (the Himalayas, according to some). The feast consists of balls of rice and wheat flour mixed with sugar and ghee, therefore, in effect, the very opposite extreme of the bird's natural food preference! That the sacred birds travel the 1,300-odd kilometres (or perhaps twice that distance) daily, and the many other myths and legends that have snowballed around this circumstance, perhaps need an extra dose of credulous piety to believe; nevertheless there are a number of curious anomalies in this connexion which challenge a scientific explanation. For instance, when the Neophron is such a common species in the Madras area, and numbers must often fly over this particular temple in their normal scouting for food, why is it that only two birds and no more come down to the proffered meal? Secondly, since Neophrons are not immortal, a replacement must become necessary

HAWKS, VULTURES, ETC.

315

to NE. Assam. Also recorded in N. Cachar hills. Normally between c. 1200 and 4000 metres elevation; rarely lower. Observed by the Everest expeditions soaring at between 7200 and 7500 metres.

Extralimital. Mountains of SE. Europe (Alps etc.), islands in the Mediterranean Sea, east to N. China and south to S. Arabia (and the Himalayas) — Peters.



x.c. 1

GENERAL HABITS. Usually seen quartering the mountain slopes and valleys, sailing majestically on outstretched motionless wings with hardly ever a wing-beat, hugging the contours and cliff-faces or soaring at immense heights. A loud droning of the wings, as of some gigantic wasp, is heard as a bird sweeps past the observer, and also a peculiar *trrrr* sound (produced by primaries?) as it sails low overhead. In spite of great size and weight, bird capable of taking off the ground without a preliminary run. Often scavenges around mountain villages and municipal refuse dumps at Himalayan hill stations and cantonments, walking about with an eagle-like gait and picking up scraps, or swooping from the air like a kite to snatch them in its talons. Its method of breaking large bones which, together with the marrow (?), form part of its normal diet is well known and reliably authenticated. The bone, which may be the femur of an ox, is carried up in the claws to a height of some 50 or 70 metres and dropped on rocks below — often at regular selected spots or 'ossuaries' — the bird retrieving the bone to repeat the process if necessary till it splinters, whereupon it will descend to the ground and leisurely swallow the pieces. On approach of the breeding season pairs indulge in spectacular aerobatics, flapping their wings, chasing one another, and indulging in mock fights. One bird will swoop at the other which dexterously turns over on its back to parry the attack with its talons. With claws thus interlocked and wings half-closed, the two tumble or 'cart-wheel' rapidly through space to the accompaniment of a sharp guttural *koolik, koolik*, separating only when a few metres from the ground. They may then either rise again to repeat the performance or soar aloft and sail away.

314

FALCONIFORMES

from time to time over the 'centuries'. By what process does this take place in such a way that continuity is not disturbed and the two visitors always remain two? A suggestion by the Bombay Natural History Society a few years ago to mark the birds for a rational investigation did not find favour with devout vested interests, so the mystery remains unsolved.

Genus *GYPÆTUS* Storr

Gypætus Storr, 1784, Alpenreise: 69. Type, by monotypy, *Gypætus grandis* Storr = *Vultur aureus* Hablizl

Bill moderately high, compressed, much hooked at end; culmen curved throughout. Nostrils ovals, longitudinal; concealed by long black bristles directed forwards from the cere and lores. Another beard-like tuft of black bristles depending perpendicularly from chin. Tarsi feathered to toes; feet fairly strong with moderate claws, blunt and well curved. Wings long and very pointed. Third primary (ascendant) longest; 1st primary between 5th and 6th. Tail of twelve feathers, long and very much graduated.

Genus monotypic; found in the mountains of SE. Europe, Africa east to S. Arabia and the Himalayas.

188. Himalayan Bearded Vulture or Lämmergeier. *Gypætus barbatus aureus* (Hablizl)

Vultur aureus Hablizl, 1783, Neue Nord. Beytr., 4: 64
(Province of Gilan, northern Persia)

Gypætus hemachalanus Hutton, 1838, Jour. As. Soc. Bengal, 7: 22 (Himalayas)
Gypætus altaicus Sharpe, 1874, Cat. Bds. Brit. Mus., 1: 229 ex Gebler, 1840, Bull.

Soc. Acad. St. Petersburg, 6: 292 (Altai)
Baker, FBI No. 1716, Vol. 5: 26

Plate 16, fig. 2, Plate 17, fig. 6 and Plate 18, fig. 2

LOCAL NAMES. *Argul* (Hindi, about Mussoree); *Ohkhab* (Chambaj). Commonly misnamed 'Golden Eagle'.

SIZE. Himalayan Griffon +, but less massive and with longer tail; length c. 122 cm. (c. 48 in.). Wing span (tip to tip) c. 275-285 cm. (9 ft. to 3 ft. 4 in.).

FIELD CHARACTERS. A handsome eagle-like vulture with feathered head and neck, and longish wedge-shaped tail.

Adult. Above, head and neck creamy or rusty white; rest of upperparts silvery grey and black, streaked with white. Below, pale rusty white. A tuft of black bristle-like feathers — the beard — pendant under chin and conspicuous in profile. Legs fully feathered. Sexes alike.

In overhead aspect like an oversize Neophron. Long and comparatively narrow pointed wings, and longish wedge-shaped tail readily distinguish it from Himalayan Griffon, and from eagles.

Young (immature). Very dark brown, with almost black head and black goatee as in adult.

STATUS, DISTRIBUTION and HABITAT. Resident. A purely northern mountain form, fairly common in Baluchistan and Sind, and throughout the Himalayas from NWFP, Ladakh and Kashmir east through Nepal and Bhutan

316

FALCONIFORMES

FOOD. Carrion and pieces of bone. Often feeds at wayside animal carcasses and refuse dumps in company with Griffons, Neophrons and ravens; but timid and keeping aloof until coast clear. In spite of allegations, never known to attack any living animal.

VOICE and CALLS. Normally silent except in courtship display, as above. Hungry nestling (about size of small goose) uttered 'a curious shrill squeak'; occasionally 'a kind of quack' when a few months older (Whistler).

BREEDING. Breeds at elevations between c. 1200 and 4200 metres; sometimes higher. Season, December to February/March. Nest, a huge pile of sticks along with quantities of miscellaneous rubbish such as sheep's wool, fragments of hairy-mammal skins, and large desiccated bones. Placed on an inaccessible ledge often under a rock overhang, or in a natural recess in a sheer cliff-face. Each pair usually has two or three alternative nest sites used in irregular rotation. Eggs, normally 1 or 2; but three have been recorded. Pale creamy yellow or pale rusty orange to deep reddish buff, variably mottled or blotched with reddish brown. Average size of 60 eggs 85.0 × 67.4 mm. (Baker). Share of the sexes in the domestic chores, and period of incubation, unrecorded.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for description of chick in down and changes with growth Whistler 1912, JBNHS, 21: 663-5; P. T. Dodsworth 1914, *ibid.*, 22: 801.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	726-890	74-85	86-95	440-555 mm. (Baker)

Mid toe and claw 95-102 mm.

COLOURS OF BARE PARTS. Iris: outer ring scarlet, inner ring khaki. 'Pale to blood-orange, the sclerotic membrane blood red' — Baker. Bill horny brown, greenish plumbeous at base, blackish at tip. Feet grey; claws plumbeous.

MISCELLANEOUS. Meat of the Lämmergeier highly prized by the hill people, and not only by the low castes; the birds are killed with spears at tethered chukor baits (! ?) — F. Stoliczka, 1868, *Jour. Asiat. Soc. Bengal*: 37.

Genus *CIRCUS* Lacépède

Circus Lacépède, 1799, Tabl. Ois.: 4. Type, by subsequent designation, *Falco eruginus* Linnaeus (Lesson, Man. d'Ois., 1: 105)

Contains slender, elegant, long-winged, long-tailed raptors — the harriers — readily distinguished by shape and flight. A more or less conspicuous ruff of close-set soft feathers extending across throat and up each side of neck behind ear-coverts. Bill weak and compressed; culmen curved from base to tip; a small festoon present. Nostril large, broadly oval, overhung by loreal bristles. Wing long and pointed: 3rd primary (ascendant) longest; 1st about equal to 6th or 7th. Tail long, square or slightly rounded. Tarsus long, slender, feathered next the thigh only; covered with transverse shields in front, smaller polygonal scales behind. Toes slender, with sharp well-curved claws.

Genus found throughout the temperate and tropical regions. Five species occur in our limits in winter; only one rarely breeding.

HAWKS, VULTURES, ETC.

Key to the Species

	Page
A Outer webs of 2nd, 3rd, and 4th primaries <i>only</i> , notched.....1	
B Outer webs of 2nd to 5th primaries notched.....2	
1 Tarsus over 66 mm..... <i>C. macrourus</i>.....319	
Tarsus under 66 mm..... <i>C. pygargus</i>.....321	
2 Bill from cere to tip over 29 mm..... <i>C. aeruginosus</i>.....324	
Bill from cere to tip under 29 mm.....a	
a Upperparts ashy..... <i>C. cyaneus</i> (ad. ♂).....317	
Upperparts to rump black..... <i>C. melanoleucos</i> (ad. ♂).....323	
Upperparts brown with paler edgings.....I	
I Upper tail-coverts pure white..... <i>C. cyaneus</i> (ad. ♀).....317	
Upper tail-coverts not all white.....a ¹	
a ¹ Coverts along forearm white or buff..... <i>C. melanoleucos</i> (ad. ♀).....323	
Coverts along forearm brown.....a ²	
a ² Abdomen buff with dark stripes..... <i>C. cyaneus</i> (juv.).....317	
Abdomen rufous-brown..... <i>C. melanoleucos</i> (juv.).....323	

189. Hen Harrier. *Circus cyaneus cyaneus* (Linnaeus)*Falco cyaneus* Linnaeus, 1766, Syst. Nat., ed. 12, 1: 126

(Europe, Africa = vicinity of London, England, ex Edwards, pl. 225)

Baker, FBI No. 1792, Vol. 5: 131

Plate 19, fig. 1

LOCAL NAMES. Same as for 190.

SIZE. Kite —; slimmer. Length c. 46–54 cm. (18–21 in.).

FIELD CHARACTERS. Male (adult). Like Pale Harrier (190) but darker ashy grey above, this colour extending over chin, throat, and upper breast which are white in 190. Often a distinct brown-streaked white nuchal patch. Upper tail-coverts pure white v. banded grey and white in Pale.

In flight blunter, rounder black-tipped wings v. more pointed in Pale, is with a little practice a further and infallible differentiating character (Meinertzhagen).

Female. Dark brown above, brown-streaked below. Indistinguishable from Montagu's and not with certainty from Pale, but conspicuously broader white rump-patch suggestive. A light buff collar frequently visible as bird flies past.

Young (immature). Underparts rufous-buff, broadly striated with dark brown. Ruff well developed.

STATUS, DISTRIBUTION AND HABITAT. Rather uncommon winter visitor and/or passage migrant, September to April/May, in NW. Pakistan [Baluchistan (Quetta dist.) and NWFP (Rawalpindi, Chitral, Kohat dists.)] and northern India (Gilgit, Kashmir, Punjab, Himachal Pradesh, Nepal) east to Upper Assam (N. Lakhimpur dist.). Probably the commonest harrier in the Sikkim Himalayas. Affects open undulating plains and cultivated country, Himalayan foothills and up to c. 2500 metres elevation.

Extralimital. 'Breeds in Europe north to the Arctic Circle (casually further) and in Asia south of the tundra, east probably to the Lena River; south to

HAWKS, VULTURES, ETC.

319

MUSEUM DIAGNOSIS. First 6 primaries in male black. Outer webs of 2nd to 5th quills (as.) notched; upper tail-coverts pure white in both sexes. For details of plumage etc. see Withersby 1939, 3: 69–70.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	341–357	23–25	69–74	210–221 mm.
♀♀	375–392	27–29	71–78	246–255 mm. (Baker)

COLOURS OF BARE PARTS: Iris ♂ ad. bright orange-yellow; ♀ ad. gamboge yellow; imm. brown. Rest as in 190.

190. Pale Harrier. *Circus macrourus* (S. G. Gmelin)*Falco macrourus* S. G. Gmelin, 1770, Reise d. Russl. th. 1: 48

(Voronezh, southern Russia)

Baker FBI No. 1790, Vol. 5: 129

Plate 14, fig. 13 and Plate 19, fig. 2

LOCAL NAMES. Dāstmal, Girgit mār, Pūttai (Hindi); Māth cheel (Bengal); Tella chappa gādda, Pilli gādda (Telugu); Poonāi pārandū (Tamil); Kurulu geyā, Ukasta (Sinhala); Daoling wahlai (Cachari).

SIZE. Kite —; slimmer; length c. 46–51 cm. (18–20 in.).

FIELD CHARACTERS. A slender, elegant grey-and-white hawk.

Male (adult). Pale ashy grey above, pure white below, with black tips to the long narrow pointed wings. The last particularly conspicuous in the low sailing flight when wings held in a flat V above plane of body. Tail relatively long, white cross-banded with grey.

Differentiated from male Hen Harrier (189) by paler grey coloration (v. bluish grey) with pure white underparts and less pronounced rump patch (greyish- or brownish white v. broad pure white). From Montagu's (191) by being likewise paler grey and lacking the diagnostic black transverse wing-bar across secondaries.

Female. Umber brown, with prominent pale rufous owl-like ruff; inseparable from Montagu's in the field. Females of both these species only doubtfully distinguishable from ♀ Hen Harrier by smaller, less prominent white rump patch.

Young (immature). Above, brown like female but the feathers margined with pale rufous. Ruff very distinct, unstreaked. Upper tail-coverts pure white. Below, rufous-buff with faint darker rufous shafts on breast and flanks.

Indistinguishable with certainty from females and immatures of 189 and 191.

STATUS, DISTRIBUTION AND HABITAT. Common winter visitor to the entire Indian Union including Andaman, Nicobar (?) and Laccadive islands.



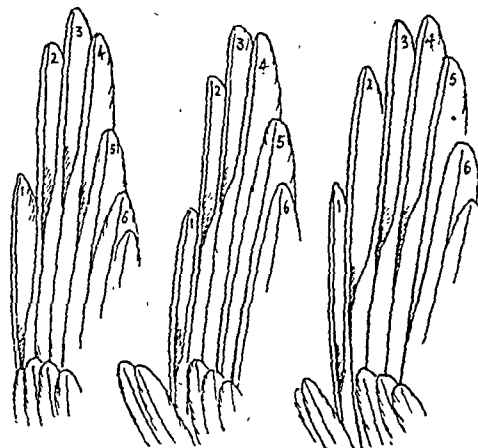
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318

FALCONIFORMES

the Pyrenees, Italy, Turkestan, and Tibet. Winters in the region about the Mediterranean, NE. Africa, N. India, Burma, China, Japan (?) — Peters.

GENERAL HABITS. Very similar to those of the Pale Harrier (190), q.v. Perhaps somewhat more given to soaring. During spring and autumn migrations found at great heights in the Punjab Himalayas; observed at 5000 metres and above beating over the barren hillsides, chasing accentors and finches (Donald).



M P H

Primaries of (M) Montagu's Harrier (*Circus pygargus*), (P) Pale Harrier (*C. macrourus*), (H) Hen Harrier (*C. cyaneus*) to show differences in wing formula and emarginations. In P and H primary-coverts are pushed aside to show emargination of 2nd visible primary, which they normally conceal, whereas in M this emargination is exposed. 5th visible primary in M and P is not emarginated and short; in H it is emarginated and longer.

FOOD. As of the genus: lizards, young rodents, sickly or nestling birds, grasshoppers, etc. Known to carry off snipe falling to shot. Among remains of small birds in stomachs of specimens, the following specifically identified: Common Babbler (*Turdoides caudatus*), Skylark (*Alauda* sp.) and Bustard Quail (*Turnix* sp.) — Whistler. One shot while carrying off a chicken (Biddulph); another seen demolishing a hoopoe (Stevens).

VOICE AND CALLS. Unrecorded. Very silent in winter; more vocal when breeding.

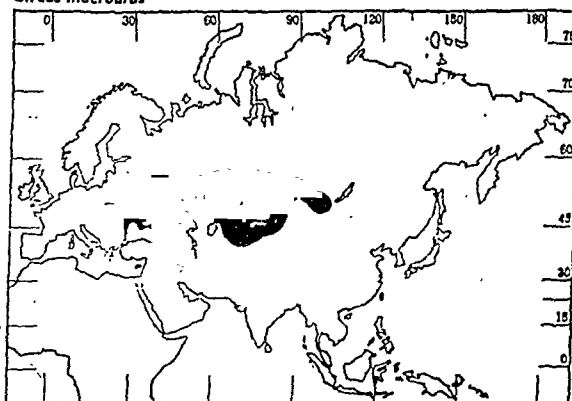
BREEDING. Extralimital. Season, May–June. Nest, on ground in heather, grass and reeds about swamps, or on exposed hillsides. Eggs, 6 to 8, white.

320

FALCONIFORMES

Both Pakistans, Nepal, Ceylon, Maldives (?). From plains level up to c. 3000 metres or higher in the Himalayas, and to the tops of the highest peninsular hills (Dodabetta, Nilgiris, c. 2600 m.; Anaimudi, Anaimalais, c. 2700 m.). In Ceylon a few non-breeding birds remain throughout summer (Phillips). Affects plateaux and undulating foothills country — open grassy hillsides, rolling downland, cultivation, stony semi-desert and scrub. Avoids wooded tracts.

Extralimital. 'Breeds from the Baltic Sea provinces east to Tarbagatai and the Tian Shans, south to Rumania, S. Russia and Ferghana. Winters in Africa from the Sudan to Cape Province; India, Ceylon, and Burma' (Peters).

Circus macrourus

Breeding range

MIGRATION. A female (this or *pygargus*?) ringed at Bharatpur, 25.iii.1962, recovered in Kazakh SSR, 53°45'N., 66°30'E., 7.v.1965 (JBNHS 62: 307). The influx commences in northern India already by the end of August, the birds spreading to southern India and Ceylon by October/November; mostly leaving again March/April. Autumn passage through NWFP (Kohat dist.) September to end November; spring passage February till May (Whitehead & Magrath). Very common in and around Quetta during spring passage between 15 March and 15 April (Marshall). Mostly gone from N. India by end April. On migration passage congregates to pass the night dotted about individually in a ploughed field or bare open ground — a stream of single birds arriving at dusk and on into darkness, and resuming the journey before daybreak. They do not fly in a flock but strung out individually at varying distances behind one another, sailing steadily or with purposeful wing-beats in a fixed direction, higher up than in normal foraging; occasionally descending lower to hunt as they work their way towards their destination.

HAWKS, VULTURES, ETC.

321

GENERAL HABITS. Not gregarious. Single birds spend the day tirelessly quartering the countryside a metre or two above the ground, sailing lightly and gracefully on outspread motionless wings, banking to skirt a bush, 'dipping to the hollow and rising to the mound', or skimming the tops of the standing crops and grass. From time to time the bird checks dead in its flight, wheeling almost double upon itself, swinging out its legs and pouncing noiselessly on some unsuspecting quarry. If successful, it alights to dispose of the victim on the spot before resuming the beat. When sated, rests on the bare ground or on a clod or mound in preference to a bush or tree. Roosts at night in the open, often in sizeable congregations and in company with other harrier species in a ploughed field, fallow land, or grassy swamp. The birds do not sleep huddled together but sit dotted about individually a few metres from one another — sometimes each in a regular 'form' of pressed-down grass as made by partridges.

FOOD. Frogs, lizards, field mice, sickly or young ground-nesting birds, grasshoppers, etc. A *Turnix* and remains of a sandgrouse (or partridge?) taken among stomach contents of a specimen. No fish recorded in India, but on migration across Red Sea from Africa to Europe harriers (species?) observed picking up flying fishes in their talons as they skimmed the water, and eating them (W. P. Lowe 1940, *Ibis*: 333).

VOICE and CALLS. Unrecorded. Very silent in winter.

BREEDING. Extralimital. *Nest*, a bed of leaves and grass in a natural hollow in the ground on a dry open meadow or on the edge of a swamp. *Eggs*, 4 or 5 white, usually spotted and blotched with reddish brown.

MUSEUM DIAGNOSIS. Outer webs of 2nd, 3rd, and 4th quills (as.) only notched. *Tarsus* over 65 mm. long. For details of plumage etc. see Witherby 1939, 3: 71-2.

MEASUREMENTS	Wing	Bill	Tarsus	Tail
♂♂	332-360	25-27	66-70	201-222 mm.
♀♀	345-386	27-31	67-78	222-247 mm.
		(from skull)		(SA)

Weight 1 ♂ 300 gm. (BNHS)

COLOURS OF BARE PARTS. Iris a dull greenish yellow or yellow; juv. brown. Bill horny black, plumbeous at base of lower mandible; cere and gape lemon-yellow; mouth greyish pink. Legs and feet pale chrome-yellow; claws black.

191. Montagu's Harrier. *Circus pygargus* (Linnaeus)

Falco Pygargus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 89

(Europe = England. ex Albin)

Baker, FBI No. 1791, Vol. 5: 130

Plate 19, fig. 3

LOCAL NAMES. As for 190.

SIZE. Kite —; slimmer; length c. 46-49 cm. (18-19 in.).

FIELD CHARACTERS. Male (adult). Like the Pale Harrier but upperparts darker ashy grey (more or less tinged with brown), the grey extending to throat and breast. Rest of underparts white with chestnut shaft-stripes. A narrow black transverse wing-bar across secondaries diagnostic at rest and in flight. Rump greyish.

HAWKS, VULTURES, ETC.

323

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
		(from feathers)		
♂♀	344-395	23-25	c. 55-65	213-241 mm.
				(Baker)

The sexes do not differ in size.

COLOURS OF BARE PARTS. As in Pale Harrier.

192. Pied Harrier. *Circus melanoleucos* (Pennant)

Falco melanoleucos Pennant, 1769, Ind. Zool.: 12, pl. 2 (Ceylon)

Baker, FBI No. 1793, Vol. 5: 132

Plate 14, fig. 12 and Plate 19, fig. 4

LOCAL NAMES. *Pahālai* (Hindi); *Āblāk petāha* (Nepal).

SIZE. Kite —; slimmer; length c. 46-49 cm. (18-19 in.).

FIELD CHARACTERS. Male (adult). A slim, handsome, black-and-white hawk. Head, mantle, throat, and breast black. Rest of underparts and rump white. Tail grey. Wings silvery grey broadly tipped with black (primaries) and with a black band across them above (median wing-coverts).

Female. Dark brown above, pale fulvous-rufous below, with whitish rump and some white on the nape. Doubtfully distinguishable in the field from females of Pale and Montagu's harriers except with much practice, by its blunter, less pointed wings (as in Hen Harrier), and somewhat heavier flight when flapping.

Young (immature). Above, darker than female with rufous edges to head and neck feathers. Whitish nuchal patch and ruff prominent. But field identification with certainty impossible.

STATUS, DISTRIBUTION and HABITAT. Chiefly winter visitor to the eastern parts of the subcontinent. Quite common in Manipur, Assam (where it occasionally breeds), East Pakistan, W. Bengal, Bihar, Orissa and decreasingly so down the eastern side of the Peninsula; in small numbers to Ceylon. Sparingly in Kerala, W. Madras (Nilgiri and Palni hills), Mysore (Londa dist.), Madhya Pradesh (esp. eastern districts, e.g. Balaghat, Bhandara, Bastar). Rare straggler or vagrant in Andhra Pradesh (Warangal dist.) and Maharashtra (Bombay environs). Not recorded north of Bombay in W. India, nor west of Nepal terai and Gorakhpur dist. in Uttar Pradesh, though putatively seen at Lahore (Currie). Affects open expanses of grassland, plain and hill (to c. 2100 metres — Kodaikanal). Also paddy-fields and stubbles, and grassy margins of jheels.

Extralimital. 'Breeds from Lake Baikal east to Ussuriland and south to Mongolia, N. China and the Amur region. Winters in E. India, Burma, and S. China; Indochinese countries, Borneo and the Philippines' — Peters. Breeds sparingly also in Assam and Burma.

GENERAL HABITS. Very similar to the Pale Harrier, q.v. Systematically quarters the ground for food in low sailing flight. Sometimes hovers stationary for a few moments a metre or so above standing crops or reeds to investigate, either pouncing on a quarry or resuming the beat. 'When not hunting, male

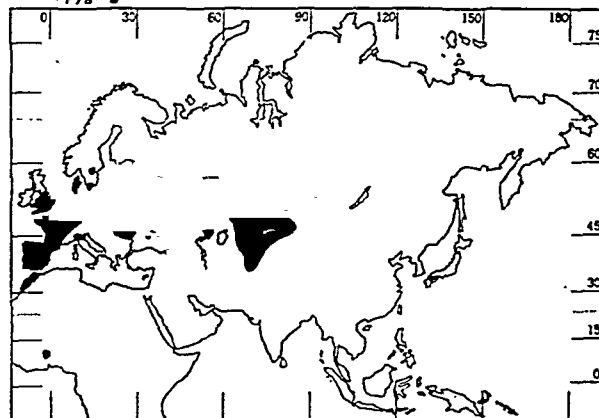
322

FALCONIFORMES

Female. Indistinguishable in the field from ♀ Pale; from ♀ Hen Harrier only doubtfully by slightly narrower white rump-patch.

Young (immature). Somewhat darker and more richly coloured than immature Pale Harrier, with the ruff indistinct; but not separable from it in the field with certainty.

STATUS, DISTRIBUTION and HABITAT. Winter visitor. Perhaps slightly less common than Pale Harrier overall, but equally widely distributed over the subcontinent. Occurs also in the Andaman and Laccadive islands, Ceylon and the Maldives. Affects identical facies to 190.

Circus pygargus

■ Breeding range

Extralimital. 'Breeds in England and through N. Europe (south of lat. 57°N.) and Asia to Turkestan, Altai, and NW. Mongolia; south to Spain. NW. Africa, Italy and Rumania. Winters from Palestine to S. Africa, India, Ceylon, and Assam' (Peters).

MIGRATION. As in 190. No ringing records, but see under 190.

GENERAL HABITS. Same as the Pale Harrier's, the two frequently confused in the field by observers.

FOOD. As in 190.

VOICE and CALLS. Unrecorded. Very silent in winter.

BREEDING. Extralimital. *Nest* of grass and reeds on the ground in a cornfield or on a bed of rushes near a swamp. *Eggs*, 4 to 6, bluish white unmarked, or faintly blotched with light red.

MUSEUM DIAGNOSIS. Outer webs of 2nd, 3rd, and 4th primaries (as.) only notched, as in 190. Most readily distinguished from Pale Harrier by shorter tarsus — under 65 mm. long. For details of plumages etc. see Witherby 1939, 3: 63-6.

FALCONIFORMES

324

always soared with tail tightly closed; female with tail spread out' (Stanford).

FOOD. As of the other harriers — frogs, lizards, mice, grasshoppers, etc. Occasionally takes sickly birds or nestlings from ground nests, but normally small birds do not regard it as a potential danger. Recorded eating a small snake, and robbing young from nest of Pied Myna (*Sturnus contra*).

VOICE and CALLS. Normally silent. Unrecorded except for a loud six-fold 'chacking', as of a magpie, uttered by female when nest containing young approached (Stanford).

BREEDING. Mainly extralimital, but a few birds breed in the uplands of Assam, e.g. in Dibrugarh dist. (Cripps), and evidently also in Cachar at c. 600-900 metres (Baker), as recently found to do in Burma (Stanford). Season, c. April to July (?). *Nest*, a rough pad of grasses placed a few centimetres above ground amongst pressed-down growing stems, in an open expanse of grassland. *Eggs*, 4 to 6 (in Siberia), white, sometimes faintly flecked with reddish. Average size of 28 Siberian eggs 43.6 × 34.5 mm. (Baker).

MUSEUM DIAGNOSIS. See key to the species. Outer webs of 2nd to 5th primaries (as.) notched. For details of plumage Baker, loc. cit.

MEASUREMENTS	Wing	Bill	Tarsus	Tail
♂♂	344-367	22-24	76-80	197-217 mm.
♀♀	366-387	25-27	81-88	211-240 mm.
		(from feathers)		(Baker)

Weight 1 ♂ 254 gm. (SA)

COLOURS OF BARE PARTS. Iris, ♂ ad. bright lemon-yellow. Bill, upper mandible and terminal half of lower blackish brown; rest of lower mandible plumbeous tinged with greenish yellow at base; cere greenish yellow. Legs and feet orange-yellow (in ♀ somewhat duller and paler); claws black.

Circus aeruginosus (Linnaeus)

Key to the Subspecies

Abdomen dark or rufous-brown or rufous with dark stripes..... *C. a. aeruginosus*
Abdomen plain white, or buff with dark shaft-stripes..... *C. a. spilometus*

193. Marsh Harrier. *Circus aeruginosus aeruginosus* (Linnaeus)

Falco aeruginosus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 91

(Europe, restricted type locality, Sweden)

Baker, FBI No. 1794, Vol. 5: 134

Plate 14, fig. 14 and Plate 19, fig. 5

LOCAL NAMES. *Kuter*, *Kulerir*, *Safid sira* (Hindi); *Pén cheel*, *Tika kauri* (Bengal); *Ukusa*, *Kuralla goya* (Sinhala); *Poonii pāvāndi* (Tamil); *Kariteppi* (Malayalam).

SIZE. Kite —; length c. 54-59 cm. (21-23 in.).

FIELD CHARACTERS. A predominantly marsh-frequenting harrier, more heavily built than others of the genus, with broader and less pointed wings. Male (adult). Dark brown with pale rufous head, neck and breast; dark rufous below. With silvery grey tail and black-tipped silvery grey wings.

HAWKS, VULTURES, ETC.

325

Female (adult) and Young (immature). Rather like a dark chocolate-brown Pariah Kite but slimmer, with a round (not forked) tail, and usually a creamy buff cap on head and buff leading edge to wing at shoulders.

The majority of birds seen in India are in this plumage.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor, September to April, practically throughout the Indian Union, Andaman, Nicobar (?) and Laccadive islands. Both Pakistans; Nepal. Chiefly low country and to c. 2000 metres elevation. Ceylon (all zones); Maldives Islands. In Ceylon some non-breeding birds loiter throughout the summer (Phillips). This is doubtless also the explanation for the young birds occasionally seen in Kashmir and elsewhere in northern India as late (or as early?) as July. Affects jheels and marshes, flooded paddyfields, etc.

Extralimital. Breeds from S. Sweden and Denmark east to the Yenesei, south to the Mediterranean, Turkestan, and Mongolia. In winter south to Africa, India, Malay Peninsula, S. China, Japan, and Philippines (Peters).

MIGRATION. No ringing data.

GENERAL HABITS. As of the other harriers, e.g. Pale Harrier (q.v.) but more addicted to marshland and jheels. Sails leisurely a few metres above the reed-beds on motionless wings, occasionally boosted by a few heavy flaps, jinking suddenly in its flight from time to time and dropping into the reeds to seize some prey. Unlike the other harriers spends a considerable part of its time sitting about on the ground, on a canal bank, mound, or snag, and is also more given to soaring aloft in the sky. In this the wings are held in a wide V above the plane of the body. It is notorious for its habit of making off with wildfowl — sometimes as large and heavy as itself — falling to a sportsman's gun with the utmost audacity, regardless of his shouts and gesticulations.

FOOD. Frogs, fish, field mice and voles, weakling or wounded birds, large insects. Among stomach contents remains of lark (*Calandrella*) and redstart (*Phoenicurus*) have been specifically identified. Observed to take an apparently unwounded moorhen (*Gallinula chloropus*) among reeds by pouncing on it repeatedly from the air (SA); also feeding on carrion (D'Abreu).

VOICE AND CALLS. Very silent. Unrecorded in winter.

BREEDING. Extralimital. *Season*, April to June. *Nest*, a mass of reeds and rushes lined with grass; placed on the ground near a marsh. *Eggs*, 4-6, unmarked white. A pair recorded to have bred successfully at Malezai, N. Baluchistan, in 1940 (A. F. P. Christison). Presumptive or reported occasional breeding in Kashmir and elsewhere in N. India not yet proven.

MUSEUM DIAGNOSIS. Outer webs of 2nd to 5th quills (inclusive) notched. Bill from cere to tip usually over 29 mm. Abdomen dark or rufous-brown, or rufous with dark stripes. For details of plumage etc. see Baker, loc. cit.; Witherby 1939, 3: 59-61.

MEASUREMENTS

	Wing	Bill (from cere(?))	Tarsus	Tail
♂♂	385-405	28-30	80-85	234-245 mm.
♀♀	390-430	28-31	85-90	238-258 mm. (Baker)

In 2 ♀♀ measured by SA and H. Whistler bill (from skull) 36, 43 mm.; tarsus 91, 96 mm.

HAWKS, VULTURES, ETC.

327

except for c. 25 mm. next the tibia; covered all round with small ill-defined hexagonal imbricate scales. Toes short; the inner and outer toes about equal in length. Claws short and not much curved.

No crest, but feathers of nape lengthened and lanceolate.

Genus chiefly African; one species extending to Europe and Asia as far east and south as India.

195. Short-toed Eagle. *Circus gallicus gallicus* (Gmelin)

Accipiter ferox, S. G. Gmelin, 1771, Novi Comm. Acad. Petrop., 15: 422, pl. 10 (Astrakan, S. Russia). (Unidentifiable vide Mayr. E., 1944, Emu, 43:303).

Falco gallicus Gmelin, 1788, Syst. Nat., 1(1): 259 (France)

Baker, FBI No. 1764, Vol. 5: 93

Plate 20, fig. 7 and Plate 21, fig. 3

LOCAL NAMES. *Saampnaar* (Hindi); *Sāmparil* (Bengal); *Mālpatar* (Kannada); *Pāmīlā gāddā* (Telugu); *Onān koththi*, *Pāmbu pārāndū* (Tamil); *Rawal* (Wagri); *Kendatle* (Yerukali).

SIZE. Kite +; length c. 63-68 cm. (25-27 in.).

FIELD CHARACTERS. A thick-set brown and white eagle with large greyish owl-like head. *Above*, earthy brown. *Below* chin, throat, and upper breast paler earthy brown; rest of underparts white, barred with pale brown. Tail with 3 (or 4) dark bands, the terminal one broadest. Sexes alike; female larger.

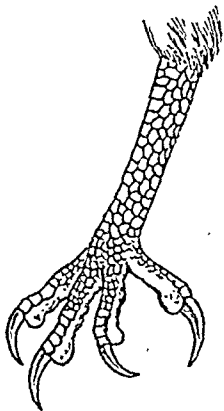
At close range and through glasses unfeathered legs, thick frowzy head with upwardly directed bristly feathers on face, and wings reaching to end of tail, are diagnostic pointers when bird at rest.

In overhead aspect thick-set outline, silvery body and underwing contrasting with darker head and throat, blackish primaries, and dark crossbands in tail are suggestive. Wings held in the same plane as body.

Young (immature). Confusingly variable in coloration: from head and neck almost white to brown, and from underparts whitish buff with browner chin, throat, and breast, to white spotted or striped with brown, and other intermediate phases.

STATUS, DISTRIBUTION AND HABITAT. Resident. W. Pakistan, Nepal and practically throughout the Indian Union (except Assam), from c. 1000 metres elevation in the Himalayas south. Has been observed as high as c. 2300 metres (Dharamsala — Donald). Not in Ceylon, or E. Pakistan (?). Affects open cultivated plains, stony deciduous scrub and foothills country, and semi-desert. Observed at Kodaikanal, c. 2100 m.

Extralimital. Also breeds from C. Europe east to Turkestan and Mongolia south to N. Africa, Persia and N. China. Migratory in northern parts of its range. Winters chiefly in NE. Africa (Peters).



326

FALCONIFORMES

COLOURS OF BARE PARTS. Iris ad. hazel brown to dull golden; imm. brown. Bill horny black, plumbeous or greenish yellow at base and chin; cere yellow. Legs and feet yellow to orange-yellow; claws horny black.

194. Eastern Marsh Harrier or Striped Harrier. *Circus aeruginosus spilontus* Kaup

Circus spilontus Kaup, 1847, Isis von Oken, col. 953 (Asia)

Baker, FBI No. 1795, Vol. 5: 135

Plate 19, fig. 6

LOCAL NAMES. Unrecorded.

SIZE. Kite —; about same as 193.

FIELD CHARACTERS. Male (adult). Head black, mantle black with some white mottling. Nape and throat white, heavily streaked with black; breast and abdomen all white; rump white, lightly barred with black. Tail and wings light grey; flight feathers blackish; underwing white.

Female. Dark brown, buffy white on head, throat, and nape, streaked with dark brown on nape and lower throat. Underwing dark; rump not noticeably lighter than back.

Both sexes readily distinguished from 193 by conspicuously striped nape and throat, and white or whitish abdomen.

Young (immature). Brown above, pale rufous below, streaked with rufous brown; rump whitish (Delacour & Mayr).

STATUS, DISTRIBUTION AND HABITAT. An eastern winter visitor, recorded only from Assam (Cachar) and Manipur. Affects marshland.

GENERAL HABITS. As in 193.

FOOD. Presumably as in the Marsh Harrier; not specifically recorded.

VOICE AND CALLS. Unrecorded.

BREEDING. Extralimital. *Nest* and *eggs* similar to those of 193.

MUSEUM DIAGNOSIS. Outer webs of 2nd to 5th primaries (inclusive) notched. Bill from cere to tip over 29 mm. Abdomen plain white or buff with dark shaft-stripes. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from cere(?))	Tarsus	Tail
♂	384	29	91	224 mm.
♀♀	406-420	31-32	91-95	244-256 mm. (Baker)

Wing ♂♂ 385-425; ♀♀ 400-443 mm. (Kirke-Swann).

COLOURS OF BARE PARTS. Iris golden yellow. Bill deep slaty, black at tip yellowish at base and gape; cere dull yellow. Legs and feet pale yellow.

Genus *CIRCAETUS* Vieillot

Circetus Vieillot, 1816, Analyse: 23. Type, by monotypy, 'Jean-le-Blanc Buffon = *Falco gallicus* Gmelin

Bill moderate, greatly hooked and with the culmen much rounded. Nostril oval and slightly oblique, the loreal bristles growing over it in an upwards direction. Wing long: 4th primary (ascendant) longest; 3rd and 5th only slightly shorter. Primaries exceed secondaries by more than length of tarsus. Tarsi long, unfeathered

328

FALCONIFORMES

GENERAL HABITS. Usually seen singly soaring and circling high up in the blue, or quartering the ground on outstretched motionless wings like a harrier, 15 to 20 metres above scrub jungle and fields, for food. The sailing flight is frequently interrupted by bouts of cumbrous hovering to investigate prospects below more closely. Against strong wind will remain stationary for minutes merely with slight manipulation in angle of wings and tail. This often followed by a closing of the wings and spectacular, almost vertical dive at high velocity, pulling out when close to the ground and pouncing on prey. The great heights from which these dives are executed — in one case well over 400 metres — bespeaks a phenomenally keen eyesight for the bird. Sometimes surveys its surroundings from perch on tree-top or stake, swooping on any prey that comes into view; or walks about on the ground like a buzzard picking up grasshopper nymphs, termites, etc. One individual overhead when fired at and peppered with small shot suddenly jinked and disgorged a 30 cm. long snake, but promptly retrieved it in its talons in mid-air and complacently flew on despite further peppering!

During breeding season much given to circling aloft in pairs and noisily calling; and to remarkable tumbling and darting aerobatics.

FOOD. Largely snakes including poisonous ones, and some of considerable size (a *Ptyas mucosus* 150-180 cm. long recorded). The reptiles apparently killed by seizing at the head and neck, the wriggling body often winding itself round parts of the bird during the struggle. Among the species identified in crops is *Psammophis condanarus*, a snake of which the first ever record for Mysore was obtained via a Short-toed Eagle! Also takes lizards (including *Varanus*), frogs, field rats, disabled birds and large insects, etc.

VOICE AND CALLS. A loud, screaming, plaintive, rather kite-like cry *pieou, pieou* uttered chiefly on the wing, and commonly in the breeding season.

BREEDING. *Season*, December to March. *Nest*, comparatively small for such a large eagle, of sticks and twigs with a deepish central depression sometimes lined with a little grass. Built in or at the top of a moderate sized tree — neem (*Melia*), babool (*Acacia*), kandi (*Prosopis*), sheesham (*Dalbergia*), or other — standing in open country. Rarely on the ledge of a cliff or steep river-bank. *Egg*, invariably a singleton in India — in Europe frequently 2 — pure white. Average size of 38 Indian-taken eggs 73.5 × 58.4 mm. (Baker). Share of the sexes in nest-building unrecorded in India. Incubation chiefly by female who is a very close sitter. Both parents feed the young.

Incubation period in Europe c. 47 days; young flies from nest in 70-75 days (*Alauda*, 21: 86-127).

MUSEUM DIAGNOSIS. See under Genus. Toes and claws markedly short in proportion to the bird. For details of plumages see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	520-536	40-43	—	252-283 mm.
♀♀	530-571	40-43	92-97	287-330 mm.

Bill from skull ♂♂ 45-46, ♀♀ 47-53 mm.; tarsus ♂♂ 93-99, ♀♀ 94-96 mm. (SA).

HAWKS, VULTURES, ETC.

329

COLOURS OF BARE PARTS. Iris yellow or bright orange-yellow. Bill pale greyish blue, darkest at tip; cere whitish or pale plumbeous grey. Legs and feet dirty yellowish white to greyish brown; claws black.

Genus *SPILORNIS* G. R. Gray

Spilornis G. R. Gray, 1840, List Gen. Birds: 3. Type, by original designation, *Falco bido* Horsfield (ridg. Stresemann, E., 1959, Jour. f. Orn., 100: 35).
Harmotornis Vigors, March 1832 (1831), Proc. zool. Soc. London, pt. 1: 170. Not *Harmotornis* Swainson, Feb. 1832 (Turdidae).
Cf. Meise, W., 1939, J. f. O., 87: 65-74.

Amadon, D. 1974, Bull. Brit. Orn. Cl. 94: 159-63

Distinguished from other Indian accipitrine genera by having a broad nuchal crest covering the whole nape. Coloration also peculiar, brown both above and below in adults, lower plumage ocellated with round white spots. Bill rather long, well hooked; festoon on upper mandible obsolete or wanting. Nostrils oval, oblique; lores nearly naked. Wings short and rounded; 4th or 5th primary (as) longest. Tarsus (naked, covered with hexagonal scales), toes, and claws as in *Circus*.

Genus confined to Oriental Region. One species occurs within our limits.

Key to the Species

	Page
A Underparts buffy brown, unmarked	<i>S. klassi</i> 335
B Underparts dark amber brown spotted with white over entire surface	<i>S. elgisi</i> 335
C Underparts various shades of brown, white spotting or barring confined mainly to lower breast and abdomen	<i>S. cheela</i> 329

SPILORNIS CHEELA (Latham)

Key to the Subspecies

A Smaller; wing below 305 mm	<i>S. c. minimus</i> 334
B Larger; wing above 305 mm	1
1 One white crossbar in tail	a
Two white crossbars in tail	b
a Wing 468-532 mm	<i>S. c. cheela</i> 329
Wing 408-463 mm	<i>S. c. burmanicus</i> 333
Wing 374-407 mm	<i>S. c. davisoni</i> 333
b Wing 405-474 mm	<i>S. c. melanotis</i> 331
Wing 355-402 mm	<i>S. c. spilogaster</i> 332

196. **Crested Serpent Eagle.** *Spilornis cheela cheela* (Latham)

Falco Cheela Latham, 1790, Index Orn., 1: 14 (India = Lucknow)

Baker FBI No. 1765, Vol. 5: 96

Plate 20, fig. 8, Plate 21, fig. 4 and Plate 28, fig. 4

LOCAL NAMES. *Furj bāj*, *Dīgra chel* (Hindi, Saharanpur); *Tilaj bāj*, *Sekher* (Bengal); *Six* (Assam).

SIZE. Kite +; length c. 74 cm. (29 in.).

FIELD CHARACTERS. A large dark brown eagle with a full, round black-and-white nuchal crest (very prominent when erected), a conspicuous yellow

HAWKS, VULTURES, ETC.

331

FOOD. Principally snakes, frogs, lizards, field rats and mice, maimed or sickly birds. Crabs, and 'an eel about a foot long' have been recorded. In spite of alleged destruction to game birds, it seldom if ever takes a healthy partridge or pheasant; occasionally domestic chickens.

VOICE AND CALLS. Loud, high-pitched, prolonged whistling screams *kee-kee-kee* or *kek-kek-kek-kee* while soaring—sometimes also from perch. Usually prefaced by a short double *whi-whi*, or three short notes like *pu-pu-pu*, quickly repeated in undertone and audible only at close range.

BREEDING. *Season*, in the plains chiefly February-March; in the hills March-May. *Nest*, a large structure of sticks and twigs, sometimes lined with green leaves. Built high up in a tree in or near a forest clearing, preferably close to a stream. *Egg*, invariably a singleton, handsome, and with a wide range of colour and markings, mostly creamy or yellowish white boldly blotched with reddish brown. Average size of 16 eggs 71.8 × 56.2 mm. (Baker). Both birds share in nest-building, but apparently the female alone incubates. Period unrecorded.

MUSEUM DIAGNOSIS. The nominate race *cheela* (northernmost) is larger and darker than the other races. Chin and throat blackish; breast somewhat barred; white ocelli on lower plumage with conspicuous black spots on either side. Tail in adults with one broad almost pure white band. For details of plumage see Baker, loc. cit.

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	468-507	41-45	100-102	295-315 mm. (Baker)

For Himalayan birds Kirke-Swann gives Wing ♂ 500-510; ♀ 495-532 mm. For birds from the Punjab foothills:

	Wing	Bill (from skull)	Tarsus	Tail
3 ad. ♂♂	472-479	42-50	—	296-305 mm.
2 ad. ♀♀	482-484	c. 48	—	299-304 mm. (Whistler)

COLOURS OF BARE PARTS. Iris golden yellow. Bill slaty blue, blackish on culmen and tip; cere and lores yellow, brighter in breeding season. Legs and feet dull yellow; claws black.

197. **Lesser or Peninsular Crested Serpent Eagle.** *Spilornis cheela melanotis* (Jerdon)

Buteo melanotis Jerdon, 1844, Madras Jour. Lit. Sci., 13: 166

(At the foot of the Nilgiris)

Falco eldii Temminck, 1820, Planch. Color. d'Ois., 4: pl. 19 (Pondicherry). Not *Falco eldii* Gmelin, 1788: 267

Spilornis minor Hume, 1873, Nests & Eggs of Indian Birds: 42

Baker, FBI No. 1766, Vol. 5: 98

LOCAL NAMES. *Mareyala* (Marathi); *Chataliyo sēpmār* (Gujarati); *Nēlla pēnēla* (Telugu); *Betta gada* (Gondi); *Geon* (Kannada); *Chattiparanda* (Malayalam).

SIZE. Kite +; length c. 74 cm. (29 in.).

330

FALCONIFORMES

patch at base of bill (cere and lores), and unfeathered yellow legs. Underparts paler brown, ocellated and finely barred with white and blackish. Sexes alike, but considerable individual colour variation consequent on age.

In overhead aspect brown coloration, very broad rounded wings with the characteristic markings, held far back and on same plane as body in sailing flight, together with the distinctive 3- or 4-noted screaming call assist identification. Underwing pattern as follows: a narrow black border with a broad white band behind it running across the primaries and along the entire trailing edge, with narrower concentric parallel black-and-white bands before it. Flight very like a hawk-eagle's (*Spizartus*). A broad whitish band across dark tail (not expanded in flight) and another ill-defined one near its base are further pointers.



Young (immature). *Above*, head, nape, and crest buffy or fulvous white with blackish tips to the feathers. Upperparts paler brown than in adult, scalloped with buffy white. Tail multi-banded dark and whitish brown. *Below*, buffy whitish, with sparse, irregular brown drops and streaks on breast and flanks. General colour pattern reminiscent of Greenland Falcon (*Falco rusticolus*).

STATUS, DISTRIBUTION and HABITAT. Resident, possibly subject to some local migration or wandering, as suggested by reports of seasonal commonness and rarity and the finding of occasional specimens of extralimital races in different parts of the country. W. Pakistan and N. India from Sind, NWFP, and Kashmir, through Nepal (where observed up to 3050 m. alt. in Gandak-Kosi watershed) to Assam north of Brahmaputra river. Gangetic Plain, foothills and normally up to c. 2000 m. in the Himalayas. Affects well-wooded well-watered country.

GENERAL HABITS. In effect the ecological counterpart in well-wooded biotope of the closely related Short-toed Eagle (*Circus gallicus*) of semi-desert areas. Keeps singly, or more usually in pairs, to jungle-clad ravines, wooded streams, and the edge of forest clearings and cultivation, perched bolt upright in the top of a lofty tree, partly concealed by the foliage, whence it can command a clear view of the surroundings for movements of prey. When alarmed the nuchal crest is erected 'so as to frame the face with a beautiful black and white ruff' (Deignan). Also commonly seen soaring and circling above the forest canopy, often at immense heights, uttering its characteristic screaming whistles which clearly proclaim its identity even when the bird itself is a mere speck in the heavens. In the breeding season pairs become particularly noisy and are much given to darting and tumbling acrobatic displays; sometimes three birds thus engaged in some form of 'triangular' courtship.

332

FALCONIFORMES

FIELD CHARACTERS. Same as for 196; somewhat smaller. Tail in adults with two broad pale bands instead of one, but the second not always very distinct. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. Peninsular India south of the Gangetic Plain, arbitrarily south of lat. 25°N., from Gujarat eastward to Bengal. Affects well-watered wooded plains and foothills country.

GENERAL HABITS. As in the northern race (196).

FOOD, VOICE and CALLS. Ditto.

BREEDING. *Season*, December to March. *Nest*, site and egg as in 196. Average size of 36 eggs 65.7 × 50.9 mm. (Baker).

MUSEUM DIAGNOSIS. Chin and throat usually not blackish; breast generally uniform unbarred; tail bands (2) grey, not white. Peninsular and Ceylonese birds similar in coloration except for individual variation. Steady diminution in size from north to south, some Kerala birds approaching the smallest race *spilogaster* of Ceylon.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	421-461	42-46	94-101	275-310 mm. (Baker)

Recently collected random specimens of *melanotis* show the size trend N. to S. as follows:

		Wing	Bill (from skull)	Tarsus	Tail
Gujarat.	1 ♂	440+	—	—	—
	3 ♀♀	469-481	43-48	99-109	290-315 mm.
M.P. and Orissa	1 ♂	432	44	102	263 mm.
	3 ♀♀	440-467	40-46	100-110	273-310 mm.
Mysore	2 ♀♀	424-497 ¹	43-46	—	260-294 mm.
Kerala	7 ♂♂	357-440	43-46	91-107	211-279 mm.

Weight 1 ♂ 1300 gm. (SA)

COLOURS OF BARE PARTS. As in the nominate race.

198. **Ceylon Crested Serpent Eagle.** *Spilornis cheela spilogaster* (Blyth)

Harmotornis spilogaster Blyth, 1853, Journ. Asiat. Soc. Bengal, 21: 351 (Ceylon)

Baker, FBI No. 1769, Vol. 5: 100

LOCAL NAMES. *Rajaliye* (Sinhala); *Kūḷumḷē* (Tamil).

SIZE. Kite ±; length c. 59-63 cm. (23-25 in.).

FIELD CHARACTERS. Same as for 196; smaller than 197 otherwise similar. Also with individual colour variations. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Race peculiar to Ceylon. Common resident throughout the island. In wooded country all zones, to over c. 2100 metres in the hills.

GENERAL HABITS, FOOD, CALLS, etc. Same as in the Indian races. 'In the courting season it indulges in curious acrobatics, stooping and rolling on the wing, with tail raised and wings half closed and "shivering"' (G. M. Henry).

¹ This may be a vagrant (?) of the northern race.

HAWKS, VULTURES, ETC.

333

BREEDING. Season, February to May; chiefly March and April. *Nest*, site, and egg as in the Indian races. Average size of 22 eggs 68.2 × 49.4 mm. (Baker).

MUSEUM DIAGNOSIS. Upperparts often with a distinct purple-grey gloss; throat very grey; breast brown, unbarred. But no consistent difference in coloration apart from individual variation; thus best distinguished from *melanotis* of peninsular India (197) only by smaller size.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	355-402	38-45	—	— (Baker)
		(from skull)		
4 ad. ♂♂	370-389	41-44	—	222-240 mm.
4 ad. ♀♀	384-398	41-44	83(1)	240-254 mm. (Whistler)

COLOURS OF BARE PARTS. As in Indian birds.

199. **Burmese Crested Serpent Eagle.** *Spilornis cheela burmanicus* Swann

Spilornis cheela burmanicus Swann, 1920, Syn. List Accipitr.: 81

(Jobin, Thayetmyo, Burma)

Baker, FBI No. 1767, Vol. 5: 99

LOCAL NAMES. *Sin* (Assam).

SIZE. Kite +; length c. 68 cm. (27 in.).

FIELD CHARACTERS. Same as for the nominate race (196). Rather smaller and paler but doubtfully separable in the field. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, possibly with some local movement, in Assam south of the Brahmaputra river; Manipur (?), E. Pakistan (?). Andaman Islands.

Extralimital. Burma, Shan States, Thailand and Tonkin, south to Tenasserim.

GENERAL HABITS, FOOD, etc. Same as in 196 and the other races.

BREEDING. Not recorded within Indian limits.

MUSEUM DIAGNOSIS. Smaller and paler than nominate *cheela* (196). White spots on lower plumage larger and more conspicuous; the black adjoining spots paler and less conspicuous. Terminal black band on primaries narrower.

MEASUREMENTS. Wing 408-463 mm. (Baker). Baker points out that very few have a wing of over 450 mm., and those from the western area only. He pertinently suggests that the bigger birds may be wandering specimens of *S. c. cheela*.

COLOURS OF BARE PARTS. As in 196.

200. **Andaman Pale Serpent Eagle.** *Spilornis cheela davisoni* Hume

Spilornis Davisoni Hume, 1873, Stray Feathers, 1: 307

(Neighbourhood of Port Blair, South Andamans)

Baker, FBI No. 1770 & 1773, Vol. 5: 101, 103

Plate 20, fig. 9

LOCAL NAMES. Unrecorded.

HAWKS, VULTURES, ETC.

335

COLOURS OF BARE PARTS. Iris yellow. Bill light blue, dark horny at tip; cere, gape, and orbital skin bright yellow. Legs and feet yellow (Baker).

202. **Great Nicobar Crested Serpent Eagle.** *Spilornis klossi* Richmond

Spilornis klossi Richmond, 1902, Proc. U.S. Nat. Mus., 25: 304

(Pulo Kunyi, Great Nicobar Island)

Baker, FBI No. 1772, Vol. 5: 102

Plate 20, fig. 11 and Plate 21, fig. 5

LOCAL NAMES. Unrecorded.

SIZE. Kite —; length c. 46 cm. (18 in.).

FIELD CHARACTERS. The most diminutive race of *cheela*, but close relationship with it superficially unmistakable. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Apparently endemic on Great Nicobar Island or Sumbelung, the largest and southernmost of the Nicobar group.

GENERAL HABITS, FOOD, etc. Unrecorded, except that among the stomach contents of a specimen were found remains of lizards, rats, a small bird, and an Emerald Dove (*Chalcophaps*).

BREEDING. Unknown.

MUSEUM DIAGNOSIS. General colour above . . . drab with light coppery sheen and some of the feathers with narrow white tips; nape and sides of the neck Isabella in colour; top of head black, the longer feathers with narrow tips of Isabella colour; ear coverts, cheeks, and malar region clear smoke grey; breast buffy wood brown, paler on abdomen, sides, thighs, and under tail-coverts; lesser and middle wing-coverts dark drab, prominently edged with white; primaries black with two dusky bars, one only on the outer primary; tail with two pale bars.

* Immature birds have buffy tips to the feathers of head, back and wing-coverts; the tail has three bars instead of two. (Richmond)

MEASUREMENTS. Wing 257; tail 165; tarsus 75; culmen 33 mm. (Richmond).

COLOURS OF BARE PARTS. Iris yellow. Bill, base yellow, middle bluish, tip, black; cere and naked skin on sides of head yellow (Richmond, 1903).

202a. **Andaman Dark Serpent Eagle.** *Spilornis elgini* Blyth. See Appendix.

Genus PANDION Savigny

Pandion Savigny, 1809, Descr. Egypte, Ois., 1: 69, 96. Type, by monotypy, *Pandion flavius* Savigny = *Falco haliastur* Linnaeus

Bill moderate; tip long and greatly hooked; festoon variable. Nostrils small, narrow, oblique. Tarsus short, stout, reticulated throughout except on the extremity of the toes. Toes very powerful with prickly scales on the soles; outer toes reversible. Claws rounded beneath, long, subequal, strongly curved. Wings very long and pointed; 3rd primary (as) longest; 1st between 4th and 5th or equal to latter. Tail almost square.

334

FALCONIFORMES

SIZE. Kite —; length c. 56 cm. (22 in.).

FIELD CHARACTERS. A smaller version of *S. c. cheela* (196). Below, pale brown; throat and breast finely barred with darker zigzag lines.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Andaman and Nicobar Is. Affects tidal creeks and mangrove swamps.

GENERAL HABITS. Presumably similar to those of the better known races.

FOOD. Crabs (Butler, Abdulali), eel (Osmaston).

BREEDING. Unknown. A female collected on 22 February had enlarged gonads (Abdulali, JBNHS 61: 510).

MUSEUM DIAGNOSIS. Pale wing-bar next to tips of primaries much narrower than dark bands on either side of it (*contra* in nominate *cheela*). Legs and feet larger and coarser than in *S. elgini* (with which it was synonymized in the earlier edition of this volume) and with shorter claws (Biswas).

MEASUREMENTS

	Wing	Bill (from feathers)	Tail
♂ ♀	374-407	37-41	— (Baker)
2 ♀♀	393, 393	—	238, 250 mm. (Abdulali)

COLOURS OF BARE PARTS. As in 196.

201. **Nicobar Crested Serpent Eagle.** *Spilornis cheela minimus* Hume

Spilornis minimus Hume, 1873, Stray Feathers, 1: 464 (Camorta, Nicobar Islands)

Baker, FBI No. 1771, Vol. 5: 192

Plate 20, fig. 10

LOCAL NAMES. Unrecorded.

SIZE. Kite —; length c. 48 cm. (19 in.).

FIELD CHARACTERS. Like 196 but very small, pale brown or greyish brown. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Apparently endemic in the Camorta-Nancowry-Teressa-Katchall group of the Nicobar islands.

GENERAL HABITS. Davison in c. 1873 recorded it as wild and shy and found only in forest near rivers, not frequenting the shores or clearings. No further information has been added since.

FOOD. Stomachs of three specimens collected by Richmond (1903) contained remains of lizards, portions of a chicken, and a crab.

CALLS, etc. Unrecorded.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Upperparts pale grey or pale brown. Breast greyish brown, unbarred in adults. Chin and throat same colour as breast. Apical black band on primaries short; under 50 mm. in breadth.

MEASUREMENT	Wing	Bill	Tarsus	Tail
♂ ♀	286-290	35-37 (from feathers)	c. 75-77	191-192 mm. (Baker)

Wing ♂♂ 256-5-284.5; ♀♀ 288-292 mm. (Richmond).

336

FALCONIFORMES

On morphological characters retained by some authorities in a separate family Pandionidae. (See Witherby 1939, 3: 106-7.)

203. **Osprey.** *Pandion haliaetus haliaetus* (Linnaeus)

Falco Haliaetus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 91

(Europe, restricted type locality, Sweden ex Fn. Succ.)

Baker, FBI No. 1704, Vol. 5: 3

Plate 14, fig. 6 and Plate 21, fig. 1

LOCAL NAMES. *Māchhlīmār*, *Māchhlāriya*, *Māchhlānga* (Hindi); *Māchhlārang* (Nepal); *Māchhlāmarol*, *Kurari*, *Utkrosh* (Bengal); *Koramē gaddi* (Telugu); *Hegguli* (Yerukali); *Vrāl āddipān* (Tamil); *Talipparundu* (Malayalam); *Pantiang* (Lepcha).

SIZE. Kite —; length c. 56 cm. (22 in.).

FIELD CHARACTERS. A water-frequenting fish-eating hawk. Above, dark brown with some white streaking on the slightly tufted head. Below, pure white with a conspicuous broad brown-streaked band, or 'necklace', across upper breast. A blackish band running backwards from behind eye. Sexes alike; female larger.

In overhead aspect glistening white throat and belly separated by the brownish breast-band, closely barred pointed wings with black patches on 'wrist' region (near base of first 2 or 3 primaries), and barred squarish tail, diagnostic. Wings held in line with body, often slightly bent backwards and downwards from 'wrist'.

Young (immature). Feathers of upperparts and wing-coverts scalloped with whitish. Brown breast-band less defined; head, neck, and face more heavily marked with dark brown.

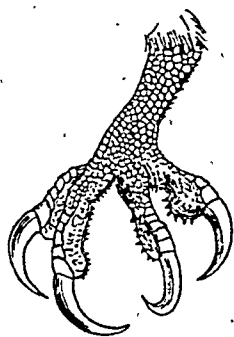
STATUS, DISTRIBUTION AND HABITAT. Breeds in small numbers, provenly or circumstantially, along the Himalayas between c. 2000 and 3300 m. altitude (Ladakh, Kashmir, Garhwal, Kumaon) and in Assam (Cachar). Observed throughout the year in Nepal Valley (Proud, JBNHS 48: 716). Mainly winter visitor, September through March, throughout the sub-continent — from Baluchistan east to Assam and Manipur, south to Kanyakumari. Andaman and Laccadive Is., Nepal (lowlands); Ceylon (to c. 1800 m. — Nuwara Eliya lake); Maldives Is. (vagrant ?). Not numerous but singly or pairs widely scattered; at large bodies of water — coastal lagoons, estuaries, broad rivers, jheels, and up to the highest multipurpose dammed reservoirs.

Extralimital. Breeds in Europe and Asia from Scotland (formerly) and Lapland east to Kamchatka and Japan, south to Spain, N. Africa, Mediterranean islands, Greece, Red Sea coasts, S. Arabia and S. China. In winter S. Africa, India, Burma, Thailand, Malay Peninsula, Philippines, Sunda Islands.

GENERAL HABITS. Single birds normally seen perched on fishing stakes, dead trees standing in or near water, islanded rocks, etc. From here it launches sorties to reconnoitre the waterspread, flying in wide circles or back and forth c. 20 or 30 m. up with slow deliberate wing-beats punctuated with bouts of gliding. Now and again the bird stops dead in mid-air hovering like a kestrel, legs dangling and a little forward in readiness, to investigate suspected movement in the water below. At a favourable opportunity hurls itself headlong on a fish with closed wings, going completely under with a

HAWKS, VULTURES, ETC.

337



great splash. Presently it emerges with the slippery prey gripped firmly in its talons, the prickly soles assisting in the process. With a convulsive shrug to shake off the water from its plumage, the bird makes for a favourite perch where the prey is torn to pieces and devoured. Occasionally a very large fish is struck which the bird has considerable difficulty in overpowering, bobbing up and down with it in the water as the quarry struggles to dive and escape. If too heavy to lift clear, the victim is dragged along the surface and beached on a shelving bank. Instances are known where an osprey, unable to extricate its claws from a particularly large and lively fish, has been pulled under and drowned. In flight occasionally descends to the water, ploughing the surface with dropped talons for 5 or 6 metres at a stretch as if to wash off the slimy remains of a meal. Seldom, if ever, soars and circles aloft for fun as so many other raptors do.

FOOD. Exclusively fish. Often strikes mahseer (*Barbus*) and others heavier than itself.

VOICE AND CALLS. Seldom heard in its winter quarters. Described elsewhere as a clear *kai, kai, kai*; also as a 'short cheeping whistle'.

BREEDING. Reports of Indian breeding not completely satisfactory, though evidently a few pairs do so in the Himalayas, e.g. in Kashmir and Ladakh. Baker found a pair breeding in several successive years in Cachar in March and April. Here the nest was a huge structure of sticks and branches c. 138 cm. across and nearly as deep. Built c. 12-14 m. up in a thinly foliated tree standing on high ground in the middle of a *bheel* or swamp. According to Baker average size of 100 European eggs 61.6 × 46.3 mm. with which three taken by him in Cachar agree. Normal clutch, 2 or 3, rarely 4, eggs white or yellowish white, spotted and blotched with dull red; very handsome. (For an excellent breeding biology see Horst Siewert 1941, 'Zur Brutbiologie des Fischadlers *Pandion h. haliaetus* (L.)', *Jour. f. Orn. Ergänzungsband* 3: 145-93.)

MUSEUM DIAGNOSIS. As for the genus. For details of plumage etc. see Witherby 1939, 3: 110-11.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	452-495	37-39	c. 59-65	191-223 mm.
♀♀	468-508	—	—	204-220 mm. (Baker)

Adults recently collected in India measure:

		Bill (from skull)		
2♂♂	481-481	41-41.5	—	201-210 mm.
3♀♀	482-537	41-43 (2 msd.)	60-61 (2 msd.)	200-251 mm. (2 msd.) (SA, Whistler, Meinertzhagen)

FALCONS

339

and under tail-coverts deep ferruginous. Rest of lower plumage rusty white. Sexes alike; female larger.

Young (immature). Forehead, supercilium, face, and collar more or less ferruginous or chestnut. Underparts generally whiter. In quite young birds upperparts and wing-coverts scalloped with pale rufous.

STATUS, DISTRIBUTION AND HABITAT. Resident. The Himalayan foothills (normally to c. 650 m. elevation; recorded as high as c. 2000 m.) and terai from Kumaon in Uttar Pradesh east through Nepal, Sikkim, Bhutan, and Assam south to Cachar. Westernmost record in U.P., Naini Tal (c. 79° 26'E.); southernmost Sultanpur (c. 26°15'N.). Affects outskirts of forest, deciduous and evergreen, and abandoned cultivation clearings with tall dead trees to serve as foraging bases. The race *burmanicus* replaces it extraliminally, in Burma, the Shan States, Thailand, etc.

GENERAL HABITS. Met with singly, in pairs, or loose (family?) parties of four or five, perched individually on a derelict spar standing in the middle of a forest clearing, or huddled on a snag near the top of a tall tree whence a good lookout can be kept over the surroundings, launching out after prey one by one or several together and circling back to the same huddle. On the pole-top the bird slowly rotates to face all directions in turn, its fierce eye alert and watchful, head bobbing ludicrously now and again like the spotted owl (*Athene*), and tail swinging slowly and deliberately up and down as in the blackwinged kite (*Elanus*). From time to time it darts out at lightning speed on rapidly beating wings at some butterfly or dragonfly — sometimes swooping quite low down — snatching the insect in its talons in mid-air and circling back to the same perch with a steep upward glide at the end — very like a shrike (*Lanius*). Sometimes descends to the ground in search of grasshoppers, etc. as drongos occasionally do. The abruptness with which such a fast-moving bird will become completely immobile immediately upon regaining its perch is quite astonishing. Here the victim is held under foot, the wings pulled off and floated to the ground, the body torn up with a distinct semblance of anger and ferocity — as if dealing punishment — before being devoured. The ground under favourite hunting bases is littered around with butterfly and dragonfly wings, providing a good index of the species taken. A butterfly chase by this pigmy falcon is strongly reminiscent of the twirls and turns of a merlin when in pursuit of a meadow pipit (Meinertzhagen).

Rather sluggish during the middle of the day but intensely active towards evening, dashing about after prey 'uttering all the while a shrill whistle'. Towards April the birds congregate in small colonies among clusters of lofty simul trees (*Salmalia*) in open tracts in preference to forest, but disperse widely after breeding (H. Stevens, 1923-5).

FOOD. Large insects, chiefly butterflies, dragonflies, grasshoppers, beetles. Occasionally small birds, wren warbler (*Prinia*), rubythroat (*Eritacus pectoralis*), and pipit (*Anthus rufus*) being recorded. '2pithma butterflies are captured on the wing, but larger species like *Papilio* and *Danaus* avoided' (Meinertzhagen), though a *Papilio memnon* was taken while sipping nectar from flower (G. E. Shaw). Butterflies form a regular and important item of its dietary. Observers have suggested that the birds can discriminate to some extent between unsavoury species and their palatable mimics, thus

338

FALCONIFORMES

COLOURS OF BARE PARTS. Iris yellow or golden yellow; eyelids greenish blue. Bill black; cere and gape dull greenish blue. Legs and feet pale greenish or yellowish; claws black.

Family FALCONIDAE, Falcons

For anatomical details see Stresemann 1927-34, *Aves*: 816; Witherby 1939, 3: 1-2

All Falconidae moult the primaries starting with the fourth (descending) whether they have pointed or rounded wings. This distinguishes them from all Accipitridae (Stresemann).

Key to the Genera

	Page
Wing under 170 mm.....	<i>Microhierax</i> 338
Wing over 180 mm.....	<i>Falco</i> 341

Genus MICROHIERAX Sharpe

Microhierax Sharpe, 1874, Cat. Bds. Brit. Mus., 1: 350 (in key), 366. Type, by original designation, *Falco fringillarius* Dapiez

Bill large, slightly compressed, with a very large tooth on upper mandible, sometimes with a second and smaller anterior tooth. Wings long in proportion to size of bird but rather rounded. 2nd and 3rd primaries (as.) longest; 1st and 4th subequal and nearly as long. Tail long and nearly square. Tarsi and toes powerful, with strong claws; lateral toes nearly equal in length and not much shorter than middle toe. Tarsus feathered about half way down.

Key to the Species

White collar present.....	<i>M. caeruleus</i>
White collar absent.....	<i>M. melanoleucus</i>

204. Himalayan Redbreasted Falconet. *Microhierax caeruleus* (Linnaeus)

Falco caeruleus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 88

(Asia = Bengal, ex Edwards, pl. 108)

Baker, FBI No. 1734, Vol. 5: 52

Plate 29, fig. 2 and Plate 30, fig. 3

LOCAL NAMES. *Ching fin nyel* (Lepcha); *Daoling kashiba* (Cachari).

SIZE. Bulbul ±; length c. 18 cm. (7 in.).

FIELD CHARACTERS. A diminutive black-and-white falcon, very shrike-like in silhouette when perched. Pointed wings and flight — a series of rapid flaps followed by a graceful glide — reminiscent of Ashy Swallow-Shrike (*Artamus fuscus*). Tail, partly spread in flight, square-ended and rather triangular, with apex at base — rather like a barbet's but proportionately longer.



x c. 1

Adult. Above, glossy black. Forehead, supercilium, and sides of face white. A prominent black band through the eye; a broad white collar on hindneck. Below, chin, throat, thighs

340

FALCONIFORMES

e.g. between Danaine or Euploeine models, and their *Papilio* mimics, avoiding the former and capturing the latter!

BREEDING. Curiously enough for such a comparatively common bird, unrecorded. Apparently the Burmese race (*M. c. burmanicus*) has also been found nesting only once or twice. Nest, a disused barbet (?) hole in a dead branch. Eggs, 4, dirty white (once 14 April). Average size of 12 laid by mated female in captivity 26.8 × 20.8 mm. (R. Hoppe, Stuttgart, in *epist.*).

MUSEUM DIAGNOSIS. As for the genus. For details of plumage see Baker, loc. cit.

MEASUREMENTS	Wing	Bill (from feathers?)	Tarsus	Tail
♂♂	91-106	11-12	c. 20-22	58-64 mm.
♀♀	100-112	12-13	—	64-67 mm. (Baker)

Recent specimens from Nepal and Sikkim measure:

		Bill (from cere)		
5♂♂	101-104	10-11 (4 msd.)	—	60-65 mm. (4 msd.)
3♀♀	109-110	11 (2)	25 (1)	63-65 mm. (2 msd.) (SA, Biswas, Ripley)

COLOURS OF BARE PARTS. Iris brown. Bill, basally yellowish green; distally black. Legs and feet blackish slate.

MISCELLANEOUS. This fierce and bold little falconet (or the next (205), or perhaps both) was trained in the Mogul Emperor Akbar's days, and also later, to strike sparrows and other small birds — some considerably larger and heavier than itself.

205. Whitelegged Falconet or Pied Pigmy Falcon. *Microhierax melanoleucus* (Blyth)

Ierax melanoleucus Blyth, 1843, Jour. Asiat. Soc. Bengal, 12; 179 (Assam)

Baker, FBI No. 1736, Vol. 5: 54

Plate 29, fig. 1 and Plate 30, fig. 1

LOCAL NAME. *Daoling kashiba* (Cachari).

SIZE. Bulbul ±; length c. 20 cm. (8 in.).

FIELD CHARACTERS. A diminutive shrike-like falcon, similar to Redbreasted Falconet (204) but above, black without the white hind collar; below, pure white with no rusty tinge. Sexes alike.

Young (immature). Undescribed.

STATUS, DISTRIBUTION AND HABITAT. Resident in Assam from Kamrup dist. eastward through Dibrugarh dist., south to Cachar; Manipur; E. Pakistan (Sylhet dist., Hill Tippera, Chittagong dist.). Plains, foothills and up to c. 1500 m. elevation. Affects the neighbourhood of forest clearings and tea plantations, and wooded foothills country in both deciduous and evergreen biotopes.

Extralimital. Yunnan (?), Tonkin and SE. China.

GENERAL HABITS. Similar to the Redbreasted Falconet (204). Usually bold and unafraid of man, e.g. in the neighbourhood of tea plantation labourers' barracks. Takes insects on the wing by lightning sorties from

FALCONS

341

an elevated stance, flying out with rapid wing-beats, circling and sailing back to the perch after the capture — actions very reminiscent of the Swallow-Shrike. Insects are disposed of in the air or, if large, brought back to the base for dismemberment before devouring. Capable of great speed, sometimes stooping on birds much larger than itself just like the true falcons, killing them by striking with the hind claw. Begins feeding by digging with its bill into the head of the victim with the same semblance of ferocity and vindictiveness as 204.

FOOD. Butterflies, dragonflies, grasshoppers and other large insects. Possibly also mice and lizards. Among its bird victims are recorded scimitar babbler, thrush, sparrow, and swallow.

VOICE and CALLS. A shrill scream; also a low chattering call. A prolonged hiss when angry (Baker).

BREEDING. Little known. *Season*, March to May. *Nest*, a disused woodpecker or barbet hole; in one case on the underside of a branch c. 13 m. up in a tree standing in a forest clearing, with a quantity of beetle elytra and other insect remains as (fortuitous?) lining. *Eggs*, presumably 3 or 4 (judging from flying broods) but so far more than one (incomplete clutch) never taken from nest; pure white, unmarked, with a soapy surface. Average size of 6 eggs 27.9 × 22.4 mm. (Baker). Presumably both sexes incubate, but this needs confirming. Incubation period unknown.

MUSEUM DIAGNOSIS. No white collar; lower plumage including thigh-coverts pure white.

MEASUREMENTS				
	Wing	Bill (from feathers)	Tarsus	Tail
♀ ♀	111-117	14-15	22	71-73 mm. (Baker)
Two specimens in the Bombay Natural History Society's collection measure: (from skull)				
♂	116	14	25	65 mm.
♀ ?	118	14	27	71 mm. (SA)

Kirke-Swann (p. 323) gives Wing ♂ 108; ♀ 121 mm.
COLOURS OF BARE PARTS. Iris bright brown. Bill deep slaty blue to blackish; tip black. Legs and feet dark horny brown to black.

Genus *FALCO* Linnaeus
Falco Linnaeus, 1758, Syst. Nat., ed. 10, 1: 80. Type, by subsequent designation, *Falco subbuteo* Linnaeus. (A.O.U. Committee, 1886)
Bill stout and strongly toothed inside the hooked tip, often with a blunt fescoon behind the tooth. Nostril circular, with a central tubercle. Tarsus equal to or shorter than middle toe without claw. Upper part of tarsus plumed in front; naked portions covered with small hexagonal scales. Toes very long, covered with transverse scales above; hind toe shorter in proportion and very powerful; claws sharp, curved and strong. Tail moderately long, slightly rounded but not graduated. Wing long and very pointed, the proportions of the primaries varying somewhat. (See Museum Diagnosis under the different species.)

FALCONS

343

streaks on ear-coverts, but no distinct moustache. Upperparts earthy brown, scalloped with rufous. *Below*, breast and belly whitish, thickly marked with longitudinal brown drops, becoming bars on flanks.

Female similar but larger and more heavily marked below.

Young (immature). *Above*, darker and more brown generally. Head more brown with the darker markings more extensive. *Below*, chin and throat unmarked white; rest of underparts boldly streaked with dark brown.

STATUS, DISTRIBUTION and HABITAT. Rather scarce winter visitor; arriving c. October, gone again by April. W. Pakistan (NWF. Province, Sind, Punjab) and adjoining NW. India in E. Punjab and Rajasthan — how far east uncertain but has been obtained in Delhi. Hodgson's specimens from Nepal referred to by Baker (loc. cit.) belong to the next race, *milvipes* (Biswas). Affects desert and open semi-desert biotope.

Extralimital. Breeds in Hungary, middle and southern Russia, and the Caucasus. In winter to Egypt and NW. India (Peters).

MIGRATION. No ringing records.

GENERAL HABITS. Keeps to open country like the Laggar. Much prized for falconry and trained to strike gazelle, kite, owl, houbara bustard, hare, etc., being considered second only to Goshawk or Peregrine for the sport. In the wild state its method of hunting small animals is to fly low over the ground and crash into its victim, 'binding' and crushing it to death. However, when trained to larger quarry like kite and houbara it adopts a different and more spectacular technique. It manoeuvres itself into a position higher than its quarry and then stoops on it with terrific velocity raking it with its powerful hind claw in passing, or 'binding' in mid-air, both birds interlocked and tumbling down together in spirals with extended wings. Excellent sport is said to be provided as pursuer and pursued both try to gain a position of advantage above each other, rising in spirals (or 'ringing' according to the term used in falconry) higher and higher till almost lost to sight.

FOOD. Largely spiny-tailed lizards (*Uromastix hardwickii*), desert gerbilles (*Meriones hurrianae*) and other small mammals, and birds like sandgrouse (*Pterocles*). A frog has been recorded, but this probably rather exceptional in its desert habitat.

VOICE and CALLS. Unrecorded.

BREEDING. Extralimital. *Season*, April to May. *Nest* of sticks in trees or on cliffs, bulky and well lined; occasionally usurped from a vulture or other bird. *Eggs*, 3 or 4, intermediate between those of the Peregrine and the Laggar in coloration and markings.

MUSEUM DIAGNOSIS. First primary (as.) about equal to 3rd. Upperparts not ashy- or slaty grey but brown with broad tawny edges (scalloping) and blackish shafts. No moustachial- or cheek-stripe; middle tail-feathers with white spots on each web. Differs from the race *F. b. milvipes* (207) in having upper plumage unbarred.

MEASUREMENTS				
	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	348-370	c. 26-27	c. 56-58	190-200 mm.
♀ ♀	390-412			207-210 mm. (Baker)

342

FALCONIFORMES

Genus nearly cosmopolitan, ten species with their races occurring within our limits as residents or winter visitors. Falcons (*Falco*) easily distinguishable from hawks (*Accipiter*) even at great heights in the sky by their long, pointed, swallow-like wings and shorter tails. When soaring the wings are held straight, on same plane as body, but when flapping they are usually bent as though preparing for a stoop. There is considerable change in all falcons from immature to adult plumage, and identification from descriptions in the transitional stages difficult and unsatisfactory. Immature usually distinguishable by bluish tinge of feet v. bright yellow in adults, *Falco p. peregrinator* being an exception.

Key to the Species			Page
A	Size large, middle toe without claw over 40 mm.....	1	
B	Size small, middle toe without claw under 40 mm.....	2	
1	First primary longer than third; upperparts ashy grey or slaty grey in adults.....	<i>F. peregrinus</i>	347
	First primary about equal to third; upperparts not ashy or slaty grey.....	<i>F. biarmicus</i>	342
2	Second and third primaries subequal; first and fourth primaries subequal.....	a	
	Second primary longest, first much longer than fourth.....	b	
a	Crown grey or brown.....	<i>F. columbarius</i>	357, 358
	Crown chestnut.....	<i>F. chichuana</i>	359
	Crown streaked.....	<i>F. tinnunculus</i>	365-8
b	Middle toe over 29 mm.....	I	
	Middle toe under 29 mm.....	II	
I	Breast white or buff with brown streaks.....	<i>F. subbuteo</i>	352
	Breast deep rufous unspotted in adults.....	<i>F. severus</i>	355, 356
	Breast sooty grey.....	<i>F. concolor</i>	356
II	Claws black.....	<i>F. vespertinus</i>	361
	Claws yellow.....	<i>F. naumanni</i>	363

FALCO BIARMICUS Temminck

Key to the Subspecies

Page

A	A distinct narrow cheek-stripe; middle tail-feathers entirely brown in adults.....	<i>F. b. jugger</i>	344
B	No cheek-stripe; middle tail-feathers with white spots on each web.....	1	
1	Plumage above with no bars.....	<i>F. b. cherrug</i>	342
	Plumage above barred throughout.....	<i>F. b. milvipes</i>	344

206. **Saker or Cherrug Falcon.** *Falco biarmicus cherrug* J. E. Gray
Falco cherrug J. E. Gray, 1834, Ill. Ind. Zool., 2: pl. 25 (India)
Baker, FBI No. 1722; Vol. 5: 39
Plate 29, fig. 16 and Plate 30, fig. 11
LOCAL NAMES. *Chārg* ♀, *Chārgela* ♂ (Hindi). The name 'Saker' is evidently the same as *sāgr* (= falcon, Arabic).
SIZE. Kite —; length c. 50-56 cm. (20-22 in.).
FIELD CHARACTERS. Male (adult). *Above*, head pale rufous-white with narrow blackish shaft-strips. Sides of face and throat white with dusky

344

FALCONIFORMES

COLOURS OF BARE PARTS. Iris dark brown usually without any suggestion of yellow. Bill ivory white or yellowish white, tipped blackish; cere dull yellow. Legs and feet dull yellow or yellowish green; claws black.

207. **Shanghar Falcon.** *Falco biarmicus milvipes* Jerdon
Falco milvipes Jerdon, 1871, Ibis: 240 (Umballa, India)
Baker, FBI No. 1723, Vol. 5: 41
Plate 29, fig. 17

LOCAL NAMES. Apparently same as for 206.
SIZE. Kite —; length c. 50-58 cm. (20-23 in.).
FIELD CHARACTERS. Adult. *Above*, darker brown than in Cherrug (206) and barred all over with pale rufous, reminiscent of female kestrel. Crown darker rufous than in 206; sides of head more streaked with blackish; a distinct broad blackish moustachial stripe. *Below*, breast and belly whitish, marked similarly with longitudinal but more blackish drops, becoming bars on flanks. Sexes alike; female larger.

Young (immature). Difficult to distinguish from young of 206, but darker and generally with tail more completely cross-barred. Field identification unsatisfactory.

STATUS, DISTRIBUTION and HABITAT. Rare winter visitor. W. Pakistan (Baluchistan, W. Punjab) and adjoining open semi-desert country in NW India, but imperfectly known. Hodgson's specimens from Nepal, hithert considered *F. b. cherrug*, belong to this subspecies (Biswas).

Extralimital. Breeds from Pamirs and the Altai Mountains across SE Mongolia and south to the Nanshan and Alashan Mountains (Peters).

GENERAL HABITS, FOOD, etc. Little known, but apparently not different from those of the Cherrug.

MUSEUM DIAGNOSIS. First primary (as.) about equal to 3rd. Check-stripe not distinct than in Cherrug. Upper plumage barred with pale rufous throughout.

MEASUREMENTS				
	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	340-351	25-27	50-60	188-236 mm.
♀ ♀	374-435			(Baker)

COLOURS OF BARE PARTS. As in 206 but bill darker, more bluish slate than ivory white.

208. **Laggar Falcon.** *Falco biarmicus jugger* J. E. Gray
Falco Jugger J. E. Gray, 1834, in Hardwicke's Ill. Ind. Zool. 2: pl. 26 (India)
Baker, FBI No. 1721, Vol. 5: 37
Plate 29, fig. 14 and Plate 30, fig. 14
LOCAL NAMES. *Lāggār* ♀, *Jāggār* ♂ (Hindi); *Lāggadu* (Telugu).
SIZE. Kite —; c. 43-46 cm. (17-18 in.).
FIELD CHARACTERS. Adult. Upperparts dark and ashy brown. Crown and nape whitish. A narrow but distinct moustachial stripe running down

FALCONS

345



x.c.1

from in front and below eyes. Below, white or whitish with longitudinal light brown drops (sometimes obsolescent on breast and abdomen), larger and more numerous on flanks and thighs. Sexes alike; female larger.

At short range distinguished from Cherrug Falcon by middle tail-feathers being entirely brown, v. with much white in them.

In overhead flight the white breast, and dark-and-white markings on the lining of the pointed wings, also that two birds are usually seen together, suggest its identity.

Young (immature). Above, dark brown, the feathers scalloped paler. Below, only chin and throat whitish; rest of underparts dark brown.

STATUS, DISTRIBUTION and HABITAT. Resident (partial local migrant in some areas) practically throughout the subcontinent from W. Pakistan (Baluchistan, Sind, NWFP, Punjab) east through Assam and Manipur, and from c. 1000 metres up in the Himalayas southward to Kanyakumari, including Nepal and E. Pakistan. Rare in S. India; absent in Ceylon. Affects dry open country, thin jungle, and cultivation; avoids humid forest tracts.

Extralimital. Breeding also in Afghanistan north to Turkestan, near Tashkent, and in S. Turkmenia (Dementiev & Rustamov).

GENERAL HABITS. The commonest and most easily identified of all our falcons. Normally seen in separated pairs — each pair with a vast territory — perched on poles or tree-tops in open dry scrub country and the neighbourhood of cultivation and habitations; in the last invariably chivvied by house crows (*C. splendens*). A pair will sometimes take up its abode even in the midst of a noisy town, using a high tower or temple spire as foraging base for sorties against the urban pigeon population which provide the birds with comfortable living. Pairs usually hunt in coordination taking turns to chase and harry the prey, both birds then sharing the spoils. The laggar is well known for its habit of waiting on sportsmen as they walk the crops or beat the bushes for partridge or quail, and stooping and carrying off a bird that flushes or one that has been pricked by shot.

Not specially prized by falconers but is, or was, trained to fly at crows, partridges, cattle egrets, and birds much larger than itself such as grey heron, florican and houbara bustard — also at hare. When flown at large birds it adopts and same technique as the cherrug (q.v.), spiralling upwards or 'ringing' into the sky with its quarry, constantly manoeuvring for position above from which it can stoop and bind and drop to earth together with its victim.

On approach of the breeding season pairs commonly indulge in spectacular aerial play, stooping at each other with astonishing velocity, side-slipping, half somersaulting, and effortlessly zooming aloft again. Sometimes hovers against wind like kestrel (Roseveare).

FOOD. Field rats, bats, lizards, small birds, e.g. mynas, babblers, drongos, quails and partridges. Also grasshoppers and locusts. An occasional pair

346

FALCONIFORMES

sometimes attaches itself to a poultry run, the birds then becoming a serious menace to small chickens.

VOICE and CALLS. A shrill prolonged cry *whi-ee-ee*, seldom heard except in the breeding season.

BREEDING. Season, overall January to April. Nest, a deep platform of twigs, lined with straw, leaves, etc. 10 to 15 metres up in a large peepul, banyan or mango tree; lower down in acacias in Rajasthan, N. Gujarat and semi-desert areas. Sometimes built on a ledge of cliff, or on a minaret or cornice of a ruined building. Old nests of other birds of prey and crows are frequently appropriated. A curious circumstance commonly observed and recorded is that in the same tree, building, or cliff as holds a laggar's nest may often be found nests of such gentle species — rollers, pigeons, doves and others — as normally comprise its prey. The co-tenants are here left unmolested, and on their part seem completely unperturbed by the comings and goings of the falcons. Eggs, 3 or 4, rarely 2 or 5, handsome, rather variable in coloration: pale stone or pinkish cream, densely blotched and smudged with brick-red or reddish brown. Average size of 60 eggs 50.0 × 39.4 mm. (Baker). Both sexes assist in building or repairing the nest, the male bringing the material the female arranging it in position. Both sexes incubate and feed the young. Period of incubation unknown. The birds are remarkably close sitters and demonstrate fiercely against a human nest-robbler, diving at him repeatedly yet seldom striking.

MUSEUM DIAGNOSIS. First primary (as), about equal to 3rd. A distinct narrow check-stripe, *contra* Cherrug. Middle tail-feathers entirely brown in adults. For details of plumage see Baker, loc. cit.

Chick (in down). 'Fairly long, dull white. Whole body covered except in definite places (apteria). Whole head covered, and down continuous thence down hindneck to spinal track, which spreads out over back of thigh and is continuous with lateral ventral tracks. Between the spinal and humeral tracks, an apteria with sparse short tufts of down. From the chin run two ventral neck tracks, separated by apteria from the dorsal neck track and from each other, which at the top of the sternum divide into lateral and median sternal tracks, the apteria between them having scanty short tufts; apteria in centre of abdomen, rest covered with sparse down continuous with dorsal track laterally. Upper surface of wing except manus, clothed with long down, undersurface four rows of short down. Thumb with distinct claw' (Ticehurst, 1926). For description of down plumage and first plumage see also Whistler, JBNHS 22: 397. For plumage when 7 months old, and of the same bird when nearly adult at 17 months see Inglis, *ibid.* 14: 560. According to Hume acquires adult plumage when fully 3 years old (SF 5: 50).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	316-335	25-31	49-53	164-183 mm.
♀♀	357-370	27-33	46-54	186-210 mm.

(SA)

COLOURS OF BARE PARTS. Adult. Iris dark brown. Bill bluish slaty, darker at tip, paler and sometimes yellowish at base; cere yellow. Legs and feet yellow; claws black. Juvenile. As above, but cere pale greyish green; legs and feet pale grey, greenish grey, or dull slaty.

FALCONS

347

FALCO PEREGRINUS Tunstall

Key to the Subspecies

	Page
A Check-stripe narrow, a buff nuchal collar <i>F. p. babylonicus</i>	349
B Check-stripe broad, nuchal collar lacking	1
1 Above paler, below white or almost so <i>F. p. japonensis</i>	347
Above much darker, below very ferruginous ... <i>F. p. peregrinator</i>	350

209. Eastern Peregrine Falcon. *Falco peregrinus japonensis* Gmelin

Falco japonensis Gmelin, 1788, Syst. Nat., 1(1): 257, No. 44, α 'Japanese Hawk', Latham, J., Gen. Syn. Bds., 1: 33, No. 7b ('flew on board off Japan')

Falco calidus Latham, 1790, Index Orn., 1: 41 (India)

Falco peregrinus ussuriensis Buturlin, 1907, Prov. i. Ruzejn. Okhota, 13: 100 (Ussuriland and Japan)

Falco peregrinus harteiti Buturlin, 1907, Prov. i. Ruzejn. Okhota, 13: 100 (Lower Lena to Anadyr, common on the Kolyma)

Cf. Stresemann, E., 1949, Ibis 87: 253

Baker, FBI No. 1718, Vol. 5: 32

Plate 29, fig. 12 and Plate 30, fig. 13

LOCAL NAMES. *Bhyri* ♀, *Bhyri bacha* ♂ (Hindi. Apparently a corruption of the Arabic name 'Bāhārī', implying its connexion with water, cf. the American name Duck-hawk); *Bhyri daga* (Telugu); *Daga* (Yerukali); *Kāyāl pūllā* (Malayalam). Among falconers 'falcon gentle' = ♀ peregrine; 'tiercel' or 'tiercel gentle' = ♂.

SIZE. Kite —; Jungle Crow ±. Length c. 40-48 cm. (16-19 in.).

FIELD CHARACTERS. A typical, compact, pointed-winged, broad-shouldered, streamlined falcon.

Adult. Above, head slaty black with conspicuous black check- or moustachial stripes. Upperparts grey, barred with blackish. Below, pinky fulvous or rufous-white, narrowly barred from lower breast down with blackish. Sexes alike; female larger.

In overhead aspect robust bullet-shaped whitish body (v. rufous in Shaheen—211), underside of wings narrowly barred with black, and comparatively short unexpanded tail are suggestive. Prominent black moustachial stripes contrasting with white chin and throat, coupled with swift purposeful pigeon-like flight and short glides, are further pointers to its identity.

Young (immature). Above, dark brown, darkest on head. Below, rufescent white, all except chin and throat boldly streaked with brown, the streaks becoming bars on flanks and thighs. Transition plumages from juvenile to adult confusing and difficult to identify with certainty.

STATUS, DISTRIBUTION and HABITAT. Winter visitor (September/October to March/April) practically throughout the subcontinent from Baluchistan eastward through Assam and Manipur, and from Gilgit and Kashmir (once at c. 4000 metres in the Indus valley) and along the foot of the Himalayas south to Kanyakumari. Ceylon (Dry Zone — mostly in the juvenile plumage); Nepal (Valley); Andaman (?), Nicobar (?), Laccadive islands; Maldives Islands (apparently 'infrequent in winter' — Phillips.

348

FALCONIFORMES

Subspecies?). Affects the neighbourhood of rivers, jheels, coastal lagoons and marshes — the favourite haunts of migratory waterfowl.

Extralimital. 'Breeds in N. Asia from W. Siberia east to Anadyr and Kamchatka. In winter migrating to Japan, SE. India, Sunda Islands, the Moluccas, New Guinea, and occasionally to N. Africa' (Peters).

MIGRATION. No ringing records.

GENERAL HABITS. More individualistic than the Laggar, seldom hunting in couples. Not actually crepuscular but more active in its hunting just after dawn and towards evening. Spends the daytime ensconced on a shady bough of a tree overlooking its feeding territory, or perched in a sandy river-bed or on a tree-stump or mound. When hunting flies low and fast with rapid powerful wing-beats, the wings usually slightly bent back from the first joint. 'On viewing ducks on a pool or a flock of doves in the fields, the falcon drops to within a few feet of the ground, the beat of the wings becomes even faster than before and the wings bend closer to the body and it fairly hurls itself through the air into the middle of the flock, which will probably rise *en masse* when the falcon is still a few yards distant. Having selected one particular bird the chase begins. . . . Usually the dove succeeds in evading those dread talons in the first instance and neatly doubles back. Up rises the falcon almost vertically to her "pitch", turns and shoots down like an arrow in the wake of its quarry, following every turn and twist of the latter. Another miss and up she goes again determined to secure her breakfast before the dove can reach the shelter of the trees surrounding a village, not far distant. The dove reaches the fringe of trees closely followed by the falcon, and dashes right into the branches of the nearest tree. The falcon once more rises high into the air, circles round once or twice in the hope of its quarry or another bird leaving the security of the trees for the open ground beyond, gives up the chase and flies straight away, rising steadily as it goes, to make an attack elsewhere' (Donald, JBNHS, 27: 283).

Largely predatory on waterfowl, which are usually struck in mid-air, the falcon stooping almost vertically from above at incredible velocity, wings pressed to its sides and with a loud swishing sound, raking with the hind claw and literally ripping open the victim which falls limply to the ground. The peregrine circles a couple of times before stooping again to retrieve the quarry. It then repairs to its favourite feeding-perch and thoroughly plucks its victim before beginning to tear and devour it. Not infrequently it stoops, strikes, and binds on the quarry in mid-air all in the same lightning action, bearing it away in its stride. A peregrine will often stoop at a duck falling to a sportsman's gun, and so intense is its concentration on the quarry then that it will stoop again and again after an initial miss, regardless of shots fired at it which may even send its feathers flying.

FOOD. Chiefly waterfowl — ducks, coots, moorhens, lapwings, etc. — and waders; also pigeons, partridges, and many other birds. Among its prey have been specifically recorded Kaleej pheasant (*Lophura leucorhynchos*), Imperial Pigeon, Chough, Caspian Tern, and early-flying bats. The more robust female (*bhyri*) is trained to strike birds much larger and heavier than itself, e.g. egrets, herons, storks, cranes and bustard. Cases reported of single birds (subspecies?) coming on board ships in mid-ocean (once along Arabian

FALCONS

349

coast) and subsisting on Storm Petrels (*Oceanites oceanicus*), flying out over the sea and returning to ship with the prey (*Sea Swallow*, 1957, 10: 20; *Ardea*, 1961, 49: 176-7).

VOICE AND CALLS. None recorded in its winter quarters. Reportedly noisy when breeding.

BREEDING. Extralimital. Nest, situation, eggs, etc. as in the Shaheen (211) q.v.

MUSEUM DIAGNOSIS. First primary (as.) longer than 3rd. Upperparts ashy grey in adult. Cheek-stripe broader than eye. No nuchal collar. Crown slaty black; breast very slightly rufous. For details of plumage of nominate race see. Withersby 1939, 3: 13-15. *F. p. japonensis* differs from it (doubtfully) in being rather paler, with less black on sides of head and ear-coverts — a narrower moustachial stripe and large white patch behind it.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	297-316	c. 25-26	c. 49-51	134-145 mm.
♀♀	344-379	27-30	—	— mm. (Baker)

Middle toe with claw, ♂♂ c. 57-58; ♀♀ 62-70 mm.

Weight: 1 ♀ 920 gm. (SA).

COLOURS OF BARE PARTS. Iris brown or deep hazel. Bill bluish slaty, yellowish at base of lower mandible; cere yellow. Legs and feet dull chrome-yellow to almost orange-yellow; claws deep slaty to almost black.

210. Redcapped or Barbary Falcon. *Falco peregrinus babylonicus* P. L. Sclater

Falco babylonicus P. L. Sclater, 1861, *Ibis*: 218, pl. 7
(Oudh, in India, Babylonia and Abyssinia. Type from Oudh)
Baker, FBI No. 1720, Vol. 5: 36

LOCAL NAMES. *Shāheen*, *Safed shāheen* (Hindi); *Lālsir shāheen* (of Punjab falconers). **SIZE.** Kite —; Jungle Crow ±. Length c. 38-46 cm. (15-18 in.).

FIELD CHARACTERS. Like the Peregrine in shape and build.

Adult. *Above*, crown largely rufous or chestnut and ashy brown. Feathers round eye and narrow cheek-stripe black. Sides of neck buff; a broad rufous nuchal collar. Upperparts and tail ashy grey cross-banded with blackish. *Below*, chin and throat whitish; rest of underparts pale rufous; flanks and under wing-coverts barred blackish. Sexes alike; female larger.

Young (immature). *Above*, dark brown broadly scalloped with rufous. Tail barred rufous and brown. A broad rufous nuchal collar; black cheek-stripes and around eyes as in adult. *Below*, rufous with broad blackish streaks except on chin and throat.

STATUS, DISTRIBUTION AND HABITAT. Breeding sparsely in NW. Pakistan south of Kohat, and in Baluchistan. Chiefly winter visitor in Baluchistan, Sind, Punjab, NWFP and in NW. India (to Kashmir, Punjab, U.P., Rajasthan, N. Gujarat). Rare in Madhya Pradesh, taken at Raipur (21° 16'N., 81°42'E.). — D'Abreu. Along foot of hills from Jhelum to Peshawar and on through Kohat to border of Afghanistan at Parachinar, both *F. p.*

FALCONS

351

FIELD CHARACTERS. Very like the Peregrine (209) — a powerful, broad-shouldered, streamlined falcon with long pointed wings, and swift direct flight.

Adult. *Above*, slaty black with black head and prominent cheek or moustachial stripes on either side of throat. *Below*, pinkish white and rusty red, boldly cross-banded with black from abdomen down. Sexes alike; female larger.

Young (immature). Darker. More brownish black above; more ferruginous below.

STATUS, DISTRIBUTION AND HABITAT. Resident and breeding in NW. Pakistan (Thal, Chitral, Kohat dists.) and the entire Indian Union from about 2400 m. alt. in the Himalayas from Kashmir, Punjab, Himachal Pradesh, U.P. and Nepal, eastward through Assam; southward throughout the Peninsula to S. Kerala (with the exception of the desert and semi-desert areas in western Rajasthan and northern and western Gujarat where mostly *babylonicus*). E. Pakistan; Ceylon and Nicobar Is. Affects foothills and rugged hilly country to the highest peninsular hills.

Extralimital. Burma east to the lower Yangtze valley in E. China.

GENERAL HABITS. Very similar to the Peregrine (209), but keeps more to steep rugged hills than about lowland waterfowl resorts. Pairs occupy favourite crags, almost traditionally, for nesting and as bases for foraging over vast tracts of the surrounding countryside. Flight extremely swift and direct — a few rapid pigeon-like wing-beats followed by a glide at tremendous speed. Like the Peregrine hurls itself obliquely at its quarry from a height, or 'pitch', wings pressed to the sides, sometimes over a traverse of several hundred yards — literally a bolt from the blue. The loud tearing swish of this lightning stoop overhead can be quite disconcerting to an observer taken unawares, and by the time he can locate its source the falcon is already vanishing in the distance, maybe with the quarry dangling limply from its talons! Inclined to be somewhat crepuscular, hunting mostly soon after dawn and then again late afternoon and well into the dusk. In the breeding season pairs indulge in a great deal of aerial interplay, stooping at each other around their nesting cliff and deep down into the adjoining gorges with incredible speed and adroitness, going through remarkable acrobatics, throwing themselves momentarily upon their backs in mock battle, and executing perfect looping-the-loop turns.

FOOD. Chiefly birds: chukor, partridges, quails, pigeons, etc. In some areas parakeets, mainly *Ptilacula krameri*, form a major food item. Nightjars (*Caprimulgus* spp.) and bats also recorded. Easily trained to strike large birds like mallard, floricorn, and junglefowl, but crows said to afford far finer sport than all of these.

VOICE AND CALLS. Unrecorded except for a prolonged *chir-r-r-r* made by the female every now and then in the proximity of the nest-cliff, especially when nest being investigated (Dodsworth).

BREEDING. *Season*, in the Himalayas (up to c. 2400 m.) chiefly March to May; in the peninsular and S. Indian hills January to March/April; in Ceylon c. March-April. *Nest*, a large compact platform of sticks sometimes lined with wool and grass, placed on a ledge or in a niche on a cliff face — usually inaccessible situations. Often no nest, the eggs being laid directly

FALCONIFORMES

350

babylonicus and *F. p. peregrinator* found during breeding season (Ratray, *Ibis* 1919: 370). Affects barren stony semi-desert tracts with sand mounds, *Capparis* bushes, scattered trees of *Prosopis spicigera* and other xerophytic species — largely the neighbourhood of cultivation in such biotope.

Extralimital. Breeds in W. and C. Asia from Mesopotamia (Iraq) to the Gobi Desert, south to Persia and Baluchistan. Winters in NW. India (Peters). For biology in Turkestan and discussion on distribution, variation, moult, etc. see Dementiev, 1957, *Ibis* 99: 477-82.

GENERAL HABITS. Very similar to those of the Peregrine and Shaheen falcons except for its habitat preference of barren desert country and rocky hills. Inclined to be somewhat crepuscular like the Peregrine, hunting more actively at dawn and fairly late in the evening. Has sometimes been observed stooping playfully at birds on the wing, apparently with no intention to kill.

FOOD. Partridges, sandgrouse, and other birds. Presumably also gerbilles, lizards and large insects as available. Sometimes takes early-flying bats.

VOICE AND CALLS. Unrecorded.

BREEDING. On circumstantial evidence breeds in Baluchistan, but no direct confirmation by nest or eggs as yet. Two young recorded as taken from an eyrie in the Gumal Pass (32° 2'N., 70° 10'E.) at c. 650 m. alt., Dera Ismail Khan dist., W. Pakistan (date?), and believed to breed in some numbers in the hills about the Khyber Pass. *Nest* and site as in 211, q.v. Eggs, 3 or 4, creamy white blotched and spotted with reddish brown, but showing considerable variation in coloration and markings. Size c. 53 × 43 mm.

MUSEUM DIAGNOSIS. First primary (as.) longer than 3rd. Cheek-stripe narrower than eye; rufous-buff nuchal collar; head ashy grey and rufous. For details of plumage see Baker, loc. cit.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	273-284	23-26	45-46	126-135 mm.
♀♀	320-338	26-28	53-55	151-158 mm. (Baker)

A ♀ weighed 2 lb. 1 oz. = 930 gm. (Hume).

COLOURS OF BARE PARTS. Iris deep brown. Bill slaty blue, blackish at tip, sometimes yellowish at base; cere, orbital skin and gape bright yellow. Legs and feet bright to deep yellow; claws black.

211. Shaheen Falcon. *Falco peregrinus peregrinator* Sundevall

Falco peregrinator Sundevall, 1837, *Physiogr. Sällskapet Tidskr.*, 1(2): 177, pl. 4
(At sea in lat. 6°20'N. between Ceylon and Sumatra, 70 Swedish miles
[= 700 kilometres] off the Nicobars). Cf. however Abdulali, JBNHS 68: 398
Baker, FBI No. 1719, Vol. 5: 34
Plate 29, fig. 13 and Plate 30, fig. 12

LOCAL NAMES. *Shāheen kōhi* ♀, *Kōhila* ♂ (Hindi); *Kurulla goya* (Sinhala); *Valliriri* (Tamil); *Kārimpullu* (Malayalam). **SIZE.** Kite —; Jungle Crow ±. Length c. 38-46 cm. (15-18 in.).

FALCONIFORMES

352

on scanty grass growing on a ledge. (An exceptional record of a tree nest presumably self-built by the birds, in the top of a pine in Burma. — Livesey, JBNHS 36: 1003). Eggs, 3 or 4, pale stone to pale brick-red in ground colour, marked in varying degree with a few bold blotches or numerous small ones of reddish brown or brick-red. Average size of 65 eggs 51.8 × 40.7 mm. (Baker). Both sexes take part in nest-building and repair. Incubation evidently by female alone; the male when not hunting keeps watch from a neighbouring pinnacle. During daytime eggs often left exposed, shaded from direct sun by female standing over them with half-open wings. Incubation period 25-27 days (Baker). Chicks (a couple of days old) clad in white down. Iris light brown; legs and feet creamy white (Dodsworth).

MUSEUM DIAGNOSIS. First primary (as.) longer than 3rd. Crown black or blackish. Cheek-stripe broader than eye, sometimes fused into black of crown. No nuchal collar. Breast generally deep rufous. For details of plumage see Baker, loc. cit.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	265-295	25-27	48-50	128-162 mm.
♀♀	312-342	28-29	—	— mm. (Baker)

Middle toe with claw ♂ c. 53-55; ♀ c. 60-63 mm.

Wingspread of an ad. ♂ with wing 295 mm. — 911 mm. (Meinertzhagen).

COLOURS OF BARE PARTS. As in the Peregrine and Redcapped falcons. In juvenile birds of races of *peregrinus*, legs and feet yellow *contra* bluish in other immature falcons.

FALCO SUBBUTEO LINNAEUS

Key to the Subspecies

Darker..... *F. s. subbuteo*
Paler..... *F. s. centralasiæ*

212. Hobby. *Falco subbuteo subbuteo* Linnaeus

Falco Subbuteo Linnaeus, 1758, *Syst. Nat.*, ed. 10, 1: 89

(Europe, restricted type locality, Sweden)

Hypobriochis subbuteo jakutensis Buturlin, 1910, *Nascha Okhota*: 71

(Chukche, NE. Siberia)

Baker, FBI No. 1724, Vol. 5: 42

Plate 29, fig. 7 and Plate 30, fig. 10

LOCAL NAME. *Morassani* (Oudh, U.P.).

SIZE. Dove or Pigeon ±; length c. 31-34 cm. (12-13 in.).

FIELD CHARACTERS. A small, pointed-winged streamlined falcon.

Adult. *Above*, slaty grey with blackish head and moustachial streaks. *Below*, rusty white, broadly streaked with black. Thighs and under tail-coverts rufous. Sexes alike; female larger. In overall effect a very good miniature of the Peregrine falcon, but with underparts longitudinally streaked instead of cross-banded.

Young (immature). Much darker above, brownish rather than slaty, scalloped with rusty whitish.

FALCONS

353

STATUS, DISTRIBUTION and HABITAT. Winter visitor (September to March/April) to W. Pakistan (Baluchistan, Sind, NWFP, Punjab) and India south to about Mysore (Belgaum). Also Nepal and E. Pakistan; but the races not clearly separable. Affects open wooded country, cultivated areas, as well as semi-desert.

Extralimital. Breeds from Scandinavia and N. Russia across Asia to E. Siberia and Kamchatka, south to the Mediterranean, SW. Siberia, Transbaikalia (and probably NW. China) and Manchuria. In winter south to Africa, India, and SE. China (Peters).

GENERAL HABITS, FOOD, etc. As in the Central Asian race (213), q.v.

BREEDING. Extralimital. Nest, eggs, etc. as in 213.

MUSEUM DIAGNOSIS. Similar to *F. s. centralasiæ* but somewhat darker and on an average a trifle smaller. For description of plumage etc. see Witherby 1939, 3: 20-21.

MEASUREMENTS

	Wing	Bill (from cere)	Tarsus	Tail
♂♂	247-272 (one 240)	12.5-14 (one 11.5)	34-37	130-140 mm. (one 122)
♀♀	265-280	—	—	— mm. (Witherby)

COLOURS OF BARE PARTS. Adult. Iris dark brown. Bill leaden blue, tip bluish black; cere, gape, bare skin round eye, legs and feet bright yellow. Immature. Cere and round eye pale lead-blue or greenish. Legs and feet paler yellow (Witherby).

213. Central Asian Hobby. *Falco subbuteo centralasiæ* (Buturlin)

Hypotriorchis subbuteo centralasiæ Buturlin, 1911, Orn. Mitt., 2: 175, new name for *Falco subbuteo cyaneus* Lönnberg, 1905, Ark. Zool., 6(9): 6 (Baingol, Tianshan) *nec Falco cyaneus* Vieillot

Hypotriorchis subbuteo planicola Portenko, 1930, Bull. Acad. Sci. USSR, ser. 7. Cl. Physico-Math.: 308 (Yarkand Oasis, Kashgaria) Baker, FBI No. 1725, Vol. 5: 43

LOCAL NAME. *Morassani* (Oudh, U.P.).

SIZE. Dove or Pigeon \pm ; length c. 31-34 cm. (12-13 in.).

FIELD CHARACTERS. Same as for 212 from which it cannot be distinguished with certainty. In general effect and actions reminiscent of the Peregrine and Shaheen falcons.

STATUS, DISTRIBUTION and HABITAT. Partly resident in the Himalayas, breeding between c. 1200 and 4000 m. alt. in NWFP, Ladakh, Kashmir, Himachal Pradesh, U.P. (Garhwal). Mainly extralimital winter visitor (September-March/April), spreading out unevenly over W. Pakistan (Sind, Baluchistan, Punjab) and India east through Assam and Manipur, south to N. Mysore. Also E. Pakistan; but the races not clearly separable. In non-breeding season affects similar biotope to the last, the two forms often overlapping.

Extralimital. Turkestan south to N. Persia and E. Himalayas — Peters.

GENERAL HABITS. Partial to low-lying swampy ground in wooded country. Even in its residential and adjacent areas more commonly seen in winter when its numbers have been augmented by extralimital migrants. Distinctly

FALCONS

355

214. Indian Hobby. *Falco scterus rufepedoides* Hodgson

Falco Rufepedoides Anonymous = Hodgson, 1844, Calc. Jour. Nat. Hist., 4: 238 (Hills of India, restricted to Nepal by Baker, 1927, Bull. Brit. Orn. Cl., 47: 107) Baker, FBI No. 1729, Vol. 5: 47

LOCAL NAMES. *Dhülar* ♂, *Dhüli* ♀ (Hindi).

SIZE. Dove \pm ; length c. 27-30 cm. (11-12 in.).

FIELD CHARACTERS. Very similar to 212 but with breast and underparts ferruginous instead of rusty white. In overall effect a good miniature of Shaheen falcon, just as 212 is of the Peregrine. Sexes alike; female larger.

Young (immature). Above, very dark, narrowly scalloped with rufous in freshly moulted plumage. Below, boldly black-streaked from upper breast to vent.

STATUS, DISTRIBUTION and HABITAT. Resident and breeding in the lower Himalayas (c. 1800 to 2400 m.) in W. Pakistan (Murree?), Kashmir? and through Kumaon, Garhwal, and Nepal to W. Assam north of Brahmaputra river. Occurs also in Kerala (chiefly hills) where status indeterminate. Presumably only winter visitor; no breeding record to date. Straggler to Ceylon in winter. Affects well-wooded foothills country.

GENERAL HABITS. Very similar to *F. s. subbuteo* (212, 213), q.v. Often seen in loose flocks of ten or twelve birds hawking insects in the manner of swallows and swifts — darting at speed in pursuit, wheeling and circling in the air, chiefly in the twilight of dawn and at sunset till late into the dusk. Prey either eaten on the wing or carried to a perch.

FOOD. Chiefly large flying insects — locusts, cicadas, beetles, dragonflies, etc. Also small birds, and occasionally lizards, pipistrelle bats, and mice. 'Hunting small chickens near lowland villages' (Fleming, Nepal).

VOICE and CALLS. Only a loud squealing rapid ki-ki-ki recorded. 'Cry is rather shriller and weaker than that of the Kestrel' (Bourdillon, SF 4: 354).

BREEDING. Very little definite information. *Season*, 'probably late May and June' (Baker). A pair feeding young in nest in tall pine in British Embassy grounds, Kathmandu, Nepal — July-August (Proud, JBNHS 48: 716). *Nest*, of sticks, usually an old crow's or magpie's, in a pine or similar tree growing from the side of a precipice. According to Baker apparently has two alternate nests at varying distances from each other, used in irregular sequence. *Eggs*, 3 or 4, broad ovals, very like those of *F. s. subbuteo* — buff, reddish buff or light brick-red in ground colour, densely speckled with dark brick-red, brownish red or purplish red, with many variations. Size about 41 x 31 mm.

MUSEUM DIAGNOSIS. Middle toe without claw under 40 mm. Second primary (as) longest: 1st much longer than 4th. Breast rufous or ferruginous, unspotted in adults. Differs from the nominate race (215) only in having the lower plumage paler and less deep ferruginous. But this in effect merely represents a colour cline and the race is perhaps redundant. There is no significant difference in size.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	211-219	17	33-34	94-95 mm.
♀♀	237-248	19	—	105-112 mm. (Baker)

FALCONIFORMES

354

crepuscular; feeds chiefly in the twilight of dawn and at sunset, often well into the dusk. The birds fly about in curves and circles, climbing and sinking at will, flying straight some distance with rapid wing-beats followed by a downward swoop of 30 metres or so, and then a swift effortless rise. While soaring the primaries are slanted slightly downwards almost below level of back. Chases cicadas, dragonflies and small birds at great speed with rapid wing-beats followed by arrow-like glides a few metres above the ground. On catching its prey rises like a kite 20 or 30 metres up in the air, sailing slowly round in circles, devouring the victim from its talons. Like the Shaheen sometimes soars to a 'pitch' and 'waits on', stooping obliquely with tremendous velocity and taking the quarry in its stride. Occasionally will also hover for a moment over a field of gram or lucerne 'waiting on' for some small bird or grasshopper to take wing. Sometimes hawks winged insects in a loose flock of ten or more birds in the manner of swifts, high up in the air, turning, twisting, rising, falling, circling round and darting at the quarry with great agility. Has been observed thus engaged in association with swallows (*Hirundo rustica* and *H. daurica*), which themselves frequently form its prey (SA).

FOOD. Small birds (larks, pipits, swallows, wagtails, swifts, warblers, etc.), pipistrelle bats, and flying insects (dragonflies, cicadas, locusts, beetles, etc.). Can be easily tamed and taught to 'wait on' at great heights for pursuit of larks, drongos, quails, hoopoes, etc. but 'lacks the dash and daring of the Merlin and is disappointing from the falconry point of view' (Donald).

VOICE and CALLS. Very noisy in breeding season. 'A harsh, plaintive, rising tee-tee-tee-tee as common to most falcons, occasionally varied with harsh single notes pit pit or chip chip chip uttered two or three times in succession while flying about in circles above the trees, settling here and there on different trees' (Whistler, JBNHS 32: 730-2).

BREEDING. *Season*, principally May to July. *Nest*, usually an old stick nest of crow or magpie high up in a fir, deodar, or poplar tree on the outskirts of forest, repaired and utilized. *Eggs*, 3 or 4, dull yellowish buff to pale brick-red densely speckled and spotted with dull brick-red and brown, sparsely blotched with purplish black. Average size of 28 eggs 41.4 x 33.0 mm. (Baker). Incubation mostly by female; period unrecorded. 'Male brought plucked bird and passed it to incubating female who left nest to receive and deal with it on a nearby branch' (Whistler, loc. cit.).

Nestling covered with down 'of isabelline shade' (A. E. Jones).

MUSEUM DIAGNOSIS. Second primary (as) longest; first much longer than 4th. Middle toe without claw under 40 mm. Breast white or buff with brown streaks. *F. s. centralasiæ* differs from nominate *subbuteo* in being somewhat paler and on an average a trifle larger, but race very variable and of doubtful validity. For details of plumage see Baker, loc. cit.

MEASUREMENTS. Wing ♂♂ 250-275; ♀♀ 277-286 mm.

COLOURS OF BARE PARTS. As in 212.

FALCO SEVERUS Horsfield

Key to the Subspecies

Darker; lower plumage very deep ferruginous.....*F. s. scterus*
Paler; lower plumage less deep ferruginous.....*F. s. rufepedoides*

FALCONIFORMES

356

COLOURS OF BARE PARTS. Iris hazel-brown to almost black. Bill bluish slate, paler at base, black at tip; cere, gape and orbital skin lemon-yellow. Legs and feet yellow to orange-yellow; claws black.

215. Burmese Hobby. *Falco scterus scterus* Horsfield

Falco scterus Horsfield, 1821, Trans. Linn. Soc. London, 13(1): 135 (Java)

Baker, FBI No. 1728, Vol. 5: 45

Plate 29, fig. 10 and Plate 30, fig. 9

LOCAL NAMES. Unrecorded.

SIZE. Same as 214.

FIELD CHARACTERS. Same as for 214 but with breast and underparts much deeper ferruginous. The two races indistinguishable with certainty.

STATUS, DISTRIBUTION and HABITAT. Resident. Assam south of the Brahmaputra river, Manipur; E. Pakistan. Affects well-wooded foothills country.

Extralimital. Burma, Thailand, Indochinese countries, Sumatra, Java, Philippines.

GENERAL HABITS, FOOD, etc. Similar to the other hobbies. In northern Assam (Dibrugarh dist.) frequents tea gardens and edge of forest and paddy land.

VOICE and CALLS. Not specifically recorded.

BREEDING. *Season*, March to May in the Assam hills. *Nest*, usually an appropriated old one of a crow or magpie in a tree growing out of a precipice or steep hillside; repaired and sometimes added to and lined with green twigs and leaves. *Eggs*, 3 or 4, as in 214. Average size of 54 eggs 40.1 x 31.9 mm. (Baker). Both sexes take part in nest-repair, incubation, and feeding the young. Incubation period 26 days (Baker).

MUSEUM DIAGNOSIS. Differs from the Indian race *rufepedoides* (214) only in having the lower plumage much darker and deeper ferruginous.

MEASUREMENTS

Measurements	Wing	Bill (from feathers)	Tarsus	Tail
221-238	c. 18 (?)	c. 30-33	95-110 mm.	
('Apparently all females' — Baker)				
3 ♀♀ recently taken in NE. Assam measure:				
	(from skull)			
221-245.5	23-25	38-40	95-115 mm. (SA, SDR)	

COLOURS OF BARE PARTS. As in 214.

216. Sooty Falcon. *Falco concolor* Temminck

Falco concolor Temminck, 1825, Pl. Col., livr. 56, text (but not pl. 330) (Senegal, Barbary Coast, Egypt, Arabia, Barakan Island, Gulf of Aqaba, suggested by Meinertzhagen, 1954, Birds of Arabia: 340)

Not in Baker, FBI

Plate 29, fig. 11 and Plate 30, fig. 8

LOCAL NAMES. Unrecorded.

SIZE. Jungle Crow \pm ; length c. 38 cm. (c. 15 in.).

FALCONS

357.

FIELD CHARACTERS. General aspect as of Hobby (212), but slightly larger and uniformly pale slaty grey above and below, with prominent yellow cere and legs. Sexes alike; female larger.

Young (immature). Not unlike that of *F. subbuteo* but with the pale nuchal patch of the latter almost absent.

STATUS, DISTRIBUTION and HABITAT. Only once obtained in W. Pakistan (ad. ♂, Qharbar, Baluchistan Coast, 31 August 1912 — W. D. Cumming). The specimen, which was examined by Dr C. B. Ticehurst in the Quetta Museum, was evidently destroyed in the great earthquake of 1936.

Extralimital. 'Red Sea coasts and Somaliland south to Mozambique; Madagascar' — Peters.

GENERAL HABITS, FOOD, etc. According to Meinertzhagen (1954: 340) crepuscular, with a very hobby-like flight; catching bats on the wing with ease. (For extralimital breeding, habits, etc. see Clapham, 1964, *Ibis*, 106: 381.)

MUSEUM DIAGNOSIS. 'Adults (both sexes): Whole upperparts pale slaty grey, primaries blackish. First primary unbarred on the inner web. All feathers of upperparts with dark shafts. Chin and centre of throat pale yellowish buff. Rest of underparts pale slate-grey. Tail as back. The immature bird is browner and has the feathers fringed paler. Cheeks and throat rusty yellow' (Meinertzhagen, *Birds of Egypt*: 374).

MEASUREMENTS. Wing 267-305 (Meinertzhagen). The Charbar specimen (♂) measured: Wing 278; bill from cere 13; tarsus 33; middle toe 32.5; tail 133 mm. (Ticehurst).

COLOURS OF BARE PARTS. Iris dark brown. Bill bluish horn; cere lemon-yellow. Legs and feet lemon-yellow; claws black.

FALCO COLUMBARIUS Linnaeus

Key to the Subspecies

Darker both above and below in both sexes.....*F. c. insignis*
Paler.....*F. c. christianiludovici*

217. North Asiatic Merlin, *Falco columbarius insignis* (Clark)

Aesalon regulus insignis Clark, 1907, Proc. U.S. Nat. Mus., 32: 470 (Fusan, Korea)
Baker, FBI No. 1731, Vol. 5: 49

Plate 29, fig. 9 and Plate 30, fig. 6

LOCAL NAMES. *Daurāla* ♂, *Daurāi* ♀ (Hindi); *Rāil tārūmti*, *Regi* (Punjab).

SIZE. Dove ±; length c. 27-30 cm. (11-12 in.).

FIELD CHARACTERS. Rather like Hobby (212) but without the cheek-stripes.

Male. (Adult). *Above*, forehead, supercilium, and sides of head whitish with black shaft-streaks. Upperparts bluish slaty with a broad rufous-and-black hindcollar. Tail tipped white, with broad subterminal black band. *Below*, sides of throat and underparts white tinged with rufous and boldly streaked with blackish; thighs and under tail-coverts darker rufous.

FALCONS

359

effect rufous rather than rufous-brown. Bars on primaries in both sexes especially pale.

STATUS, DISTRIBUTION and HABITAT. Uncommon. Vagrant in winter to W. Pakistan (specimens in the British Museum collection from Peshawar and Kohat districts, and Sind); also from Gilgit. Meinertzhagen procured one in Ladakh at c. 3000 m. alt. (Dras, 34°26'N., 75°46'E.) on 15 April.

Extralimital. 'Breeds on the Kirghiz Steppes from Orenburg to the Altai, north to Omsk and Lake Tschany. Winters to the Caucasus, Turkestan and Tarim Basin' (Peters).

GENERAL HABITS, FOOD, etc. As in 217.

MUSEUM DIAGNOSIS. Differs from *insignis* (217) in both adults and juveniles being very much paler.

MEASUREMENTS. Wing ♂♂ 203-226; ♀♀ 200-232 mm. (Baker); in Meinertzhagen's ♀ from Ladakh 230 mm.

COLOURS OF BARE PARTS. Bill paler bluish; cere paler yellow. Otherwise as in 217.

219. Redheaded Merlin, *Falco chicquera chicquera* Daudin

Falco chicquera Daudin, 1800, *Traité d'Orn.*, 2: 121 (Bengal)

Baker, FBI No. 1730, Vol. 5: 47

Plate 29, fig. 8 and Plate 30, fig. 7

LOCAL NAMES. *Tūrūmti*, *Tūrūmtāri* ♀ (Hindi); *Chūwa* ♂ (Sind); *Jellaganta*, *Jelgiddā* (Telugu); *Jelkūt* (Yerukali).

SIZE. Pigeon ±; length c. 31-36 cm. (12-14 in.).

FIELD CHARACTERS. An elegant little grey-and-white falcon with a diagnostic chestnut head.

Adult. *Above*, crown, nape, sides of head and cheek-stripe chestnut. Rest of upperparts ashy or bluish grey. Wing-quills blackish. Tail grey, narrowly barred with black, and with a broad black band near end; extreme tip white. *Below*, white, sparsely streaked with blackish on breast, barred on flanks and abdomen. Sexes alike; female larger.

Young (immature). More heavily barred below than adult. In still younger birds upperparts also barred throughout; chestnut of head duller, more rufous, and streaked with black; throat and breast also heavily marked with black.

STATUS, DISTRIBUTION and HABITAT. Resident and breeding. Not very common, but fairly generally distributed throughout the subcontinent, from W. Pakistan (Baluchistan, Sind, NWFP) eastward through Rajasthan and the Gangetic Plain (including the Himalayan foothills, terai, and Nepal Valley) to Assam and E. Pakistan. Southward through the Peninsula to Kerala and Madras (southernmost Tirunelveli c. 8°45'N.). Not in Ceylon. Common on the Deccan Plateau; rarely descending to the coastal districts. Apparently also partial local migrant, or nomadic, to some extent. Recorded as abundant in some localities in winter and as scarce in other seasons, but movements unstudied. Affects deciduous plains, plateau and low foothills country interspersed with groves of trees, cultivation and villages. Avoids forest.

358

FALCONIFORMES

Female. Larger. *Above*, slaty brown scalloped with rufous. Tail barred throughout with dark brown and rufous-grey. *Below*, paler than in male, more broadly streaked with brown.

Young (immature). *Above*, brown without any slaty tinge. Rufous of scalloping and head more pronounced.

STATUS, DISTRIBUTION and HABITAT. Scarce winter visitor (vagrant ?) to W. Pakistan [Baluchistan (Quetta-Pishin; Loralai dist.) and Sind (race presumed)]. Nepal (sight, Fleming). Has been obtained as a vagrant in Gilgit and Punjab in winter. Not very rare in Punjab (Donald), arriving in autumn, leaving again in spring. Affects open country with scrub and cultivation.

Extralimital. Breeds in N. Siberia across Yakutsk to the Stanovoy Mountains. In winter to Turkestan, N. India, S. China, Japan.

GENERAL HABITS. Hunts singly (not in pairs like *F. chiequera*) in open places, particularly crops, for larks and such-like small birds. Perches on the ground or on a mound or bund separating fields from where the sorties are launched. Occasionally hovers momentarily. Flies low along the ground, very fast with short sharp wing-beats interspersed with glides with half-closed wings. Seldom or never soars, and though often striking prey from above does not stoop at it from any distance or great height. Prey usually captured by swift, direct pursuit. Much esteemed for falconry. Very easily tamed and trained for pursuit of quails, hoopoes, larks, etc. Exhibits great speed and courage in the chase, turning, twisting, zigzagging, rising and falling in the air after the quarry with utmost adroitness.

FOOD. Mostly small birds. 'Took a Desert Wheatear from under my nose' in Sind (Ticehurst).

BREEDING. Extralimital. Nests on ground among grass and herbaceous vegetation, or in trees utilizing old stick-nests of crows, etc.

MUSEUM DIAGNOSIS. Middle toe without claw under 40 mm. as in Hobby, but 2nd and 3rd primaries subequal, and 1st and 4th subequal. Differs from *F. c. christianiludovici* (218) in both sexes being much darker above and below. For details of plumage, see Baker, loc. cit.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	196-204	14-15	c. 34-39	121-138 mm.
♀♀	220-224	15-16		(Baker)

COLOURS OF BARE PARTS. Iris brown. Bill slaty blue, black at tip, yellowish at base of lower mandible; cere yellow. Legs and feet yellow; claws black.

218. Pallid Merlin, *Falco columbarius pallidus* (Sushkin)

Lithofalco aesalon pallidus Sushkin, 1900, Bull. Brit. Orn. Cl. 11: 5

(Western Kirghiz steppes)

Baker, FBI No. 1732, Vol. 5: 50

LOCAL NAMES. As in 217.

SIZE. Dove ±; same as 217.

FIELD CHARACTERS. Much paler than 217, the adult ♂ a beautiful pale blue-grey above. Female and Young (immature) also paler; in general

360

FALCONIFORMES

GENERAL HABITS. Male and female almost invariably keep together and hunt in concert, one bird chasing the quarry close along the ground at incredible speed while the other heads it off. Its pursuit flight, attained by rapid, regular wing-beats, is straight and arrowlike; very different from the Merlin (*F. columbarius*) which goes in jerks and 'jumps'. Often beats out prey from shrubbery or foliage canopy, by suddenly darting through a gap in them or hedge-hopping at speed, stampeding any little birds sheltering within or on the ground behind. Like the Merlin it will also hover momentarily at times to investigate. Possesses the audacity of the Peregrine, sometimes swooping suddenly from nowhere, snatching a bird fallen to gunshot or chasing one thus wounded completely undeterred by the sportsman's warning shots. Comes down to water to drink, and walks easily on ground. Much esteemed by falconers for its pluck, and the ease with which it can be tamed and trained to take birds like hoopoes, rollers, quails, and even partridges and pigeons; pairs often made to hunt in coordination as in the wild state.

FOOD. Mainly small birds. Among items specifically recorded are sparrows (esp. *Passer montanus*), wagtails, pipits, larks (esp. the social *Calandrella* spp.), ring plovers (*Charadrius dubius*), and not unfrequently mice and bats. From the stomachs of a pair shot simultaneously were obtained the right and left leg respectively, along with other remains of a warbler (*Prinia sylvatica*) which had evidently been shared and shared alike! (SA).

VOICE and CALLS. 'Peculiar shrill querulous screams' as it sallies to drive off crows and kites from proximity of nest-tree. 'A continual *tiririri-tiririri*' uttered by full-fledged young when being chased off by (presumed) parent (K. K. Neelakantan).

BREEDING. Season, chiefly January to March, but continuing till about May. Nest, a fairly substantial cup or platform of sticks and twigs, lined with grass roots. Usually well concealed 5 to 10 metres up in the densely foliated branches of a mango or peepul tree in open country, often close to a village. Old nests of kites and crows are normally brought into commission. Eggs, 3 or 4, longish regular ovals, pale reddish white in ground colour, thickly speckled with reddish brown. Small replicas of the eggs of Laggar falcon. Average size of 120 eggs 42.4 × 31.1 mm. (Baker). Both sexes share in nest-building and/or repair and evidently also in incubation, though the female is chiefly responsible for this. Incubation period unknown. Both parents feed the young.

MUSEUM DIAGNOSIS. As in *F. columbarius* 2nd and 3rd primaries (as.) subequal; 1st and 4th subequal, but crown chestnut instead of black-streaked grey or brown as in that species. For details of plumage see Baker, loc. cit.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	190-207	19-24	35-40	124-137 mm.
♀♀	220-232	c. 25	38-41	148-155 mm.
				(Baker, SA, BB)

COLOURS OF BARE PARTS. Iris brown. Bill dark plumbeous, black at tip, greenish yellow on basal half; cere and orbital skin yellow. Legs and feet yellow; claws black.

FALCONS

361

220. Eastern Redlegged Falcon. *Falco vespertinus amurensis* Radde

Falco vespertinus var. *amurensis* Radde, 1863, Reisen süd von Ost-Sibir, 2: 102, pl. 1, f. 2a, 2b (Amur)

Baker, FBI No. 1739, Vol. 5: 58 (= *Erythropus amurensis*)
Plate 29, fig. 5 and Plate 30, fig. 5

LOCAL NAME. *Daotu hagra* (Cachar).

SIZE. Pigeon —; length c. 28–31 cm. (11–12 in.).

FIELD CHARACTERS. A small, rare migratory falcon.

Adult (male). Above, slaty grey, below, ashy grey with deep ferruginous-red vent, thighs, and under tail-coverts. Distinctive orange-red orbital skin, cere and legs. Birds in this plumage easily distinguishable, but rare in the migrating flocks. Could casually be confused only with Sooty Falcon (216) q.v.

In flight (somewhat reminiscent of pratincole when hawking insects) dark body and black wing-quills contrasting with grey axillaries and wing lining, together with red legs and cere, are diagnostic features.

Female. Above, including tail, slaty grey barred with black. Crown dark slate; whitish nuchal collar on hindneck; black cheek-stripe. Below, pale rusty white with longitudinal black spots on upper breast, bars on lower breast and flanks; unmarked on lower abdomen. Underwing white, barred black.

Young (immature). Like female but upperparts browner and scalloped with rufous. Below, more heavily barred and broadly spotted. Intermediate stages between this and adult plumage common.

STATUS, DISTRIBUTION and HABITAT. In NE. India evidently partly resident, but mainly passage migrant. Breeds casually in N. Cachar vide Baker, where previously recorded by Hume as disappearing about mid-December and reappearing in large numbers about mid-October in the following year. Recorded as a regular cold-weather visitor to N. Assam (Dibrugarh dist.) and Manipur, and as 'comparatively common during the rains in E. Bengal' (!). In peninsular India only a through migrant to and from E. and S. Africa. Stragglers, obviously in transit, observed or collected between September and April (autumn and spring passage) in the Nilgiris, Carnatic, Nellore, Rajamundry, Madura districts, and once near Bombay. Rare straggler to Ceylon; one old record for Nepal (Hodgson's). Apparently sparse winter visitor to the Maldive Islands (Phillips 1963).

Extralimital. 'Breeds in Siberia east of Lake Baikal to Amurland south to Manchuria and N. China to the Tsin-ling Mountains. Winters in E. and S. Africa from Kenya Colony to Cape Province' (Peters).

MIGRATION. Records such as 'a huge flock numbering some thousands passing Belgaum (15°54'N., 74°36'E.) on 24 November (Butler, SF, 9: 371), 'immense scattered flocks in November–December in some years all along the coast near Karwar' (N. Kanara dist., Mysore, c. 14°30'N. lat.) — Davidson, JBNHS 12: 16), and of 'large numbers' in the same locality in November (E. H. Aitken, MS), suggest that the bulk of the migration between NE. India and E. Africa — at least in autumn — takes place across the Indian Ocean from somewhere in this area in a continuing NE.–SW. trend. It is a regular winter visitor to East Africa (Nyasaland, now Malawi) arriving December, most abundant January–February, leaving

FALCONS

363

ground, often round a village. Eggs, 4 to 6, in appearance like eggs of common Kestrel with all its variations: creamy to brick-red in ground colour, lightly or densely speckled and smeared with deep blood-red or blackish red. Average size of 50 eggs 35.8 × 28.9 mm. (Baker). Both sexes incubate.

MUSEUM DIAGNOSIS. Second primary (as.) longest; 1st longer than 3rd. For details of plumage see Baker, loc. cit. Nominate *vespertinus* differs from *amurensis* in male having the axillaries and under wing-coverts white *contra* dark slaty grey; in female having the crown and nape dark-streaked rusty brown *contra* dark slate.

MEASUREMENTS	Wing	Bill	Tarsus	Tail
		(from feathers)		
♂ ♀	230–246	16–18	28–33	124–131 mm.

COLOURS OF BARE PARTS. Iris dark brown. Bill fleshy red, paler and yellower at base, blackish at tip. Orbital skin and cere, orange-yellow — redder during breeding season. Legs and feet orange-yellow to orange-red; claws pale fleshy horny.

221. Lesser Kestrel. *Falco naumanni* Fleischer

Falco naumanni Fleischer, 1818, in Lauro & Fisher's 'Sylvan', Jahrb. for 1817–18, p. 174 ('scarce visitor to southern Germany and Switzerland')

Falco cenchris var. *pekinensis* Swinhoe, 1870, Proc. Zool. Soc. London: 442

(Near Peking, China)

Baker, FBI No. 1745, Vol. 5: 66

Plate 29, fig. 4 and Plate 30, fig. 2

LOCAL NAMES. Unrecorded.

SIZE. Pigeon ±; length c. 34 cm. (13 in.).

FIELD CHARACTERS. A small dainty, rather gregarious migratory falcon.

Male (adult). Above, head, neck, lower back, rump, and tail ashy grey, the last with a broad black subterminal band and white tip. Mantle unspotted vinous brick-red, brighter looking than in Kestrel. Below, pale to deep rufous with round black spots on breast and flanks; absent in old birds. In overhead flight very pale wings and tail with black borders diagnostic.

Female. Above, pale rufous, cross-barred with black. Below, pale vinous-buff densely streaked on breast and spotted on abdomen with blackish. Indistinguishable from ♀ Kestrel (q.v.) except on a clear view with binoculars when *whitish*, instead of *black*, claws diagnostic in all phases.

Young (immature). Like ♀, but generally greyish on head and greyer on tail.

STATUS, DISTRIBUTION and HABITAT. Status uncertain. Apparently rare winter visitor; perhaps more correctly an irregular through passage migrant to E. Africa like Redlegged Falcon, a few stragglers remaining behind. Sight records and specimens obtained between November and April as follows: Punjab (Ambala, Delhi), U.P. (Lucknow), Bihar (Dinapur), Orissa (Balasore), Bengal (Calcutta), Assam (Dibrugarh, Naga Hills, NE. Cachar), Manipur, Maharashtra (Sholapur c. 17°43'N., 75°56'E., 'flock of several hundred'; Ahmednagar c. 19°8'N., 74°48'E., 'flock c. dozen' — both in January (C. S. Davidson), Madras (Coonoor — Nilgiris), Maldive

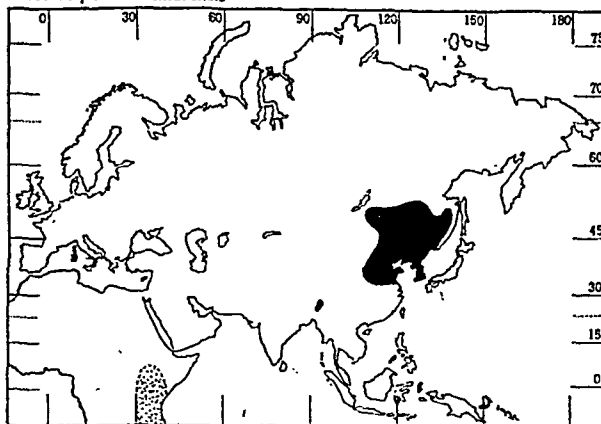
¹ For dropping subspecies *pekinensis* see Ripley, *Synopsis*, 2nd edition.

362

FALCONIFORMES

again March (Benson 1951, *Ibis*, 93: 467–8). Significantly there seem to be no records in NW. India, and none either from the northern Arabian Sea or across in Sudan or Egypt, thus supporting the hypothesis that a large proportion of the migrants traverse southern peninsular India in a NE.–SW. trend. However, from a flock of about 100 encountered by him in April near Mecca (c. 21°26'N., 39°49'E.) Meinertzhagen is inclined to believe that some mass migration almost certainly takes place over Arabia, at least in spring, when also incredible numbers pass north in central Kenya, possibly veering eastward somewhere about the Equator. Many observed by him and SA (presumably this race) migrating northward with Lesser Kestrels in N. Afghanistan, 24 April (*Ibis*, 1938: 701).

Falco vespertinus amurensis



■ Breeding range ▨ Wintering range

GENERAL HABITS. During migration stop-overs keeps in large flocks, or swarms, of several hundred (or thousand) strong, often in company with Lesser Kestrels (*Falco naumanni*). The birds mill around in the air at sunset, diving and darting at winged insects some 50 to 100 metres above open fallow or grazing land, occasionally descending to skim along the bushes, or settle on trees in clusters. Roosting in like manner after dark, preceded by a good deal of circling around the foliage canopy in the manner of bee-eaters. Sometimes hovers like kestrel when hunting. Said to be very good eating, and much prized by Cacharis, as well as in East Africa.

FOOD. Locusts, grasshoppers, beetles, winged termites, etc. hawked in the air; sometimes picked off the ground in a swoop.

VOICE and CALLS. A shrill screaming accompanies the settling-in process, continuing more or less through the night.

BREEDING. Mainly extralimital; casually in N. Cachar. Season, April–May. Nest, of sticks, usually a disused one of magpie etc., in trees in open

364

FALCONIFORMES

Islands, December ('probably an annual winter visitor' — Phillips 1963). Affects open savannah country and cultivation.

Extralimital. 'Breeds from Turkestan eastward to Manchuria and N. China, exact limits not known. Migrates to India and occasionally to E. Africa' (Peters).

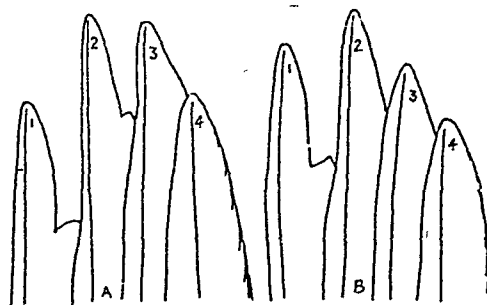
MIGRATION. Large flocks, obviously on mass migration, observed in Orissa and Deccan during January. No other visual or ringing data.

GENERAL HABITS. Very similar to Kestrel (222), q.v., but much more gregarious. Hovering very distinctive. Carries body raised 45° instead of horizontally as kestrel, beating wings backward and forward instead of up and down (Mountfort 1962, *Portrait of a River*: 118). A large (migratory?) swarm of 300+ birds observed by SA on 8 January (1950) in Orissa (Balasore c. 21°30'N., 87°0'E.) preparing to roost at sunset in a lone leafy tree standing amidst fallow fields. Flying in a rabble around the foliage canopy like bee-eaters before retiring. Perching thickly like swallows along adjacent telegraph wires looking remarkably like house crows in distant silhouette in the falling dusk. Not known whether the swarm moved on next day, but for several days subsequently odd birds were met with scattered far and wide over the surrounding country.

FOOD. Mainly insects; perhaps more insectivorous than Kestrel. Stomachs of specimens examined were crammed exclusively with grasshoppers (Orthoptera), beetles (Coleoptera), and mole-crickets (*Gryllotalpa* sp.). Once a centipede (*Scalopendra*).

VOICE and CALLS. Not recorded.

BREEDING. Extralimital. Nests in holes in walls of buildings etc.; tends to be colonial, several pairs nesting close to one another. Also utilizes old stick-nests of crows or magpies. Eggs, 3 to 5 smaller and richer-coloured replicas of those of Kestrel.



Wing formula of (A) Kestrel (*Falco tinnunculus*). Outer visible primaries: 1st and 2nd notched on inner web and 2nd and 3rd emarginated on outer; 1st always considerably shorter than 3rd. (B) Lesser Kestrel (*Falco naumanni*). 2nd notched on inner web, 3rd not emarginated on outer web, 1st usually longer and only occasionally shorter than 3rd.

FALCONS

365

MUSEUM DIAGNOSIS. Differs from Kestrel in wing formula (see diagram); in male having the brick-red mantle *unspotted*, and lores and feathers next the bill rufous v. white or creamy white. Claws in both sexes *pale yellow* instead of black. Nominate race *naumanni* (Europe, W. Asia) usually has less grey in median and lesser wing-coverts, but this character variable. For details of plumage see Baker, loc. cit.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	222-244	16-17	c. 32-35	142-156 mm.
Two adults measured in the flesh:				
		(from skull)		
♂	250	20	34	161 mm.
♀	241	20	34	146 mm.

Both in body moult and very fat, 8 January (SA).

COLOURS OF BARE PARTS. Iris deep brown. Bill bluish horn, yellowish at base, blackish at tip; cere and orbital skin orange-yellow. Legs and feet bright chrome yellow; claws paler.

FALCO TINNUNCULUS Linnaeus

Key to the Subspecies

	Page
Colour of upperparts paler..... <i>F. t. tinnunculus</i>	365
Colour of upperparts richer, more brick-red..... <i>F. t. objurgatus</i>	368
Colour of upperparts darker, more heavily barred..... <i>F. t. interstinctus</i>	367

222. European Kestrel. *Falco tinnunculus tinnunculus* Linnaeus

Falco Tinnunculus Linnaeus, 1758, Syst. Nat., ed. 10, 1:90

(Europe, restricted type locality, Sweden, *apud* Hartert)

Baker, FBI No. 1740, Vol. 5: 61

Plate 29, fig. 6 and Plate 30, fig. 4

LOCAL NAMES. *Karontia*, *Koruttia*, *Khermutia*, *Narzinak* ♂, *Narzi* ♀ (Hindi); *Thondälä muchi göddä*, *Thondälä doshi gödu* (Telugu); *Ting kyi* (Lepcha); *Cherupallu* (Malayalam).

SIZE. Pigeon ±; length c. 36 cm. (14 in.).

FIELD CHARACTERS. A small, slender falcon with pointed wings and rather rounded tail remarkable for its habit of hovering stationary in one spot for many seconds at a time — 'hanging in the air'.

Male (adult). Above, crown, nape, and sides of neck ashy grey finely streaked with blackish. A blackish cheek-stripe. Mantle bright brick-red with pear-shaped black spots. Rump, upper tail-coverts, and tail grey, the last tipped with white and with a broad black subterminal bar. Below, vinous-buff streaked on breast and spotted on abdomen and flanks with blackish.

Female. Above, including crown and nape, pale rufous, cross-banded on back with black. Rump and tail normally tinged with grey. Below, paler than in male and with the markings denser and browner. Also slightly larger.

Young (immature). ♂ like ♀, but soon acquiring a good deal of grey in tail, and grey rump and upper tail-coverts. (Completely blue-grey tail at c. 15 months' moult — Ticehurst.)

FALCONS

367

or small birds. Specifically recorded: locusts, grasshoppers, mole-cricket (*Gryllotalpa*), beetles (Coleoptera), winged termites. Above tree-line in Garhwal (c. 4500 m. alt.) mainly a single grasshopper (*Anaptygus* sp.) and a lizard (*Lacerta* sp.). Birds: crag martin (*Hirundo rupestris*), warbler (*Scotocerca inquieta*), painted bush quail (*Coturnix erythrorhyncha*) and lark (sp.?). Mammals: field mice, voles (*Microtus* spp.).

VOICE AND CALLS. As above. No others recorded in India.

BREEDING. Season, in the W. Himalayas April to June. Nest, of twigs, roots, rags, and rubbish placed in a hole or crevice, or on the ledge of an inaccessible cliff; rarely in the wall of a ruined building. Occasionally a disused nest, e.g. of magpie or crow, utilized. Eggs, 3 to 6, oval, pale pinkish or yellowish stone-colour, profusely speckled and blotched with various shades of red. Average size of 100 British eggs 39.73 × 31.77 mm. (Witherby). Baker gives for 68 eggs (apparently this race and *interstinctus* mixed) 39.3 × 31.6 mm. Eggs laid at least at two-day intervals, sometimes three and even four incubation period 27-29 days (Witherby). Both sexes incubate, but chiefly female.

MUSEUM DIAGNOSIS. Differs from Lesser Kestrel in wing formula (see diagram under 221). Brick-red mantle of male spotted with black. Claws black in both sexes v. pale yellow. For details of plumage see Witherby 1939, 3: 28-31; Baker, loc. cit.

MEASUREMENTS of nominate European birds:	Wing	Bill (from cere)	Tarsus	Tail
♂ ♂	230-252	13-15	37-41	150-173 mm.
♀ ♀	235-267	—	—	— mm. (Witherby)

Of Indian specimens including breeding birds from W. Himalayas:

	Wing	Bill (from skull)	Tarsus	Tail
23 ♂ ♂	231-258	19-22	36-46	154-175 mm.
17 ♀ ♀	241-270	20-22	36-43	158-183 mm. (SA, HW)

COLOURS OF BARE PARTS. Iris brown. Bill slaty blue, black at tip, yellow at gape and base; cere and orbital skin yellow. Legs and feet yellow to orange-yellow; claws black.

223. East Himalayan Kestrel. *Falco tinnunculus interstinctus* McClelland

Falco interstinctus McClelland, 1840 (1839), Proc. zool. Soc. London, pt. 7: 154 (Assam)

Falco tinnunculus japonensis Ticehurst, 1929, Bull. Brit. Orn. Cl., 50:10 (New name for *Falco tinnunculus japonicus* Temminck & Schlegel, 1844 in Siebold, Fauna Jap., Aves, 2, pl. 1 and 1B (Japan) nec *Falco japonicus* Gmelin)

Baker, FBI No. 1741, Vol. 5: 62

Plate 12, fig. 5

LOCAL NAMES. As for 222.

SIZE. Same as the European Kestrel.

FIELD CHARACTERS. Indistinguishable from European Kestrel with certainty in winter when their ranges overlap. See Museum Diagnosis.

FALCONIFORMES

366

STATUS, DISTRIBUTION and HABITAT. Breeds in W. Pakistan (N. Baluchistan, NW. Province, Punjab) and India in the W. Himalayas (Ladakh, Kashmir, Himachal Pradesh) between c. 700 and 3300 metres alt. Commonly observed (non-breeding) above tree-line up to c. 5500 m. No direct evidence as yet of breeding in E. Himalayas or Assam. If found, racial identity will need establishing. Winters throughout both Pakistans, Nepal (up to at least 2700 m.) and all India — plains and up to the highest peninsular hills — its numbers vastly augmented by extralimital migrants, and overlapping with the other races. Also winters in Ceylon, Andaman, Laccadive and Maldivé islands. Affects open grassland, hill and plain: also cultivation and semi-desert.

Extralimital. Also breeds in the Palaearctic Region, in Europe roughly from between latitude 60° and 70°N. and eastward through the Ural Mountains and W. Siberia to Tarbagatai and Altai; southward to N. Africa and east through most of W. Asia to Mongolia and the Amur. Winters south of these areas including the Indian subcontinent.

MIGRATION. Seen in the plains (non-breeding localities) in winter, between September/October and March/April. No ringing or other precise data. Visual records of earliest and latest dates of arrival and departure vitiated by uncertainty in racial identification. In N. Baluchistan (Chagai) northward migration (of nominate race) observed in progress in April (Christison, JBNHS 43: 484); near Kabul and in N. Afghanistan (race?) between 13 April and 11 May (Meinertzhagen, *Ibis* 1938: 702). From the fact of single birds (same individuals?) frequently found roosting in the selfsame spots winter after winter — e.g. a particular niche or cornice in a ruin — the species probably 'home true' to its winter quarters.

GENERAL HABITS. Usually met with singly in well staked-out feeding territories, perched on the selfsame mound, bush or telegraph pole day after day on the lookout for creeping prey, bobbing its head up and down to focus on some movement in the grass, pouncing to the ground from time to time and returning with the victim to its base. But the kestrel's most characteristic method of hunting, in which it surpasses all other birds of prey employing similar tactics, is its hovering. As it quarters its feeding territory, 30 metres or so above, the bird suddenly stops dead in its flight face to wind, poising stationary in mid-air for many seconds at a time on rapidly vibrating wing-tips and fanned-out tail to investigate the ground below. On further suspicion the bird drops a step lower, finally pouncing silently on the quarry and bearing it away in its claws. In a strong headwind seems to enjoy remaining effortlessly suspended aloft, as on some invisible wire, for minutes together (once timed 5 minutes +, SA) with no movement except an almost imperceptible spreading and narrowing of the tail and tilting of wingtips, the bird often drifting backwards with the current. In hovering flight body held horizontally, not tilted to wind as in Lesser Kestrel, q.v. In the breeding season pairs engage in spectacular aerial display around their nesting cliffs, stooping and darting at each other, zooming upward with the wind currents and eddies, and hovering prettily on vibrating wings (quite distinct from normal hovering) to the accompaniment of a shrill *ki-ki-ki* or *tii* ... *wee*.

FOOD. Chiefly insects, frogs, lizards, small rodents, and rarely nestlings

FALCONIFORMES

368

STATUS, DISTRIBUTION and HABITAT. Status uncertain. Only circumstantial evidence of breeding in Eastern Himalayas and hills south to Manipur. Breeding birds from NW. Himalayas, assigned by Baker as *interstinctus* (*Modification*, 4: 41), shown by Ticehurst (*Ibis* 1923: 262) and Whistler (JBNHS 38: 420-1) not to differ from nominate race. Therefore, as presently known, only a winter visitor to the Eastern Himalayas (west at least to Nepal); Assam, Manipur, E. Pakistan (Sylhet, Chittagong), eastern India (Orissa), S. India (Coimbatore, Kerala). Also to Ceylon, and Andaman Islands (Biswas). But dispersal and numerical status imperfectly known due to great variability in the species, difficulty of discrimination and wide overlapping of the races in winter.

Extralimital. Breeds in Japan, NE. China, SE. Tibet, east Central Asia and Szechuan. Winters in India, Burma, (Indochinese countries?), SE. China.

GENERAL HABITS, FOOD, VOICE. As in 222.

BREEDING. Chiefly extralimital, but said to breed in Cachar, Assam (Baker, JBNHS 11: 404). Nest, eggs, etc. as in nominate race.

MUSEUM DIAGNOSIS. Differs from the nominate race in both sexes being more heavily barred above. Also has a bright foxy red phase not found in *F. t. tinnunculus*.

MEASUREMENTS. The range covers that of the nominate race. Three recent specimens from Nepal and Sikkim measure:

	Wing	Bill (from skull)	Tarsus	Tail
2 ♂ ♂	235-252	20-21	—	153-169 mm.
1 ♀	260	22	41	179 mm. (BB, SA)

Weight 3 ♂ ♂ 173-185, 1 ♀ 150 gm. (BNHS).

COLOURS OF BARE PARTS. As in 222.

224. Indian Kestrel. *Falco tinnunculus objurgatus* (Baker)

Cerchus tinnunculus objurgatus Baker, 1927, Bull. Brit. Orn. Cl., 47: 106 (Ootacamund, Nilgiris, S. India)

Baker, FBI No. 1744, Vol. 5: 65

LOCAL NAMES. As for 222.

SIZE. European Kestrel ±.

FIELD CHARACTERS. Like the European Kestrel (222) but slightly smaller. Both sexes more brightly and richly coloured generally, with very rufous underparts. Not always distinguishable from other races. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Breeds in the Western Ghats complex from Khandesh south to Kanyakumari, including the Nilgiri, Palni, and associated hills; the Shevaroy Hills and possibly other portions of the Eastern Ghats. Breeds also in Ceylon (hills of the Central Province). Winter dispersal not properly known.

GENERAL HABITS, FOOD, VOICE. As in 222.

BREEDING. Season, January to March in the peninsular hills (c. 1200-2500 m.); March to June in Ceylon (c. 1000-1440 m.). Nest, a sketchy pad

FALCONS

369

of straw, etc. in a cleft or hole in a precipitous cliff, usually inaccessible. Eggs, 3 to 6, indistinguishable from those of the nominate race, q.v. Average size c. 38 × 30 mm. (Baker).

MUSEUM DIAGNOSIS. Adult ♂ differs from the nominate race in the upperparts being a deeper more sooty brick-red, lacking the characteristic faint grey wash or bloom. Top of head duller, darker grey, or even streaked rufous-brown as in ♀. Grey tail usually faintly barred. Underparts well tinged with rufous, the markings on central flanks of a somewhat different character. Adult ♀ richer brick-red above, heavily barred. Underparts differ from nominate race in same way as in ♂.

MEASUREMENTS.

	Wing	Bill (from skull)	Tail
16 ♂♂	221-242	c. 21-22	145-163 mm.
17 ♀♀	234-258	c. 22-23	145-175 mm. (SA, HW)

COLOURS OF BARE PARTS. As in 222.

APPENDIX

3a. Rednecked Grebe. *Podiceps grisigena* (Boddaert)

Colymbus grisigena [sic] Boddaert, 1783, Tabl. Planch. Enlum.: 155

(No locality. France. Witherby 1912)

Plate 1, fig. 5

SIZE. Domestic duck—; length c. 45 cm (17 in.).

FIELD CHARACTERS. In winter grey and white, rather similar to Great Crested Grebe (3). Distinguished from it by smaller size, thicker neck, absence of white eye-stripe, black of crown extending down to eye level. Sides of head dusky grey diffusing into white of throat and breast, the two colours not sharply demarcated as in 3. Base of bill yellow. Sexes alike. For summer plumage see Witherby, 4: 93.

STATUS, DISTRIBUTION and HABITAT. Rare (?) winter visitor. Sight-recorded twice in Pakistan—Bahawalpur, January 1967 and Salt Range, September 1967 (JBNHS 64: 555; 65: 773).

Extralimital. Breeds in the northern Palearctic; winters south to the Mediterranean, N. Africa and Iran.

37a. Western Purple Heron. *Ardea purpurea purpurea* Linnaeus

Ardea purpurea Linnaeus, 1766, Syst. Nat., ed. 12, 1: 236

('Oriente', restricted to France)

CHARACTERS. Differs from *manilensis* in being darker, more slaty-less greyish on scapulars and mantle. Elongated feathers of crop more buffy. Underparts more variegated with chestnut. Field identification difficult.

STATUS, DISTRIBUTION and HABITAT. Winter visitors to Pakistan (Baluchistan)—Titchhurst, JBNHS 32: 91, Christison, ibid. 43: 486.

APPENDIX

371

4 General plumage cinnamon-brown. Wing- and tail quills blackish.

Head and neck downy, buff.

In overhead flight: Body cinnamon, streaked darker. Under wing-coverts cinnamon; rest of wings blackish Fulvous

202a. Andaman Dark Serpent Eagle. *Spilornis elgini* (Blyth)

Haematomis elgini Blyth, 1863, Ibis: 118 (South Andaman Island)

Plate 20, fig. 12 and Plate 21, fig. 6

LOCAL NAME. Unrecorded.

SIZE. Kite—; length c. 50 cm. (20 in.).

FIELD CHARACTERS. Like 196 but much smaller and very dark chocolate-brown both above and below. Chin and throat blackish, rest of underparts largely ocellated with white but without adjoining black spots.

Young (immature). Head white, with dark centres to feathers of crown. Face and throat streaked darker. Breast finely barred with dusky and dark brown. Wings more profusely spotted with white than in adult.

STATUS, DISTRIBUTION and HABITAT. Common resident. Andaman Is., ecologically separated from co-existing 200. Affects inland forest clearings, hillsides covered with scattered trees, etc.

GENERAL HABITS. Largely as in 196 and other Serpent Eagles.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	344-368	36-38	c. 81-84	215-241 mm.
		(from feathers)	(once 75)	(Baker)

COLOURS OF BARE PARTS. Iris bright yellow. Bill pale horny, bluish horny or fleshy, darker on culmen; cere, lores and orbital region lemon-yellow or bright yellow. Legs and feet yellow.

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370

APPENDIX

104. Garganey or Bluewing Teal. *Anas querquedula* Linnaeus

MIGRATION. Two recent aberrant records are: (1) First-year male ringed in Rajasthan (Bharatpur) 14.xii.1971, recovered in Italy (Viterbo, 42°22'N., 11°37'E.) 25.iii.1973—c. 7600 km. WNW. (2) Adult male ringed in Tamil Nadu (Tanjavur, 10°18'N., 79°51'E.) 22.ii.1971, recovered in Nigeria (near Kano, 12°00'N., 8°30'E.) ?iii.1973—c. 7700 km. almost due west.

128a. Andaman Blackcrested Baza. *Ariceda leuphotes andamanica* Abdulali & Grubb

Ariceda leuphotes andamanica Abdulali & Grubb, 1970, J. Bombay Nat. Hist. Soc. 67(2): 137-8 (Wrightmyo, South Andaman Island)

LOCAL NAME. Unrecorded.

SIZE. Pigeon ±; length c. 33 cm. (13 in.).

FIELD CHARACTERS. Like 127, but with the underparts unbarred. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. As yet known only from South Andaman Island.

Ecology unrecorded; presumably as of 127.

BREEDING. On 9 April 1969, when collected, the specimens (a pair) had somewhat enlarged gonads (♂ 12mm., ♀ 3mm.) and from their behaviour appeared to be interested in breeding.

MUSEUM DIAGNOSIS. Differs from 127 as follows: (1) Blackish rufous band on upper breast much thinner, (2) this followed by only a single chestnut band in male, and by only two bands in female; rest of underparts unbarred, (3) unbarred portion of lower breast more intense rufous.

MEASUREMENTS

	Wing	Tail
1 ♂	223	130 mm.
1 ♀	224	127 mm. (HA)

Field key to the commoner large vultures (adults)

- General plumage black. Naked head and legs red.
In overhead flight: Broad oval white patches on thighs King
- General plumage greyish black. Head and neck naked, brown.
Lower back white.
In overhead flight: Under wing-coverts white; rest of wings, and body, blackish Whitebacked
- General plumage isabelline buff, contrasting with black wing and tail quills. Head and neck naked, black.
In overhead flight: Body and under wing-coverts isabelline; rest of wings blackish Longbilled

372

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373

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374

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Order GALLIFORMES

(For anatomical details see Stresemann, 1927-1934, *Aves*: 754; Witherby, 1941, 5: 208-9; Baker, 1928, 5: 279-80.)

Family MEGAPODIIDAE: Megapodes

Contains birds closely related to the pheasants, junglefowl, etc. (Fam. Phasianidae), many of whose natural characters they share. Remarkable for their reptile-like nesting habits, laying their eggs in holes in the ground or in scraped-together mounds of sand and humus, leaving them to hatch by the heat of the sun and/or decomposition of the vegetable matter. Young pass through natal down stage within egg; born with full juvenal plumage and able to fly and fend for themselves. Confined chiefly to the Australasian Region, only a single genus and species occurring within our limits in the Nicobar Islands.

(For Ontogeny and Evolution of the family see George A. Clark, Jr, 1964, *Pestilla* 78: 1-37.)

Genus MEGAPODIUS Gaimard

Megapodius Gaimard, 1823, Bull. Gen. Univ. Annon. Nouv. Sci. 2: 450

Type, by subsequent designation, *Megapodius freycinet* Gaimard

Bill moderate. Nostrils large, oval, longitudinally elongate. Legs and feet very large and powerful; tarsus in front broadly scutellated. Claws long and straight; hindclaw longest. Wings short and rounded: 5th primary (as.) longest; 1st subequal with 10th; secondaries as long as primaries. Tail short and rounded; of 12 feathers. Sexes alike. Represented by one species in two races within our limits, only in the Nicobar Islands.

MEGAPODIUS FREYCINET Gaimard

Key to the Indian Subspecies

Paler in colour, wing 228-250 mm.....*M. f. nicobariensis*
Darker in colour, wing 215-230 mm.....*M. f. abbotti*

225. North Nicobar Megapode. *Megapodius freycinet nicobariensis* Blyth

Megapodius nicobariensis Blyth, 1846, Jour. Asiat. Soc. Bengal 15: 52
(Nicobar Islands)

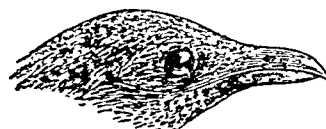
Baker, FBI No. 1994, Vol. 5: 437

Plate 32, fig. 18

LOCAL NAME. *Kongah* (Nicobars).

SIZE. Domestic hen —; length c. 43 cm. (16 in.).

FIELD CHARACTERS. A terrestrial brown bird like a jungle-hen with conspicuously large feet. Above, including wings and tail rufescent brown



Below, only chin and foreneck greyish brown without any grey tinge.

STATUS, DISTRIBUTION and HABITAT. Resident. Fairly common in the Nicobar group of islands lying north of the Sombbrero Channel except Chowra and Car Nicobar where not yet recorded, and Great and Little Nicobar occupied by the next race *M. f. abbotti*, q.v. According to Seymour-Sewell (JBNS 28: 982) occurs (subspecies?) also in the Cocos Is. north of the Andamans, and possibly, on circumstantial evidence, in the Little Andamans. These claims need confirming. Affects undergrowth in dense forest fringing the sandy shores of the islands above spring tide high-water mark.

GENERAL HABITS. Keeps in pairs or in fairly large parties or droves of adults and young mixed, including quite small chicks, running about and feeding in undergrowth like junglefowl, and calling noisily to one another. Partly nocturnal. Is a fast runner, and when disturbed trusts to its legs for escape rather than wings although capable of strong flight. Will sometimes take shelter up in the branches of trees like junglefowl.

FOOD. Land snails, seeds, vegetable matter, insects, etc. In the stomach of a specimen shot on Tillanchang I., Hume found sand, fragments of quartz, and specimens of *Scarabus plicatus* and one of *Helicina zelebori*. Of the former the largest was about three-quarters of an inch long and contained the animal (SF 2: 72). Newly hatched chicks grew up in captivity entirely on termites (JBNS 12: 21).

VOICE and CALLS. Contact calls: a loud cackling note syllabilized by Davison as *kuk-a-kuk-kuk* repeated quickly several times. V. Ball (SF 1: 82) mentions 'a peculiar guttural crow reminiscent of the croaking of bull frogs which may be represented by the syllables *kiouk, kiouk, kok, kok, kok*, etc. *ad infinitum*'.

BREEDING. Season, not definite; more or less throughout the year. Nest, a mound of scraped-together sand, leaves and vegetable matter up to 1.5 metres high and 10 metres or more in circumference usually built inside forest a few metres from the edge of the sandy shore above high-tide mark. Eggs. Number laid by each hen not ascertained. They are long ellipses in shape and enormous for the size of the bird, the weight of six being more or less equal to that of the layer. Colour: some shade of pink when newly laid, changing as incubation progresses to dull buff or ochre-brown, and eventually to uniform dull whitish. Average size of 84 eggs 82.6 × 52.3 mm. (Baker). Said to be excellent eating when fresh. The eggs are laid at intervals of several days each, possibly by several females in the same mound since as many as 20, in all stages from quite fresh to almost hatching, have

MEGAPODES

3

been dug out from a single mound. Evidently the egg is first deposited on the mound and then a hole dug by the parent into which it is rolled and covered up to a depth of a metre or more and a half. The eggs are incubated by the heat generated by the decomposing humus. Period of incubation not known. The fully developed precocious chick kicks itself out of the egg and out of the mound like a turtle hatching, and is capable of running strongly and flying when only a few hours old. It fends for itself independently of its parents from the time it is born. The breeding biology of this megapode is very imperfectly known. It is also not known whether the bird is monogamous, or polygamous, or promiscuous.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.

Chick (size of quail). 'Uniform snuff brown all over, everywhere densely feathered, even about the throat and neck, and with the feathers of the forehead and back of the neck much longer, *actually* and not merely *relatively*, than in the adult; no bare space in front of or round the eye, no tail developed, only a large bunch of fur-like feathers, but the wings large, strong, and well-formed, the bill very short. One such bird measured 5.5 inches [c. 14 cm.] in length and had a wing of 4 inches [101.5 mm.]; tarsus 1.1 [c. 26 mm.]; bill at front [exposed culmen ?] 0.3 [c. 5 mm.]' (Hume, SF 2: 277).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	228-250	c. 23.5-26	c. 59-68	69-88 mm.

Weight: ♂ 21-34 oz. (595-964 gm.); ♀ 30-36 oz. (850-1021 gm.) (Baker)

COLOURS OF BARE PARTS. Iris light to dark brown; eyelids red. Skin of lores, sides of head and neck showing through cherry-red to bright brick-red or mauve-pink. Bill greenish- or yellowish horny, paler along commissure. Legs and feet greenish horny, darker in front and more red or brick-red on the back.

226. South Nicobar Megapode. *Megapodius freycinet abbotti* Oberholser

Megapodius nicobariensis abbotti Oberholser, 1919, Proc. U.S. Nat. Mus. 55: 401
(Little Nicobar Island)

Baker, FBI No. 1995, Vol. 5: 439

LOCAL NAME. *Kongah* (Nicobars).

SIZE. About the same as the last.

FIELD CHARACTERS. A brown ground bird like a jungle-hen with conspicuously large feet. Similar to but somewhat darker than 225 (see Museum Diagnosis).

STATUS, DISTRIBUTION and HABITAT. Great and Little Nicobar Islands lying south of the Sombbrero Channel.

GENERAL HABITS, BREEDING, etc. Not different from the preceding subspecies. 4 eggs each taken from two separate mounds by B. B. Osmaston average 83.1 × 50.8 mm. (Baker).

MUSEUM DIAGNOSIS. Darker than *M. f. nicobariensis* above and below, the primaries especially being darker on the outer webs and contrasting less with the inner webs.

MEASUREMENTS. ♂ ♀ Wing 215-230 mm.

COLOURS OF BARE PARTS. As in 225.

Family PHASIANIDAE: Pheasants, Partridges, Quails, etc.

Comprises the so-called 'Game Birds' which have formed a valuable food resource for man from earliest times, and of which the domestic fowl is the most familiar representative. The family is characterized by its terrestrial habit with stout unfeathered legs for progress on ground; hind tarsus usually furnished with one or more pointed spike-like spurs or blunt protuberances, in the male only or in both sexes. Hallux or hind toe always present *contra* Turnicidae (Bustard-Quails). Unlike megapodes, claws short, blunt, and very strong for scratching the ground for food. Wings short and rounded: first primary (as.) more or less equal in length to the last (10th). Contour feathers with well-developed aftershaft.

The majority lay their eggs on the ground in open scrapes with no or scanty lining. Young nidifugous; born covered with down and able to run about within a short time of hatching out.

(Important references:

Beebe, W., 1918-1922, *A Monograph of the Pheasants*, 4 vols., London
Delacour, J., 1951, *The Pheasants of the World*, London)

Key to the Genera

Adult males

	Page
A Feathers of tail, or tail-coverts, with large metallic ocelli.....1	
B No ocellations on tail or tail-coverts.....2	
1 Wing over 480 mm..... <i>Pavo</i>	122
Wing under 480 mm..... <i>Polyplocus</i>	120
2 Wing over 200 mm.....a	
Wing under 200 mm.....b	
a Tail longer than wing.....I	
Tail shorter than wing.....II	
I A fleshy erect comb on the crown..... <i>Gallus</i>	102
No comb or crest but well-developed ear-tufts..... <i>Crossoptilon</i>	92
No fleshy comb on crown, no ear-tufts.....a ¹	
a ¹ Tail slightly longer than wing.....b ¹	
Tail much longer than wing.....b ²	
b ¹ Sides of head feathered..... <i>Pucrasia</i>	111
Sides of head unfeathered..... <i>Lophura</i>	93
b ² No occipital crest; first primary longer than tenth..... <i>Symyx</i>	119
Occipital crest; first primary shorter than tenth..... <i>Catreus</i>	116
II Plumage of males metallic..... <i>Lophophanes</i>	87
Plumage of males not metallic..... <i>Tetractophorus</i>	16
b Tail and wing equal..... <i>Tragopan</i>	79
Tail longer than wing.....III	
Tail shorter than wing.....IV	
III Tail-feathers numbering 14..... <i>Iliaegus</i>	74
Tail-feathers numbering 20-22..... <i>Tetractophorus</i>	10
IV First primary shorter than tenth.....a ²	
First primary equal to or longer than tenth.....a ³	

PHEASANTS, PARTRIDGES, QUAILS

5

	Page
a ^a Tail-feathers numbering 10..... <i>Ophrysia</i>	73
Tail-feathers numbering 14.....b ^a	
b ^a Spurs on tarsi..... <i>Galloperdix</i>	66
No spurs on tarsi..... <i>Bambusicola</i>	64
a ^a Size small, wing under 120 mm.....b ^a	
Size moderate, wing over 120 mm.....b ^a	
b ^a First primary longer than fourth..... <i>Coturnix</i>	37
First primary between seventh and tenth..... <i>Perdicula</i>	44
b ^a Tail-feathers numbering 12..... <i>Ammoperdix</i>	8
Tail-feathers 16-18..... <i>Perdix</i>	34
Tail-feathers 14.....c ^a	
c ^a Tarsus half clad..... <i>Lerwa</i>	6
Tarsus naked.....d ^a	
d ^a Tail less than half length of wing..... <i>Arborophila</i>	55
Tail more than half length of wing.....c ^a	
c ^a Flanks boldly barred..... <i>Alectoris</i>	17
Flanks not barred..... <i>Francolinus</i>	20

Adult females

A Feathers of head bushy, or elongated at crown, nape or ear-coverts....1	
B Feathers of head neither bushy nor elongated....2	
1 Extensive area around eye (other than orbital ring) or side of face unfeathered.....a	
Sides of face feathered.....b	
a Tarsi partly feathered..... <i>Lophophorus</i>	87
Tarsi unfeathered.....I	
I Wing 300 mm. or over..... <i>Pavo</i>	122
Wing under 300 mm.....a ^a	
a ^a Tail of 14-18 feathers.....b ^a	
Tail of 20-24 feathers.....b ^a	
b ^a Tail exceeds wing by 70 mm. or more..... <i>Calreus</i>	116
Tail shorter than wing or only slightly longer.....c ^a	
c ^a Crown grey..... <i>Ithaginis</i>	74
Crown not grey..... <i>Lophura</i>	93
b ^a Tail with brownish spots or small, ill-defined, blackish, dully metallic ocelli..... <i>Polyplectron</i>	120
Ocelli not present..... <i>Crossoptilon</i>	92
b Primaries longer than secondaries..... <i>Pucrasia</i>	111
Primaries same length as secondaries..... <i>Tragopan</i>	79
2 Extensive area around eye (other than orbital ring) or side of face bare of feathers.....c	
Sides of face feathered.....d	
c Wing over 250 mm..... <i>Tetraogallus</i>	10
Wing under 250 mm.....II	
II Feathers of hindneck and mantle lanceolate..... <i>Gallus</i>	102
Feathers not lanceolate.....a ^a	
a ^a Wing small, 180 mm. or less..... <i>Galloperdix</i>	66
Wing larger, 190 mm. or more.....b ^a	

PHEASANTS, PARTRIDGES, QUAILS

7



x c. 1

largely deep chestnut, broadly streaked with whitish on abdomen and flanks. Under tail-coverts chestnut, streaked with black and tipped with whitish. Sexes alike.

Young (first year). Above, mottled dull brown and buffy white with conspicuous white shafts showing on scapulars and innermost secondaries, particularly in flight. Below, mottled pale brown and buffy white, with white streaks on breast and flanks.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident and common though local, in a narrow altitudinal zone between c. 3000 and 5000 metres along the entire Himalayas from NW. Pakistan through Nepal, Sikkim and Bhutan to our extreme NE. Frontier. Seldom descends as low as 2500 m. and that only in very severe winters. Affects alpine pastures, open hillsides above the tree-line covered with grass, lichens, ferns and rhododendron bushes with scattered snow patches. Its characteristic facies is less bare and stony than the Snowcock's, q.v.

Extralimital. Afghanistan, S. Tibet, W. China.

GENERAL HABITS. Keeps in family parties of 6 to 8, adults and young, or coveys of up to 20 birds or more. When flushed rises silently straight up for a metre or two but with a great whirring and clapping of wings, flying away fast and strongly, the covey scattering. Where not much persecuted, tame almost to the point of stupidity, allowing themselves to be approached and fired at again and again till the entire covey may be wiped out. This trait, in conjunction with their palatability, is doubtless responsible for the considerable decline in their numbers in parts of their west Himalayan range.

FOOD. Lichen, moss, seeds and vegetable shoots, along with which a quantity of grit is swallowed. Presumably insects are also taken.

VOICE AND CALLS. Breeding call very similar to that of the grey partridge of the plains (A. E. Osmaston). A low whistle of alarm when covey approached, frequently repeated in a shriller tone when approached closer (R. Meinertzhagen).

BREEDING. Season, as so far recorded, May to July. Nest, a scrape on the ground under cover of a rock or bush sometimes well lined with moss and leaves, at other times practically without lining. Usually well concealed, but the cock bird rather gives it away by calling and strutting about in its vicinity (S. L. Whympers). Eggs, 3 to 5, or possibly 6, smaller replicas of those of the Snowcock — glossless pale clear buff or yellowish buff to dirty dark grey-buff, finely freckled and blotched with reddish all over. Average size of 50 eggs 54.6 x 35.4 mm. (Baker). Period of incubation and share of the sexes unknown. Male believed to be monogynous and to assist in tending the chicks.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

6

GALLIFORMES

	Page
b ^a Rump mottled sandy brown and black..... <i>Symaticus</i>	119
Rump pale grey..... <i>Tetraophasis</i>	16
d Wing under 120 mm.....III	
Wing 120-210 mm.....IV	
III First, second, or third primary longest..... <i>Coturnix</i>	37
Fourth, fifth, or sixth primary longest.....a ^a	
a ^a First primary equal to or longer than tenth..... <i>Perdicula</i>	44
First primary shorter than tenth..... <i>Ophrysia</i>	73
IV About one-half of tarsi feathered..... <i>Lerwa</i>	6
Tarsi not feathered.....a ^a	
a ^a Outer primaries graduated.....b ^a	
Outer primaries not graduated.....b ^a	
b ^a Primaries graduated on inner web only..... <i>Ammoperdix</i>	8
Primaries graduated on inner and outer webs..... <i>Alectoris</i>	17
b ^a Tail of 16-18 feathers..... <i>Perdix</i>	34
Tail of 14 feathers.....c ^a	
c ^a Tail short, about one-half length of wing..... <i>Arborophila</i>	55
Tail long, equal to about two-thirds length of wing or more.....d ^a	
d ^a Third or fourth primary longest..... <i>Francolinus</i>	20
Fifth primary longest..... <i>Bambusicola</i>	64

Genus *LERWA* Hodgson

Lerwa Hodgson, 1837, Madras Jour. Lit. Sci. 5: 300

Type, by monotypy and tautonymy, *Perdix lerwa* Hodgson

Contains a single Himalayan species with no races. Wing short but pointed; second primary (as.) usually longest, 1st and 3rd being subequal and only slightly shorter. Secondaries comparatively long reaching to within c. 25 mm. of wing tip. Tarsus short, feathered for over half its length in front. Tail of 14 feathers, slightly rounded at end. Sexes coloured alike, but male has a well-developed spur on hind tarsus with sometimes a second incipient one.

227. Snow Partridge. *Lerwa lerwa* (Hodgson)

Perdix lerwa Hodgson, 1833, Proc. Zool. Soc. London, pt. 1: 107

(Northern region of Nepal)

Baker, FBI No. 1993, Vol. 5: 433

Plate 32, fig. 14

LOCAL NAMES. *Lerwa* (Bhutea); *Janguria* (Kumaon); *Quoir* or *Kur monal* (Garhwal); *Guldbi bhair*, *Teriltar* (Bashahr); *Bāyf ka titār* (Kulu); *Biju* (Chamba); *Pārahāt* (Hazara).

SIZE. Partridge +; length c. 38 cm. (15 in.).

FIELD CHARACTERS. A gregarious close-barred high-altitude partridge with bright red legs and bill. Above, closely barred black and white. Below,

8

GALLIFORMES

Chick (in down). Above, chestnut-brown, a blackish mark down the centre of the back and on the thighs. Centre of crown and nape, round the eye, and posterior cheeks velvety black; remainder of head, throat and sides of neck soft silvery white. Below, pale buff to chestnut buff.

There is a striking similarity in the downy chick to that of the Blood Pheasant (*Ithaginis cruentus*). Only in the former the tarsus is feathered for half its length and the bill black; in *Ithaginis* the tarsus is bare throughout and bill orange-yellow (Meinertzhagen, 1927, *Ibis*: 625 and coloured plate).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	180-205	18-20	38-40	118-138 mm. (Baker)

Weight 16 oz. (454 gm.) to 22 oz. (c. 624 gm.) once 25 oz. (c. 709 gm.) — Hume.

COLOURS OF BARE PARTS. Iris brownish red or blood red. Bill bright coral red. Legs and feet orange-red to deep red, deepest and brightest in the breeding season.

Genus *AMMOPERDIX* Gould

Ammoperdix Gould, 1851, Bds. Asia 6(3): pl. 4, 5, and text. Type, by subsequent designation, *Perdix heyi* Temminck (Reichenbach, 1853 (1852), Av. Syst. Nat. 28)

Tail of 12 feathers, short, not exceeding half length of wing. Wing rounded, 3rd or 4th primary (as.) longest; 1st, 2nd, 5th and 6th graduated. Tarsi strong and fairly long, without spurs, but male occasionally has a small knob or incipient spur on one or both legs. Bill with a distinct cere, brighter in colour than rest of bill. Sexes differently coloured.

Represented by one species in West Pakistan.

228. Seesee Partridge. *Ammoperdix griseogularis griseogularis* (J. F. Brandt)

Perdix griseogularis J. F. Brandt, 1843, Bull. Acad. Imp. Sci. St. Petersb., Physico-Math. Cl. 1: col. 365 (Transcaspia and Persia; restricted type locality, Persia apud Hartert, 1921, Vög. pal. Fauna 3: 1916)

Baker, FBI No. 1975, Vol. 5: 405

Plate 32, fig. 13

LOCAL NAMES. *Siru* (Baluchi); *Seesee* (Sind, Punjab); *Tihu* (Persian); *Kukia* (Attock, Campbellpur).

SIZE. Partridge —; length c. 26 cm. (c. 10 in.).

FIELD CHARACTERS. A small sandy grey-brown, concealingly desert-coloured partridge. Male. Head and foreneck ashy grey. A white band from lores through eye and ear-coverts ending posteriorly in a rufous patch, bordered above and below by black lines. The black line above (supercilium) broader and stretching from across forehead backward to nape. Outer tail-feathers conspicuously chestnut. Underparts pinkish buff, horizontally streaked on flanks with black and chestnut. Orange bill, yellow legs.



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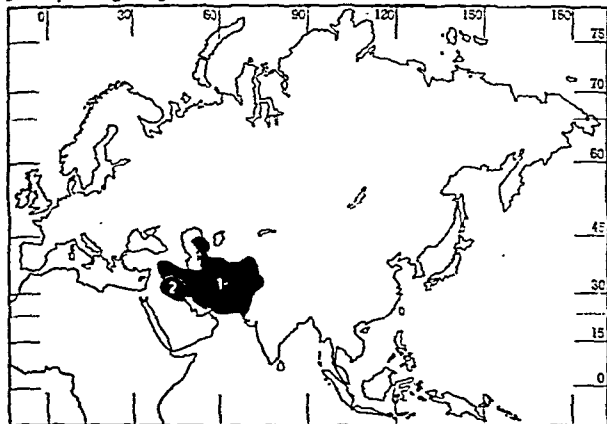
PHEASANTS, PARTRIDGES, QUAILS

9

Female. Sandy grey like male but without the grey head and black-and-white bands, and with no dark streaks on flanks.

STATUS, DISTRIBUTION AND HABITAT. Resident and locally common in West Pakistan — Baluchistan, NW. Frontier Province, Punjab (Salt Range), and Sind (Kirthar Hills). Affects dry stony bare or lightly-scrubbed foothills up to about 2000 metres elevation (normally much lower), broken up by rocky outcrops and bluffs of sun-baked mud and nullahs and ravines. Also the edge of scattered cultivation in the smaller valleys.

Extrelimital. Iran to Afghanistan, north to Bokhara.

Ammoperdix griseogularis

Distributional range 1 *A. g. griseogularis* (228).
2 *A. g. ter-meuleni* (RE).

GENERAL HABITS. Keeps in coveys of 20 birds or more, collecting in larger numbers to drink at water-holes. Very active in the early mornings and at dusk, sheltering from the midday heat in crevices and fissures — in Baluchistan often in the *karez* pits or openings to the underground water-channels. More often seen abroad at midday during the cold season. Astonishingly agile on its legs, sprinting away at great speed over boulders and rough broken ground, flying only when suddenly come upon or hard pressed. Abundant in the remoter areas and refreshingly tame and confiding where not persecuted, often seen running about like domestic chickens on the sites of deserted villages and encampments whence the herdsmen have moved to higher pastures in spring, pecking at horse- and mule-dung for food, and dust-bathing on the paths. When flushed on a hillside the birds invariably fly downhill, the wings producing the characteristic high-pitched squeaking *see-see* noise, as of a badly oiled bearing, which has given the bird its name. They provide good sport with the gun, but due to their concealing coloration in the broken terrain they frequent, and the habit

GALLIFORMES

10

of taking refuge in fissures when winged, are often difficult to retrieve without the aid of a dog. The superiority of their flesh over that of the chukor was already recorded in the Emperor Jehangir's Memoirs in the 17th century.

FOOD. Seeds and vegetable shoots, and doubtless also insects. Whistler found stomachs of specimens fully crammed with the small serrated trefoil-like leaves of *Trigonella occulta* Del. which grows sparsely in their stony habitat.

VOICE AND CALLS. A soft *chuck-chuck* uttered as contact note between members of a covey. On approach of breeding season male said to call at all hours of the day from an exposed rock or suchlike situation, like chukor but with a different note (not intelligibly described). The loud onomatopoeic double whistle produced by the wings is wrongly described as its call by Baker. The birds utter an alarm note when flushed which also needs proper description.

BREEDING. Season, March to June, chiefly April and May. *Nest*, a mere scrape in the ground, sometimes sparsely lined with grass and a few feathers, either sheltered under a rock or unprotected in the open. Nests have been recorded on the cornice of a deserted building and on the roof of a temporarily unoccupied house! *Eggs*, 8 to 16 (once 28!) pointed broad ovals, fairly glossy, creamy white or ivory-white to pale buff in colour, unmarked. Average size of 70 eggs 34.8 × 25.5 mm. (Baker). The male is believed to be monogynous, but SA has observed a wild cock paying assiduous court to two hens a couple of metres from each other, first running round one with the wing on that side drooped and trailing, and then round the second female in the same way. Males are pugnacious and, in the wild state, fight fiercely in the breeding season. They are, however, less prized by fanciers as fighting birds than the chukor.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	123-139	c. 11-12.5	32-34	60-68 mm.
♀♀	123-133	11-12	31-33	59-62 mm. (Baker)

Weight (♂♂) 7 to 8 oz. (c. 198-227 gm.) — Hume.

COLOURS OF BARE PARTS. Iris bright yellow, orange, orange-brown, dull red, or light brown. Bill orange, dusky on culmen, in some orange horny; cere orange or orange-red (brownish in non-breeding season). Legs and feet dingy wax yellow, greenish yellow, or dusky yellow; claws pale brown.

Genus TETRAOGALLUS J. E. Gray

Tetraogallus J. E. Gray, 1832, in Hardwicke's Ill. Ind. Zool. 2(11), pl. 46. Type, by monotypy, *Tetraogallus nigellii* J. E. Gray (not *Lophophorus nigelli* Jardine & Selby) = *Tetraogallus himalayensis* G. R. Gray

Contains the Snowcocks superficially like gigantic Grey Partridges. Wing rounded: first primary (as.) about equal to 6th; second primary longest. Tail well graduated, equal to about two-thirds of the wing. Tarsus short, feathered at the base and armed with a spur. A naked space behind eye. Sexes alike or differing slightly.

Genus confined to the mountains of central Asia from Asia Minor to western China.

PHEASANTS, PARTRIDGES, QUAILS

11

Key to the Species

	Page
A Lower breast and abdomen dark grey..... <i>T. himalayensis</i>	13
B Lower breast and abdomen white with black streaks..... <i>T. tibetanus</i>	11

TETRAOGALLUS TIBETANUS Gould

Key to the Subspecies

		Page
A Paler and more sandy on the head, nape and back	<i>T. t. tibetanus</i>	11
B Darker and more fulvous on the head, nape and back.....	<i>T. t. centralis</i>	13
C Darkest, less sandy or fulvous on the head, nape and back.....	<i>T. t. aquilonifer</i>	12

229. Tibetan Snowcock. *Tetraogallus tibetanus tibetanus* Gould

Tetraogallus tibetanus Gould, 1854 (1853), Proc. Zool. Soc. London, pt. 21: 47 (Tibet, type from Ladakh)

Baker, FBI No. 1990, Vol. 5: 429

Plate 34, fig. 8

LOCAL NAMES. *Utar utar* (Turki); *Hailik* (Mongol); *Garmo* (Tangut).

SIZE. Large domestic hen +; length c. 51 cm. (20 in.).

FIELD CHARACTERS. A stout, dumpy, high-altitude game bird reminiscent of a huge, overgrown Grey Partridge. *Above.* Head and neck dark grey; sides of forehead, ear-coverts, and throat white. Back largely sandy grey and blackish grey, finely vermiculated and streaked with buff. Rump, upper tail-coverts, and central tail-feathers rufous; rest of tail blackish brown with rufous tips. A conspicuous white wing-patch (on secondaries). *Below,* largely white: throat and upper breast unmarked, followed by a grey band separating them from rest of underparts which are broadly streaked with black, the streaks broadest on flanks and lower abdomen. Reddish legs. Sexes only differing slightly.

Young (immature). *Above,* paler; white supercilium more conspicuous than in adult. *Below,* chin and throat white; no distinct pectoral band. Breast grey mottled with brown and buff. Abdomen and flanks white without the black streaks.

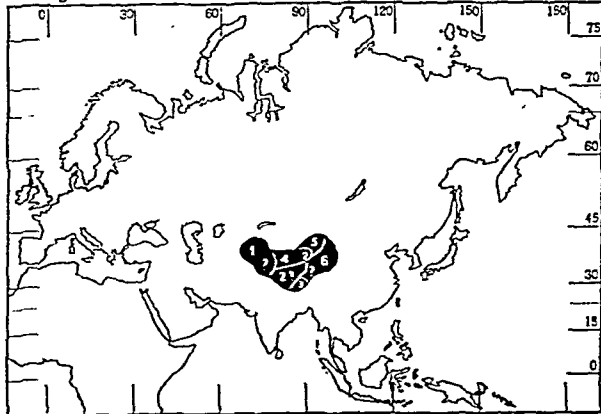
STATUS, DISTRIBUTION AND HABITAT. Resident in the western Himalayas (Ladakh and Rupshu) up to c. 5800 m. elevation in summer, down to between 4000 m. and 3000 m. in winter or still lower under heavy snowfall. Meinertzhagen (*Ibis* 1927: 629) never met with it in the same range of hills in eastern Ladakh as *T. himalayensis*. Affects alpine pastures with snow patches, stony sparsely grass-covered ridges, etc. above tree-line.

Extrelimital. Pamirs, and W. Tibet from Kashgar and Yarkand to Nanda Devi (Peters).

GENERAL HABITS, FOOD, VOICE AND CALLS. Not markedly different from those of the better known Himalayan Snowcock, *Tetraogallus himalayensis*, q.v. According to F. Ludlow, it has calls of three different kinds: (1) a subdued chuckling which gradually becomes louder and louder until it reaches a kind of climax, (2) a whistle, and (3) a call strangely reminiscent of that of the Curlew.

GALLIFORMES

12

Tetraogallus tibetanus

Distributional range 1 *T. t. tibetanus* (229). 2 *T. t. centralis* (231).
3 *T. t. aquilonifer* (230). 4 *T. t. tschimenensis* (RE).
5 *T. t. przewalskii* (RE). 6 *T. t. henrici* (RE).

BREEDING. Season, May to July. *Nest* and *Eggs* (4 to 7) as in Himalayan Snowcock. Average size of 16 eggs 63.8 × 44.1 mm. (Baker).

MUSEUM DIAGNOSIS. For detailed description of plumage see Baker, loc. cit.; for coloured illustration of chick in down, Meinertzhagen, *Ibis* 1927, pl. 15; for a note on moult, D. Marien, 1951, *Amer. Mus. Novit.*, No. 1518: 18.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	255-276	28-32	62-65	170-192 mm. (Baker)

COLOURS OF BARE PARTS. Iris hazel. Bill corneal yellow; nostrils magenta to dull carmine. Orbital region orange. Legs and feet bright pale vermillion; claws horn to orange-vermillion (Meinertzhagen).

230. Sikkim Snowcock. *Tetraogallus tibetanus aquilonifer* R. & A. Meinertzhagen

Tetraogallus tibetanus aquilonifer R. & A. Meinertzhagen, 1926, Bull. Brit. Orn. Cl. 46: 99 (Interior of Sikkim)

Baker, FBI No. 1992, Vol. 5: 432

LOCAL NAMES. *Hrak-pa* (Shutca); *Lephia kengmo* (or *kengmo* (South Tibet).

SIZE AND FIELD CHARACTERS. As for 229.

STATUS, DISTRIBUTION AND HABITAT. Resident. The Nepal and Sikkim Himalayas to western Bhutan between c. 4500 and 5500 m., descending somewhat lower in winter. Affects alpine pastures and bare rocky sparsely scrubbed ridges above tree-line—Tibetan plateau country.

EXTRALIMITAL. Adjacent parts of southern Tibet.

GENERAL HABITS etc. As in 232, q.v.

BREEDING. Not specifically recorded.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS, AND COLOURS OF BARE PARTS AS IN 229.

231. Central Tibetan Snowcock. *Tetraogallus tibetanus centralis* Sushkin

Tetraogallus tibetanus centralis Sushkin, 1926, Bull. Brit. Orn. Cl. 47: 37

(Tang-la Pass, Tang-la Range, central Tibet)

Baker, FBI No. 1991, Vol. 5: 430

LOCAL NAMES. Not recorded.

SIZE AND FIELD CHARACTERS. As for 229.

STATUS, DISTRIBUTION AND HABITAT. Resident. Abor and Mishmi Hills in the North East Frontier Agency tract, from c. 3500 metres up. Affects rocky stony hillsides, gorges and sparsely scrubbed ridges above tree-line.

EXTRALIMITAL. Northeastern and central Tibet.

GENERAL HABITS etc. As in 232, q.v.

BREEDING. Season, April to August, chiefly May and June. Nest, a natural or scraped hollow among stones and boulders or under the shelter of a rock, usually lined with dead leaves and grass; according to Baker and his correspondents 'invariably placed on the leeward side of a hill, often within a few yards of the crest'. Eggs, normally 4 to 6, sometimes 7, like those of the Himalayan Snowcock (232), apparently somewhat more heavily spotted at the smaller than the larger end. Average size of 140 eggs 62.6 × 43.2 mm. (Baker). Cock believed to be monogynous, not assisting in incubation but keeping watch near the nest and giving loud whistle of alarm on approach of danger. Two or three hens with their newly hatched broods reported joining together in one party.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

Wing ♂♂ 270-280; ♀♀ 260-270 mm. (Sushkin).

COLOURS OF BARE PARTS. As in 229.

232. Himalayan Snowcock. *Tetraogallus himalayensis himalayensis* G. R. Gray

Tetraogallus Himalayensis G. R. Gray, 1843 (1842), Proc. Zool. Soc. London: 105 (Himalayas). New name for the bird figured in Jardine & Selby, Ill. Orn., pl. 141 as *Lophophorus nigelli* not *L. nigelli* id., op. cit., pl. 76

Baker FBI No. 1989, Vol. 5: 426

Plate 34, fig. 9

LOCAL NAMES. *Kulla*, *Lupu*, *Baera* (W. Nepal); *Huinwal* (Kumaon); *Jer monal* (hills N. of Mussooree); *Leep* (Kulu); *Galaond* (Chamba); *Gleund* (Kangra); *Kübbk*, *Gura kákov*, *Rám chákör* (Kashmir); *Kübbk-i-dára* or *kouk-i-zárren* (Persian, Afghanistan).

without a single wing-beat, the wind whining through the pinions. They are noisy birds, continually uttering clucking calls as they feed, and shrill cackles of alarm when flushed, as well as on the wing.

FOOD. Chiefly bulbous roots and tubers, and green vegetable matter including grass shoots, along with which a good deal of grit is swallowed. *Artemisia* leaves, *Ephedra* berries and heads of a rye-like grass (Kociz).

VOICE AND CALLS. In breeding season cock particularly noisy. He utters a loud prolonged penetrating whistle or pipe of 4 (or 5) notes rising in scale and repeated with great persistence from a rock or mound. It has rather the cadence of the Common Green Pigeon's call and can be readily imitated to decoy the birds. Another call, described by B. B. Osmaston, begins with *kuk*, *kuk* repeated about a dozen times, gradually quickening and rising in scale 'until the last high-pitched notes follow each other so rapidly as to remind one of the acceleration of a ping-pong ball'.

BREEDING. Season, April to June. Nest a scratched-out hollow usually unlined, among stones and boulders quite in the open or under shelter of a ledge of rock. Normally on the leeward side of a hill, protected from the prevailing wind and rain. Eggs, 5 to 7, rarely 8, fine-textured, broad to long ovals, varying from pale yellowish stone to rich reddish buff, scantily scattered over with small blotches and specks of red-brown, characteristically more numerous at the smaller end. Average size of 68 eggs 65.4 × 45.4 mm. (Baker). Incubation believed to be by female alone, period (in incubator) 27-28 days. Incubating female has two brood-patches, one on either side between the thighs. 'In breeding season females get badly mauled by the cock, the crown often being quite bare of feathers and the skin bruised and red' (Meinertzhagen). Cock evidently monogynous. When courting he pursues the hen in a crouching position with his tail held vertically in the air (A. E. Osmaston). His neck ruff and tail are expanded, displaying the white under tail-coverts prominently. He then walks slowly round the hen with lowered head. At intervals he makes a dash for a rock or mound which he ascends, throws his head well back and gives his wild 5-noted whistle (Meinertzhagen).

MUSEUM DIAGNOSIS. See Key to the Species; for details of plumage Baker, loc. cit.; for a note on moult, D. Marien, 1951, *Amer. Mus. Novit.*, no. 151B: 17.

CHICK (in down). 'Upper parts stone grey richly variegated, with black tips and subterminal pale buff markings, making no definite pattern. Head very pale creamy buff, tipped with black and having four black lines from base of bill (1) along the side of the crown, (2) over the eye, (3) beneath the eye, and (4) as moustachial streak, all more or less blending behind the eye and ear-coverts. Underparts white, greyish white on breast and flanks. Legs and feet horny yellow, bill black, iris olive-brown' (Ticehurst). For coloured illustration see Meinertzhagen, *IBU* 1927: pl. 15.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	280-312	28-33	62-64	173-193 mm.

(Baker)

Weight ♂♂ 4 to 6½ lb. (c. 1.80-3 kg.); ♀♀ 3 to 4 + lb. (1.36-1.80 + kg.). COLOURS OF BARE PARTS. Iris hazel; bill olive horn-brown. Legs and feet dull vermilion; post-orbital region vermilion shading to orange (Meinertzhagen).

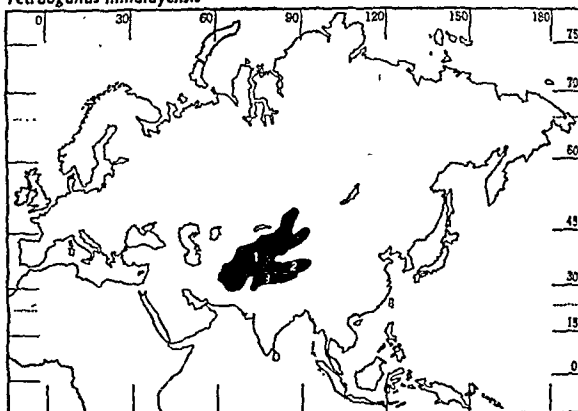
SIZE. Large domestic hen +; larger than 229. Length of ♂ c. 72 cm. (28 in.).

FIELD CHARACTERS. Like 229, reminiscent of a gigantic Grey Partridge, largely grey, white, chestnut and black streaked and vermiculated plumage. The white throat, separated by a broken chestnut collar from the dark grey underparts, and white under tail-coverts, are diagnostic points. In overhead flight against a bright sky, trailing edge of wings translucent white.

STATUS, DISTRIBUTION AND HABITAT. Resident. Western Himalayas—Kashmir, Ladakh, montane Punjab, Himachal Pradesh, Garhwal, Kumaon, western Nepal—between 4000 and 5500 metres altitude in summer, descending to 2400 m. or lower in severe winters. Like the Tibetan Snowcock affects steep alpine pastures near the snow line and bare stony ridges above the limit of tree growth.

EXTRALIMITAL. Tian Shans, Pamirs, and eastern Afghanistan.

Tetraogallus himalayensis



■ Distributional range x *T. h. himalayensis* (232).
a *T. h. grombezenskii* (RE). 3 *T. h. koslowi* (RE).

GENERAL HABITS. Usually keeps in pairs, or parties of 3 to 5, though coveys of over 20 birds frequently observed. The birds shoot down the hillsides in the early morning to drink, and slowly work their way upwards feeding as the day warms up, scratching the ground and digging vigorously with their stout bills. They hardly ever fly uphill or flap their wings in flight except just before alighting. When alarmed the bird invariably runs uphill with a waddling goose-like gait, its coloration blending to perfection with the barren environment. The partly erected tail is jerked now and again in the moorhen manner, flashing the white under coverts. It mounts a rock before taking off, plummeting at great speed straight down a steep hillside or round its contours or across a ravine, often travelling long distances

MISCELLANEOUS. One of the less attractive peculiarities of the Snowcock as a game bird is the strong and disgusting stench it often emits within only a couple of hours of being killed, possibly due to some food it has eaten. This however in no way affects the flavour of its flesh, which is excellent. Its high-altitude domicile and the rugged steepness of the ground it frequents call for considerable stamina and soundness of limb in hunting the bird.

Genus *TETRAOPHAPSIS* Elliot

Tetraophasis Elliot, 1871, Monogr. Phasian. 1: xix, pl. 21 and text. Type, by original designation and monotypy, *Lophophorus obscurus* J. Verreaux

Bill stout; edge of upper mandible overhanging lower. Wing rounded: 4th to 6th primaries (as.) subequal and longest, 4th or 4th and 5th slightly longer. First primary between 8th and 9th. A tuft of silky down-like feathers under the wing. Tail of 18 feathers, rather long, rounded, about three-quarters length of wing. Tarsus stout; of male with one spur, of female without. Otherwise sexes alike.

Only two forms known, from Tibet and China, of which one enters the fringe of our territory in NE. Assam.

233. Pheasant-Grouse. *Tetraophasis szechenyi* Madarász

Tetraophasis Szechenyi Madarász, 1885, Zeitschr. f. ges. Orn. 2: 50, pl. 2

(Szi-tschuan = Szechwan or eastern Tibet)

Not in Baker, FBI

Plate 34, fig. 5

LOCAL NAMES. *Kwa-kwa-dzi k'uling* (Tibetan); *Hsi-ue-tzu* (Chinese).

SIZE. Length c. 64 cm. (25 in.).

FIELD CHARACTERS. A large, plain coloured pheasant of the size and shape of the Koklas (*Pucrasia*). Above. Crown brownish grey narrowly streaked with black. Hindneck and upper back dark brown; lower back and rump grey, the feathers narrowly edged darker. Below. Chin and throat rust coloured (fawn). Upper breast dark grey, rest of underparts browner grey; feathers of lower plumage edged with rusty, and with rusty and chestnut spots. Outer tail-feathers with black-and-white tips. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common in eastern Tibet, only just entering our northeastern border in the Upper Subansiri and Siyom drainage areas of NEFA (the North East Frontier Agency). Affects rocky ravines with plenty of cover, in fir forest and rhododendron scrub in the alpine zone between c. 3350 and 4600 metres altitude.

EXTRALIMITAL. E. Tibet and SW. China in provinces of Szechuan and Yunnan' (Peters).

GENERAL HABITS. Keeps in family parties of 4 to 6 birds. When disturbed in forest seeks refuge in trees where it 'freezes' and becomes difficult to detect. When flushed in open country where it has frozen on the observer's approach, it rises with a whirr of wings and shoots downhill into the nearest forest with the speed of a Koklas.

FOOD. Crop contents examined by Ludlow consisted of small roots, bulbs, and green leaves.

VOICE AND CALLS. According to Ludlow, has a loud harsh series of notes difficult to describe. On the whole a quieter bird than *Crossoptilon*, which inhabits the same biotope and is very noisy.

PHEASANTS, PARTRIDGES, QUAILS

17

BREEDING. Not recorded within our limits, and little known. Ludlow found chicks in E. Tibet in late May, June, and July, and Schäfer in August, indicating that season much protracted.

[Good accounts from E. Tibet by E. Schäfer (*Jour. Orn.*, 1934, 82(4): 490-2, and Sonderheft, 1938: 82); also F. Ludlow (*Ibis*, 1944: 382-3).]

MUSEUM DIAGNOSIS. For details of plumage see Hartert, E., 1921-22, Vog. pal. Fauna 3: 1895-6.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
2 ♂♂	216-226	32-34.5	—	142-151 mm.
3 ♀♀	203-221	28.5-32	51 (1)	129-133 mm.

(R. M. de Schauensee)

COLOURS OF BARE PARTS. Iris chestnut-brown. Bill blackish. Legs and feet reddish brown.

Genus *ALECTORIS* Kaup

Alectoris Kaup, 1829, Skizz. Entw.-Gesch. Eur. Thierw.: 180, 193. Type, by monotypy, *Perdix petraea* auct. not of Gmelin = *Perdix barbara* Bonnaterrae

Contains partridges of moderate size with red legs and almost uniform upper plumage, but with the flanks boldly barred with black. Wing short and rounded: first primary (as.) equal to 5th or 6th; 3rd primary longest. Tail of 14 feathers slightly rounded, equal to about two-thirds length of wing. Tarsus long and well developed; armed in male with a small spur. Otherwise sexes alike.

Genus well represented throughout Europe, N. Africa and W. and C. Asia.

*ALECTORIS CHUKAR*¹ (J. E. Gray)

Key to the Subspecies

	Page
A Paler everywhere, above and below.....	<i>A. c. pallescens</i> 18
B Darker	1
1 Crown conspicuously red-brown; pink of upper back very bright.....	<i>A. c. korovikovi</i> 17
Crown not so conspicuously red-brown, and pink of upper back duller	<i>A. c. chukar</i> 18

234. *Persian Chukor*. *Alectoris chukar korovikovi* (Zarudny)

Caccabis kakelik korovikovi Zarudny, 1914, Orn. Mitt. 5: 55

(Mountains of Birdjan, eastern Persia, Persian Baluchistan)

Baker, FBI No. 1973, Vol. 5: 404

LOCAL NAME. *Kākā* (Persian, Baluchi).

SIZE AND FIELD CHARACTERS. As of 236, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident. Common in West Pakistan (Baluchistan) and Sind (Kirthar Range and outlying spurs) between c. 1000 and 3500 m. elevation. Affects barren rocky hillsides and ravines sparsely

¹ Cf. Watson, G. E., 1962, *Ibis* 104: 353-67; *Evolution* 16(1): 11-19.

PHEASANTS, PARTRIDGES, QUAILS

19

down sides of neck to meet in a gorget, or 'necklace', on upper breast enclosing the buffy to glistening white cheeks, chin and throat. Crimson bill and legs. Sexes alike; female somewhat smaller and lacking the spur on tarsus.

Young (immature). Dull brownish grey. Upperparts spotted with white; underparts dirty brownish white with faint brown bars. Head rufescent brown. Tail grey with mottled bars of black and white, the outer feathers tinged with rufous.

(For downy chick see Museum Diagnosis.)

STATUS, DISTRIBUTION AND HABITAT. Resident. Throughout the western Himalayas between c. 1200 and 5000 metres elevation, east to central Nepal, excluding the ranges of 234 and 235, q.v. Also Punjab Salt Range. Affects barren, stony sparsely scrub-covered hillsides, boulder-strewn ravines, and the neighbourhood of terraced-cultivated river valleys.

GENERAL HABITS. Normally keeps in parties of 4 or 5 birds to steep bare hillsides with a scanty sprinkling of *Rubus*, *Berberis*, and such-like scrub, and often in the neighbourhood of terraced cultivation. Coveys of 50 or more, adults accompanied by young of the year, are not uncommon in autumn and winter when the birds descend from the highest levels. Several coveys may collect together to drink at the few and far-between springs and water-holes in the barren hills an hour or two after sunrise, or to feed in the freshly sown wheat and barley fields, gradually working their way up the flanking hill-slopes as the day gets warmer. They are very fast and strong on the wing, but the flight is not sustained. When flushed, a covey scatters, the birds sticking to the contours of the hillside wherever possible and invariably flying downhill with great velocity. They afford excellent sport with the gun, but the steep and rugged nature of the terrain makes their pursuit an exhausting business. The only chance of making a decent bag is to get the birds driven over in the neighbourhood of the drinking-places where they concentrate. They then give a large variety of shots as they sweep the contours or hurdle through space high overhead across a ravine from a high spur to lower ground. Dr Ticehurst records that in a good year three guns shot 700 birds in two mornings in this way in Baluchistan. They are excellent for the table.

FOOD. Bulbous roots, grain, and green vegetable matter including shoots of grass, wheat and barley; also insects, especially termites. A quantity of grit is always taken with the food.

VOICE AND CALLS. The cock has a rattling gamey crow uttered from an exposed rock or other eminence in the early morning and late evening with a particularly challenging ring in the breeding season. It is a loud chuckling, far-reaching, *kāk-kāk-kāk*, *kāwāk-kāk*, *kāwāk-kāk*, *kāwāk-kāk*, etc., reminiscent of something between the calls of the Grey Partridge and the Guineafowl. To Hume's ear the call sounded as 'I'm here, I'm here; who's dead, who's dead; oh lor, oh lor'.

An interesting study, 'Voice and Social Behaviour of the Chukar Partridge', has been made on captive as well as wild birds in the areas of their introduction in the U.S.A. (Stokes, A. W., 1961, *The Condor* 63(2): 111-27). Fourteen different calls have been classified based on their association with alarm, social contact, agonistic, and sexual situations. The one here described

18

GALLIFORMES

dotted with stunted grass and bushes. Occasionally small numbers in thick juniper forest in northern Baluchistan (Ticehurst).

Extralimital. 'Eastern Persia from lat. 37°30'N. southward' (Peters).

GENERAL HABITS, FOOD, VOICE, etc. As in 236.

BREEDING. Season, May-June. Nest and Eggs as in 236. Average size of 50 eggs 39.0 × 29.3 mm.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Breast generally a clearer purer grey than in *A. c. chukar*.

MEASUREMENTS. Wing ♂ ♀ 140-156 mm. (Baker); 148-164 mm. (Ticehurst).

COLOURS OF BARE PARTS. As in 236.

235. *Northern Chukor*. *Alectoris chukar pallescens* (Hume)

Caccabis pallescens Hume, 1873, in Henderson & Hume, *Lahore to Yarkand*: 283

(Karbu, Ladakh)

Baker, FBI No. 1974, Vol. 5: 404

LOCAL NAMES. *Chukōr* (Hindi); *Keklik* (Turki); *Kāko* (Kashmiri); *Zarker* (Pushtu).

SIZE AND FIELD CHARACTERS. As of 236, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident at altitudes between c. 1500 to 4000 metres from about the Wakhan region of Afghanistan (lat. c. 37°N.) south through Chitral, Gilgit, and Baltistan to N. Kashmir and Ladakh where it merges with 236, replacing it in the drier portions. Affects bare stony hillsides and ravines, and the neighbourhood of terraced cultivation.

Extralimital. Eastern Turkestan and Yarkand.

GENERAL HABITS, FOOD, VOICE, etc. As in 236.

BREEDING. Season, from about beginning of May to end July. Nest and eggs as in 236. Full clutch 8 to 14. Average size of 36 eggs 43.6 × 31.7 mm. (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies. The palest of the three forms occurring in Indian limits.

MEASUREMENTS. Wing ♂ ♀ 158-172 mm. (Baker).

COLOURS OF BARE PARTS. As in 236.

236. *Chukor Partridge*. *Alectoris chukar chukar* (J. E. Gray)

Perdix Chukar J. E. Gray, 1830, in Hardwicke's Ill. Ind. Zool. 1(2): 54 (India. No exact locality given but Srinagar in Dehra Dun district, U.P. (not Kashmir)

accepted as the type locality by Hellmayr, 1929, Field Mus. Nat. Hist. publ., Zoology Ser., 17: 136)

Baker, FBI No. 1972, Vol. 5: 402

Platē 32, fig. 16

LOCAL NAMES. *Chukōr* (Hindi); *Kāko* (Kashmiri); *Chākrū* (Chamba).

SIZE. Grey Partridge +; length c. 38 cm. (15 in.).

FIELD CHARACTERS. A large sleek and plump pinkish grey-brown partridge with rufous tail and conspicuous rib-like bars on flanks in 'buff' and black. A black band running across forehead back through the eyes and

20

GALLIFORMES

fits what is classed the commonest 'rally call'. Throughout the year this rally call serves to reunite scattered birds; during the breeding season it is an aggressive call to advertise a dominant male and to repel intruders. The paper¹ also discusses pair formation, courtship, and various behaviour patterns.

BREEDING. Season, early April to mid July depending on altitude. Nest, a scrape or hollow in the ground under shelter of a rock or bush, or at the base of a grass tussock on rugged hillsides. Sometimes without lining at other times lined with leaves, bents, and rubbish. Eggs normally 7 to 12, but up to 20 have been found in a single nest, possibly the product of two hens. Pale yellowish or greyish stone colour or *café-au-lait* with light reddish freckles scattered all over the surface. Average size of 250 eggs 43.0 × 31.4 mm. (Baker). Believed to be monogynous and most of the incubating to be done by the hen.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for subspecies, Key.

Chick (in down). 'A broad band from bill over crown to nape chestnut, outlined in dark brown; from base of bill a broad creamy white superciliary streak surmounting a narrow dark brown one. On the dorsum a broad median chestnut band, and on each side of it a narrow creamy white streak. Wings and back of thighs girdled brown and cream. Underparts creamy grey; a short dark brown moustachial streak from base of bill' (Ticehurst).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	146-180	19-21	41-52	78-105 mm.

— (Baker)

Weight ♂♂ 19-27 oz. (c. 540-765 gm.); ♀♀ 13-19 oz. (c. 370-540 gm.) — Hume.

COLOURS OF BARE PARTS. Iris brown, yellowish or orange; eyelids (rim) coral-crimson. Bill coral red to crimson, dusky on culmen and near nostrils. Legs and feet coral red to crimson; claws and spur dusky brown.

MISCELLANEOUS. Has been introduced into every state in the U.S.A. including Alaska and Hawaii on a fairly large scale, principally since 1935. The bird has established itself successfully in ecologically suitable areas in 11 or 12 of the states. It breeds freely, and under scientific management withstands considerable hunting pressure, having now become a favourite game bird with American sportsmen.

Taken young and hand-reared chukor become exceedingly tame, moving freely about the house following the inmates and boldly attacking strangers and stray dogs. Cocks are highly pugnacious. Chukor fighting is a popular public sport on high days and holidays in NW. Pakistan and India, and considerable wagers change hands over the mains.

Genus *FRANCOLINUS* Stephens

Francolinus Stephens, 1819, in Shaw's Gen. Zool. 11(2): 316. Type, by tautonymy, *Francolinus vulgaris* Stephens = *Tetrao francolinus* Linnaeus

Wing short and rounded, about one-quarter to one-third longer than tail: 3rd or 4th primary (as.) longest, 5th and 6th a little shorter. Tail of 14 feathers. Legs

¹ See also another by the same author, 'Sexual and agonistic behaviour in the Chukar Partridge (*Alectoris graeca*)'. *Animal Behaviour* 11(1): 121-34, 1963.

PHEASANTS, PARTRIDGES, QUAILS 21

stouter and longer than in *Perdix*, furnished with a spur in the male, sometimes very small or rudimentary. Sexes alike in some species, dimorphic in others.
Genus well represented in tropical Africa and Asia.

Key to the Species

- | | | | |
|---|--|---|----|
| A | Quills transversely barred or spotted with buff on both webs..... | 1 | |
| B | Quills without transverse bars or spots..... | 2 | |
| 1 | No submarginal buff band on scapulars..... | | 28 |
| | Scapulars with a conspicuous buff submarginal band..... | a | |
| a | Males with chestnut collar and females with chestnut nuchal patch..... | | 21 |
| | No chestnut collar or patch..... | | 25 |
| 2 | Buff with narrow cross-bars..... | | 29 |
| | Breast brown with longitudinal white stripes..... | | 33 |

FRANCOLINUS FRANKOLINUS (Linnaeus)

Key to the Subspecies

- | | | | |
|---|---|------------------------|----|
| A | Darker..... | <i>F. f. asiæ</i> | 22 |
| B | Much paler..... | <i>F. f. henrici</i> | 21 |
| C | Darkest of all, with much black both above and below..... | <i>F. f. melanotos</i> | 24 |

237. South Persian Black Partridge. *Francolinus francolinus henrici* Bonaparte

Francolinus henrici Bonaparte, 1856, Compt. Rend. Acad. Sci. Paris 42: 882 (Sind) Baker, FBI No. 1977, Vol. 5: 410

LOCAL NAMES. *Kāro tīlār* (Sind); *Taru* (Pushtu); *ṣ Sijhṣghwar*, *ṣ Shānz* (Baluchi).

SIZE AND FIELD CHARACTERS. As of 238, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident. West Pakistan — Las Bela (?), Sind, Chitral (to c. 1200 m. alt.). More abundant in Upper Sind than in Lower. Affects grass and tamarisk jungle bordering canals and cultivation.

GENERAL HABITS, FOOD, VOICE AND CALLS. As of 238.

BREEDING. Season, much protracted: March to May, with evidently a second burst from August to October. Nest and eggs as in 238. Average size of 30 eggs 39.0 × 31.7 mm. (Baker).

MUSEUM DIAGNOSIS. Both sexes much paler than 238, but with under tail-coverts of male darker chestnut than in *F. f. asiæ* and normally with no trace of barring.

Chick (in down). 'Upperparts pale creamy buff, from base of bill down centre of crown a broad chocolate-brown line; a short narrow line behind eyes, a long narrow one over the eyes, and one from base of bill below the eyes, brown; three broad parallel brown lines on dorsum, and a broken one over thighs. Underparts cream white; wings creamy buff, mottled with brown' (Ticehurst).

This description is of a chick of *F. f. arabistanicus* (= *henrici*).

MEASUREMENTS. Wing ♂♂ 148-163; ♀♀ about 150 mm.

COLOURS OF BARE PARTS. As in 238.

PHEASANTS, PARTRIDGES, QUAILS 23

the darker Assam race *melanotos* becomes noticeable), Punjab, U.P., Bihar, West Bengal. Roughly south to a line from Deesa (Gujarat) to Gwalior (Madhya Pradesh), thence through Sambalpur to the Chilka Lake in Orissa (lat. c. 20°N.). Up to c. 2000 metres altitude in Nepal and to c. 2500 m. in the Simla area; normally below c. 1200 m. Affects well-watered tracts — high grass and tamarisk jungle bordering rivers and canals with alternating patches of cultivation, especially millets and sugarcane. Tea gardens and their environs form favourite haunts in the Himalayan foothills.

GENERAL HABITS. Keeps singly or in scattered pairs and parties of 3 to 5. Leaves thicker cover to feed in the more open crops and grassland chiefly in the morning and late afternoon, sauntering about at the edge of cover tail slightly cocked as in the moorhen — a peculiarity seldom observed in the Grey Partridge. Rests and roosts in thick cover of tall grass clumps or sugarcane fields and not up in branches of trees like Grey Partridge, though often mounting into them for calling. Flushes readily except where much harried when it trusts to its legs for escape, running ahead of the hunter or line of beaters, breaking cover with a loud whirr of wings only when near the end of a field, and flying away swiftly and strongly with rapid wingbeats punctuated with glides. Seldom flies high except when breaking back overhead in a beat, and usually not more than 300 or 400 metres before alighting again and continuing to run on. When walked up with a line of beaters the birds provide excellent sport with the gun. They are very good eating but rather dry to the taste.

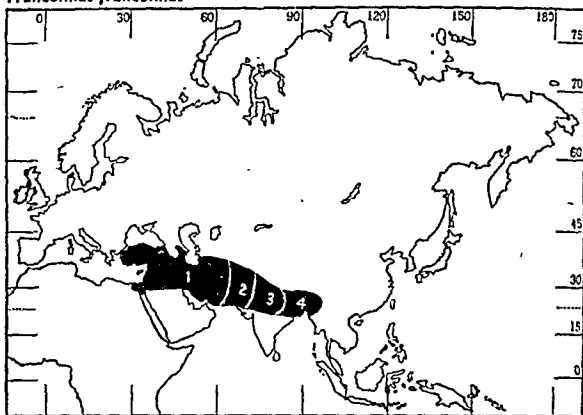
FOOD. Omnivorous. Grass and weed seeds, cereal grains, shoots, leaves, tubers, fallen berries and wild figs (*Ficus*), and larvae and insects of all kinds, particularly termites and their eggs, and various coleoptera and orthoptera; once a small mouse (Emperor Jehangir's Memoirs); in the neighbourhood of villages often also human excreta. (For specific analyses of stomach contents see Mason & Lefroy, 1912, Mem. Agri. Dept. India, Entom. Ser. 3: 235-43. Also Faruqi, Gardiner Bump *et al.*, 1960, Jour. Bom. nat. Hist. Soc. 57(2): 354-62.)

VOICE AND CALLS. A cheery high-pitched *chik* (or *click*)... *check-check-kerayek* uttered by the cock from a termite mound, branch or other eminence particularly in the morning and evening far into the dusk, but at all hours of the day during the breeding season. The call is a curious blend of the harsh and the musical and has a peculiar far-reaching and ventriloquist quality. It is repeated at intervals of 15 seconds or so, several birds answering one another from all directions. It has been phonetically rendered in many variants, as *Shtr-dārem-shākrāk* ('I have milk and a little sugar') by the Mogul emperor Babar, as *Sūbhān-tīrī-gūdrāt* ('Omnipotent, thy power') by U.P. Muslims, and as *Lekān-pīz-dārāk* ('Garlic, onion, ginger') by more down-to-earth gourmets! The spirited call, with neck upstretched, ends with an up-and-down waggle of the tail.

BREEDING. Season, very protracted: March to October, varying somewhat in different parts of its range. Nest, a shallow depression scraped in the ground and lined with grass. Placed amongst the roots of tall plumed grass tussocks and bushes, or in tamarisk scrub, grassland or millet fields, sometimes well-concealed, sometimes in absurdly exposed situations. Eggs, 6 to 9 (in Sind usually 4 — T. R. Bell), fine textured, very broad ovals sometimes

22 GALLIFORMES

Francolinus francolinus



Distributional range 1 *F. f. francolinus* (RE). 2 *F. f. henrici* (237). 3 *F. f. asiæ* (238). 4 *F. f. melanotos* (239).

238. Indian Black Partridge. *Francolinus francolinus asiæ* Bonaparte

Francolinus asiæ Bonaparte, 1856, Compt. Rend. Acad. Sci. Paris 42: 882 (Asia).

Restricted to Gurgaon by Baker, 1922, Jour. Bom. nat. Hist. Soc. 28: 849.)

Francolinus francolinus parkerae Van Tyne & Koelz, 1936, Occas. Pap. Mus. Zool. Univ. Mich., no. 334: 1 (Arsu, Kulu, Punjab)

Baker, FBI No. 1976, Vol. 5: 408

Plate 31, fig. 1

LOCAL NAMES. *Kāla teetār* (Hindi); *Tetra*, *Kālo tetra* (Garhwal); *Kais teetār* (Nepal).

SIZE. Grey Partridge ±; length c. 34 cm. (13 in.).

FIELD CHARACTERS. A plump, stub-tailed game bird.

Male. Largely jet black, scalloped, spotted and barred above with white and fulvous. The glistening white cheek-patches, chestnut collar, jet black underparts with chestnut belly and under tail-coverts are further pointers.

Female. Above, more or less like male but paler and browner, with no white cheek patches or chestnut collar, only a dull chestnut patch on nape. Below, chin and throat buffy white; rest of underparts and flanks wavyly barred and scalloped black and white. Vent and under tail-coverts chestnut.

Young (immature). Like richly coloured female but with the supercilia blackish and cheeks white. Rufous nuchal patch darker. Breast black profusely spotted with white.

STATUS, DISTRIBUTION AND HABITAT. Resident. Kashmir and northern India along the foothills to central Nepal (eastward of which merging with

24 GALLIFORMES

pointed at the small end; coloured from yellowish olive to warm olive-brown or sienna-brown. Average size of 100 eggs 37.8 × 31.3 mm. (Baker). Cock monogynous. Incubation by hen alone; period 18-19 days.

MUSEUM DIAGNOSIS. Darker than *F. f. henrici*, paler than *F. f. melanotos*. For details of plumage see Baker, loc. cit.

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	145-168	c. 22-26	c. 45-50	77-110 mm.
♀♀	138-167	—	—	—

Weight ♂♂ 10-20 oz. (c. 283-566 gm.); ♀♀ 8-17 oz. (c. 227-482 gm.). — Hume. Average weight of birds trapped near Delhi in January (1962): 19 ♂♂ 17 oz. (c. 482 gm.); 18 ♀♀ 15 oz. (c. 424 gm.). — G. Bump.

COLOURS OF BARE PARTS. Iris brown or hazel-brown. Bill black or dark horny brown; tip of lower mandible whitish. Legs and feet reddish brown to orange-red or brick-red; claws black or horny brown.

Chick (in down). Undescribed, but see 237.

[An experiment is currently in progress by the U.S. Government's Fish and Wildlife Service to introduce Indian francolins as game birds into certain ecologically equivalent areas in N. America. In this connexion the Special Scientific Report — Wildlife No. 81, 1964, entitled 'A Study and Review of the Black Francolin and the Gray Francolin' by Gardiner & Janet W. Bump is an informative and instructive document.]

239. Assam Black Partridge. *Francolinus francolinus melanotos* Hume

Francolinus melanotos Hume, 1888, Stray Feathers 11: 305

(Sylhet, Cachar, Garo and Khasi Hills, and the Assam Valley)

Baker, FBI No. 1978, Vol. 5: 411

LOCAL NAMES. *Tetri sordī*, *Mecheñteri* (Assam); *Urenbi* (Manipur); *Dao chinn* (Cachar); *Imui jirip* (Kacha Naga); *Voh chinee* (Mikir).

SIZE AND FIELD CHARACTERS. As of 238, q.v.; much darker.

STATUS, DISTRIBUTION AND HABITAT. Eastern Nepal, through Bhutan duars and Assam, Manipur, and East Pakistan; up to c. 2000 metres altitude. Affects the vast stretches of tall grassland on alluvial river banks in the foothills of the Himalayas, and the Surma and Brahmaputra valleys.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 238.

BREEDING. Season, April to July/August varying locally with break of rains or firing of the grass. Nest, a shallow scrape with a slimy pad of grass and leaves, occasionally quite well made, placed close to an ant-hill or bush on the edge of tall grassland or a *bheel*. Eggs, 4 to 6 like those of the Indian race. Average size of 150 eggs 37.0 × 31.5 mm. (Baker). Some birds believed to have two successive broods.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Both sexes considerably darker than *F. f. asiæ*. Male. Above, feathers centred very dark, almost blackish brown, with the paler edges narrow and dark rufous. White bars on posterior upperparts also very narrow. Below, the white spots oval instead of round, becoming still longer-shaped on lower breast. Under tail-coverts unbarred deep chestnut. Female. Breast more heavily barred with black than in Indian birds.

PHEASANTS, PARTRIDGES, QUAILS

25

Chick (in down). Markings similar to those described for *henrici* q.v. 'but the whole coloration so much darker that one would hardly suppose the two to belong to one species' (Ticehurst).

MEASUREMENTS. Wing ♂ ♀ 143-155 mm. (Baker).

Weight ♂ ♂ 10-20 oz. (c. 285-570 gm.); ♀ ♀ 8-17 oz. (c. 228-480 gm.). — Hume.

COLOURS OF BARE PARTS. As in 238, but legs and feet very bright deep red in breeding season.

FRANCOLINUS PICTUS (Jardine & Selby)

Key to the Subspecies

		Page
A	Paler; bright, pale rufous below.....	<i>F. p. pallidus</i> 25
B	Darker; dull, earthy rufous below.....	<i>F. p. pictus</i> 27
C	Darkest; heavily marked with black below.....	<i>F. p. watsoni</i> 27

240. Northern Painted Partridge. *Francolinus pictus pallidus* (J. E. Gray)

Perdix hepburnii var. *pallida* J. E. Gray, 1831, in Gray & Hardwicke, III. Ind. Zool 1(8): pl. 55 (Odyore = Udaipur)
Baker, FBI No. 1980, Vol. 5: 414

LOCAL NAMES. *Titūr*, *Chitūr* (Bombay); *Kala titūr* (Marathi).

SIZE. Grey Partridge; length c. 31 cm. (12 in.).

FIELD CHARACTERS. Rather like a female Black Partridge. *Above*, brownish black spotted, scalloped, and finely barred with white. Supercilium and face pale chestnut. No chestnut collar in male or nuchal patch in female as in Black Partridge. *Below*, black heavily spotted with white; centre of abdomen and vent rufous. Throat chestnut in male, whitish (usually but not always) in female; otherwise sexes more or less alike, both without spurs.

When flying away from observer, white-spotted plumage, black outer tail-feathers and rich rufous in the typically cambered wings are diagnostic points.

Young (immature). Like female, with black arrow-shaped marks on the pale buffy flanks and lower breast.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to local movements governed by food supply and water; spreading out widely in the monsoon when both abundant. South of range of Black Partridge in Gujarat (excepting Kutch), southern Uttar Pradesh and northern Madhya Pradesh, chiefly low and plateau country. Believed to hybridize with Black Partridge where their ranges meet. On the whole affects drier facies than Black Partridge, but better watered than the thorny xerophytic habitat of the Grey.

Keeps to undulating grassland and cultivation bordered and interspersed with patches of scrub jungle and bushes (such as *Calycopteris*, *Diospyros* and *Zizyphus*) and with vegetation-bordered streams and water channels between the hummocks.

GENERAL HABITS. Almost invariably met with in scattered pairs; sometimes family parties of parents and 3 or 4 grown young, not in coveys. Like the Black Partridge active in the early mornings and late afternoons, retiring

PHEASANTS, PARTRIDGES, QUAILS

27

241. Southern Painted Partridge. *Francolinus pictus pictus* (Jardine & Selby)

Perdix picta Jardine & Selby, 1828, III. Orn. 1: sig. G, pl. 50 (Bangalore, India)
Baker, FBI No. 1979, Vol. 5: 412
Plate 31, fig. 4

LOCAL NAME. *Kakra kozhi* (Tamil).

SIZE and FIELD CHARACTERS. As of the northern race, 240 q.v. Darker. (See Museum Diagnosis.)

STATUS, DISTRIBUTION and HABITAT. Resident, shifting locally with conditions of rainfall and drought. The Peninsula north to the range of 240 — roughly lat. 20°N. which, for convenience, may be arbitrarily fixed as the boundary between the races. Individual specimens from this area difficult to assign racially. Does not occur in the evergreen hygrophytic tracts of Kerala and Mysore. Affects semi-moist undulating grassland intermixed with scrub and cultivation, as described under 240.

GENERAL HABITS, FOOD, VOICE, etc. As in 240. In the Bombay area the staple food between November and January is paddy gleaned in the stubbles, with a greater proportion of insects thereafter. Of the latter the following identified in stomach contents: black ants (*Camponotus* sp.), the beetles *Aulacophora foreicollis* and *Pseudobolaps mellyi*, and the bug *Aspongopus janus* (H. Abdulali, 1964, JBNHS 61(2): 449).

BREEDING. As in 240.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Difference in shade of rufous of abdomen and vent obvious only in series; individual specimens often impossible to place racially.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	132-148	c. 24-27	c. 40	66-89 mm. (Baker)

Weight ♂ ♀ 8.5 to 12.7 oz. (c. 242-340 gm.). — Hume.

COLOURS OF BARE PARTS. As in 240.

242. Ceylon Painted Partridge. *Francolinus pictus watsoni* Legge

Francolinus Watsoni Legge, 1880, Birds of Ceylon 3: 745 (Wellemade, Ceylon)
Baker, FBI No. 1979 (part), Vol. 5: 412

LOCAL NAMES. *Ussa watawā*, *Piri kakkulā*, *Maṇa kakkulā* (Sinhala); *Kaṭṭi-ṭi* (Tamil).

SIZE and FIELD CHARACTERS. As of 240; much darker.

STATUS, DISTRIBUTION and HABITAT. Resident; endemic in Ceylon. Affects *pāna*-grass, scrub and bracken country in the foothills (and up to about 1200 m. elevation) of the Dry zone only in Uva Province (Henry). 'Now (1952) very scarce on the pānans or grasslands of the Uva hills, but still fairly plentiful in the "park country" of the adjoining lowlands around Bibile and Nilgala' (Phillips).

GENERAL HABITS, FOOD, VOICE, etc. As of 240, q.v.

26

GALLIFORMES

into cover during the heat of the day, except in cloudy, overcast and drizzly weather. Shares with Black Partridge the peculiarity of carrying its tail partly cocked as it runs about. Is an inveterate skulker and, particularly where much harried, will frequently squat in cover till almost trampled by a line of noisy beaters, breaking back immediately they have passed on. Will often lie low in a bush even in spite of prolonged and seemingly futile beating. Normally rises with a loud whirr of wings, but on such occasions will usually sneak out noiselessly when search abandoned, and dash to safety, leaving the hunter nonplussed. Roosts in trees as well as on the ground in forms canopied by arching grass.

FOOD. Cereal grains mostly gleaned in stubbles, weed and grass seeds, tender shoots of grass and crops and other green matter, berries and drupes (e.g. *Zizyphus*); termites and other insects and their eggs and larvae. Around villages often also human excreta. A quantity of grit always present in stomachs.

VOICE and CALLS. Normally more silent than Black Partridge. In breeding season a high-pitched, rather ventriloquistic *click* . . . *cheek-cheek-keray* very similar to that of the Black, almost indistinguishable from it. Calls from a tree stump, mound, or other elevated station once every 20 seconds or so, frequently for over 15 minutes at a stretch. Usually answered by another bird in the distance. After a bout of challenges from one perch, flies off to another 50 or 100 metres away for a further session, returning thereafter to the original stance or to a third one in the neighbourhood to resume calling; thus doubtless effectively patrolling its breeding territory. When calling the neck is merely stretched up and forward (not vertically), this unaccompanied by any drooping, expanding, erecting or jerking of wings or tail. Whether female also calls, as asserted by some locals, unproven, but two calling birds in breeding season were observed to have whitish throats as in female!

BREEDING. Season, normally commences with the break of the SW. monsoon rains in June and continues till September or October, but in central India April, May, and June have also been reported (Whitehead, 1911, JBNHS 21: 168). Nest, a scrape or slight hollow in the ground, sparsely lined with grass and leaves; usually in standing crops or sugarcane fields, or in a patch of grass and scrub jungle. Eggs, 4 to 8, normally up to 6, very like those of the Black Partridge — some shade of olive-brown. Average size of 29 eggs 35.7 × 29.5 mm. (Baker). Cock believed to be monogynous; incubation by hen alone; period unrecorded.

MUSEUM DIAGNOSIS. See Key to the Subspecies; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂ ♂	140-149	23-26	37-45	65-68 mm.
5 ♀ ♀	140-151	21-24	41-46	64-69 mm. (SA)

Wing ♂ ♀ 131-146 mm. (Baker).

COLOURS OF BARE PARTS. Iris orange-brown. Bill dark brown to black; base and gape horny white. Legs and feet brownish orange (yellow in immature); claws horny brown.

28

GALLIFORMES

BREEDING. Curiously enough no nest yet taken in Ceylon, but from circumstantial evidence probably breeds between March and June. A specimen collected on 18 February already showed slightly enlarged gonads (SDR).

MUSEUM DIAGNOSIS. See Key to the Subspecies. Differs from nominate *pictus* in much darker brown tint of upperparts with spotting on back of neck and white edging of mantle and scapulars much reduced. Underparts also much more heavily marked with black, being in the female more definitely barred than in south Indian birds.

MEASUREMENTS and COLOURS OF BARE PARTS as in 241.

243. Burmese Francolin. *Francolinus pintadeanus phayrei* (Blyth)

Perdix Phayrei Blyth, 1843, Jour. Asiat. Soc. Bengal 12(2): 1011 (Arrakan)
Baker, FBI No. 1981, Vol. 5: 415
Plate 31, fig. 3

LOCAL NAME. *Kabo wenbi* (Manipur).

SIZE. Grey Partridge +; length c. 33 cm. (13 in.).

FIELD CHARACTERS. Heavier head and thicker neck distinguish it from Black Partridge in silhouette.

Male. *Above*, crown dark brown bordered longitudinally on each side by a rufous-brown band. A broad white band along side of face from lores through ear-coverts, bordered above and below by narrower black bands, the upper continuing across the forehead. Rest of upperparts black spotted with white, with some dull chestnut about the wing shoulders. Lower back and rump (black) and upper tail-coverts (greyish brown) finely barred with white. *Below*, chin and throat white; rest black heavily spotted with white, the spots increasing in size to coalesce as bars on lower abdomen. Under tail-coverts pale chestnut.

Female. *Above*, sides of head buff with broken brown superciliary and cheek stripes. Rest of upperparts largely brown with pale ill-defined spots, bars, and vermiculations. *Below*, largely buff, closely barred with blackish on foreneck and upper breast, decreasing towards abdomen and thigh-coverts. Under tail-coverts dull chestnut.

Young (immature). Like female but duller. Neck and back pale-streaked; eye-streak and moustachial streak absent or obsolete.

STATUS, DISTRIBUTION and HABITAT. Resident and common in SE. Manipur State, in the Kabaw and Manipur Valleys. (For particulars of specific localities within the area see Higgins, 1934, JBNHS 37: 93.) Affects low oak scrub in the foothills, and grassy openings in Dipterocarp forest in undulating country. Common in drier localities.

Extremities. Arakan, Pegu, eastern Burma south to N. Tenasserim, Shan States, Yunnan, eastern Indochinese countries from Tonkin to Cambodia, Hainan Island (Peters). The nominate race in SE. China.

GENERAL HABITS. Keeps singly or in scattered twos and threes; not in flocks or coveys, though sometimes many in the same neighbourhood. Is a stronger flier than Black Partridge but an inveterate skulker and difficult to dislodge from cover without a dog; thus often heard than seen. When

flushed will sometimes take refuge in a high tree till the trouble has passed. Less widely distributed in Manipur than the Black (*F. f. melanotus*), but shares with it the same facies wherever found.

FOOD. Seeds, shoots, and insects.

VOICE AND CALLS. Uttered from tree-stump or branch up to c. 3 m. high. An unusually resonant (for partridge) five-noted challenge apparently given throughout the year, mostly in the early mornings and at dusk when several birds may be heard calling simultaneously. Particularly vociferous during the breeding season. Call variously rendered as *Ke kai, ke kai, ke karr* (Baker), *Kai kai, kee kai, kee kurr* (Swinhoe) and *Kak kak kurich, ka ka* (Wardlaw-Ramsay). These renderings give little idea of the call itself, but some indication of the rhythm, the last according to Higgins being the nearest. The call is adequately expressed by the words 'Do be quick papa' (Wickham).

BREEDING. No record from within Indian limits. Season (in Burma) March to September. Nest, like that of the Black Partridge, a scrape lined with grass at the foot of a thick bush in scrub-and-bush jungle. Eggs, 3 to 7, commonly 4 or 5, warm cream colour, sometimes faintly tinged with olive. Average size of 84 eggs 35.3 × 28.7 mm. (Baker).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	132-151	23-25	c. 42-44	c. 60-70 mm. (Baker)

Weight 10-14 oz. (c. 284-397 gm.).

COLOURS OF BARE PARTS. Iris reddish brown to dark brown; eyelids dull greenish or livid green. Bill black, horny at base of lower mandible. Legs and feet orange-yellow to yellowish or reddish brown, much brighter in breeding season; paler and more yellow in female.

FRANCOLINUS PONDICERIANUS (Gmelin)

Key to the Subspecies

	Page
A Darker; centre of throat ochraceous..... <i>F. p. pondicerianus</i>	31
B Paler; centre of throat creamy-white..... <i>F. p. interpositus</i>	30
C Palest; plumage generally more grey and less chestnut..... <i>F. p. mecranensis</i>	29

244. Baluchistan Grey Partridge. *Francolinus pondicerianus mecranensis* Zarudny & Härms

Francolinus (*Ortygornis*) *pondicerianus mecranensis* Zarudny & Härms, 1913, Orn. Monatsb. 21: 53 (Valley of the Rud-i-Sarbas river, Persian Baluchistan). Baker, FBI No. 1985, Vol. 5: 422

LOCAL NAMES. *Achho teetar* (Sind); *Tauzarai* (Pushtu); *Kapinja* (Baluchi).

SIZE AND FIELD CHARACTERS. As of 246, q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION AND HABITAT. Resident. West Pakistan (Baluchistan to c. 1200 m. alt.); western Sind; N.W.F. Province; west of Indus river. Affects stony semi-desert country with sparse thorn scrub bordering dry ravines etc., especially in the neighbourhood of cultivation.

246. South Indian Grey Partridge. *Francolinus pondicerianus pondicerianus* (Gmelin)

Tetrao pondicerianus Gmelin, 1789, Syst. Nat. 1(2): 760 (Pondicherry, India)

Francolinus pondicerianus ceylonensis Whistler, 1941, Ibis: 319 (Mluppaikkadavai, northern Ceylon)

Baker, FBI No. 1983, Vol. 5: 419

Plate 31, fig. 2

LOCAL NAMES. *Sāfed utār* (Hindi); *Gowjal hākki* (Kannada); *Kawanga* (Telugu); *Kendri*, *Kauthāri* (Tamil); *Kōchi kōta* (Malayalam); *Ussa watuwā* (Sinhala); *Chittār* (Marathi).

SIZE. Half-grown village hen ±; length c. 33 cm. (13 in.).

FIELD CHARACTERS. A squat, stub-tailed game bird largely greyish brown, rufous and chestnut above, mottled, barred, and vermiculated with buff and black. Below, pale buff and rufous, narrowly cross-banded on fore-neck and upper breast and finely pencilled or vermiculated on abdomen and flanks with black. A prominent yellowish rufous throat patch enclosed within a blackular loop. Tail largely chestnut, particularly conspicuous when bird flying away from observer. Sexes alike, but cock somewhat larger with a sharp spur, occasionally double, on each leg.

Young (immature). Like adult but with less rufous on forehead. Throat-patch paler, its enclosing black border obsolete.

STATUS, DISTRIBUTION AND HABITAT. Resident. Southern peninsular India south of range of 245, and Ceylon (NW. coastal islands and Jaffna peninsula). Affects dry undulating plains and eroded plateau country with xerophytic thorn scrub, especially in the neighbourhood of villages and scattered cultivation of jowar, bajra, lentils and other dry-season crops.

Was introduced in the Andaman Islands in 1890 where it has since established itself in fair strength in the Port Blair neighbourhood.

GENERAL HABITS. Met with in pairs and family parties or coveys of 4 to 8 birds sauntering about with a jaunty upright carriage, digging and scratching the ground with bill and feet in fallow fields, pecking at cattle dung for food, or dust-bathing on cross-country earth tracks. On alarm the covey scurries off, running swiftly from bush to bush, surreptitiously squatting in ones and twos in different thickets. They are very fast on their legs and loth to take wing unless hard pressed. While individuals will rise with an explosive whirr of wings when approached, and scatter in different directions, others will keep dodging from bush to bush till out of danger. Flight swift with rapid beats of the short cambered wings alternated with spurts of gliding; seldom high up in the air except when breaking back over a line of beaters. After a short flight of 50 or 100 metres the bird alights, continuing to run immediately on touching down so that on approaching the bush wherein it apparently took cover the observer finds it mysteriously vanished, only to be seen running on a long way ahead. Roosts at night in pairs or



x c. 1

Extralimital. Southern Afghanistan, southern Iran, eastern Arabia (Muscat) (Peters).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the nominate race (246). BREEDING. Season, March to May. Nest and eggs as in 246. Average size of 81 eggs 34.0 × 26.0 mm. (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies. Chestnut in upperparts very pale, less in extent, confined chiefly to scapulars and wings. Throat-patch white or whitish; surrounding white spaces broader and whiter than in the other races. Breast only faintly tinged with ochraceous.

MEASUREMENTS. Wing ♂♂ 141-149; ♀♀ 137-139 mm. Bill (from feather) 19-23 mm. (Baker).

COLOURS OF BARE PARTS. As in 246, somewhat paler.

245. North Indian Grey Partridge. *Francolinus pondicerianus interpositus* Hartert

Francolinus pondicerianus interpositus Hartert, 1917, Novit. Zool. 24: 288 (Oudh) *Francolinus pondicerianus prepositus* Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 31 (Kotla, Kangra dist., Punjab)

Francolinus pondicerianus paganus Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 31 (Sihor, Saurashtra)

Francolinus pondicerianus tilar Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 31 (Ramanujanj, Surguja) Baker, FBI No. 1948, Vol. 5: 421

LOCAL NAMES. *Teetar*, *Rām teetar*, *Sāfed teetar*, *Gōra teetar* (Hindi); *Jirufti* (Punjab); *Khyr* (Bengal); *Tauzarai* (Pushtu).

SIZE AND FIELD CHARACTERS. As of 246, q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION AND HABITAT. Resident. Eastern Sind, E. Punjab, Rajasthan and northern India east to Bihar and W. Bengal. From the Himalayan terai south to a line of what may be called 'subspecific or racial balance'—from Poona to Kakinada. Affects dry open grass and thorn-scrub country in the neighbourhood of villages and cultivation, up to c. 500 metres altitude.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the nominate race (246).

BREEDING. Season, chiefly March to September, but nests locally and sporadically in other months also. Nest and eggs as in 246. Baker gives average size of 90 eggs as 32.4 × 25.6 mm., therefore slightly smaller than that of *F. p. pondicerianus*!

MUSEUM DIAGNOSIS. See Key to the Subspecies. More grey less brown than the south Indian (nominate) race. Bars on upperparts very pale fulvous, almost white on scapulars and inner secondaries. Throat-patch creamy white rather than ochraceous. Lower parts paler; breast less rufous.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	144-160	23-29	36-45	80-94 mm.
♀♀	134-146	23-26	37-46	79-91 mm. (SA)

COLOURS OF BARE PARTS. As in 246.

family groups up in small thorny trees, or squatting on the ground within dense thorn bushes such as *Capparis* or *Zizyphus*. When flushed by a dog will often take refuge up in a thorny tree. When much harried will squat tight in a thicket and refuse to leave despite noisy shouts and stone-throwing. To escape a trained falcon SA has seen one dive into a thorn bush and refuse to budge even when bush set alight and itself all but roasted alive!

FOOD. Weed seeds, cereal grains, shoots of grass and crop plants, berries and drupes (e.g. *Lantana*, *Zizyphus jujuba* and *oenoplia*, and *Capparis aphylla*) and insects (e.g. grasshoppers, termites, maggots); on village outskirts commonly human excreta. Among unusual food items is recorded a snake (*Boiga trigonata*) c. 18.5 cm. long (Soman, 1962, JBNHS 59(2): 653). For seasonal analyses of crop contents of N. Indian birds see Faruqi, Bump, et al., 1960, JBNHS 57(2): 277-300. Can subsist for long periods without drinking where dew available. Often seen miles away from water without apparent need for commuting to it like sandgrouse.

VOICE AND CALLS. Commonest call of cock commences with two to four subdued clucks or chuckles rising in intensity, followed by a ringing, high-pitched, spirited challenge — *kāteetar kāteetar kāteetar* etc. quickly repeated. Normal call of female a high-pitched monosyllabic *tee tee* repeated several times; also a musical *kila kila kila* similar to one of the cock's calls but softer. A third, less challenging call also commonly heard — *katerla katerla katerla* — is evidently the combined duetting of a mated pair. Alarm call of both sexes: a very sharp high-pitched agitated *kirr . . . kirr . . . kirr* (i as in sit) characteristically uttered when bird flushed off nest or when leading small chicks. For details of the various calls see Himmatsinhji, 1959, JBNHS 56(3): 632-3.

BREEDING. Season, in the Peninsula more or less throughout the year, principally April to September; in Ceylon c. April to July. Nest, a scrape in the ground lined with grass and leaves, under a clod, tuft of grass or bush in a ploughed field or in open scrub jungle. Eggs, 4 to 8 or 9, broad ovals, pale buff in coloration. Average size of 100 eggs 34.5 × 26.1 mm. (Baker). Cock monogynous. Incubation solely by hen; period 18-19 days. Chicks tended by both parents. A brood observed attended by 3 adults (SA).

MUSEUM DIAGNOSIS. Throat-patch yellowish rufous v. creamy or whitish in the other two races. See Key to the Subspecies; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	142-161	22-24	44-46	81-91 mm.
♀♀	142-146	21-23	41-42	(Baker)

Weight (subspecies ?) ♂♂ 9-12 oz. (c. 255-340 gm.); ♀♀ 7-11 oz. (c. 200-312 gm.)—Hume.

COLOURS OF BARE PARTS. Iris hazel-brown. Bill dusky plumbeous, paler and fleshy at base. Legs and feet dull red.

MISCELLANEOUS. Cocks very pugnacious and largely kept by fanciers as fighting birds. A strain reportedly found in Andhra (?) and known as 'Hyderabad teetar' is claimed to be considerably larger, heavier, and more robust than normal birds and most highly prized. Partridge fights are a popular sport in many parts of the country and large sums of money change

PHEASANTS, PARTRIDGES, QUAILS

33

hands on the bouts. When taken as chick and hand-reared, becomes exceedingly tame, following its master about like a dog, calling at his command, and coming over long distances when summoned.

Is hardy, adaptable, and a prolific breeder and has recently been introduced by the U.S.A. Department of the Interior, Fish and Wildlife Service as an exotic game bird into ecologically equivalent semi-desert areas of the southwestern States, where it bids fair to succeed. For details of the experiment see 'A Study and Review of the Black Francolin and the Gray Francolin' by Gardiner & Janet Bump. Special Scientific Report — Wildlife No. 81, 1964.

Illicit wholesale year-round netting and trapping for urban markets has decimated local Grey Partridge populations in many areas in recent years.

247. Swamp Partridge or Kyah. *Francolinus gularis* (Temminck)

Perdix gularis Temminck, 1815, Pig. et Gall. 3: 401, 731 (Vicinity of Calcutta)
Francolinus gularis ridibundus Koelz, 1954, Contrib. Inst. Regional Exploration,
No. 1: 31 (Kalnahi, U.P.)
Baker, FBI No. 1982, Vol. 5: 417
Plate 31, fig. 5

LOCAL NAMES. Kyah, Khyr, Kajjah (Bengal); Bhil titri (N. Bihar); Koi, Koi sorai, Koiira (Assam); Bheel tetar, Gul tetar (Cachar and Sylhet); Hoi koli (Plains Miri).

SIZE. Grey Partridge +; length c. 37 cm. (15 in.).

FIELD CHARACTERS. A large and conspicuously long-legged partridge. Above, crown and nape brown; supercilium and a broader band below eye through ear-coverts buff. Upperparts brown with rufous-brown patches; transversely barred with buff as in Grey Partridge. Tail largely chestnut with pale tips. Below, chin, throat and foreneck rusty red. Rest of underparts brown with broad white longitudinal streaks edged with black. Under tail-coverts pale rufous. Sexes alike, but male with a spur on each leg.

STATUS, DISTRIBUTION AND HABITAT. Resident. Terai and alluvial north Indian plains from W. Nepal and Uttar Pradesh through N. Bihar, W. Bengal and Assam, East Pakistan (Sylhet, Chittagong, Sunderbans (part)). Affects heavy kra and nal grass (*Arundo karka* Roxb.) jungle in low-lying swampy tracts subject to seasonal flooding adjacent to the larger rivers of the Ganges and Brahmaputra systems. Exceptionally found on the Cherrapunji plateau, c. 1200 m. altitude.

Owing to draining of the *chaurs* and swamps in many of its terai habitats, the species is becoming scarce where formerly abundant.

GENERAL HABITS. Keeps in pairs or coveys of 5 or 6 birds to swampy ground, wading about through mud and shallow water. Where water too deep for this, clammers up the reed stems like Purple Moorhen (*Porphyrio*) and makes its way thus to reach drier ground. Is a confirmed runner and difficult to flush except with elephant or line of beaters. Rises clumsily with a flutter and whirr, with loud chuckles and cackling, unlike other francolins, but flies swiftly and strongly. Roosts in thorny trees growing in swampy grass jungle and on brookdown reeds in flooded areas. Cocks very pugnacious; fighting like game cocks but using bills more than spurs. Many

PHEASANTS, PARTRIDGES, QUAILS

35

of 16 feathers in *P. hodgsoniae*, 18 in some other species. Tarsus strong, bare, without spur. Sexes alike.

The genus extends throughout the Palaearctic Region, only one species just entering our limits.

PERDIX HODGSONIAE (Hodgson)

Key to the Subspecies

Nuchal collar broad and dark chestnut in colour.....*P. h. hodgsoniae*
Nuchal collar narrow and of paler chestnut-yellow.....*P. h. caraganae*

248. Ladakh Partridge. *Perdix hodgsoniae caraganae* R. & A. Meinertzhagen

Perdix hodgsoniae caraganae R. & A. Meinertzhagen, 1926, Bull. Brit. Orn. Cl. 46: 86
(Shushal, 15,000 ft, Eastern Ladakh)
Baker, FBI No. 1988, Vol. 5: 425

LOCAL NAME. Chak pa (Ladakh).

SIZE AND FIELD CHARACTERS. As for 249, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident at high elevations, c. 4250–5200 metres. Ladakh (Pangkong Lake, Takhum, Puga, Shushal, Polakonka Pass), and Kumaon (near Gangotri). Affects Tibetan Gorse (*Caragana*) patches along the shores of Pangkong Lake and in most valleys of eastern Ladakh. Also similar facies in high Kumaon.

GENERAL HABITS, FOOD, VOICE AND CALLS. As of the nominate race, 249. 'Difficult to flush, but if driven to the end of the patch in which they live, they will sit close. When they rise they make very much the same noise as the English Partridge' (Meinertzhagen).

BREEDING. Meinertzhagen found a clutch of 11 fresh eggs near Shushal, c. 4575 m. on 13 June, and took oviduct eggs from specimens collected on 7th and 17th June.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Generally paler than *P. h. hodgsoniae*, with the dark brown markings of upperparts replaced largely by chestnut markings.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 249.

249. Tibetan Partridge. *Perdix hodgsoniae hodgsoniae* (Hodgson)

Saefa Hodgsoniae Hodgson, 1857, Jour. Asiat. Soc. Bengal 25: 165 and pl. (Tibet)
Baker, FBI No. 1986, Vol. 5: 423
Plate 32, fig. 17

LOCAL NAMES. Saefa (E. Tibet); Rhakpa (C. Tibet); Che tra (Kongo Tibet); Rare uch (Nepal).

SIZE. Grey Partridge; length c. 31 cm. (12 in.).

FIELD CHARACTERS. A high-altitude partridge reminiscent of the familiar Grey of the plains. Above, head patterned with prominent white eyebrows running across chestnut forehead; chestnut ear-coverts with a black cheekpatch below. A dull chestnut collar at base and sides of hindneck.

34

GALLIFORMES

shot birds carry more or less heavy scars about neck and breast — evidence of encounters with rials.

FOOD. Omnivorous: weed seeds, grain, shoots of mustard, paddy and other crops, and insects. Baker found tiny shellfish in the crop of one. Feeds in and on the edge of marshes and neighbouring cultivation, particularly sugarcane fields. Comes out to feed in the open in the mornings and evenings in paddyfields, especially when the crop is ripening.

VOICE AND CALLS. 'A loud *kau-care*' (R. L. Fleming). 'An occasional loud *qua, qua, qua* ascending in tone' (A. E. Osmaston). 'A rather harsh *chuckeroo chuckeroo chuckeroo*' (Tickell), preceded by several chuckles and croaks as if bird clearing its throat in preparation. Pattern of crowing rather similar to that of Grey Partridge to which it seems more closely related than to Black. When calling stands very erect with neck upstretched.

BREEDING. Season, February to May — chiefly March and April. Nest, usually well-built pad of weeds and rank grass c. 5–10 cm. thick and c. 20–30 cm. across with a deepish hollow for the eggs. Placed a few centimetres above water or mud level on brookdown reeds etc. in dense undergrowth and cane brakes on partially submerged islets; occasionally on drier edges of swamps. Eggs, 4–5, or 6, shaped like other francolins', bright pale buff or stone colour with small reddish freckles and blotches all over, or chiefly at larger end. Average size of 48 eggs 39.4 × 30.0 mm. (Baker).

Cock believed to be monogynous. Incubation only by hen; period unrecorded.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick in down undescribed. When two months old 'got white arrow-shaped streaks bordered with brown on the breast, and the feathers of the back were barred and crossed with buff; also the throat became a pale rufous' (Ingis, of chicks hatched in captivity. JBNHS 28: 287).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	162–186	c. 21–23	c. 60–70	101–127 mm. (Baker)

Weight ♂ c. 18 oz. (510 gm.), ♀ somewhat less (Hume).

COLOURS OF BARE PARTS. Iris brown, crimson-brown or crimson; eyelids dull livid green or plumbeous-green. Bill black, horny white at tip. Legs and feet orange-yellow to dull red; redder in male, and brighter in both sexes in breeding season. Male with short blunt spurs; female sometimes with rudimentary ones.

MISCELLANEOUS. Much favoured as a fighting bird in parts of Assam, large sums of money being wagered on mains between champion cocks. Many fighting birds hand-reared from eggs incubated and hatched in a cloth tied round human owner's body for the necessary warmth and kept so day and night throughout the incubation period, a practice now apparently dying out.

Genus PERDIX Brisson

Perdix Brisson, 1760, Orn. 1: 26, 219. Type, by tautonymy, *Perdix cinerea* Brisson = *Tetrao perdix* Linnaeus

Wing rounded: first primary (as.) between 7th and 8th in length, 4th primary usually longest. Tail very slightly graduated, rather more than half length of wing;

36

GALLIFORMES

Upperparts buffy grey barred with blackish on upper back, vermiculated on lower. Lateral tail-feathers largely chestnut. Below, underparts white, unmarked on chin and throat, barred with black on breast, more broadly with chestnut-brown on flanks. Lower abdomen and under tail-coverts buff. Scapulars, tertiaries, and wing-coverts narrowly streaked and barred with buff. Sexes alike.

Young (immature). Above, without any blue-grey tinge, and chestnut absent everywhere. Crown, cheeks and ear-coverts dark brown with white apical spots. Below, dull earthy buff with pale striations and indefinite narrow blackish bars.

STATUS, DISTRIBUTION AND HABITAT. Just crosses the Tibetan border into northernmost west-central and central Nepal, and Sikkim; possibly also in the NEFA area. Locally not uncommon; in summer between c. 3600 and 5600 m. altitude, in winter generally below 4000 m. but rarely as low as 2800 m. Affects typical Tibetan plateau country and rocky hillsides with scattered furze bushes (*Caragana spinosa*) and dwarf juniper and rhododendron scrub. Found in grass and bush cover about crops and yak pastures in the Tsangpo valley.

Extralimital. Adjoining portions of the Tibetan plateau.

GENERAL HABITS. Keeps in coveys of 10 to 15 birds. Usually not very wild; reluctant to fly, trusting to its legs for escape. Coveys 'explode' with a whirr of wings when flushed, the birds scattering in ones and twos in different directions, shrilling and gliding downhill like chukor whenever they have the choice. The coveys break up into pairs for breeding in March/April.

FOOD. Seeds, shoots, roots of moss (?), and presumably insects.

VOICE AND CALLS. Normal call, uttered mostly in the mornings and evenings, a rattling *Scherrreck* — *scherrreck* etc. (Schäfer). When flushed and going off a shrill *chee, chee, chee, chee, chee* (Fleming), presumably the same as has been described by Bailey as exactly like the creaking of the lid of a (wicker) lunch basket.

BREEDING. Within our limits apparently recorded only in Ladakh (*caraganae*). Season, May to July. Nest, a scrape in the ground under a boulder or bush, lined with grass; about 20–22 cm. in diameter and hardly large enough to hold a full clutch. Eggs, normally 8 to 10 (rarely up to 14); long ovals — proportionately longer than any francolin's — dark brownish buff sometimes tinged with olive. Average size of 150 eggs 37.6 × 27.2 mm. (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies; for details of plumage, Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	155–165	c. 15–17	c. 40–43	c. 86–91 mm. (Baker)
♀ ♀	149–155 (Kinnear)			

Weight c. 1 lb. (c. 450 gm.) — Hodgson.

COLOURS OF BARE PARTS. Iris brown or red-brown; orbital skin deep velvety crimson in breeding season, dull reddish crimson at other times. Bill pale horny green. Legs and feet pale greenish brown.

Genus *Coturnix* Bonaparte

Coturnix Bonaparte, 1791, Tabl. Encycl. Méth. Orn., pt. 1: 87, 216.

Type, by tautonymy, 'Caille' = *Tetrao coturnix* Linnaeus

Exallfactoria Bonaparte, 1856, Compt. Rend. Acad. Sci. Paris 42: 881. Type, by tautonymy, *Tetrao chinensis* Linnaeus (*Coturnix exallfactoria* Temminck in synonymy) Small partridge-like birds with short and rounded to comparatively long and pointed wings correlated with sedentary or migratory habit. Tail short, of 8 to 12 soft feathers. Bill small and slender. Tarsus strong, of moderate length, unspurred. Toes 4 contra 3 in *Turnix* (Button Quails). Sexes differing slightly in coloration; in one Indian species markedly so.

The genus occurs in the Palearctic, Ethiopian, Oriental, and Australasian Regions. Three species in India, one chiefly migratory, two more or less sedentary.

Key to the Species

A Third primary longest.....	<i>C. chinensis</i>	Page 42
B First or second primary longest.....	1	
1 Outer webs of primaries barred with buff.....	<i>C. coturnix</i>	37
Outer webs of primaries unbarred.....	<i>C. coromandelica</i>	41

COTURNIX COTURNIX (Linnaeus)

Key to the Subspecies

Feathers of chin lengthened and bristly.....	<i>C. c. japonica</i>
Feathers of chin normal; black in males, creamy-buff in females.....	<i>C. c. coturnix</i>

250. Grey Quail. *Coturnix coturnix coturnix* (Linnaeus)

Tetrao Coturnix Linnaeus, 1758, Syst. Nat., ed. 10, 1: 161 (Europe, Asia, Africa. Restricted type locality, Sweden, ex Fn. Svec.)

Baker, FBI No. 1950, Vol. 5: 372

Plate 32, fig. 6

LOCAL NAMES. *Baltr*, *Bādā baltr*, *Ghāgus baltr* (Hindi); *Baltr*, *Balra* (Sind); *Kurak*, *Srapok* (Baluchistan); *Bhatri* (Bengal); *Gundri* (Orissa); *Daobui kashiba* (Cachar); *Bota sorāi* (Assam); *Soibol* or *Sorbol* (Manipur); *Lovca*, *Bādā ganga*, *Gurganj* (locally in Maharashtra); *Barli*, *Sipale hākki* (Mysore); *Gogari yelichi* (Telugu); *Kāta* (Malayalam).

SIZE. Partridge —; length c. 20 cm. (8 in.).

FIELD CHARACTERS. A plump and squat pale brown partridge-like bird with conspicuous buff spear-shaped streaks and irregular mottling and barring of reddish brown and black above in both sexes.

Male. *Below*. Chin and a line down centre of throat black. Two dark bands (sometimes indistinct) curving up from base of throat to ear-coverts. Breast rufous-buff with glistening pale buff shaft-streaks; flanks brown longitudinally streaked with black; rest of underparts creamy white.

Female. *Below*. Chin and throat creamy buff; breast spotted with blackish.

Young (immature). Like female; somewhat duller.

hill (c. 2300 metres) near Mussooree (U.P.) on a moonlit night in April, the birds sweeping close over his head with the sound of rushing wind, uttering their unmistakable call.

GENERAL HABITS. Usually keeps in pairs, not coveys like Bush Quail, but numbers may concentrate in a patch where feeding is good. Thus in NW. Pakistan and Kashmir, particularly in spring when most crops have been harvested and only a few are still standing, hundreds may be put up from a single field by walking through. When flushed, the bird rises almost vertically for a few feet with the typically partridge whirl of wings and a squeaky whistling note flying low on rapidly vibrating wings straight and fast for a couple of hundred metres before dropping into the crops again. A peculiarity repeatedly observed, and cashed in on by experienced sportsmen, is that when two birds a few metres apart rise more or less simultaneously and are flying away in the same direction, sooner or later one will try to cut across the other. If fire is withheld till the right moment it is often possible to secure both birds with the same shot (*experio credo*).

Large bags are made in NW. India (e.g. Punjab) at the appropriate seasons by walking the fields with a line of beaters. Fifty couple in a morning to a single gun is nothing exceptional especially where the birds have been previously decoyed into the neighbouring fields with the aid of a caged call-bird, as is frequently done.

FOOD. Paddy, millets, and other grain, grass- and weed seeds, and insects — ants, caterpillars, beetles, aphids, etc. Grubs of *Hypera variabilis* have been identified in stomach contents (Husain & Bhalla, 1937, JBNHS 39: 841).

VOICE AND CALLS. A loud clear whistling note followed rapidly by two short ones, popularly described as 'a very liquid *Wet-mi-lips*'. Uttered chiefly in the morning and evening, and sometimes also during the night. A squeaky whistle when flushed.

BREEDING. *Season*, in India overall March to July varying with locality; most commonly March and April. *Nest*, a scrape in the ground practically without lining; sometimes lined with scanty leaves and grass. Usually well concealed in standing crops or grassland. *Eggs*, 6 to 11 and even 13, but usually 6 to 8. Variable in colour, from yellowish buff to deep yellowish brown or reddish brown, speckled and blotched with some shade of dark or chestnut-brown. Average size of 100 Indian eggs 29.7 × 22.8 mm. (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies. For description of plumage Baker, loc. cit.; for more details Witherby, 1941, 5: 252-4.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	110-115	14-16	c. 26-27	31-38 mm.
♀♀	107-116	14-16	26-30	36-44 mm. (SA, HW)

Wing ♂♀ 100-117 mm. (Baker).

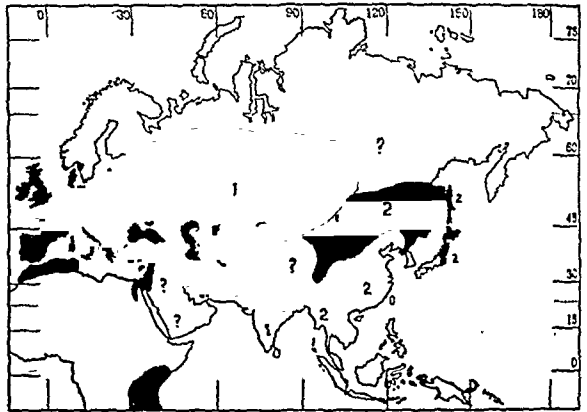
Weight ♂♀ 3.60-4.60 oz. (c. 86-120 gm.).

COLORS OF BARE PARTS. Iris bright hazel to deep brown. Bill bluish, greyish, or brownish horny darker on tip and culmen. Legs and feet pale fleshy to fleshy brown.

STATUS, DISTRIBUTION and HABITAT. Partly resident, partly winter visitor. Breeds in both Pakistans, Kashmir (up to c. 2500 m. alt.) east through Bihar and W. Bengal, south at least to Madhya Pradesh (Hoshangabad) and southern Maharashtra (Satara). Breeding in Manipur, *vide* Baker, not confirmed. Birds collected there in winter are intergrades with *C. c. japonica* (Higgins, JBNHS 37: 299). Strongly augmented by influx of migrants from outside in winter and then spreads out over our entire area south to Kanyakumari. Very abundant locally, but numbers variable year to year. In great numbers in Nepal Valley mid October to mid December (Scully). Affects standing crops (e.g. cotton, young wheat, gram, millets, lucerne), paddy stubbles, and grassland, chiefly in flat and undulating country.

Extralimital. 'Breeds in Europe from lat. 65°N. south to the islands in the Mediterranean Sea, and in N. Africa. In W. Asia east to Lake Baikal, from lat. 61°N., south to Asia Minor, Persia, Afghanistan and India to the Deccan. Winters in northern tropical Africa to Senegal, Lake Chad and Somaliland, in Arabia, and the plains of India' (Peters).

Coturnix coturnix



Black numerals = Winter
1 *C. c. coturnix* (250). 2 *C. c. japonica* (251).

MIGRATION. No ringing data. Recorded observations indicate that passage, both inward and outward, takes place through northwest Pakistan (Chitral, Peshawar, Kohat, Kurram, etc.) in autumn (September-October; even end August) and spring (end of March to early May). Evidently this is the main through migration route, the birds dispersing east and south in the Peninsula after arrival, and concentrating in the northwest again for return migration in astonishingly large numbers. They travel during the night in successive flocks of 30 to 40 or 100 or in enormous swarms of many thousand strong. One such was observed by Hume standing on top of Benog

MISCELLANEOUS. Highly relished as a delicacy throughout its overall range, and hundreds of thousands, or millions, netted and shot for food year after year all along the migration routes since early historical times. That the world population does not show any marked decline notwithstanding is an indication of the bird's extraordinary fecundity and resilience to predation pressure.

Quail are also very extensively netted for the market particularly in parts of W. Pakistan and northwestern India although in some states commercial netting is now prohibited by law. The birds are kept alive in darkened underground pits for fattening and served up as required. In Hume's day, i.e. in the last quarter of the 19th century, quails were available at Re. 1 to Rs. 2.50 per hundred, and even until before the last war (1938) 16 to 24 to the rupee was quite a fair price.

Much prized in W. Pakistan and N. India as a fighting bird. Large prices are paid for champion cocks and considerable wagers are won and lost on the mains. As part of the conditioning and training the owner constantly carries his bird about in one hand and dances it on the palm of the other, the bend-stretch of the legs being believed to strengthen them for the bouts.

251. Japanese Grey Quail. *Coturnix coturnix japonica* Temminck & Schlegel

Coturnix vulgaris japonica Temminck & Schlegel, 1849, in Siebold, Fauna Jap., Aves: 103, pl. 61 (Japan)

Baker, FBI No. 1951, Vol. 5: 374

LOCAL NAMES. *Sorbol* (Manipur); *Bota sorāi* (Assam).

SIZE and FIELD CHARACTERS. As of 250; not distinguishable from it unless in the hand. (See Museum Diagnosis.)

STATUS, DISTRIBUTION and HABITAT. Winter visitor in small numbers to Assam south of Brahmaputra river. Birds collected in Manipur in winter are intergrades with the nominate race.

Extralimital. Breeds in Sakhalin and the Japanese islands. In winter to S. China, Siam, Indochina, Formosa, Hainan (Peters).

MIGRATION. No data.

HABITS and FOOD. Nothing specifically recorded as different from 250. VOICE and CALLS. According to Przevalsky the Japanese race easily distinguished from nominate (250) by its voice. Call notes of male in spring described as consisting of 'some deep hollow sounds, several times repeated in quick succession'. This call does not appear to be known in the Grey Quail unless it be the same as the 'faint *gurr-gurr-gurr*', not unlike the purring of a cat' quoted from Naumann in Witherby (5: 251), which is apparently only a subdued and secondary call.

BREEDING. Extralimital; not different from 250.

MUSEUM DIAGNOSIS. Male differs from male of nominate *coturnix* in having no black on chin and throat and no upcurving black bands. These parts and sides of head light brick-red. Upperparts more brightly coloured than in 250. Elongated winter feathers of malar region and throat replaced in spring (breeding plumage) by rounded short red feathers.

PHEASANTS, PARTRIDGES, QUAILS 41

Female also has feathers of cheeks and chin long and pointed forming a regular little beard in winter. In spring difficult to distinguish from female *C. c. cornix*. For details of plumage see Hartert, 1921-2: 1943.

MEASUREMENTS. Wing ad. ♂ 98-102; ♀ 100-106 mm. (Hartert).

COLOURS OF BARE PARTS. As in 250.

MISCELLANEOUS. Has been domesticated in Japan as a table delicacy, for its meat and eggs, within the last 50 years or so by selection from quails formerly kept for song. Quail-breeding is now a flourishing minor industry. The birds are kept perpetually under artificial light like battery hens, and with special feeding and care, good females lay from 250 to 300 eggs per year. They begin to lay when only 35-60 days old, and continue non-stop for 8-12 months thereafter. For details and techniques see Yoshimaro Yamashina, 1961, JBNHS 58(1): 216-22.

252. **Blackbreasted or Rain Quail.** *Coturnix coromandelica* (Gmelin)

Tetrao coromandelicus Gmelin, 1789, Syst. Nat. 1(2): 764 (Coromandel Coast)

Baker, FBI No. 1952, Vol. 5: 375

Plate 32, fig. 8

LOCAL NAMES. *China bātēr* (N. India); *Chinagā bātēr* (Gujarat); *Chānak* (Nepal); *Kādai* (Tamil); *Chinna yellichē* (Telugu); *Pun watuwā*, *Wil watuwā* (Sinhala); *Kāta* (Malayalam). Generally not distinguished from Grey Quail except by professional netters.

SIZE. Grey Quail —; length c. 18 cm. (7 in.).

FIELD CHARACTERS. Very similar to Grey Quail (250) q.v., but smaller. Male with dark marks on face and throat more jet-black contrasting strongly with white cheeks. Upper breast black (sometimes also centre of abdomen). Flanks boldly black streaked.

Female indistinguishable from female 250 except on smaller size. For identification in the hand see Key to the Species.

STATUS, DISTRIBUTION and HABITAT. More or less restricted to the Indian subregion. Resident and nomadic or locally migratory during SW. monsoon, spreading out widely over otherwise parched areas with availability of grass cover and food. Practically all India and both Pakistans. Chiefly plains, but also peninsular hills and up to c. 2000 m. in the Himalayas. Occasional winter visitor to Ceylon. Affects grass-and-scrub jungle, open moist grassland, standing crops, and paddy stubbles, etc.

Extralimital. Burma, including the Shan States.

GENERAL HABITS. Keeps singly or in scattered pairs — only rarely 5-8 together — and nowhere found in such large concentrations as Grey Quail in spring and autumn though local populations, e.g. in south India, tend to swell somewhat by seasonal influx from other areas. Exact nature and extent of such movements unknown. Habits and food similar to those of Grey Quail; is more partial to grass seeds and millet.

VOICE and CALLS. Distinct, and unmistakable for that of 250 — a double-noted musical *which-which*, *which-which*, etc. repeated every half-second or so in runs of 3 to 5 calls. Uttered by male chiefly in early mornings and late evenings, but throughout the day in cloudy overcast weather; also

PHEASANTS, PARTRIDGES, QUAILS 43

Young male with no blue along forehead. Underparts duller slaty blue, barred with black on sides of head and neck. Chestnut of abdomen restricted to centre, or wanting.

STATUS, DISTRIBUTION and HABITAT. Resident; widely but sparsely and patchily distributed, in small numbers. Evidently with some nomadic movements dependent on rainfall; described in some areas as monsoon visitor. Occurs roughly east and south of a line from Bombay to Simla. Commoner on the eastern side of the subcontinent, viz. N. Orissa, Bihar, W. Bengal, E. Pakistan — perhaps commonest in Assam and Manipur. Baker's statement that it is a common breeding bird in Kerala ('Travancore and the Malabar coast') to Bombay is certainly not true today. Plentiful in Ceylon (lowlands and hills to c. 1800 metres up). Chiefly plains, but in suitable facies also up to c. 2000 m. in the S. Indian hills. Affects swampy grassland and grazing grounds at the end of the rains, and occasionally snipe marshes. Also heavy grass along roadsides, in secondary scrub on abandoned cultivation, on the edges of paddyfields, and in tea gardens at the foot of the hills in Assam.

Extralimital. East to SE. China and south through the Malay Peninsula, Siam, and Indochina; Hainan and Formosa. Introduced into Mauritius and Réunion (Peters).

MIGRATION. No definite data.

GENERAL HABITS. More partial to wetter terrain than any other quail. Keeps in pairs or small family parties. Usually flushes singly dropping into the grass after a short flight and difficult to put up a second time without a dog. Believed to have a strong scent: 'My spaniel always used to get very keen when they were about' (Cyril Hopwood, Burma).

FOOD. Chiefly grass seeds and millets; also small insects especially termites.

VOICE and CALLS. A soft *tir-tir-tir* when flushed. In Malaya another call, not often heard, described as 'a weak peeping whistle not unlike the call of the Great Eared Nightjar (*Eurostopodus*)', also reminiscent of one of the Plaintive Cuckoo (*Cacomantis*)' — G. C. Madoc. 'Cock occasionally utters a tiny crow resembling a miniature imitation of the brain-fever bird's note' (F. Finn).

BREEDING. Season indefinite, and variable in different areas: in Assam principally June to August; in S. India March-April; in Ceylon recorded as May, August-September, and December-January. Nest, a natural hollow or scrape in the ground lined sparsely with leaves and grass, or without lining, placed in a clump of short grass close to thicker cover. Eggs, 4 to 8, normally 5 to 7, glossy broad ovals usually well pointed at the small end; pale grey or green drab, pale olive-yellow or olive-clay colour to rich sienna brown. Many finely but sparsely stippled and speckled with black all over. Average size of 100 eggs 24.5 × 19.0 mm. (Baker). Cock evidently monogynous. Incubation by hen alone; period c. 16 days. Both parents tend the young.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for subspecies see Key.

Chick (in down). 'The whole body and head, above and below, brown with the following exceptions which are buff: coronal streak and a streak on either side of

42 GALLIFORMES

sporadically during moonlit nights in the breeding season. A short squeaky whistling note when flushed.

BREEDING. Season, overall March to October, straggling into December, varying with locality and moisture conditions. Nest and eggs similar to those of Grey Quail, the latter merely smaller. Average size of 150 eggs 27.4 × 20.8 mm. (Baker). Cock monogynous. Only the hen incubates; period 18-19 days. Both parents tend young.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	93-96	12-14	23-26	29-32 mm.
♀♀	90-97	12-14	23-27	28-31 mm. (SA, HW)

Baker gives Wing ♂♀ 83-92 mm.

Weight ♂♀ 2.2-3 oz. (c. 64-85 gm.) — Hume.

COLOURS OF BARE PARTS. Iris hazel to deep brown. Bill black (breeding) or horny black, paler at base (non-breeding and immature). Legs and feet fleshy or fleshy grey (more pink in breeding season).

MISCELLANEOUS. Cock rated by some as a better fighting bird than the larger Grey Quail.

COTURNIX CHINENSIS (Linnaeus)

Key to the Subspecies

Paler; back of male not suffused with blue-grey and having pale shaft-stripes *C. c. chinensis*

Darker; back of male suffused with blue-grey and having no pale shaft-stripes *C. c. trinkutensis*

253. **Bluebreasted Quail.** *Coturnix chinensis chinensis* (Linnaeus)

Tetrao chinensis Linnaeus, 1766, Syst. Nat., ed. 12, 1: 277 (China and the Philippines = Nanking, China, ex Edwards)

Baker, FBI No. 1948, Vol. 5: 369

Plate 32, fig. 4

LOCAL NAMES. *Khair butai*, *Kanli* (Nepal); *Gobal butai* (Oudh); *Gurru* (Bengal); *Daobui majungbi* (Cachar); *Sorbol* (Manipur); *Pandara wutuwā* (Sinhala).

SIZE. Grey Quail —; c. 14 cm. (5½ in.).

FIELD CHARACTERS. A diminutive dark quail with bright yellow legs and the sexes very differently coloured.

Male. Above, forehead, supercilium and sides of neck slaty blue, Rest of upperparts brown as in Grey Quail, streaked, mottled, and barred with buff, reddish brown and black. Below, throat and upper breast with bold black and white marking of Grey Quail pattern. Lower breast and flanks slaty blue; abdomen and under tail-coverts rich chestnut.

Female. Like female Grey Quail but breast and flanks barred with blackish instead of being longitudinally streaked.



44 GALLIFORMES

the crown; tips of the wings, sides of the head, chin and throat. The brown of the underparts is rather paler than that above, and is somewhat dusty in tint' (Baker).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	65-78	10-11	20-22	c. 25 mm.
♀♀	66-67	—	—	— (Baker)

Weight 1½ to 2 oz. (c. 43-57 gm.). 1 ♀ (Ceylon) 36 gm. — SDR.

COLOURS OF BARE PARTS. Iris ♂ bright vermilion-red to deep crimson, rarely a bright vinous pink; ♀ brown. Bill black, the edge, gape, and gonys slaty. Legs and feet bright yellow, soles paler; claws brownish.

MISCELLANEOUS. 'Far superior to Grey Quail as a table delicacy' (J. C. Higgins, Manipur).

254. **Nicobar Bluebreasted Quail.** *Coturnix chinensis trinkutensis* (Richmond)

Excalfactoria trinkutensis Richmond, 1902, Proc. U.S. Nat. Mus. 25: 310 (Trinkut Island, Nicobar group)

Baker, FBI No. 1949, Vol. 5: 371

LOCAL NAME. *Mul* (Car Nicobar).

SIZE and FIELD CHARACTERS. As of the nominate race (253), q.v., but see Key to the Subspecies.

STATUS, DISTRIBUTION and HABITAT. Resident. The Nicobar group of islands: Car Nicobar, Trinkut, Camorta. Possibly also others not yet explored.

GENERAL HABITS, FOOD, VOICE, etc. Nothing specifically recorded as different from 253.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Male. Adult differs from *C. c. chinensis* in being much darker generally. Back suffused with the slaty blue of the breast, and the pale shaft-streaks absent or obsolete.

Female darker and more richly coloured than in 253. Ground colour of upperparts grey rather than brown. Underparts completely barred.

MEASUREMENTS. ♂♀ Wing c. 70; bill (from feathers) c. 10 mm.

COLOURS OF BARE PARTS. As in 253.

Genus PERDICULA Hodgson

Pardicula Hodgson, 1837, Bengal Sport. Mag. 9: 344. Type, by original designation, *Pardicula rubicola* Hodgson = *Perdix asiatica* Latham

Cryptoplectron Streubel, 1842, in Ersch & Gruber, Allg. Encycl., sect. 3, 16: 291.

Type, by monotypy, *Coturnix erythrophyna* Sykes

In many respects closer to Partridges than Quails though of small size like latter. Bill short and thick; culmen very convex. Wing short, rounded: first primary (as.) equal to 8th; fourth primary longest. Tail of 12 feathers, of about half length of wing. Tarsus as long as middle toe with claw and armed with a short blunt spur.

Genus peculiar to the Indian subregion.

PHEASANTS, PARTRIDGES, QUAILS 45

Key to the Species		Page
A	First primary equals eighth	1
B	First primary equals tenth	2
1	Inner webs of primaries brown throughout	45
	Inner webs of primaries mottled or barred with buff	48
2	Upper surface brown with black spots	51
	Upper surface slaty grey with black bars and spots	53

PERDICULA ASIATICA (Latham)

Key to the Subspecies

A	Upperparts brown blotched with blackish; buffy shaft-streaks of scapulars contrasting with rest of plumage	45
B	Upperparts darker; buffy shaft-streaks of scapulars reduced in extent so that these parts do not contrast so strongly with the rest of the plumage	48
C	Upperparts paler, more sandy brown	47
D	Upperparts with deep reddish tint	48
E	Upperparts paler than A with no reddish tint; chin and throat dark chocolate-brown (contra chestnut)	341

255. Jungle Bush Quail. *Pardicula asiatica asiatica* (Latham)

Pardicula asiatica Latham, 1790, Index Orn. 2: 649 (Maharatta region, India)
Baker, FBI No. 1953, Vol. 5: 377

Plate 32, fig. 11

LOCAL NAMES. *Louwa* (Hindi); *Vana laura* (Gujarat); *Juhar* (Manbhum); *Auriconnai* (Santal); *Girza pitta* (Telugu); *Kari louwa* (Kannada); *Vari kada* (Malayalam).

SIZE. Grey Quail —; c. 17 cm. (6½ in.).



FIELD CHARACTERS. A squat and plump little partridge-like bird.

Male. Above fulvous-brown, streaked and mottled with black and buff. A prominent buff-and-chestnut supercilium stripe from forehead and down sides of neck. Below white, closely barred with black. Chin and throat bright chestnut.

Female. Above like male. Below, pale pinkish rufous with bright chestnut throat-patch as in male. (See also Museum Diagnosis.)

Young (immature). Paler; less rufous more brown overall and finely streaked above and below with creamy white.

STATUS, DISTRIBUTION AND HABITAT. Resident. Gujarat (excepting Kutch), Maharashtra (excepting S. Konkan), Madhya Pradesh, Bihar, Orissa, Andhra, Madras, Mysore. Boundaries between the races not properly worked out. Plains and up to c. 1250 metres in the hills especially around terraced cultivation. Affects grass-and-scrub jungle and open secondary forest in deciduous biotope, seldom entering standing crops.

The species absent in Sind, W. Rajasthan, E. Pakistan, and Assam.

GENERAL HABITS. Keeps in coveys of 6 to 20. When resting in daytime or roosting at night the birds form themselves into 'squares', squatting

PHEASANTS, PARTRIDGES, QUAILS 47

Weight 2-2.85 oz. (c. 57-82 gm.) — Hume.

COLOURS OF BARE PARTS. Iris light to orange-brown. Bill horny- or slaty black, greyer on lower mandible and base of commissure. Legs and feet dull yellowish or dusky orange; claws brownish flesh colour.

256. Punjab Jungle Bush Quail. *Pardicula asiatica punjaubi* Whistler

Pardicula asiatica punjaubi Whistler, 1939, Bull. Brit. Orn. Cl. 59: 76 (Ambala, Punjab)
Baker, FBI No. 1953 (part), Vol. 5: 377

LOCAL NAME. *Louwa* (Hindi).

SIZE AND FIELD CHARACTERS. As of 255, q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION AND HABITAT. Resident. Kashmir, Punjab, Himachal Pradesh, Uttar Pradesh. Plains and up to c. 1200 metres elevation. Affects dry scrub-and-bush country.

GENERAL HABITS, FOOD, VOICE AND CALLS. As of 255.

BREEDING. Season, mainly August through October. Nest and eggs as in 255.

MUSEUM DIAGNOSIS. Differs from the nominate race (255) in its markedly paler coloration. Male (adult). Above, paler, more sandy brown with conspicuous pale barring on rump, upper tail-coverts, and tail. Dark blotching on scapulars and tertiaries less extensive and conspicuous. Below, black bars, as a rule, narrower and so not appearing quite so black.

Female (adult). Upper plumage similarly paler; the dark blotching of the scapulars and tertiaries less extensive.

First-winter birds and even the juveniles are similarly paler.

Chick (in down). From base of bill over crown, down centre of back to tail, a broad chestnut band edged on each side with dark brown; outside this from base of bill a broad ochraceous supra-orbital stripe reaching nape and surmounting a narrow dark brown supercilium stripe; ear-coverts and a short moustachial streak dark brown. Rest of upperparts dappled rusty brown and light brown; underparts ochraceous-grey (Tiechurst).

Young (immature). Sexes alike. A broad band down the centre of the crown brown, edged with blackish brown; a broad fulvous-white supercilium from the lores to the posterior edge of the ear-coverts; cheeks and ear-coverts dark brown with whitish shaft-streaks. Upper plumage warm sandy brown, the feathers of the hind-neck, upper back and wing-coverts with conspicuous fulvous shaft-streaks and broken blackish bars, the shaft-streaks becoming broader on the scapulars and the bars becoming black patches on their inner webs. Primaries dark brown mottled and streaked with sandy fulvous; secondaries, tertiaries, and tail warm sandy brown with fulvous shafts and mottled, speckled and barred with fulvous and blackish brown. Lower plumage vinous buff, the chin, throat and breast with shining white shaft-streaks.

This juvenile plumage seems to be moulted rather gradually during the first winter, giving place to the respective adult male and female plumages. As in other game birds the outer two or three juvenile primaries, more pointed in character than those that will succeed them, are apparently retained to the first post-nuptial moult, but they are not always easy to recognize (Whistler).

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 255.

46 GALLIFORMES

bunched together under a bush all facing outward. The covey suddenly 'explodes', rising with a great whirr of wings when almost trodden upon and dispersing in all directions. These explosions are apt to prove disconcerting when one is tensely tracking dangerous game such as a wounded tiger in forest! The birds drop in the undergrowth after a short flight, and the covey soon re-unites with the aid of the soft whistling rally calls. The coveys troop down to drink in the mornings and evenings in more or less single file, and shift from one feeding ground to another in like manner, using the same little paths or tunnels formed in the matted and bent-over grass day after day. Cocks pugnacious in breeding season.

As a game bird it usually forms a minor but useful supplement to the small game shooter's mixed bag. Though not difficult to bring down with a shotgun they can account for an unwarranted number of misses by the fluster they cause by exploding when least expected, and the failure of the sportsman to fix his eye on one bird at a time when so many are simultaneously scurrying off in different directions. To those familiar with the American Bobwhite Quail this habit will be very reminiscent.

FOOD. Grass- and weed seeds, bajra and other millets, lentils (moong), and small insects especially termites. A quantity of grit usually found in stomachs. Sometimes springs up a couple of inches to pluck grass or millet seeds from a growing culm, a number of birds together thus engaged presenting a comical sight.

VOICE AND CALLS. Rallying call when a covey has got scattered: a soft musical whistling *whi-whi-whi-whi* etc. by members from different directions. In breeding season cocks constantly challenge with harsh grating notes as of drongos 'arguing' at the onset of their breeding season: *chee-chee-chuck, chee-chee-chuck*, etc.

BREEDING. Season, not well defined; ranges between August and April. Nest, a shallow scrape in the ground lined with grass, at the base of a grass tussock in scrub jungle. Eggs, 4-8 creamy white. Average size of 140 eggs (mixed races and possibly also including eggs of *P. argoondah*) 25.4 x 19.5 mm. (Baker). Cock believed to be monogynous. Hen only incubates; period 16-18 days.

MUSEUM DIAGNOSIS. This (nominate) race is a dark, blackish-looking bird quite clearly differentiated from the red birds (*vidali*) found below the Western Ghats in South Konkan, as well as from the grey or sandy coloured bird (*punjaubi*) found in other parts of the Indian range of the species.

Some adult females have a faint indication of black and white barring on lower throat and breast. This is not to be confused with the truly black-and-white feathers found irregularly on juvenile males which have moulted some of their juvenile feathers.

For description of chick in down and juvenile plumage see under *P. a. punjaubi*. Comparative stages of *P. a. asiatica* differ from it only in being a darker, blackish brown in tone, emphasizing the subspecific difference between it and *punjaubi*.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂ (ad.)	81-88	13-17	24-30	34-41 mm.
♀♀ (ad.)	80-88	13-16	23-31	32-41 mm. (SA, HW)

48 GALLIFORMES

257. Konkan Jungle Bush Quail. *Pardicula asiatica vidali* Whistler & Kinnear

Pardicula asiatica vidali Whistler & Kinnear, 1936, Jour. Bom. nat. Hist. Soc. 38: 686 (Kelsi, South Konkan)
Baker, FBI No. 1953 (part), Vol. 5: 377

LOCAL NAME. *Louwa* (Marathi).

SIZE AND FIELD CHARACTERS. As of 255, q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION AND HABITAT. Resident. Malabar coast from about Bombay south to Mallapuram (Malabar dist., Kerala) and Kodaikanal, Palni Hills. Plains and up to c. 1500 m. elevation. Affects dry scrub-and-bush country. Race in S. Kerala needs confirming. Exact boundaries between the races not properly worked out.

GENERAL HABITS, FOOD, VOICE AND CALLS. As of 255.

BREEDING. Season not well defined. Practically all months; perhaps more concentrated between July and February. Nest and eggs as in 255.

MUSEUM DIAGNOSIS. Both adult and immature birds differ from the nominate race (255) in the deep reddish tinge of the whole upper plumage, which is even more particularly marked on the crown. In adult males, moreover, the black barring of the lower plumage is broader than in nominate *asiatica*.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 255.

257a. Tamil Nadu Jungle Bush Quail. *P. a. vellorri**

258. Ceylon Jungle Bush Quail. *Pardicula asiatica ceylonensis* Whistler & Kinnear

Pardicula asiatica ceylonensis Whistler & Kinnear, 1936, Jour. Bom. nat. Hist. Soc. 38: 686 (Cocoawatte, Ceylon)
Baker, FBI No. 1953 (part), Vol. 5: 377

LOCAL NAMES. *Pandara waturu*, *W'il waturu* (Sinhala); *Kudai* (Tamil).

SIZE AND FIELD CHARACTERS. As of 255, q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION AND HABITAT. Endemic. Resident in the low-country Dry zone. Fairly plentiful in a small area of grassy jungle country to SE. of the Uva hills, bounded roughly by the Mahaweli-ganga to the NE., the foothills of the Uva ranges and the Kumbukkan river in the SW. Occasional in the low hills round Passara (Phillips).

GENERAL HABITS, FOOD, VOICE AND CALLS. As of 255.

BREEDING. Season, 'about March and April' (Phillips). Nest and eggs as in 255.

MUSEUM DIAGNOSIS. Upper plumage of both sexes much darker throughout than in the nominate race (255); the black blotching and pale shaft-streaks of the scapulars reduced in extent so that these parts do not contrast so strongly with the rest of the plumage. The chestnut throat-patch is also far darker than in *P. a. asiatica*.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 255.

PERDICULA ARGOONDAH (Sykes)

Key to the Subspecies

A	Upperparts brown	<i>P. a. argoondah</i>	49
B	Upperparts much paler than those of the nominate form		
		<i>P. a. meinertzhageni</i>	49
C	Upperparts bright brick red	<i>P. a. salimalii</i>	50

* See Appendix

PHEASANTS, PARTRIDGES, QUAILS

49

259. **Rajasthan Rock Bush Quail.** *Perdica argoondah meinertzhageni* Whistler*Perdica argoondah meinertzhageni* Whistler, 1937, Bull. Brit. Orn. Cl. 58: 19 (Nasirabad, Rajputana)

Baker, FBI No. 1954 (part), Vol. 5: 379

LOCAL NAME. *Louwa* (Hindi).

SIZE AND FIELD CHARACTERS. As of 260, q.v. See Key to the Subspecies, and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. From Hariana (SE. Punjab) and Uttar Pradesh across Rajasthan and N. Gujarat to Kutch and Saurashtra, and east to western and northern Madhya Pradesh. Affects stony, sparsely thorn-scrubbed country in semi-desert facies.

GENERAL HABITS, FOOD, VOICE AND CALLS. As of 260.

BREEDING. Season extends practically throughout the year but more general between September/October and January/February. Nest and eggs as in 260. MUSEUM DIAGNOSIS. Differs from the nominate race (260) in being much paler in coloration. The barring on the lower plumage of the male is less heavy in appearance, as the black bars are individually narrower.

Chick (in down): Crown and nape brown, barred with black, the feathers of the forecrown with pale shafts; supercilium extending beyond ear-coverts pale creamy fulvous; ear-coverts and cheeks mixed buffy brown and dark brown. Remainder of upper plumage earthy brown the feathers speckled and broadly barred with black, and with fulvous shaft-streaks, these markings becoming obsolescent on the rump and upper tail-coverts. Primaries, secondaries, tertiaries and tail warm sandy brown, barred and freckled on both webs with brownish black, the tertiaries with broad fulvous shaft-strips and black blotches on the inner webs. Chin vinous-buff; remainder of lower plumage fulvous-buff, the throat, breast, and to a less extent the flanks, barred with blackish brown, the feathers with white shafts.

Young (immature). The juvenile plumage of *P. argoondah* differs from that of *P. asiatica* in one most marked detail. Instead of being roughly unicolorous below with shining white streaks, the throat and breast are barred with blackish, thereby superficially resembling the adult male. This explains why in this species one meets numbers of immature females which seem to have a mixture of male and female feathers below. The warm vinous-buff of the female underparts is, in these birds, mixed with barred black-and-white feathers which are remnants of the juvenile plumage. On the other hand in *asiatica* the birds with mixed vinous-buff and black and white barred underparts are young males exchanging the vinous-buff juvenile plumage for the adult black and white bars. Thus, in the case of *argoondah* the black and white bars are juvenile feathers; in the case of *asiatica* they are adult feathers.

The distinction is interesting and important, and essential to an understanding of the two species (Whistler).

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 260.

260. **Deccan Rock Bush Quail.** *Perdica argoondah argoondah* (Sykes)*Coturnix Argoondah* Sykes, 1832, Proc. Zool. Soc. London: 153 (Dukhun)

Baker, FBI No. 1954 (part), Vol. 5: 379

Plate 32, fig. 10

LOCAL NAMES. *Louwa* (Hindi and Marathi); *Lauwaka* (Telugu); *Sinna kâda* (Tamil). Commonly not differentiated from Jungle Bush Quail, and names indiscriminately used for both.

PHEASANTS, PARTRIDGES, QUAILS

51

SIZE AND FIELD CHARACTERS. As of 260, q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION AND HABITAT. Resident. East-central Mysore, lat. c. 14°N. (Chitaldrug district). Extent of range not known. Affects stony laterite and moorum, scraggy grass-covered country, where its coloration matches the soil remarkably.

GENERAL HABITS, FOOD, VOICE AND CALLS. Nothing specifically recorded as different from 260.

BREEDING. Season, Nest, and Eggs. Not recorded; presumably as in 260. Specimens in breeding condition taken in January.

MUSEUM DIAGNOSIS. Male (adult). Whole upper plumage, wings, and tail bright brick-red, agreeing with the colour of the forehead in the nominate race (260). Forehead and a line above the buff supercilial streak unmarked; rest of upper plumage irregularly barred with black and dark brown, and streaked and mottled with buff as typical of this species. Lower plumage similar to that of *P. a. argoondah* (260), but slightly warmer in tint; washed with brick-red on flanks, lower abdomen and under tail-coverts.

Female (immature). Upperparts as in ad. ♂ (above), but dark barring largely absent; the buff shaft-streaks terminate in triangular buff spots, more conspicuous on mantle, scapulars, and tertiaries. Lower plumage warm buff tinged with brick-red, the throat and breast irregularly barred with dark brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
2 ♂♂ ad.	80-85	13-14	23-27	38-41 mm. (HW, SA)

COLOURS OF BARE PARTS. As in 260.

PERDICA ERYTHROHYNCHA (Sykes)

Key to the Subspecies

Darker and larger..... *P. e. erythrorhyncha*
Paler and smaller..... *P. e. blewittii*262. **Painted Bush Quail.** *Perdica erythrorhyncha erythrorhyncha* (Sykes)*Coturnix erythrorhyncha* Sykes, 1832, Proc. Zool. Soc. London: 153

(Karli Valley, North Konkan)

Baker, FBI No. 1955, Vol. 5: 381

Plate 32, fig. 7

LOCAL NAMES. *Kokni-louwa* (Hindi); *Kâdai* (Tamil); *Meni kâda* (Malayalam).

SIZE. Grey Quail —; length c. 18 cm. (7 in.).

FIELD CHARACTERS. A dark but brightly coloured quail with conspicuous deep red bill and legs diagnostic even in flight.

Male. Above, olive-brown finely streaked with white and boldly spotted or blotched with black. A narrow white band running backward from forecrown down sides of blackish head and nape. Below, a conspicuous white throat-patch bordered by a narrow black loop. Rest of underparts chestnut, mottled boldly with black and white on flanks.



♂, x c. 1

GALLIFORMES

50

SIZE. Grey Quail —; c. 17 cm. (6½ in.).

FIELD CHARACTERS. A squat and plump quail.

Male easily confusable with Jungle Bush Quail (255) except for absence of buff supercilial stripe, and dull brick-red instead of bright chestnut throat-patch.

Female distinguished from 255 chiefly by absence of red throat-patch. Chin whitish. Throat and underparts warm vinaceous- or pinkish buff.

STATUS, DISTRIBUTION AND HABITAT. Resident. Peninsular India from about Berar south through the Deccan to Madras. How much further south not known. Affects dry stony scrub-and-bush country.

Exact boundaries between the races not properly worked out, nor the exact status of the species *P. asiatica* and *P. argoondah inter se*. In many areas their distributions overlap, but on the whole this species will be found in drier and stonier facies than *P. asiatica* which prefers thicker-scrubbed country and open deciduous forest.GENERAL HABITS, FOOD, VOICE AND CALLS. Nothing specifically recorded as different from *P. asiatica* except habitat preference.BREEDING. Season, undefined, practically throughout the year, varying with locality. Principal months March-April and August to November. Nest, as of Jungle Bush Quail, a scrape in the ground lined with grass, at the base of a thorn bush or grass tussock, or under protection of a rock. Eggs, 4 to 8, generally 5 or 6, creamy white, indistinguishable from those of 255. Average size of 100 eggs (mixed races and possibly also including eggs of *P. asiatica*) 25.6 × 20.1 mm. (Baker). Cock believed to be monogynous. Hen alone incubates; period 16-18 days.MUSEUM DIAGNOSIS. In the species *asiatica* inner webs of the primaries in adults unmarked; in *argoondah* barred or mottled with fulvous in most (but not all) specimens. This character must therefore be used with great caution, particularly since the juvenile primaries in both species are normally marked on the inner web.Young (immature). For description see under race *meinertzhageni* (259).Chick (in down). Undescribed. Presumably as of *meinertzhageni*, q.v.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	82-89	13-16	25-27	44-47 mm.
♀♀	82-86	14-16	24-25	40-47 mm.
		(from skull)		(SA)

Weight 6 ♂♂ 60-74 (av. 66); 4 ♀♀ (av. 60-25) gm. — BNHS.

COLOURS OF BARE PARTS. Iris light to orange-brown. Bill horny or slaty black, greyer on lower mandible and at base of commissure. Legs and feet dull yellowish or dusky orange; claws brownish flesh colour.

261. **Mysore or Laterite Rock Bush Quail.** *Perdica argoondah salimalii* Whistler*Perdica argoondah salimalii* Whistler, 1943, Jour. Bom. nat. Hist. Soc. 44: 208 (Marikanive, Mysore)

Baker, FBI No. 1954 (part), Vol. 5: 379

LOCAL NAME. *Kempha louwa* (Kannada).

GALLIFORMES

52

Female. Upperparts more or less as in male. Head and throat dull rufous lacking the white throat-patch and head stripe. Underparts rufous, lightly blotched with black on flanks.

STATUS, DISTRIBUTION AND HABITAT. Resident. The Western Ghats strip of country from about Khandala south through Kerala, including the associated hill ranges in Coorg, Mysore, and adjoining Salem district of Madras (Shevaroy Hills), between c. 600 and 2000 metres elevation. Affects tall grass and broken foothills country interspersed with cultivation; also thin scrub on open hillsides along the edge of forest in moist-deciduous biotope.

GENERAL HABITS. Similar to the other Bush Quails (255, 260). Keeps in coveys of 6 to 15 birds which troop out to feed in the open patches in the mornings and evenings, then also commonly seen dusting themselves on the sides of jungle paths and cart tracks. When flushed, the covey scatters in all directions, the birds tumbling into the undergrowth after a short flight. They begin their rally calls to each other almost at once, and soon work their way back through the bushes to re-unite.

FOOD. Grass- and weed seeds, grain, shoots, and small insects, especially termites. A quantity of grit is swallowed with the food.

VOICE AND CALLS. A short whistle like that of Grey Quail when flushed. Rally calls: very soft whistles, something like those of *Perdica asiatica* in runs of about two seconds' duration, repeated every couple of seconds or so, 'rising gradually till it reaches a certain pitch which note is repeated a few times and then dies down more rapidly. This is also the female's usual call' (A. M. Primrose). It is syllabified as *tu-tu-tu-tu-tu-tu-tu* (Davison), and has a curious ventriloquistic quality. Breeding call of cock a pleasant triple note *kirikee, kirikee*, etc. The birds can be readily decoyed by means of caged call birds or an imitation of their calls, the approaching bird answering the challenge every few yards as he advances.

BREEDING. Season not well defined, variable locally, and covering most months of the year. Nest, a scrape in the ground, sometimes lined with a little grass; placed at the root of a bush or grass clump. Eggs, 4 to 7 and up to 10; creamy buff to café-au-lait with a fair gloss, indistinguishable from those of the Jungle Bush Quail. Average size of 140 eggs 25.4 × 19.5 mm. (Baker). Male evidently monogynous. Incubation by female alone; period 16-18 days. Both parents tend the young. The chicks fly at a very early age, even when still down-clad mites scarcely bigger than bumble-bees.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for subspecies Key. Chick (in down) inadequately described. 'With three stripes of a light cream colour extending down their backs' (Miss Cockburn, Nilgiris).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	81-87	14-16	23-25	40-44 mm.
♀♀	81-86	14-16	c. 24	33-45 mm.
	(once 92)			(SA, HW)

Weight ♂♀ 2.4 to 3.1 oz. (c. 70-85 gm.) — Hume.

COLOURS OF BARE PARTS. Iris light yellow-brown or hazel-brown. Bill, legs and feet deep red; in young birds duller red or brownish red.

PHEASANTS, PARTRIDGES, QUAILS 53

263. Northern Painted Bush Quail. *Perdica erythrorhynchos blewitti* (Hume)

Microperdix Blewitti Anonymous = Hume, 1874, *Stray Feathers* 2: 512 (Raipur) Baker, FBI No. 1956, Vol. 5: 382

LOCAL NAMES. *Sirsee lowra* (Mandla, Balaghat, Chanda—Madhya Pradesh); *Huker* (Bengal); *Huker gindri* (Santahali).

SIZE. Grey Quail —; length c. 16 cm. (6½ in.).

FIELD CHARACTERS. As for 262, q.v. See Key to the Subspecies, and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident in an area north and east of the range of the nominate race (262), viz. eastern Maharashtra (Bhandara, Chanda dists.), eastern Madhya Pradesh (Mandla, Balaghat, Bastar dists., etc.), Bihar, Orissa, and W. Bengal. Affects forest tracts and scrub jungle in low hilly deciduous biotope, up to c. 1000 metres elevation.

GENERAL HABITS, FOOD, VOICE and CALLS. As of 262. 'During the season of courtship the male utters a single loud note often repeated' (R. Thompson).

BREEDING. Season, extended and ill defined as in 262, *Nest and eggs* similar to those of *P. e. erythrorhynchos*.

MUSEUM DIAGNOSIS. Male distinguished from 262 by much broader white sincipital band (i.e. on front part of head, between forehead and crown), narrower black forehead, and black on chin being absent or obsolete. Brown greyish wash on breast stronger and coming lower down. More white on feathers of flanks.

Female paler and duller than ♀ 262.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	76-84	13-14	c. 26	39-44 mm. (Baker)

Weight ♂ ♀ 1.85 to 2.3 oz. (c. 50-70 gm.) — Hume.

COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet coral red.

PERDICA MANIPURENSIS Hume

Key to the Subspecies

- Upper surface boldly marked with black.....*P. m. manipurensis*
Upper surface faintly marked with black.....*P. m. inglisii*

264. Assam Painted Bush Quail. *Perdica manipurensis inglisii* (Ogilvie-Grant)

Microperdix inglisii Ogilvie-Grant, 1909, *Jour. Bom. nat. Hist. Soc.* 19: 1 and pl. (Goalpara, Assam) Baker, FBI No. 1958, Vol. 5: 384

LOCAL NAME. *Kāla goondri* (Goalpara, Assam).

SIZE. Grey Quail ±; length c. 20 cm. (7½ in.).

FIELD CHARACTERS. As for 265, q.v. See Key to the Subspecies.

PHEASANTS, PARTRIDGES, QUAILS 55

shoots sprouting, in the early morning and late afternoon. In flight and behaviour a typical bush quail.

FOOD. Grass seeds, wild lentils, ants and other insects.

VOICE and CALLS. Described from a captive female as 'a clear, softly whistled *whit-it-it-it-it*, each *it* slightly higher in tone till they tend to run into one another at the end. Repeated 3 or 4 times, becoming louder and higher each time' (Powell Connor).

BREEDING. Little known. Apparently only a single nest so far taken (13 May) on a grassy plateau surrounded by evergreen forest on the Manipur-Cachar border — a hollow scraped in the ground among grass roots. It contained 4 eggs exactly like those of *Perdica erythrorhynchos* (262) but whiter. They measured c. 30 × 24 mm.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	80-86	14-15	c. 25-26	45-52 mm.

Weight ♂ ♀ 2½ to 2½ oz. (c. 64-78 gm.) — Baker.

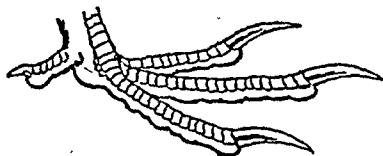
COLOURS OF BARE PARTS. Iris dark brown or hazel. Bill dark grey, yellowish at base. Legs and feet orange-red to deep vermillion; claws light brown.

MISCELLANEOUS. Claimed by one experienced sportsman (J. C. Higgins, Manipur) to be better for the table than any other game bird, surpassing francolin, garganey teal or junglefowl in the delicacy of its all-white flesh.

Genus ARBOROPHILA Hodgson

Arborophila Hodgson, 1837, *Madras Jour. Lit. Sci.* 5: 303. Type, by monotypy '*Perdix olivacea* Latham' = *Perdix torquola* Valenciennes

Superficially typical partridges but differing from both *Francolinus* and *Perdix* in habits and important structural details. There is a supra-orbital row of bones in the skull extending from the lachrymal to the post-orbital process such as is found in the Tinamous of the Neotropical Region. Tarsus comparatively longer than in francolins, without spurs, about equal in length to middle toe with claw. Claws on anterior toes long and straight. Wing short and rounded: first primary (as.) between 8th and 10th in length; 4th and 5th primaries subequal and longest. Tail of 14 soft feathers equal to about half length of wing.



Foot, x c. 1

The genus, containing the Hill Partridges, ranges from the western Himalayas right across to eastern Assam and through the Indochinese and Indomalayan regions.

54 GALLIFORMES

STATUS, DISTRIBUTION and HABITAT. Resident; local and parochial. Northern W. Bengal (duars) and Assam north of Brahmaputra river, from about Jalpaiguri to Sadiya. Affects damp grassland and scrub jungle especially in nullahs, in moist-deciduous foothills country.

GENERAL HABITS, FOOD, VOICE and CALLS. As of 265.

BREEDING. Nothing recorded except that adults showed signs of breeding (Goalpara, Assam) in the beginning of March, and a fully fledged young one was obtained on 11 January (C. M. Inglis).

MUSEUM DIAGNOSIS. Male differs from the nominate race (265) in being rather paler and less boldly marked with black above and below.

Female. Paler and more grey than ♀ *P. m. manipurensis*, with the black markings on lower plumage less conspicuous.

Young (immature). Browner than adult but more heavily marked with black. Bill dark grey, pale at tip and base of lower mandible. Legs and feet flesh colour.

MEASUREMENTS as in 265.

COLOURS OF BARE PARTS. Iris brown. Bill dark grey, lighter and sometimes tinged with yellow at base. Legs and feet orange-red, somewhat paler on hind tarsus; claws light brown.

265. Manipur Painted Bush Quail. *Perdica manipurensis manipurensis* Hume

Perdica manipurensis Hume, 1881, *Stray Feathers* 9: 467 (Bases of the hills in the southeastern portion of the Manipur plain)

Baker, FBI No. 1957, Vol. 5: 383

Plate 32, fig. 9

LOCAL NAMES. *Lanz sorbol* (= 'trap quail'), *Sorbol amubā* (= 'black quail') — Manipur.

SIZE. Grey Quail ±; length c. 20 cm. (7½ in.).

FIELD CHARACTERS. Overall effect, especially underparts, reminiscent of a miniature Black Partridge.

Male. Above. Forehead and sides of face rufous-chestnut, with a fine white line through eye. Upperparts dark slaty grey barred throughout and boldly blotched in the scapular region with velvety black. Below, chin and throat rufous-chestnut. Neck and upper breast ashy grey spotted with black. Rest of underparts rufous-buff, greyer on flanks, each feather with a bold black cross formed by a shaft-streak and a broader transverse band. Under tail-coverts black spotted with white.

Female duller and paler with no rufous on head. Rufous of underparts replaced by pale greyish buff, particularly pale on centre of chin and throat.

STATUS, DISTRIBUTION and HABITAT. Resident. Manipur and the Assam hill ranges south of Brahmaputra river: Cachar, Khasi, Naga, etc., hills up to c. 1000 m. elevation. Chittagong Hill Tracts, Bangladesh. Affects moist tall elephant-grass covered areas; in the Manipur Valley sometimes bogs and swamps. Not very rare but easily passed over till its characteristic call learnt and recognized. Believed to be getting scarcer in Manipur since c. 1930 (J. C. Higgins).

GENERAL HABITS. Keeps in coveys of 5 or 6. Lives in tall grass, is shy, and therefore seldom seen. Comes out into burnt grass patches with new

56 GALLIFORMES

Key to the Species

		Page
A	No chestnut on flanks..... <i>A. atrogularis</i>	62
B	Feathers of flanks more or less chestnut.....1	
1	Breast chestnut..... <i>A. mandellii</i>	63
	Breast brownish or grey.....a	
a	Crown olive-brown..... <i>A. rufogularis</i>	59
	Crown chestnut or olive-brown with black spots..... <i>A. torquola</i>	56

ARBOROPHILA TORQUEOLA (Valenciennes)

Key to the Subspecies

A	Breast brownish; crown olive-brown with black spots..... <i>A. t. torquola</i> (♀)	57
B	Breast grey, crown chestnut.....1	
1	Sides of neck more or less chestnut.....a	
	No chestnut on sides of neck.....a	57
a	Abdomen pure white..... <i>A. t. torquola</i> (♂)	56
	Abdomen rufescent..... <i>A. t. millardi</i>	58
	Rufous of abdomen richer and darker..... <i>A. t. interstincta</i>	

266. Simla Hill Partridge. *Arborophila torquola millardi* (Baker)

Arboricola torquola millardi Baker, 1921, *Bull. Brit. Orn. Cl.* 41: 101 (Koteghar) Baker, FBI No. 1960, Vol. 5: 388

LOCAL NAMES. *Roli*, *Rām chakra* (Himachal Pradesh); *Purna*, *Bān tetār* (Hindi).

SIZE. Grey Partridge —; length c. 28 cm. (11 in.).

FIELD CHARACTERS. As for 267, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. Himachal Pradesh and Punjab Himalayas, in Chamba, Kangra, Simla, etc. between c. 1550 and 3000 metres elevation, occasionally to c. 4000 m. Affects forest broken up by ravines and *khads* with heavy evergreen undergrowth.

GENERAL HABITS, FOOD, VOICE and CALLS. As of the nominate race (267).

Putative call described by Whistler (in the Simla hills c. 1800-2300 m. alt.) as 'a very gentle, melancholy, *poor* or *pheaw* — at closer quarters sounding more like *quaww*'. Heard throughout May, June and early part of July.

BREEDING. Season evidently, as in 267, April to June, the only nest recorded in this subspecies having the full clutch of 9 eggs completed on 2 May. Nest (in this case) a scraped-out hole in a bank, domed over with grass. Eggs. Average size of above clutch 44.0 × 32.2 mm. (Whistler).

MUSEUM DIAGNOSIS. Male (adult) differs from *A. t. torquola* (267) in having the chestnut of the crown less bright and darker. Breast paler, less pure grey, and tinged with ashy. Abdomen nearly always strongly suffused with rufous.

Female (adult) differs from ♀ 267 in having the chestnut of the throat much paler, and the breast paler and much more rufous-grey.

PHEASANTS, PARTRIDGES, QUAILS

57

Chick (in down), c. 1 day old. 'A broad band of chestnut from base of bill (where it is pinched in) to near the nape where it is 12.5 mm.; a broad buff supercilium extending down the side of the neck. A blackish brown streak from posterior corner of the eye broadening out over the ear-coverts. Back, to extremity of body, dark brown mottled lightly with red-brown. Side of body, including wing, mottled dark and lighter red-brown. Chin and throat pale buff. A band across breast dark brown mottled with buff and grey which also spreads along the flanks. Abdomen pale buff.

'Bill: upper and lower mandibles yellow except across the nostrils where it is horn. Legs and feet dusky yellow. Iris deep reddish brown' (A. E. Jones).

MEASUREMENTS. Wing ♂♂ 150-161; ♀♀ 144-155 mm. (Baker).

COLOURS OF BARE PARTS. As in 267.

267. **Common Hill Partridge.** *Arborophila torqueola torqueola* (Valenciennes)

Perdix torqueola Valenciennes, 1826 (1825), Dict. Sci. Nat., éd. Levrault, 38: 435 (Bengal)

Baker, FBI No. 1959 (part), Vol. 5: 386

Plate 31, fig. 6

LOCAL NAMES. *Pura*, *Bān tetār* (Hindi). Kumaon, Garhwal, Nepal, etc.); *Kohumbut* (Lepcha); *Pao-er* (Mishmi); *Dechui* (Cachar); *Duboi* (Nongowang, Assam).

SIZE. Grey Partridge —; length c. 28 cm. (11 in.).

FIELD CHARACTERS. A dumpy, short-tailed olive-brown partridge.

Male. *Above*. Crown and nape bright chestnut, the latter spotted with black. Narrow forehead and broad supercilium black. A black-spotted chestnut line under supercilium. Cheeks black. Ear-coverts bright chestnut. A ring of bare crimson skin round eye. Upperparts golden olive-brown finely barred or scalloped with black and broadly mottled with chestnut and black. *Below*, chin, throat and neck black, the last with white streaks. Breast grey, separated from foreneck by a white band. Rest of underparts grey and white, with broad chestnut streaks and white drops on flanks. Vent rufous-white with black bars. Under tail-coverts black and white.

Female. *Above*, similar but with the crown brown, streaked with black. *Below*, chin and throat rufous, spotted with black. Breast brownish, separated from throat by a chestnut instead of white band.

Young (immature) male like adult ♂ but with the supercilia absent or obsolete. No chestnut on flanks; only a little on wing-coverts. Underparts spotted with white from breast to vent.

STATUS, DISTRIBUTION and HABITAT. Resident. The Himalayas from Garhwal through Nepal, Sikkim, and Bhutan to extreme eastern Assam north of Brahmaputra river (NE. Frontier Agency Tract) from c. 1500 to 4000 metres elevation. Affects ravines, *khuds*, and hillsides where not too steep and clad in dense forest of *banj* oak (*Quercus incana*), laurel, and other evergreen trees and shrubs.

Extralimital. SE. Tibet.

GENERAL HABITS. Gregarious. Keeps in coveys of 5 to 10 birds in dense undergrowth, scratching for food amongst the rich mulch and humus on the forest floor. Trusts to its legs for escape, but when suddenly come upon

58

GALLIFORMES

or flushed by a dog, will fly strongly, manoeuvring dextrously through the maze of tree-trunks and other obstacles, and often take refuge up in a leafy branch. Roosts at night in trees, the covey sitting huddled together along a branch. Once flushed, and especially after being fired at, the bird difficult to flush a second time, either scuttling away through the undergrowth or lying low under leaves and bushes till danger has passed.

FOOD. Seeds, shoots, berries, insects, grubs, and tiny molluscs.

VOICE and CALLS. A single low mournful whistle, c. 1½ seconds long, repeated every two or three seconds, reminiscent of the awkward intake effort of a schoolboy learning to whistle. This repeated slowly two or three times and followed by a series of three to six mellow double whistles in ascending scale, vaguely reminiscent of the hawk-cuckoo. They have been rendered (SA) as *bobwhite*, *bobwhite*, *bobwhite*, or *do-eat*, *do-eat*, *do-eat* (first syllable short, second prolonged). Frequently one bird (♀?) leads off with a shrill continuous *kwikwikwikwik* etc. by way of invitation and accompaniment; a second (♂?) promptly joins in with the crescendo *bobwhite* calls, the duet ending rather abruptly when the climax is reached. The birds answer one another from different directions and are particularly vocal in the mornings and evenings.

BREEDING. *Season*, April to June/July, earlier at lower elevations, later at higher. *Nest*, from a rough scrape in the ground sparsely lined with grass, to a deeper cup well padded with same. Placed in dense ringal or scrub undergrowth in forest. *Eggs*, normally 3 to 5 but a clutch of 9 has been taken; pure china-white, glossy and with a fine texture. Average size of 60 eggs 40.6 × 31.9 mm. (Baker).¹ No other data on breeding biology recorded.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for Subspecies Key.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	144-160	c. 19-21 (from feathers)		
♀♀	c. 140-150	c. 21-23 (from skull)	c. 41-45	c. 60-80 mm. (SA)

Weight ♂♀ 8-13.6 oz. (c. 227-383 gm.)—Hume. 1 ♂ 400 gm. — SA.

COLOURS OF BARE PARTS. Iris brown to crimson-brown; orbital skin dusky pink to crimson-red. Bill dark brown to black. Legs and feet olive-brown to livid grey.

268. **Assam Hill Partridge.** *Arborophila torqueola interstincta* Ripley

Arborophila torqueola interstincta Ripley, 1951, Postilla, Yale Peabody Museum, No. 6: 1 (Mt Zephu, 93 miles E. of Kohima, eastern Naga Hills, Assam)

Baker, FBI No. 1959 (part), Vol. 5: 386

LOCAL NAME. *Inru whip* (Naga).

SIZE and FIELD CHARACTERS. As for 267, q.v. See Key to the Subspecies.

¹ Average size of 13 eggs in Brit. Mus. collection 43.6 × 33.3 mm. (Harrison & Parker, 1966, JBNHS 63: 749).

PHEASANTS, PARTRIDGES, QUAILS

59

STATUS, DISTRIBUTION and HABITAT. Resident. Assam south of Brahmaputra river, in the Upper Chindwin drainage area of the Naga Hills. Presumably also the Barail and higher hill ranges of north Cachar and north Manipur. Affects wet, temperate forest between c. 2200 and 2600 metres alt.

Extralimital. Upper Burma (Chindwin river drainage area).

GENERAL HABITS, FOOD, VOICE and CALLS. Nothing specifically recorded as different from 267. 'The birds were silent during our stay on the mountain [Mt Zephu at c. 2400 m.] in late November and early December, only occasional low calls being heard' (Ripley).

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Differs from the nominate race, *A. t. torqueola*, in being more richly and darkly coloured, and more heavily barred.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 267.

269. **Kachin Hill Partridge.** *Arborophila torqueola batemani* (Ogilvie-Grant)

Arboricola batemani Ogilvie-Grant, 1906, Bull. Brit. Orn. Cl. 16: 63

(Tiddim, near Fort White, Chin Hills)

Baker, FBI No. 1961, Vol. 5: 389

LOCAL NAMES. *Wogam*, *Gam tong* (Kachin).

SIZE and FIELD CHARACTERS. As for 267, q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION and HABITAT. Presumably this is the race that occurs in the hills of south Manipur. Needs verification.

Extralimital. Burma (Chin and Kachin Hills).

BREEDING. Not recorded in Indian limits.

MUSEUM DIAGNOSIS. Male (adult). Differs from the nominate race (267) in having the sides of the neck largely or entirely chestnut. Chin, throat, and neck more frequently marked with white. Chestnut on scapulars and inner secondaries darker, duller, and greater in extent.

Female similar to ♀ *A. t. torqueola* but generally more rufous on upperparts.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 267.

ARBOROPHILA RUFOGULARIS (Blyth)

Key to the Subspecies

Rufous throat with a band of black below..... *A. r. rufogularis*
No black band below rufous throat..... *A. r. intermedia*

270. **Rufousthroated Hill Partridge.** *Arborophila rufogularis rufogularis* (Blyth)

Arboricola rufogularis Blyth, 1850, Jour. Asiat. Soc. Bengal 18: 819 (Darjeeling)

Baker, FBI No. 1962, Vol. 5: 390

Plate 31, fig. 9

LOCAL NAMES. *Pura* (Kumaon); *Kohumbut* (Lepcha); *Pokhu* (Dafla).

SIZE. Grey Partridge —; length c. 27 cm. (10½ in.).

FIELD CHARACTERS. A dumpy short-tailed olive-brown partridge like 267.

60

GALLIFORMES

Male. *Above*, forehead grey; crown olive-brown stippled with black. Long supercilia greyish white. Sides of face white, speckled with black except on white moustachial stripe running from lower mandible to below dark brown ear-coverts. Small naked red patch round eye. Upperparts golden olive-brown, spotted with black on rump and upper tail-coverts. Scapulars and wing-coverts chestnut with large grey and black drops. *Below*, chin, throat, and sides of neck (almost meeting in a collar behind) rufous, spotted with black. A broad band of ferruginous-red with a narrow black line below it separating foreneck from slaty grey breast. Anterior flanks slaty grey broadly streaked with deep orange-chestnut and with white drops; posterior flanks brown with black crescentic spots.

Female has fewer black spots on chin and throat, and more white drops on breast and abdomen.

Young (immature) male. Throat unspotted, much paler than in adult. Underparts smoky slate colour with numerous white spots scattered all over.

STATUS, DISTRIBUTION and HABITAT. Resident. Kumaon (U.P.) and through Garhwal, Nepal, Sikkim, and Bhutan east to the Mishmi Hills (Assam) between c. 1000 and 2400 m. elevation, optimally c. 1500-1800 m., sometimes descending to c. 700 m. in winter. Occupies a lower altitudinal zone than the species *torqueola*, but occasionally their ranges overlap at the seam. Affects dense secondary scrub on abandoned cultivation, and heavy undergrowth in evergreen hill forest.

GENERAL HABITS. Similar to those of 267. Keeps in coveys of 6 to 12 in non-breeding season. Usually not shy, but an inveterate runner and difficult to flush without a dog. Looks deceptively large, almost the size of hen kaleej when it flies in the open, but as small as quail when creeping through thickets.

FOOD. Weed-seeds, fallen berries, shoots, insects and grubs, and small molluscs.

VOICE and CALLS. 'A beautiful clear loud double whistle, a sound like *Wheee-who*, repeated constantly and slightly ascending in scale with each repetition. It is a very loud ringing cry and can be heard at a long distance even in heavy jungle where sound carries so short a way. It is uttered principally in the breeding season in the early mornings and evenings, and once heard can never be forgotten' (Baker). This call, however, is putatively attributed by J. C. Higgins (Manipur) to *A. atrogularis* (272). He adds that its repetition 2 or 3 times is followed by a series of 3 short sharp whistles *whu-whu-whu* in an ascending scale. A mournful descending whistle, commonly uttered in late afternoon. Occasionally given at close intervals, gradually increasing in frequency and working up in scale until a sort of climax is reached. This is apparently a threatening or territorial call indulged in by two birds approaching each other through forest, and climaxing when the rivals close together (Ripley).

BREEDING. *Season*, from c. April in the lower hills to end July in the higher ranges. *Nest*, a hollow scraped in the ground in undergrowth more or less well lined with grass and leaves, sometimes domed over with growing grass. *Eggs*, normally 4 or 5 (up to 8 recorded by Baker), china-white as in 267. Average size of 91 eggs in the Brit. Mus. collection 39.9 × 30.3 mm. (Harrison & Parker, 1966, JBNHS 63: 749). No other data available.

PHEASANTS, PARTRIDGES, QUAILS

61

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for subspecies Key. Chick (in down). Above, a broad reddish brown stripe on each side from the forehead passing above the eye, including the sides of the crown, to nape, the stripes of the two sides meeting anteriorly on the forehead. Ear-coverts and a distinct collar black; remainder of upper plumage chocolate-brown. Below, chin, throat and upper breast brownish cream; breast and flanks chocolate-brown, paler than in upper plumage; abdomen brownish cream (Biswas, 1960, JBNHS 57: 305). Young (first plumage). Above as in adult but duller, with crown vermiculated instead of spotted with black. Below, flanks vermiculated brown and black. Centre of breast and abdomen paler and whitish (Baker).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	138-149	18-19	40-44	50-56 mm.
♀♀	(126) 131-142			

(Baker, SDR, H. Stevens)

Weight ♂♀ 7-10½ oz. (c. 200-300 gm.) — Hume.

COLOURS OF BARE PARTS. Iris brown or red-brown; ocular skin pinkish red or dull crimson. Bill dark brown. Legs and feet pinkish red to dull coral-red; claws horny.

271. Arakan Hill Partridge. *Arborophila rufogularis intermedia* (Blyth)

Arboricola intermedia Blyth, 1856, Jour. Asiat. Soc. Bengal 24: 277 (Arrakan)
Arborophila rufogularis tenebrarum Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 30 (Tura Mountain, Garo Hills)
 Baker, FBI No. 1963, Vol. 5: 391
 Plate 31, fig. 10

LOCAL NAMES. *Dao bui*, *Daobui yéghashi* (Cachar); *Inrui whip* (Naga); *Duboi* (Assam).
SIZE AND FIELD CHARACTERS. As for 270, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; locally not uncommon, but rarely seen and its abundance difficult to detect till its call known. Assam east and south of Brahmaputra river, through Manipur, Mizo (Lushai Hills), and Chittagong Hill Tracts (East Pakistan). Affects dense undergrowth and shady nullahs in evergreen hill forest between c. 600 and 1800 metres elevation. In identical biotope as *torqueola* where their altitudinal ranges overlap.

Extralimital. Arakan Yomas, Chin and Kachin Hills of Burma.

GENERAL HABITS, FOOD, VOICE AND CALLS. As of the nominate race (270).

BREEDING. Season, overall April to August, chiefly May and June. Nest, the typical hollow scraped in the ground in dense evergreen undergrowth, lined either sparsely or thickly and compactly with grass and leaves; sometimes canopied by growing grass. Eggs, reportedly 3 to 6, china-white as of the genus. Average size of 150 eggs 39.2 × 29.8 mm. (Baker). Male evidently monogynous; does not incubate but assists in tending the chicks. Incubation period c. 20-21 days (Baker).

MUSEUM DIAGNOSIS. Male. Similar to *A. r. rufogularis* but spots on crown larger and a deeper black. Below spots on chin and throat so close together that

PHEASANTS, PARTRIDGES, QUAILS

63

and Chittagong Hill Tracts) from the foothills at almost plains level to c. 1500 metres elevation. Commoner below c. 750 m. than above. Affects wet undergrowth in less dense evergreen forest than *A. torqueola* or *A. rufogularis*, as well as bamboo jungle.

Extralimital. Upper Burma (Chin and Kachin Hills, Arakan).

GENERAL HABITS AND FOOD. As of 267 and 270, q.v. Gregarious. Keeping in pairs or scattered coveys of 5 to 8, flushing one at a time and only when almost underfoot, thereby giving the false impression of being solitary birds.

VOICE AND CALLS. 'Often heard, especially towards dusk — a rolling whistle *whew*, *whew* repeated many times, and winding up with a sharper and more quickly uttered *whew*' (Cripps). In breeding season 'a very beautiful, loud, clear double whistle audible at very great distances' (Baker). Both these presumably refer to the same thing. Cf. also Higgins under 270. Rally call: a very soft and mellow whistle from different directions when a covey is scattered.

BREEDING. Season, March-April at plains level, to June-July at higher elevations. Nest, a hollow scratched in the ground under scrub in grassland or bamboo jungle, usually well padded with grass and leaves. Eggs, overall 3 to 7; normal clutch 4 or 5. Rather glossy china-white as typical of the genus. Average size of 42 eggs in the Brit. Mus. collection 37.0 × 28.3 mm. (Harrison & Parker, 1966, JBNHS 63: 750). Other data on breeding biology not available.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	135-147	18-20	c. 42-44	c. 60-65 mm.
♀♀	126-130			

(Baker)

Weight ♂♀ 7-11 oz. (c. 200-312 gm.) — Hume.

COLOURS OF BARE PARTS. Iris brown or red-brown. Bill ♂ black, ♀ dark brown. Orbital and gular skin bright pink; brilliant deep red in breeding season. Legs and feet ♂ dull orange to bright orange-red, or red in breeding season; in ♀ dull wax yellow to same tinged with red.

273. Redbreasted Hill Partridge. *Arborophila mandellii* Hume

Arborophila Mandellii Hume, 1874, Stray Feathers 2: 449 (Bhutan Duars)
 Baker, FBI No. 1966, Vol. 5: 395
 Plate 31, fig. 8

LOCAL NAME. *Pao-er* (Chulikatta Mishmi).

SIZE. Grey Partridge —; length c. 28 cm. (11 in.).

FIELD CHARACTERS. A typical dumpy hill partridge.

Male and Female. Above, crown and nape dull chestnut-brown. Dark grey supercilial stripes from eyes continued behind to meet on upper hindneck. A small white moustachial streak. Lower hindneck (all round) and upper back reddish chestnut with black spots. Rest of upperparts olive, spotted and narrowly scalloped with black. Below, chin and throat pale olive-chestnut separated from deep chestnut upper breast by a double gorget of

62

GALLIFORMES

these parts appear almost black. Lower margin of rufous throat meeting slaty grey of breast without any intervening black line. Abdomen generally paler slate.

Female like that of 270, but with no black band below chestnut throat. More black-spotted on chin and throat, but less densely than in male.

Young (immature). Like adult but with breast, abdomen and flanks profusely spotted with white. Chin and throat rather rufous. Legs, orbital and gular skin dull yellowish.

Young (in first plumage). Above like adult but duller. Crown vermiculated rather than spotted with black. Below, flanks vermiculated with brown and black. Centre of breast and abdomen paler and whitish.

Chick (in down). Above, bright chestnut-brown. Supercilium and cheeks pale buffy brown; a dark brown line from eye dividing the two. Below dingy white.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	138-148	c. 18-19	c. 37-42	52-60 mm.
♀♀	134-143			

(Baker)

Weight ♂♀ 12-13 oz. (c. 340-370 gm.) — Hume.

COLOURS OF BARE PARTS. Iris brown; orbital and gular skin red. Bill black, reddish at gape. Legs red; claws horny. In breeding season the reds much brighter and more vivid.

272. Whitecheeked Hill Partridge. *Arborophila atrogularis* (Blyth)

Arboricola atrogularis Blyth, 1850, Jour. Asiat. Soc. Bengal 18(2): 819
 (Assam, Sylhet, and Arrakan)

Arborophila atrogularis rupchandi Koelz, 1953, Jour. zool. Soc. India 4: 155
 (Bhutan at Menoka, Assam)
 Baker, FBI No. 1965, Vol. 5: 393
 Plate 31, fig. 7

LOCAL NAMES. *Peura* (Sylhet); *Duboi*, *Dubore* (Assam); *Sán batii* (Chittagong); *Daobui*, *Daobui yéghashi* (Cachar); *Inrui whip* (Naga).

SIZE. Grey Partridge —; length c. 28 cm. (11 in.).

FIELD CHARACTERS. A dumpy short-tailed olive-brown forest partridge.

Male and Female. Above, forehead and supercilium grey; crown olive-brown; nape rufous, broadly spotted with black. A black line below supercilium from lores to above cheeks. Cheeks white, running behind into rufous buff ear-coverts. Upperparts light olive-brown stippled and barred with black. Scapular region barred and mottled with black and rufous. Below, chin, throat, and foreneck black diffusing through black-and-white into grey of breast and flanks. Flanks grey, without any chestnut marks but with white drops posteriorly. Centre of abdomen whitish. Under tail-coverts rufescent, edged with white, spotted with black.

STATUS, DISTRIBUTION AND HABITAT. Resident. Assam (Dibrugarh dist., Dafia, Miri, Mishmi hills), and south of Brahmaputra river in the Khasis and all along the Valley to the western slopes of the Garos. Also Naga Hills, Manipur, Mizo, Tripura, and adjoining East Pakistan (Sylhet, Tippera,

GALLIFORMES

64

black and white. Lower breast to vent grey marked on flanks with chestnut and white. Under tail-coverts olive with white spots and rufous mottling.

STATUS, DISTRIBUTION AND HABITAT. Resident. Sikkim and Bhutan duars, and Assam hills north of Brahmaputra river east through NEFA. Occupies an altitudinal zone between c. 350 and 2450 metres, possibly somewhat higher. Affects dense undergrowth in evergreen forest.

Extralimital. Presumably SE. Tibet.

GENERAL HABITS, FOOD. Nothing specifically recorded.

VOICE AND CALLS. Putatively a loud, rich, long-drawn *quic* followed by a series of ascending double notes leading to a climax. Similar in pattern to call of *A. torqueola* (267), but distinct (SA).

BREEDING. The only reliably known nest was taken at c. 2400 m. alt. in Sikkim on 3 June. It contained 4 fresh eggs measuring about 43 × 33 mm. (Baker). No other data available.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Feathers of upper back and interscapular region finely barred with black. Lower margin of rufous throat sharply demarcated from breast by a black line with a white one above it. See also Key to the Species.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	133-145	19-20	43-45	56-58 mm.

(Baker)

COLOURS OF BARE PARTS. Iris brown to red-brown. Bill black. Legs and feet reddish.

Genus *BAMBUSICOLA* Gould

Bambusicola Gould, 1863 (1862), Proc. Zool. Soc. London: 285. Type, by subsequent designation, *Paridix thoracica* Temminck

In its long tail and structure closer to *Galloperdix*; in coloration and general appearance to *Arborophila*.

Claws of moderate length and curved as in *Francolinus*. Tarsus long and strong, considerably longer than middle toe and claw; furnished with a spur, sometimes also in female. Tail of 14 feathers, well graduated, equal to more than three-quarters length of wing. Wing rounded: fifth primary (as.) longest, 2nd equal to 10th, first much shorter. Sexes alike.

Range: Assam, N. Burma to China and Formosa. Only one species and race within Indian limits.

274. Assam Bamboo Partridge. *Bambusicola fytchii hopkinsoni* Godwin-Austen

Bambusicola hopkinsoni Godwin-Austen, 1874, Proc. Zool. Soc. London: 44
 (Khasia Hills, Assam)

Bambusicola fytchii rincheni Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 30
 (Sangau, Lushai Hills)
 Baker, FBI No. 1946, Vol. 5: 366
 Plate 32, fig. 15

LOCAL NAMES. *Das bui lai* (Cachar); *Wákrék* (Manipur, ud = bamboo, krék = the 'scream' of the bird as it flushes).

PHEASANTS, PARTRIDGES, QUAILS

65

SIZE. Grey Partridge +; length c. 35 cm. (14 in.).

FIELD CHARACTERS. A comparatively long-tailed rufous-brown partridge. Above, crown and nape rufous-brown. Face rufous-buff with a broad rufescent white supercilium to nape, and a broad dark rufous-brown (or blackish) line below it behind eye. Upperparts grey-brown, broadly streaked with chestnut and spotted with blackish chestnut in scapular region; vermiculated with grey-brown on lower back, rump, and tail. Wing quills chestnut-brown. Tail barred brown and buff. Below, chin, throat, and foreneck rufous-buff. Breast chestnut, spotted and streaked with white and grey. Rest of underparts buff, with large black heart- or half-moon shaped spots except on centre of abdomen and vent. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident. Assam hills south of Brahmaputra river from above Margherita in Lakhimpur through Patkai, Naga, Cachar, Khasi, Jaintia, Garo, and Mizo (Lushai) hills, and Manipur. East Pakistan (Sylhet, Chittagong Hill Tracts). Affects open scrub jungle bordering rice fields and pastureland in foothills country, sometimes venturing a few miles out in the adjacent plains. In Manipur in low oak and willow scrub along banks of streams, mixed with elephant grass and *Rubus* thickets, etc. Partial to patches of a wild cardamom-like plant (known as *pulleri* in Manipuri and *tirapāt* in Assamese — *Alpinia* sp.) in which large numbers usually found. Normally at low elevations, but sometimes ascending to c. 2000 metres. In spite of its substantive name not predominantly restricted to bamboo forest.

Extralimital. Burma (Chin Hills, northern Arakan Yomas).

GENERAL HABITS. Keeps in coveys of 5 or 6, presumably old birds and their last brood, which break up into pairs about March. Cocks thereafter very noisy, flying up every now and then with a flutter of wings to a mound or tree stump from early dawn, crowing challenges two or three times, then dropping to earth. The birds come out in the open morning and evening to scratch for food, seldom straying far from water (streams etc.). Flight recorded as diagnostically different from that of Black Partridge found in the same terrain, often side by side. Flushes when almost trodden on, flies a few metres and tumbles suddenly into the tall grass. Occasionally takes refuge in trees.

FOOD. Buds, shoots, seeds, grain, berries, and insects (grasshoppers, crickets, termites, ants, grubs, etc.).

VOICE and CALLS. Crow of cock somewhat 'similar to call of Black Partridge but less shrill and high pitched: *Che-chirree-che-chirree, chirree, chirree, chirree*'. Another observer (J. C. Higgins, Manipur) finds this chatter more like *Pishup, pishup, pishup, pishup*, and so on indefinitely. According to P. F. Wickham (Burma) it sounds 'as if most of the covey were shouting, and like the English partridge they generally "scream" a bit when put up by dogs or walked up by the guns'. Apparently the female also utters 'discordant squawks' in the nature of crowing.

BREEDING. Season, chiefly March through May. Nest, a scrape in the ground padded with grass and leaves, placed in scrub, bamboo jungle or grassland. Eggs, 4-6, creamy buff to deep warm buff, unspotted, fine textured and hard-shelled. Average size of 200-eggs 40.2 × 29.6 mm. (Baker). Cock believed to be monogynous, taking no part in incubation but helping to tend the young. Hen a close sitter; period of incubation 18-19 days.

PHEASANTS, PARTRIDGES, QUAILS

67

275. Red Spurfowl. *Galloperdix spadicea spadicea* (Gmelin)

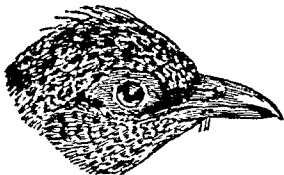
Tetrao spadiceus Gmelin, 1789, Syst. Nat. 1(2): 759 (Madagascar, ex Sonnerat, error = India)

Baker, FBI No. 1940, Vol. 5: 358

Plate 31, fig. 11

LOCAL NAMES. *Chhōti jūngli mūrghi* (Hindi, Madhya Pradesh); *Chākotri, Kōkātri, Kāstoor* (Marathi); *Chakharā* (Gujarati); *Sarava kozhi* (Tamil); *Terra kodī, Jita kodī* (Telugu).

SIZE. Grey Partridge +; $\frac{1}{2}$ grown village hen —. Length c. 36 cm. (14½ in.).



♂, × c. 1

FIELD CHARACTERS. A reddish brown, longer tailed partridge-like bird.

Male. Above, crown dark brown, paler and greyer on face and neck. Upperparts rufous-chestnut with black and rufous vermiculations and greyish brown scalloping. Below, rufous chestnut scalloped with greyish brown. Chin whitish brown. 2 to 4 pointed spurs on each leg. A naked brick-red patch round eye.

Female. Above, forehead sandy brown; crown and nape blackish brown. Upperparts greyish or sandy with rufous tinge, finely barred with black. Below, chin and throat whitish. Breast and flanks pale rufous-chestnut, spotted with black. A naked reddish patch round eye. One or two pointed spurs on each leg.

Young (immature). Male like adult female but more richly and deeply coloured, with more black in proportion to buff and rufous.

STATUS, DISTRIBUTION and HABITAT. Resident. Uttar Pradesh and West Nepal terai. Widely scattered over peninsular India south of the Gangetic Plain in Gujarat (north to c. Palanpur), Madhya Pradesh, southern Bihar, Orissa, Maharashtra, Andhra, Madras (including Nilgiris), Mysore (including Coorg) and northern Kerala (Wynaad). Affects stony, scrubbed foothills country and bamboo jungle cut up by watercourses and overgrown with brushwood in dry- and moist-deciduous biotope, normally below c. 1000 metres altitude. In S. India, quite numerous in coffee estates and lantana patches, even close to villages.

GENERAL HABITS. Keeps in pairs or small parties of 3 to 5 to scrubby undergrowth in broken country scratching amongst the mulch for food. Is shy and wary and a great skulker, oftener heard than seen, scuttling away on the least alarm, dodging from cover to cover, generally running uphill whenever it has the choice. Very fast on its legs, and reluctant to fly except when hard pressed. Roosts at night in trees and will also take refuge in the leafy branches of one when suddenly come upon. Seldom flies far and usually only to 'hedge-hop', thus placing more thickets between itself and the observer and continuing to run again as soon as it touches down, tail open fanwise and carried partly erect. Very parochial; addicted to favourite beats where may be found day after day. Overgrown ruins of jungle forts

66

GALLIFORMES

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	141-156	18-20	c. 44-47	85-112 mm. (Baker)

Weight ♂♂ 10-14 oz. (c. 285-400 gm.); ♀♀ c. 12 oz. (c. 340 gm.) — Hume.

COLOURS OF BARE PARTS. Iris hazel or yellow-hazel. Bill dark horny brown, paler at tip and on lower mandible. Legs and feet greenish brown; claws bluish. Spurs whitish horny.

MISCELLANEOUS. As a game bird provides excellent sport if walked up with beaters and a couple of dogs. It is plentiful within its range, easily flushed, and has a quick getaway and straight and strong flight. Best season's bag recorded in Manipur 128 birds (1928-9). Best day's bags to 2 guns, 20, 23, and 27 birds along with other small game (J. C. Higgins).

Genus GALLOPERDIX Blyth

Galloperdix Blyth, 1844, Jour. Asiat. Soc. Bengal 13(2): 936, note.

Type, by monotypy, *P. spadiceus* = *Tetrao spadiceus* Gmelin

Contains the Spurfowl, exactly midway between junglefowl and partridge in appearance; like a small hen but with a partly ridge-like tail, i.e. not laterally compressed. Wing short and rounded: first primary (as.) shortest, 5th or 6th longest or subequal. Tail of 14 feathers, slightly graduated, about two-thirds to three-quarters length of wing. Tarsus long and strong, with 2, 3, or sometimes 4, spurs on each leg in male; 1 or 2 in female. No wattle or comb as in junglefowl (*Gallus*), but a patch of brick-red naked skin round eye, much brighter in breeding season. Sexes dimorphic.

Genus endemic to peninsular India and Ceylon.

Key to the Species

	Males	Page
A	Breast chiefly chestnut or rufous..... <i>G. spadicea</i>	67
B	Breast buff with black spots..... <i>G. lunulata</i>	70
C	Breast chiefly white..... <i>G. bicalcarata</i>	71
	Females	
A	Breast chestnut with black tips to the feathers..... <i>G. spadicea</i>	67
B	Breast ochraceous-brown..... <i>G. lunulata</i>	70
C	Breast chestnut without black tips..... <i>G. bicalcarata</i>	71

GALLOPERDIX SPADICEA (Gmelin)

Key to the Subspecies

	Males	
A	General colour chestnut; crown brown..... <i>G. s. spadicea</i>	67
B	General colour bright chestnut; crown blackish..... <i>G. s. stewarti</i>	69
C	General colour greyish-chestnut; paler everywhere..... <i>G. s. caurina</i>	68
	Females	
A	Above grey with only a faint rufous tinge..... <i>G. s. spadicea</i>	67
B	Above rufescent-grey; darker generally..... <i>G. s. stewarti</i>	69
C	Above very pale with no rufous tinge..... <i>G. s. caurina</i>	68

68

GALLIFORMES

are favourite haunts. The birds usually rummage under low thorn thickets, seldom venturing out into the open except on forest paths, and edge of harvested fields bordering forest, in the early mornings and evenings.

FOOD. Seeds, tubers, berries and drupes (e.g. *Zizyphus* and *Lantana*), land molluscs, and insects, especially termites. A quantity of grit is usually swallowed.

VOICE and CALLS. A loud cackling *kuk-kuk-kuk-kukaak* like domestic hen after she has laid an egg when suddenly come upon and flushed. The cock has a peculiar chuckle-like crow — a quick-repeated rattling *k-r-r-r-kwek, kr-kr-kwek, kr-kr-kwek*, etc. reminiscent of the calls of a guineafowl. Its Marathi name *Kōkātri* is distantly onomatopoeic.

BREEDING. Season, overall January to June varying with local conditions, but eggs may be found practically throughout the year. Nest, a shallow depression scraped in the ground in dense bamboo or scrub jungle, sometimes sparsely lined with leaves and grass. Eggs, commonly 3 to 5, buff coloured, very like small eggs of the village *mūrghi*. Average size of 44 eggs 40.4 × 29.5 mm. (Baker). Cock monogynous. Does not incubate but assists in tending the young. Period of incubation unknown. Hen timid, readily deserting nest and eggs on disturbance. When brood of chicks disturbed, both parents become quite distracted, floundering about as though in *extremis*, while chicks freeze and become completely invisible among the dead leaves.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for subspecies Key. A feature unrecorded in published descriptions is the tuft of somewhat elongated feathers on crown in both sexes, often raised into a crest in life.

Chick (in down). Undescribed.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
13 ♂♂	153-165	22-26	43-52	120-143 mm.
9 ♀♀	140-160	21-26	43-46	105-123 mm. (SA, HW)

Baker gives Wing ♂♂ 145-166; ♀♀ 134-163 mm.

Weight ♂♂ 11-16 oz. (c. 284-454 gm.) — Wm. Davison, Mysore.

COLOURS OF BARE PARTS. Iris yellow-brown to hazel-brown: naked orbital skin brick-red in ♂, duller red in ♀. Bill horny brown, reddish at base, paler on lower mandible. Legs reddish brick or reddish brown, sometimes with a greenish tinge; spurs horny.

276. Aravalli Red Spurfowl. *Galloperdix spadicea caurina* Blanford

Galloperdix spadicea var. *caurina* Blanford, 1893, Fauna Brit. Ind., Bds. 4: 107

(Mt Abu, Southern Rajputana)

Baker, FBI No. 1942, Vol. 5: 361

LOCAL NAME. *Chhōti jūngli mūrghi* (Hindi).

SIZE and FIELD CHARACTERS. As for 275, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. Aravalli Hills in southern Rajasthan (Sirohi, Udaipur). Common about Mt Abu; most plentiful

PHEASANTS, PARTRIDGES, QUAILS

69

between c. 450 and 900 m. elevation. Intergrades with the nominate race around Hathidhara in Banaskantha (Gujarat). Birds from Asirgarh in Madhya Pradesh (c. 21°30'N., 76°20'E.) much greyer and closer to this form (D'Abreu, JBNHS 35: 219). Affects scrub and bamboo foothills jungle. GENERAL HABITS, FOOD, VOICE AND CALLS. As of the nominate race (275). BREEDING. Season, May and June recorded, but probably also other months. Nest and eggs as in 275.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

Male. Above, chestnut centres to feathers much paler; grey margins (scalloping) wider. Below, much paler than 275.

Female. Above, black barring almost absent. Below, chestnut much paler, the scalloping paler grey; black markings greatly reduced.

MEASUREMENTS as quoted by Baker from G. King, Wing 154-173 mm. Whether *aurina* is in fact larger than the nominate race, as thus suggested, needs confirming. COLOURS OF BARE PARTS. As in 275.

277. Travancore Red Spurrow. *Galloperdix spadicea stewarti* Baker

Galloperdix spadicea stewarti Baker, 1919, Bull. Brit. Orn. Cl. 40: 18

(Ancichardi, Travancore)

Baker, FBI No. 1941, Vol. 5: 360

LOCAL NAMES. Mullan kōzhi (Malayalam); Saravō kōzhi, Chākūtti kōzhi (Tamil). SIZE AND FIELD CHARACTERS. As for 275, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Kerala excluding Wynaad. Common. Affects lantana scrub on abandoned forest clearings, undergrowth in bamboo forest, etc. in moist-deciduous biotope: foothills and up to c. 1250 metres elevation.

GENERAL HABITS, FOOD, VOICE AND CALLS. As of the nominate race (275).

BREEDING. Season irregular: January to April, and September-October recorded, but probably also breeds in other months excepting those of the heaviest monsoon (June-August). Nest and eggs indistinguishable from those of the nominate race, the latter averaging slightly larger and paler. Average size of 36 eggs 41.3 × 30.4 mm. (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies.

Male. Above bright chestnut-rufous with the pale scalloping absent or obsolete. Vermiculations on lower back entirely absent; on rump and upper tail-coverts almost so. Below, chestnut very rich, extending to vent.

Female. Above and below, much more richly and brightly coloured than in 275.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
6 ♂♂	153-164	22-25	49-55	116-136 mm.
2 ♀♀	148-150	20-21	41(1)	91-118 mm. (SA)

Baker gives Wing ♂♂ 145-161; ♀♀ 148-150 mm.

COLOURS OF BARE PARTS. As in 275. Legs and feet sometimes salmon-pink or orange-coral; claws and spurs horny brown.

PHEASANTS, PARTRIDGES, QUAILS

71

FOOD. Seeds, tubers, berries and drupes (e.g. *Zizyphus oenophia*, *Lantana*, *Ficus* spp.), tiny land molluscs, and insects — especially termites. Also flowers of *Mowia* (*Basia latifolia*) in season.

VOICE AND CALLS. Male when flushed utters 'a curious bubbling, half-scolding clucking note' (Pitman). Male has 'a fine cackling sort of call very fowl-like' (Jerdon). 'A peculiar loud *chur, chur, chur*, rapidly repeated, anything but fowl-like' (Blewitt)!

BREEDING. Season overall January to June, principally February to early May. Possibly also in other months locally, e.g. August in the Deccan (Sparrow). Nest, a scrape in the ground lined with grass and leaves, placed deep under a boulder or root, or on a bed of dry bamboo leaves in the heart of a clump, usually well concealed. Eggs, 3 or 4, sometimes 5, pale buff, very like small eggs of the country fowl. Average size of 25 eggs 40.9 × 29.3 mm. (Baker). As in *G. spadicea* both parents tend the brood assiduously and indulge in distraction display to lead off the intruder from the 'frozen' and perfectly camouflaged chicks. Incubation evidently by female alone; period unknown.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Coloration on wings of adult males very variable, and apparently unconnected with age. In some examples amount of metallic green on wing-coverts so great that the chestnut is visible only on their outer half (viewed *en masse*), and even then a considerable part of the feathers is glossy green. In other examples wing-coverts practically all chestnut with the metallic green confined to inconspicuous tips on many of the feathers. There is similar variation in amount of metallic green of scapulars and central back, but in all cases the white spotting on these persists.

Chick (in down). Above, light chestnut-rufous; darkest on head and a broad dorsal line. Below, dull pale earthy brown, more chestnut on throat, breast, thighs, and vent.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
8 ♂♂ ad.	148-167	22-25	40-45 (4 msd.)	111-129 mm.
8 ♀♀ ad.	132-157	21-23	36-44 (3 msd.)	99-128 mm. (SA, HW)

Baker gives Wing ♂♂ 144-161; ♀♀ 138-159 mm.

Weight ♂♂ 9-10 oz. (c. 255-285 gm.); ♀♀ 8-9 oz. (c. 226-255 gm.) — Hume.

COLOURS OF BARE PARTS. Iris hazel brown. Bill horny brown, paler at chin. Legs and feet greyish olive-brown; claws and spurs horny brown. Spurs in ♂ 1 to 3, generally 2 on each leg, sometimes 3 on one 2 on the other. In ♀ generally 1 on each leg.

279. Ceylon Spurrow. *Galloperdix bicalcarata* (J. R. Forster)

Perdix bicalcarata J. R. Forster, 1781, Ind. Zool.: 25, pl. 14 (Ceylon)

Baker, FBI No. 1944, Vol. 5: 363

Plate 31, fig. 12

LOCAL NAMES. *Haben kukkula* (Sinhala); *Sōma kōzhi kōzhi* (Tamil).

70

GALLIFORMES

278. Painted Spurrow. *Galloperdix lunulata* (Valenciennes)

Perdix lunulata Valenciennes, 1825, Dict. Sci. Nat., ed. Levaillant, 38: 446 (Bengale)
Baker, FBI No. 1943, Vol. 5: 362

Plate 31, fig. 13

LOCAL NAMES. *Askal*, *Kainjer* (Orissa); *Hutkah* (Gondi); *Kalkodi* (Tamil); *Jittu kōdi* (Telugu).

SIZE. Grey Partridge; length c. 32 cm. (12½ in.).

FIELD CHARACTERS. A partridge-like bird distinguished from francolins by longer tail and very distinctive coloration.

Male (adult). Above, forehead and crown metallic greenish black, stippled with white elongate drops. Sides of head, and neck all round, black with broader white spots. No crest or bare orbital skin as in *G. spadicea*. Upperparts chestnut marked with black-bordered white eye-spots or ocelli; replaced by fine black stippling, or absent, on lower back. Scapulars and some wing-coverts metallic green. Tail blackish, faintly glossed with green. Below, breast and anterior abdomen buff, with triangular black stippling. Posterior abdomen, flanks, and under tail-coverts chestnut, the former with black-edged white spots, the last black-tipped.

Female (adult). Above, forehead, supercilia and sides of head dark chestnut. Crown black with chestnut shaft-stripes. A chestnut-buff moustachial stripe from gape. Upperparts including wings dark brown tinged with olive. Below, chin, throat, and cheeks buff, mottled with chestnut. Rest of underparts olivaceous brown, paler and yellower on breast.

Young (immature) male like adult female but duller. Above, much freckled and barred with dull black and rufous-brown. Below, more earthy brown and much freckled with buff.

STATUS, DISTRIBUTION AND HABITAT. Resident. Continental and peninsular India south of the Gangetic Plain, roughly south of the rivers Sindh (in Gwalior dist., M.P.), Yamuna (Jumna) and Ganga (Ganges). Not in Rajasthan or Gujarat or in the coastal strip west of the Western Ghats. Commoner in the central and eastern parts of the Peninsula than western. Range largely overlaps and/or jigsaws confusingly with that of *G. spadicea*, but as a rule this species more addicted to drier rockier foothills and broken terrain covered with dense, impenetrable thorn scrub (e.g. *Anogeissus*, *Acacia*, *Mimosa*, *Bridelia*) and bamboo jungle, up to c. 1000 metres elevation. Partial to grassy hill crests and ridges in such.

GENERAL HABITS. Keeps in pairs or family parties of 3 to 5, or 6. Is even a greater skulker than Red Spurrow. Extremely reluctant to fly unless really hard pressed or fired at while scuttling through the undergrowth — then only to 'hedge-hop' a few yards over the thickets and continue sprinting immediately on alighting. After this, almost impossible to flush a second time, the bird taking refuge in some hole or fissure of rock and refusing to budge in spite of much din and beating of bushes. Very swift on its legs, clucking as it runs on disturbance, with tail spread and partly erect, hopping from rock to rock on a steep hillside with agility. Thus the best way to shoot them is to walk along the crest of a scrub-covered ridge with a beater about 20 yards below on either side. On disturbance the bird will invariably run uphill to the open ridge and then launch in the air to hurl itself down the opposite slope offering fairly easy shots.

72

GALLIFORMES

SIZE. Grey Partridge + or half-grown village fowl. Length c. 34 cm. (13½ in.).

FIELD CHARACTERS. 'The cock with his white-spangled black foreparts and dark chestnut hindparts, is unmistakable' (G. M. Henry).

Male (adult). Above, forehead, crown, nape and hindneck black with white shaft-stripes; naked red orbital skin. Rest of upperparts black and chestnut with white shaft-stripes and elongated spots. Lower back and rump chestnut, finely vermiculated with black. Upper tail-coverts and tail black. Below, chin white; throat and sides of head white, streaked with black. Sides of breast, and flanks, black broadly streaked with white. Breast and anterior abdomen white; posterior abdomen and under tail-coverts blackish with whitish spots.

Female (adult). Crown blackish; forehead and sides of head paler; naked orbital skin red, chin whitish. Rest of plumage above and below dull chestnut, vermiculated with black except on breast.

STATUS, DISTRIBUTION AND HABITAT. Species endemic to Ceylon. Resident. Locally distributed in the forests throughout the Wet zone, in parts of the Eastern and Uva Provinces (Dry zone), and in the hills to c. 2000 metres (Phillips). Not uncommon in the more densely forested parts of its range both in the low country and the hills.

GENERAL HABITS. Nothing recorded as specifically different from the Indian species.

FOOD. Seeds, fallen berries, termites and other insects, and predominantly *Strobilanthes* ('nillu') seeds in flowering years.

VOICE AND CALLS. 'A peculiar ringing cackle consisting of series of three-syllabled whistles, each series on a higher note than the preceding one and the last dropping suddenly to the starting note: *yuhuhu, yuhuhu, yuhuhu, yuhuhu, yuhuhu, yuhuhēyū*. This cackle is uttered by the male and is replied to by other males in the neighbourhood in similar strains, so that for some minutes at a time, and several times during the morning, the welkin rings with their music' (G. M. Henry).

BREEDING. Season, during the northeast monsoon — November to March; also occasionally July to September. Nest, as in the Indian species, a slight scrape in the ground under shelter of a rock or bush. Eggs, normally 2, but up to 5 recorded; cream or warm buff in colour, exactly like those of a village hen. Average size of 18 eggs 40.6 × 29.7 mm. (Baker). Cock monogynous and very pugnacious.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick at first 'clothed in rather uniform dark brown down. Each sex quickly develops its distinctive plumage, but the white streaks and spots of the young male are relatively fewer and larger than in the adult' (G. M. Henry).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	157-174	c. 22	54-57	121-130 mm.
♀♀	143-150	—	—	— (Baker)
Whistler (Avifaunal Survey of Ceylon) gives for				
2 ♂♂	158	25, 27 (from skull)	52, 54	107, 118 mm.

PHEASANTS, PARTRIDGES, QUAILS

73

Weight ♂ 11-13 oz. (c. 312-368 gm.); ♀ 7-10 oz. (c. 200-312 gm.) — Hart.
 COLOURS OF BARE PARTS. Iris brownish yellow or brownish red; orbital skin red, paler in ♀. Bill, legs, and feet red, paler in ♀. Males usually with two spurs on each leg, the upper one longer. In the two males measured by Whistler upper spurs 16 and 27.5 mm.; lower 13 and 17.5 mm., respectively. Most females have one or two spurs on both legs; in some they are missing on one leg.

Genus *OPHRYSIA* Bonaparte

Ophrysia Bonaparte, 1856, *Compt. Rend. Acad. Sci. Paris* 43: 414. Type, by original designation and monotypy, *Rollulus superciliosus* J. E. Gray

Very little known and correct taxonomic position equivocal. Wing short: first primary (as.) shorter than tenth; fifth or sixth longest. Tail of 10 feathers, well rounded, nearly equal to wing in length; this feature reminiscent of *Galloperdix*. Bill short and stout, rather as in *Ithaginis* or *Perdix*. Tarsus short but strong. Plumage long, lax and lanceolate, being in these respects similar to the Blood Pheasants (*Ithaginis*). Forehead feathers bristle-shafted and stiff as in *Ithaginis* and *Perdix*. Sexes dimorphic.

Contains a single species known only from the Kumaon Himalayas, now apparently extinct.

280. Mountain Quail. *Ophrysia superciliosa* (J. E. Gray)

Rollulus superciliosus J. E. Gray, 1846, *Knowsley Menagerie*, I: 8, pl. 16

(India = Mussoorie)

Baker, *FBI No.* 1939, Vol. 5: 356

Plate 32, fig. 12

LOCAL NAMES. Not recorded.

SIZE. Grey Partridge —; length c. 25 cm. (10 in.).

FIELD CHARACTERS. A smallish relatively long-tailed slaty brown partridge with conspicuous red bill and feet.

Male. Above, face black with a white patch in front of eye and another behind. Forehead and prominent broad supercilium white, bordered above and below with black. Crown greyish brown streaked with black. Upperparts dark slaty olive-brown streaked with black. Wings browner and lighter. Below, chin and throat black, bordered by a conspicuous white looping band from cheeks; under tail-coverts black, barred with white. Rest of underparts like back.

Female. Above, face pinkish grey. A small white eyebrow, and white patch in front and behind eye as in male. A broad black band on either side of crown. Upperparts including wings, cinnamon-brown broadly black-streaked on nape and neck, and with triangular black spots on back and the rest. Below, pale vinaceous-brown streaked with chestnut and black from lower throat down. Flanks and vent vermiculated with brown and black.

STATUS, DISTRIBUTION AND HABITAT. Status unknown. Not recorded anywhere extraliminally. Presumably once endemic; now most probably extinct. Was known only from the Western Himalayas between c. 1650 m. (Jharipani above Dehra Dun) and c. 2100 metres elevation — Banog, Badiraj behind Mussoorie, and Sher-ka-danda near Naini Tal. Last specimen procured at

PHEASANTS, PARTRIDGES, QUAILS

75

Females

	Page
A Sides of head light ochre.....	<i>I. c. affinis</i> 77
B Sides of head rufescent ochre.....	<i>I. c. cruentus</i> 75
C Sides of head rich chestnut.....	<i>I. c. kuseri</i> 78
D Sides of head rufous.....	<i>I. c. tibetanus</i> 78

281. Nepal Blood Pheasant. *Ithaginis cruentus cruentus* (Hardwicke)

Phasianus cruentus Hardwicke, 1821, *Trans. Linn. Soc. London* 13(1): 237

(Mountains of Nepal)

Baker, *FBI No.* 1936 (part), Vol. 5: 352

LOCAL NAMES. *Chilime*, *Chilmili*, *Seremin*, *Selmung* (Nepal).

SIZE. Domestic fowl; length c. 46 cm. (18 in.).

FIELD CHARACTERS. Male, a brightly, almost gaudily coloured large partridge-shaped bird, overall grey above, apple-green below, streaked with yellow, with a full mop-like crest. A bright red naked orbital patch bordered by black. Forehead black; chin and throat crimson. Upper breast splashed with crimson ('blood stains'). Crimson splashes also on wing shoulders, upper and lower tail-coverts, and in tail.

Young male less brilliantly coloured, with red bill. Orbital skin and cere fleshy grey.

Female. Overall bright rufous-brown, finely vermiculated. Forehead, face, and throat light ochre or rufescent cinnamon, contrasting strongly with ashy grey crest and nape.

STATUS, DISTRIBUTION AND HABITAT. Resident. Common and abundant in the High Himalayas in central and eastern Nepal seasonally up and down with the snowline between c. 3600 and 4300 metres altitude; occasionally somewhat lower in severe winters. Affects steep pine forest, dwarf rhododendron, and dense ringal bamboo and juniper scrub, often interspersed with snow patches.

GENERAL HABITS. As a species found at higher elevations, even in winter, than any other Himalayan pheasant. Gregarious; usually in coveys of 5 to 10, sometimes up to 30 and more. A swift and strong runner with an upright partridge-like carriage, loth to take wing even after a member of a covey has been shot at. Like all mountain partridges, invariably runs uphill and flies downhill. Feeds in the open patches, scratching the ground like domestic fowl, often digging deep into the snow with its short, stout, grouse-like bill. Tame and fearless to the point of stupidity, the members of a covey coming out inquisitively to a fluttering companion that has been shot, and allowing bird after bird to be killed by the ambushed hunter.

FOOD. Almost exclusively moss, fern and pine shoots, and lichens.

VOICE AND CALLS. Rallying call of scattered covey: a long, high-pitched squeal something like a kite's. 'A short monosyllabic note of alarm' (Blanford).

BREEDING. Little recorded in wild state beyond Hodgson's statement that the loose nest of grass and leaves is placed on the ground in grass and bushes. Season, April-May. Several observers have noted parents (various races) accompanied by small chicks in June and early July. Eggs, 5 to 12, pinkish buff profusely speckled and blotched with rich brown. Incubation

74

GALLIFORMES

the latter place in 1876 since when thorough combing of its known habitats and others of identical ecology has failed to rediscover the bird. In all less than a dozen specimens (actually 10) exist in world museums, and its biology is completely unknown.

GENERAL HABITS. Was found in coveys of 5 or 6 in patches of long grass and brushwood on steep hillsides. Flew reluctantly when almost trampled on, heavily and for short distances, soon pitching into the grass again.

FOOD. Grass seeds; probably also insects and berries.

VOICE AND CALLS. Contact note when covey feeding: 'low, short, quail-like'. Alarm note when disturbed: 'a shrill whistle'.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS of the 5 examples in the British Museum:

	Wing	Tail
3 ♂♂	85, 86, 93	76, 78, (damaged) mm.
2 ♀♀	87, 91	64, 65 mm.
		(SA)

Bill (from feathers) 11.5; tarsus 29 mm. (Baker).

COLOURS OF BARE PARTS. ♂ Bill coral red; legs and feet dull red. ♀ Bill dusky red, lower mandible brightest; legs dull red; eyelids black with a small white spot at the corner' (Hutton).

Genus *ITHAGINIS* Wagler

Ithaginis Wagler, 1832, *Isis von Oken*, col. 1228. Type, by monotypy, *Phasianus cruentus* Hardwicke and *Phasianus gardneri* Hardwicke

(The former is the ♂, the latter the ♀ of the same bird.)

Of Delacour, J., 1951, *The Pheasants of the World*, London. (Genera of pheasants.)

Plumage generally very soft and lax, the feathers lanceolate in shape. A soft, mop-like crest in both sexes. Wing short and rounded: first primary (as.) shorter than or nearly equal to tenth; fifth and sixth primaries about equal, and longest. Tail long, of 14 graduated feathers. Tarsi long and stout, furnished with several spurs in the male; reduced to knobs in female. Bill short, stout and curved, very grouse-like in character, reminiscent also of *Perdix*. A small naked orbital patch. Sexes markedly dimorphic.

Only a single High Himalayan species within our limits.

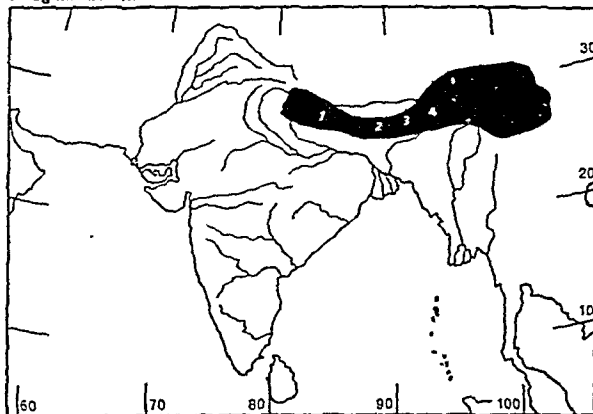
ITHAGINIS CRUENTUS (Hardwicke)

Key to the Subspecies

	Males	Page
A Forehead black.....	1	
B Forehead crimson.....	2	
1 Crimson of tail-feathers wholly lacking in two outer pairs.....		77
.....	<i>I. c. affinis</i>	
Crimson of tail-feathers wholly lacking in outer pair only.....		75
.....	<i>I. c. cruentus</i>	
2 Anterior ear-coverts and gorget black.....		78
.....	<i>I. c. kuseri</i>	
Anterior ear-coverts yellowish with black edges; no gorget.....		78
.....	<i>I. c. tibetanus</i>	

76

GALLIFORMES

Ithaginis cruentus

■ Distributional range within Indian limits 1 *I. c. cruentus* (281).
 2 *I. c. affinis* (282). 3 *I. c. tibetanus* (283). 4 *I. c. kuseri* (284).

Other races extralimital E. of 4, and N. to c. 38°.

period 29 days (Delacour). Male apparently monogynous in aviaries, but in wild state two cocks (race *tibetanus*) assiduously attending on a single hen have been observed by Sheriff (Ibis 1944: 381) on three separate occasions and according to local Tibetans the species is both polygynous and polyandrous.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; Delacour: 50. Chick (in down). 'Loral and malar streaks, circle around eye, large infra-auricular spot and line extending backward around the nape, centre of crown and wide nuchal band brownish black; remainder of head, throat and neck pale grizzled grey; lower neck and entire body dull rufous, with slender black tips, except on underparts, where the rufous is paler and purer' (Delacour).

Close similarity with chick of Snow Partridge (*Lerwa lerwa*) stressed by Meinertzhagen (Ibis, 1927: 625 and coloured pl. xv). In *Ithaginis* chick tarsus bare throughout, bill orange-yellow; in chick of *Lerwa* tarsus feathered for half its length, bill black.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	193-214	c. 22-23	c. 72-77	164-178 mm.
♀♀	190-195	—	—	—
				(Baker)
♂♀	194-228	11	66-76	164-178 mm.
		(from nostril)		(Delacour)

Weight ♂♂ 1 lb. 1 oz. to 1 lb. 4 oz. (c. 482-568 gm.).

The spurs in ♂ vary from 1 to 3 and are not always the same on both legs.
COLOURS OF BARE PARTS. ♂: Iris yellowish brown; orbital skin bright scarlet of salmon-crimson. Bill horny black, scarlet on cere, edges of base of lower mandible, and gape. Legs, feet, and spurs scarlet like orbital skin; claws horny black. Soles of feet very bright orange-crimson. ♀: Iris brighter yellowish brown; orbital patch, smaller and paler than in ♂. Bill horny brown at base, orange-red at tip. Legs, feet, claws, and soles as in ♂. No spurs.

MISCELLANEOUS. The plumage has a musty repulsive odour even when bird freshly killed. Stuart Baker considered its flesh 'excellent for the table', but even with the locals it ranks as greatly inferior to other pheasants. Meinertzhagen feelingly described it as 'disgusting'. The flavour no doubt varies with the nature of the food upon which the bird has been chiefly subsisting at the time.

282. Sikkim Blood Pheasant. *Ithaginis cruentus affinis* Beebe

Ithaginis cruentus affinis Beebe, 1912, Zoologica 1: 191 (British Sikkim)
Baker, FBI No. 1936 (part), Vol. 5: 352
Plate 35, fig. 5

LOCAL NAMES. Same, Semo, Soomong pho (Lepcha).

SIZE AND FIELD CHARACTERS. As for 281, q.v. See Key to the Subspecies

STATUS, DISTRIBUTION AND HABITAT.

Resident. Common. Sikkim and western Bhutan, between c. 2600 and 4600 metres altitude; down to c. 1500 metres in exceptionally severe winters. Its contact zone with the race *tibetanus* (283) evidently lies in the Jo Dürshi or Black Mountain range in central Bhutan which forms the watershed between the Manas and the Sankosh rivers (Ludlow, *Ibis* 1937: 499). Affects steep, *Abies* forest, dwarf rhododendron, and



x c. 1/2

dense ringal bamboo and juniper scrub near the snow-line.

GENERAL HABITS, FOOD, VOICE AND CALLS. As of the nominate race (281).

BREEDING. Nothing specifically recorded as different from Nepal birds.

MUSEUM DIAGNOSIS. Compared with the Nepal Blood Pheasant (281), male *affinis* has the forecrown without crimson; the throat with a little crimson but black showing through it; crimson on breast much reduced; a little more green on the flanks. The absence of crimson on the outer tail-feathers, as mentioned in Beebe's original description, does not always apply. Female *affinis* less grey on crest and nape than in 281.

No size difference between the Nepal and Sikkim populations.

MEASUREMENTS of Sikkim specimens:

Wing: 21 ♂♂ ad. 196-220 (aver. 209.4); 12 ♀♀ ad. 187-205 mm. (aver. 195.0) mm. (SA).

COLOURS OF BARE PARTS. As in 281.

probably, is the most sporting weapon to use, for Kuser's Blood Pheasant is only a shade wilder than a barn-door fowl' (F. Ludlow, *Ibis* 1944: 382).

BREEDING. A nest with 3 fresh eggs recorded at c. 3000 m. altitude in the Upper Dibang Valley, end April. In a depression in the ground under a bamboo (F. M. Bailey).

MUSEUM DIAGNOSIS. Male. Differs from *I. c. tibetanus* (283) in the still greater extent of red and black colours. Forehead, throat, and breast almost pure crimson-red. Supercilia, ear-coverts, sides of head, and neck, wholly black. A broad black band (gorget) between red of throat and of breast.

Female, similar to *tibetanus* but slightly darker and redder, often washed with red on breast. Face and cheeks bright reddish brown (Delacour).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	197-210	c. 19	55-60	147-171 mm.
♀♀	184-190	—	—	—

COLOURS OF BARE PARTS. Iris yellow or light brown; orbital skin yellow, tinged with orange behind eye. Bill black, with scarlet cere and nostril. Legs and feet scarlet; claws dark brown; spurs black-tipped or all black (Baker).

Genus TRAGOPAN Cuvier

Tragopan Cuvier, 1829, Règne Anim., nouv. éd., 1: 479. Type, by monotypy, *Meleagris satyra* Linnaeus

Contains the so-called Horned Pheasants, with the shape, proportions and carriage of partridges and a great deal of resplendent crimson in the plumage of the males.

Wings rounded: first primary (as.) shortest; 4th and 5th subequal and longest. Bastard wing (alula) well-developed. Tail of 18 feathers steeply graduated, more or less equal to wing in length. Bill short and stout; feathers of forehead almost reaching to nostril. Legs very powerful; armed with a short blunt spur on tarsus. An occipital crest of lengthened feathers in male, and two long subcylindrical brightly coloured fleshy horns, one above each eye, erected in courtship display. A brilliantly coloured and patterned apron-shaped gular wattle or bib fully developed in breeding season, also expanded in display. Sides of head and throat naked and brightly coloured in all species except *T. satyra* (286), in which they are thinly feathered.

The genus ranges throughout the Himalayas from Kashmir to eastern China, four species occurring within our limits.

Key to the Species

	Males	Page
A	Below crimson with black-edged white spots..... <i>T. satyra</i>	82
B	Below black with white spots..... <i>T. melanocephalus</i>	80
C	Breast crimson-red; abdomen smoky or sepia-grey..... <i>T. blythii</i>	84
D	Below crimson, feathers centred with pearl-grey..... <i>T. temminckii</i>	86
	Females	
A	Upper plumage streaked with white..... <i>T. melanocephalus</i>	80
B	Upper plumage streaked with fawn or buff..... <i>T. satyra</i>	82
I	No crimson on shoulder of wing..... <i>T. temminckii</i>	86
	Shoulder of wing tinged with crimson..... <i>T. satyra</i>	82

283. Tibetan Blood Pheasant. *Ithaginis cruentus tibetanus* (Baker)

Ithaginis [sic] *tibetanus* Baker, 1914, Bull. Brit. Orn. Cl. 35: 18 (Sela Range, 13,000 ft, above Tawang, eastern Bhutan-Tibet boundary [= NEFA])
Baker, FBI No. 1938, Vol. 5: 355

LOCAL NAME. Seri (Tibet).

SIZE AND FIELD CHARACTERS. As for 281, q.v. but with forehead crimson instead of black. (See Key to the Subspecies and Museum Diagnosis.)

STATUS, DISTRIBUTION AND HABITAT. Resident. 'Extremely common in eastern Bhutan in summer from 11,000 to 14,500 ft' (c. 3350 to 4400 metres — Ludlow, *Ibis* 1937: 499). Also in Kameng (and Subansiri?) Frontier Division of NEFA. Moves altitudinally with the seasons; in autumn and winter down to c. 2750 m. Its western boundary is probably the Jo Dürshi or Black Mountain range in central Bhutan between the 90th and 91st meridian — the watershed of the Manas and the Sankosh rivers. Affects dwarf rhododendron scrub near the snow-line.

Extralimital. Adjacent parts of SE. Tibet.

GENERAL HABITS, FOOD, VOICE AND CALLS. As of the nominate race (281).

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Male. Above, crest greyer, less white than in 281; posterior ear-coverts grey and white. Feathers of forehead and face, above and below the eyes, red instead of black. Rectrices whitish grey. Below, feathers of breast with much more red, as in *kusuri* (284).

Female. Resembles *I. c. cruentus*, but darker and more strongly vermiculated below. Similar also to *I. c. kusuri* (284) but a shade more rufous and with the shaft-streaks on the underside more pronounced. Some females show scarlet feathers on the throat and sides of head.

MEASUREMENTS. ♂ Wing 197; bill (from feathers) 17.7; tarsus 59.7; tail 176.5 mm. (Baker).

COLOURS OF BARE PARTS. Bill black; orbital skin apparently orange; legs brilliant crimson-red, soles paler, claws black (Baker).

284. Mishmi Blood Pheasant. *Ithaginis cruentus kusuri* Beebe

Ithaginis kusuri Beebe, 1912, Zoologica 1: 190 (Yunnan)
Baker, FBI No. 1937, Vol. 5: 354

LOCAL NAMES. Chiku (Mishmi); Siri, Selo (Tibet).

SIZE AND FIELD CHARACTERS. As for 281, q.v., but with forehead crimson instead of black. (See Key to the Subspecies and Museum Diagnosis.)

STATUS, DISTRIBUTION AND HABITAT. Resident. Abor and Mishmi Hills of Siang and Lohit Frontier Divisions, NEFA, between c. 2500 and 4500 metres altitude. Its western boundary with *tibetanus* (283) lies somewhere between the 92nd and 93rd meridians (Ludlow, *Ibis* 1944: 381). Affects the rhododendron scrub zone to its highest limit.

Extralimital. SE. Tibet east to Yunnan (Shweli-Salween divide).

GENERAL HABITS, FOOD, VOICE AND CALLS. As of the nominate race (281). 'It is one of the loveliest, stupidest, tamest and most unappetising game birds I have ever shot. We got specimens with our catapults, and this,

	Page
a General tint paler and more buff; black markings fewer.....	82
..... <i>T. satyra</i>	
General tint darker and black markings predominating.....	84
..... <i>T. blythii</i>	

285. Western Horned Pheasant. *Tragopan melanocephalus* (J. E. Gray)

Phasianus Melanocephalus J. E. Gray, 1829, in Griffith, Anim. Kingd. 8 (Aves, 3): 29 (Almorah, India)
Baker, FBI No. 1932, Vol. 5: 345
Plate 34, fig. I

LOCAL NAMES. Jewar (Garhwal); Jaghi, Jaghi (Bashahr); Sing monal (NW. Himalayas); Jigurana ♂, Budal ♀ (Kulu, Mandi, Suket); Fulgar ♂, Fulgeri ♀ (Chamba); Sonālu ♂, Solāle ♀ (Kashmir).

SIZE. Large village hen; length c. 71 cm. (28 in.).

FIELD CHARACTERS. Male. A brilliantly coloured, white-spotted red and black giant partridge. Above. Crown black, with recumbent red-tipped occipital crest. Face naked bright red. Upperparts including wing-coverts and tertiaries finely vermiculated buffy grey and black, and with round black-bordered white spots or ocelli. Neck (all round) red. Tail mottled buff and black, with irregular black bars and tips. Below, naked throat deep blue; foreneck and upper breast bright light red. Rest of underparts black, ocellated with white and irregularly smeared with red; flanks and abdomen mottled with brown and black.

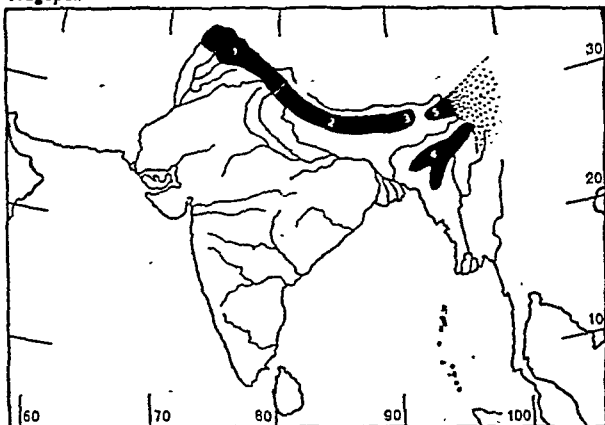
Female. General effect grey instead of rufous-brown as in ♀ *T. satyra* (286). Above brownish grey; head and neck tinged with rufous, rest of upperparts irregularly streaked and spotted with black and white. Below, vermiculated grey and dark brown, spotted with fulvous on throat, and broadly streaked and sploshed with white on the paler and greyer abdomen and flanks.

Young (immature) male like female, but the marks below more rounded, less spatulate in shape. At an older stage also like female 'but larger, lighter on the legs, with a variable amount of black on the head and of red on the neck, and a number of white spots, surrounded with black, on the upper back and underparts' (Delacour).

STATUS, DISTRIBUTION AND HABITAT. Resident. From Swat in northern West Pakistan (Duber Valley, W. of Indus R., c. 73°E.), through Kashmir, the Punjab Himalayas and Himachal Pradesh to Garhwal and Kumaon (?) seasonally between c. 1350 (winter) and 3600 metres altitude; normally breeding above c. 2400 m. Affects dense undergrowth of rue and ringal bamboo in hill forest.

GENERAL HABITS. More or less common to the genus. Seen singly or in pairs, sometimes small family parties in non-breeding season. In out-of-the-way places where comparatively free from persecution sometimes feeds in company with Chir, Kaleej, and Koklas pheasants in open glades or forested hill slopes, particularly whence the snow has just melted. Normally very shy and wild; skulking away through thick undergrowth on the least

Tragopan



- Range within Indian limits 1 *T. melanocephalus* (285).
 2 *T. satyra* (286). 3 *T. blythii molesworthi* (287).
 4 *T. blythii blythii* (288). 5 *T. temminckii* (289).

disturbance or flying up and concealing itself most effectively in densely foliated branches of trees where it also roosts at night. Like all Himalayan pheasants difficult to observe in wild state. Most details of its biology obtained from captivity in which it thrives well and breeds freely given adequate care and facilities. Stages of the cock's bizarre but beautiful display thus described by Delacour (loc. cit.: 60). (1) Struts round hen with wing on near side lowered and partly spread, shoulder on far side raised, slanting upper part of body towards her for better exhibition. This is the manoeuvre common to the domestic cock and all other pheasants. (2) Rushes suddenly with partly spread wings, with or without erection of horns or expanding of throat-wattle (bib). (3) Stops suddenly with most of the lower plumage fluffed out. The half-spread wings move slowly up and down, with wrist-edges well out from body and tips pressed inward and downward; head and neck shaken spasmodically until the horns and wattle are spread out to their utmost. The lappet is expanded and retracted with astonishing ease and rapidity. The bird soon reassumes a normal posture, walks off, picks up food, only to start displaying again in a moment.

FOOD. Largely fresh leaves, e.g. of oak (*Quercus*), sometimes taken up in the trees; shoots of ringal bamboo, roots, seeds, acorns, berries and insects.

VOICE AND CALLS. When alarmed a succession of wailing cries not unlike those of a young lamb or kid: *wa, wa, wa*, each *wa* uttered slowly and distinctly at first, and more rapidly as the bird is hard pressed and about to

PHEASANTS, PARTRIDGES, QUAILS

83



♂, x 6.3

of crest. General plumage, above and below, rich orange-crimson, olive-brown on back and rump, sprinkled all over with round black-bordered white spots or ocelli. Shoulder of wing crimson; rest of wing dark brown mottled with buff; tail black.

Female. Above rufous- or ochreous-brown, vermiculated, barred and blotched with black and buff. Pale shaft-stripes on crown. Shoulder of wing tinged with crimson. Below, chin and throat whitish; breast and abdomen like back but paler, mottled with large ill-defined whitish shaft-spots. Tail rufous-brown, irregularly barred with black and buff.

Young (immature) ♂ like female, but less richly coloured. When assuming adult plumage presents a patchy appearance with red and ocellated feathers distributed irregularly on underparts.

STATUS, DISTRIBUTION AND HABITAT. Resident. Garhwal, Nepal, Sikkim, Bhutan and adjoining parts of NEFA. Western and eastern limits, as presently known, roughly the Alaknanda river in Garhwal (c. 79°30'E.) and 'Darrang' north of Brahmaputra river, in Assam. (More likely somewhere in the Kameng Frontier Division [Mon Yul area ?] where the altitudes and biotope are more appropriate.) Affects oak, deodar and rhododendron forest in *khuds* and on steep hillsides with scrubby undergrowth and ringal bamboo, between c. 2400 and 4250 metres elevation; down to c. 1800 metres in severe winters.

GENERAL HABITS AND FOOD. As of 285, q.v. Stomachs of 13 birds from Lachung (Sikkim) examined by Meinertzhagen in December all contained a leaf and a fern believed to be *Diplazium* and *Polypodium*.

VOICE AND CALLS. 'A loud pitched *wak* repeated several times' (H. Stevens). 'An arresting loud *kye, kye, kye* like the bleating of a goat kid' (SA). Each bleat repeated at appropriate intervals.

BREEDING. Little known in the wild state. *Season*, apparently May-June. *Nest*, an untidy jumble of sticks placed up in the branches of a tree in forest. *Eggs*, 2 to 4 (?) reddish buff, freckled all over with deeper brick-red. Size c. 65 x 42 mm.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). Above, 'Side of head and supercilium dirty buffish white, dark-tipped on ear-coverts; crown from bill ferruginous. Upperparts ferruginous-brown with darker tips and paler bases, but no distinct pattern. Tail ferruginous. Below, chin and throat buffish white; rest of underparts same, with faint dark tips and tinged with rust on sides and on thighs' (Tiechurst).

MEASUREMENTS. Wing 15 ♂♂ ad. 260-277 (aver. 268.5 mm.); 7 ♀♀ ad. 216-245 (aver. 229.5 mm.). — (Schäfer, Stevens, SA).

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	245-285	14-16	85-95	250-345 mm.
♀♀	215-235	11	66	195 mm. (Delacour)

take wing. On approach of breeding season ♂ calls at intervals throughout the day, more often at dusk and daybreak (every 5 or 10 minutes, sometimes longer) from the bough of a tree or other elevated position such as a fallen tree-trunk or boulder. Similar to alarm-call but much louder and a single energetic, far-carrying *wa* at a time, not unlike the bleating of a lost goat. This curious cry has also been described as 'something between a kid's bleat and the cry of a wild goose' (Hume & Marshall).

'The love-call of the male tragopan [apparently the genus] is a resounding and far-reaching *way! waah! oo-ah! OO-aaaah!*' (Delacour).

BREEDING. Poorly known in the wild state. *Season*, mentioned as June. *Nest*, of sticks with grass lining either on the ground in thick undergrowth, e.g. of ringal bamboo, or in a tree: 'about 10 ft from the ground' being recorded. *Eggs*, in captivity 3 to 6, laid every other day; pale buff to reddish brown feebly freckled with dark brown, averaging c. 63 x 42 mm. in size. Cock monogynous; assists in tending the chicks. Incubation entirely by hen; period about 28 days.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). Like that of *Tragopan satyra* (286) q.v., but greyer.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	255-290	17-20	78-97	220-250 mm.
♀♀	225-250	15	65	190-200 mm. (Delacour)

Weight ♂♂ 4 lb. to 4 lb. 12 oz. (c. 1.80-2.15 kg.). — Baker; ♀♀ 2 lb. 12 oz. to 3 lb. (c. 1.25-1.40 kg.). — Whistler.

COLOURS OF BARE PARTS. ♂ Iris brown. Bill black, tip horny. Bare skin of face bright red with lines of small blue spots below eyes. Throat [naked] deep blue; cheeks blue-green; lappet purplish blue down centre, pink on margins, with pale blue indentations. Fleishy horns blue. Legs pink to whitish grey, according to season (Delacour).

The lappet, when not in use, shrivels up and becomes quite insignificant.

286. Crimson Horned Pheasant or Satyr Tragopan. *Tragopan satyra* (Linnaeus)

Meleagris Satyra Linnaeus, 1758, Syst. Nat., ed. 10, 1: 157

(Bengal, ex Edwards, pl. 116, error = Nepal!)

Baker, FBI No. 1931, Vol. 5: 343

Plate 34, fig. 2

LOCAL NAMES. *Lungi* (Hindi, Garhwal, Kumaon); *Monal* (Nepal); *Omo*, *Bop* (Bhutes); *Tarhyak* (Lepcha); *Chamling* (Tibet).

SIZE. Village hen; length ♂ c. 68 cm. (27 in.), ♀ c. 59 cm. (23 in.).

FIELD CHARACTERS. Male. Head, recumbent crest, and a loop round the deep blue semi-naked throat-patch, black. A crimson streak on either side

² or Darjeeling dist., Bengal? See Birwas, 1960, JBNHS 57: 360, footnote.

Tail proportionately longer than in other tragopans.

Weight ♂♂ 3 lb. 8 oz. to 4 lb. 10 oz. (1.60-2.10 kg.); ♀♀ 2 lb. 4 oz. to 2 lb. 10 oz. (c. 1-1.20 kg.). — Hume.

COLOURS OF BARE PARTS. ♂ Iris brown. Bill black. Bare skin of throat dark blue; lappet blue in middle, pale green on margins, with four or five triangular scarlet patches on each side. Fleishy horns blue. The lappet extends to a length of 100 mm. and the horns to 75 mm. during display. Legs pink.

♀ Iris brown; orbital skin bluish. Bill horn brown. Legs whitish grey (Delacour).

TRAGOPAN BLYTHII (Jerdon)

Key to the Subspecies

Males

Paler; red of the breast forming a very broad gorget.... *T. b. blythii*
 Darker; red of the breast forming a very narrow gorget only.....
 *T. b. molesworthi*

287. Tibetan Greybellied Tragopan. *Tragopan blythii molesworthi* Baker

Tragopan blythii molesworthi Baker, 1914, Bull. Brit. Orn. Cl. 35: 18

(Dengon La, 8000 ft, Tibet)

Baker, FBI No. 1934, Vol. 5: 349

LOCAL NAME. *Bop* (Tibet).

SIZE. Village hen; length ♂ c. 68 cm. (27 in.).

FIELD CHARACTERS. As of the nominate race (288) q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION AND HABITAT. Resident. Rare. Apparently only three specimens known. Eastern Bhutan (where it overlaps the range of *T. satyra*) and presumably adjoining parts of NEFA east to the Mishmi Hills, from c. 1800 to 3300 metres elevation. Reported to keep to the thickest scrub and ringal undergrowth in high forest, and very hard to get a glimpse of though not shy (Col. J. Chatterton).

Extralimital. Adjacent parts of SE. Tibet.

GENERAL HABITS AND FOOD. As of the nominate race.

VOICE AND CALLS. Brig. A. L. M. Molesworth, who obtained the type specimen, says 'it was sitting in a clump of bamboos making a noise like a leopard' (!).

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Male, differs from ♂ of the nominate race (288) in having the entire upperparts darker, the maroon ocelli browner, and the buff vermiculations narrower and less distinct; the white spots smaller though equally numerous. Below, red of breast confined to a comparatively narrow gorget descending only a short way below the neck on to the breast. Rest of lower parts much paler grey than in *blythii*, the light centres scarcely distinguishable from the surrounding parts of the feather.

Female, differs from ♀ of the nominate subspecies in having the whole upper plumage darker, the blackish marks being larger and deeper coloured, the grey-brown markings much deeper grey and less brown, ear-coverts sub tipped rufous, rufous-centred cheek-feathers, rump and upper tail-coverts greyer and not

PHEASANTS, PARTRIDGES, QUAILS 85

quite so reddish in general tone. On the underside, the rufous edges of feathers of breast and abdomen deeper' (Biswas, 1968, JBNHS 65: 216-17 and coloured plate).

MEASUREMENTS

♂ Wing 250; bill ('from front') 19; tarsus 76, middle toe and claw 76; tail 195 mm. (Baker).

♀ (in flesh) Wing 232; bill (from skull) 33; tail 155 + mm. (Biswas).

COLOURS OF BARE PARTS. ♂ unrecorded; presumably as in the nominate race. ♀ Iris dark brown, edges of eyelids lemon yellow. Maxilla black but brown at base; mandible very pale horny. Legs and feet brownish horny; claws horny; pads white' (Biswas).

288. Greybellied Tragopan. *Tragopan blythii blythii* (Jerdon)

Cerionis Blythii Jerdon, 1870, Proc. Asiat. Soc. Bengal: 60 (Hills at the head of the Assam Valley, i.e. Henema, Naga Hills, Assam)

Tragopan blythii rupchandi Koelz, 1954, Contrib. Inst. Regional Exploration No. 1: 29 (Blue Mountain, Lushai Hills)

Baker, FBI No. 1933, Vol. 5: 347

Plate 34, fig. 5 (There should not be any blue adjoining the yellow gular patch as shown.)

LOCAL NAMES. *Hur huria* (Assam and Miri); *San sorai* (Assam, Sadiya); *Gnu* (Angami Naga); *Aghah* (Sema Naga); *Aogho* (Chang Naga); *Chingtho* (Kuki).

SIZE. Village hen; length ♂ c. 68 cm. (27 in.), ♀ c. 59 cm. (23 in.).

FIELD CHARACTERS. A large oversized partridge, the male with much brilliant red in plumage, and conspicuous white ocelli on back.

Male. *Above*, forehead, crown, a patch down either side of neck, and feathers round the naked orange-yellow face, black. Broad supercilia to nape, hindcrown, neck, upper back, and wing shoulders bright crimson. Rest of upper plumage brown, tinged with red and contrastingly marked with numerous white and maroon ocelli. *Below*, feathers round the naked yellow gular patch, black. Adjacent upper breast bright crimson followed by smoky grey lower breast and belly, the feathers centred paler grey. Flanks and thighs mottled black and buff and splashed with crimson as on vent.

Female. Rather like ♀ *T. satyra*, but paler. *Above*, black narrowly barred, blotched and stippled with rufous and vermiculated with buff. Tail paler and more rufous. *Below*, mottled, stippled and spotted with dark brown, rufous, and greyish white. Centre of abdomen, and vent, more uniform grey.

Young (immature) male like female but acquiring red on the neck at the first spring moult.

STATUS, DISTRIBUTION AND HABITAT. Resident, but like other pheasants moving up and down altitudinally with season and supply of favourite foods. Assam south of the Brahmaputra river, in the Patkai, Naga, and Barail hill ranges south through Manipur and Mizo (Lushai Hills) from c. 1800 metres up. Affects thick undergrowth in heavy evergreen forest.

Extralimital. The Chin Hills and adjacent mountain ranges of western and northern Burma.

GENERAL HABITS, AND FOOD. As of 285, q.v.

PHEASANTS, PARTRIDGES, QUAILS 87

Rest of underparts light brown with large whitish shaft-spots and black blotches.

Young (immature) male. Like female, but larger, with some black and red on the head, and red on neck and upper breast.

STATUS, DISTRIBUTION AND HABITAT. Resident. Luhit Frontier Division of NEFA (Mishmi Hills, Upper Dibang and Tsangpo valleys, etc.), between c. 2100 and 3500 m. altitude. The Subansiri-Manas watershed postulated as the dividing line between this species and *T. satyra* which occurs on the East Bhutan frontier (F. Ludlow, *Ibis* 1944: 379). Like the other tragopans affects thick undergrowth in evergreen forest on steep hillsides.

Extralimital. Adjacent mountains of SE. Tibet; N. Yunnan, Szechuan, Shensi and Hupch; NE. Burma (Chin Hills etc.).

GENERAL HABITS, FOOD, VOICE AND CALLS. Largely as in 285, q.v. Little known in wild state. Apparently even more unsocial than other tragopans, and very arboreal. Usually seen solitary, and never more than 2 or 3 together. In uninhabited regions, common and very tame (F. M. Bailey).

BREEDING. Not authentically known. Eggs (in captivity) comparatively small for the genus, averaging 54 × 40 mm.; buff, speckled and freckled with brown (Delacour).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). 'Lores and crown bright rufous-green, changing to darker chestnut-brown on back and tail-tuft; circle round eye, sides of head, and ear-coverts bright pale fulvous-rufous; below pale dull fulvous' (Baker). 'Differs mostly from *satyra* in being smaller' (Delacour).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	225-265	15-16	70-80	185-230 mm.
♀♀	220-225	15	70	175 mm.

Weight ♂ c. 3½ lb. (1.60 kg.) — F. M. Bailey.

COLOURS OF BARE PARTS. ♂: Iris brown. Bill black, tip horny. Bare face and chin bright blue. Horns greenish blue. Lappet dark blue spotted all over with pale blue and eight arrow-shaped scarlet marks on each side. Legs pinkish to reddish. ♀: Iris brown. Bill horny. Orbital skin bluish. Legs fleshy grey (Delacour).

Genus LOPHOPHORUS Temminck

Lophophorus Temminck, 1813, Fig. et Gall. 2: 355. Type, by monotypy, *Lophophorus refulgens* Temminck = *Phasianus impejanus* Latham

Face more or less naked and highly coloured. Bill long and greatly curved, upper mandible much overlapping lower at the tip as well as along edges. Tarsi and feet very powerful and heavy, the former feathered above and with a short shiny spur. Wing much rounded: first primary (as.) shortest; fifth and sixth coequal and longest. Tail of 18 feathers, shorter than wing, fairly rounded; flat as in partridge, not laterally compressed as in junglefowl.

The genus contains heavily built dumpy Himalayan pheasants shaped like snow-cock but distinguished by the highly refulgent plumage of the males. Two species occur within our limits.

86 GALLIFORMES

VOICE AND CALLS. 'A very loud challenging *gnau, gnau* by the male' (R. S. Bedi, in *epist.*). Displaying cock utters a 'gock . . . gock . . . gock' repeated often, punctuated by short pauses; reminiscent of 'roar' of Great Pied Hornbill but much softer. Two cocks answer each other from the distance, the second joining in soon after the first begins. These 'challenges' and 'counter-challenges' are kept up for some time (Gerd Heinrich, Mt Victoria).

BREEDING. No authentic record in wild state. Eggs (in captivity) pale buff, finely and lightly freckled and spotted with brown, averaging 58.5 × 44 mm. (Delacour). Clutch size ?

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). Similar to *T. satyra*, but lighter in colour.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	260-265	c. 10	82-94	180-220 mm.
♀♀	230-245	—	—	—

(Baker)

Bill from skull of a ♂ collected by SDR in the Naga Hills measured 25.5 mm. He remarks that the measurement given by Delacour (op. cit., 1951: 68) as 15 mm. is presumably for nostril to tip rather than culmen, as stated. In view of this, Baker's 'c. 10 mm.' seems even more misleading.

COLOURS OF BARE PARTS. ♂ Iris brown. Bill horny brown. Bare face golden yellow. Horns light blue. Lappet yellow, bordered with blue. Legs pink or reddish. ♀ Iris brown. Bill horny. Orbital skin yellowish. Legs fleshy brown (Delacour).

One spur on each leg in ♂ up to c. 190 mm. long and of a 'bright azure blue colour' in life (*vide* G. Damant in Hume, SF 7: 473).

289. Temminck's Tragopan or Chinese Crimson Horned Pheasant.

Tragopan temminckii (J. E. Gray)

Satyra Temminckii J. E. Gray, 1831, in Hardwicke's Ill. Ind. Zool. 1(9): pl. 50. (No locality; the type in the British Museum is from 'China' = Szechuan *epud* Baker, 1928, Fauna, 5: 350.)

Baker, FBI No. 1935, Vol. 5: 350

Plate 34, fig. 4

LOCAL NAMES. *Bop* (Tibet); *Oua oua ky*; *Ko ky*, *Kiao ky*, *Sin triou ky*, *Tso-chi* (Chinese).

SIZE. Village hen; length c. 64 cm. (25 in.).

FIELD CHARACTERS. Male. *Above* and *below* bright crimson like *Satyr* *Tragopan* (286), with round black-bordered pearl-grey spots or ocelli on upperparts. Head, borders of face, and loop round throat-patch similarly black. Differs from 286 chiefly in having the face naked bright cobalt blue in addition to the throat patch, and large triangular (or diamond-shaped) pearl-grey spots replacing white ocelli on underparts.

Female. *Above*, rufous to greyish brown strongly mottled with blackish, with whitish arrow-shaped marks. Tail like back, but with the markings forming irregular bars. *Below*, chin and throat whitish, with black lines.

88 GALLIFORMES

Key to the Species

	Males	Females	Page
A	Crest composed of feathers with naked shafts and spatulate ends.		88
B	Crest composed of short curly feathers.		90
		Females	
A		Lower back buff barred with black.	88
B		Lower back and rump pale earthy-white with narrow bars of brown.	90

290. Impeyan or Himalayan Monal Pheasant. *Lophophorus impejanus* (Latham)

Phasianus impejanus Latham, 1790, Index Orn. 2: 632 (India = Sikkim, type locality fixed by Meinertzhagen, 1952, Bull. Brit. Orn. Cl. 72: 85)

Lophophorus chambanus Marshall, 1884, *Ibis*: 421, pl. 10 (Chamba)

Baker, FBI No. 1928, Vol. 5: 335

Plate 34, fig. 6

LOCAL NAMES. *Sunāl*, *Suna mūrgh* ♂, *Hām* ♀ (Kashmir); *Nilgur* (Chamba); *Munāl*, *Nil* ♂, *Karēri* ♀ (Kulu); *Munāl*, *Char munāl*, *Ratia kauran*, *Ratnal*, *Railap* (NW. Himalayas); *Datiya* (Kumaon and Garhwal); *Dāngān*, *Dafī* (Nepal); *Fo é-t* (Lepcha); *Chamdong* (Bhutea, Sikkim); *Pia padir* (Mishmi); *Būp* (Bhutanes).

SIZE. Large domestic hen +; length c. 72 cm. (28 in.).

FIELD CHARACTERS. A stout, dumpy Himalayan pheasant. *Above*, refulgent metallic, bronze-green, purple, and blue with a large white rump-patch and crest of wire-like spatula-tipped metallic green feathers. Tail cinnamon-rufous, short, broad, more or less square-cut. *Below*, velvety jet black. When flushed, the wild ringing shrieks, the chestnut wings and the broad white rump-patch are diagnostic.



♂, × c. 1

Female. Brown, mottled and streaked with paler and darker brown, with a short tuft on head and white throat. In flight looks brown with much white in tail.

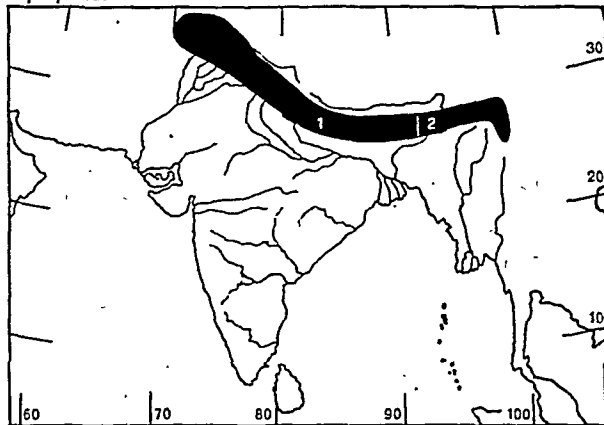
Young (immature) male. Like female, but more mottled with black above, and with black and rufous below. Older juveniles have some black spots on throat and occasionally a few metallic feathers on upperparts.

PHEASANTS, PARTRIDGES, QUAILS

89

STATUS, DISTRIBUTION and HABITAT. Resident. The Himalayas between c. 2600 and 5000 m. altitude from eastern Afghanistan through NW. Pakistan, Kashmir, Punjab, Himachal Pradesh, Kumaon, Garhwal, Nepal, Sikkim to about the eastern frontier of Bhutan. Somewhere between c. 92° and 93°E. long. it meets the species *L. sclateri* (291) (vide Ludlow, *Ibis* 1944: 376). Affects high oak, rhododendron, and deodar (*Cedrus deodara*) forest interspersed with open glades and sheep pastures, and precipitous hillsides with grass and weeds growing on the narrow ledges.

Lophophorus



Range within Indian limits

- 1 *L. impejanus* (290).
2 *L. sclateri* (291).

GENERAL HABITS. Keeps singly or in parties of 3 or 4 consisting of a cock and two or three hens, or all of the same sex, which dig for food vigorously with their powerful bills on the edge of alpine pastures often in deep snow. When flushed, rises with a loud flutter of wings, the bird invariably planing steeply downhill with wild ringing cries. When suddenly come upon in forest, especially if accompanied by small chicks, it flies up with much cackling into the thickly foliated branches of a deodar or pine tree and freezes, the sober-coloured hen in particular then becoming astonishingly obliterated. In courtship the cock droops his chestnut wings, spreads out and erects his tail like a turkey cock, jerking it up over the back from time to time as he struts around the seemingly unconcerned hen. A variant of the 'dance' observed as follows: Cock and hen scratching and feeding on flat terrace on hillside. Hen uttered her 'call note' (?) several times. Upon this the cock, feeding some little distance away, ran to her with wings raised high above the back, tail spread, neck- and body-feathers fluffed out, displaying refugence of plumage in the morning sun to best advantage. He thus moved quickly to and fro in front of her for a few seconds while she stood quietly

* See Appendix

PHEASANTS, PARTRIDGES, QUAILS

91

FIELD CHARACTERS. Male. Very like the Himalayan Monal (290), but somewhat duller and less refulgent, and without crest; the crown covered with short curly or frizzled metallic blue-green feathers instead. White of rump much more extensive and including upper tail-coverts. Tip of tail broadly white making the cinnamon appear like a wide band across white tail.

Female. Similar to ♀ 290 but with rump and upper tail-coverts conspicuously pale greyish white. Tail black, broadly tipped with white and with some narrow whitish bars.

Young (immature). See under Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. NEFA east of c. the 92nd-93rd meridians (where it meets *L. impejanus*, vide Ludlow, *Ibis* 1944: 376), through the Kameng, Subansiri, Siang, and Lohit Frontier Divisions, between c. 3000 and 4000 metres altitude. Affects silver fir (*Abies*) forest with dense rhododendron undergrowth.

Extralimital. Contiguous parts of SE. Tibet, eastward to NE. Burma and Yunnan.

GENERAL HABITS. As of Himalayan Monal (290), q.v. Very parochial, occupying the same haunts day after day (Cranbrook). 'Very noisy in the evenings. When chased by dog refused to fly until nearly caught, when they would fly into a tree and remain there while the dog barked below. Our dog actually caught one' (F. M. Bailey).

FOOD. As in 290. Among crop contents specifically mentioned are 'Polygonum seeds and heads of some thistle or hard-headed flowers' (Cranbrook).

VOICE and CALLS. Alarm calls described as shrill, harsh, rather plaintive, 'a mixture between that of a peacock and a guinea-fowl'—a single cry uttered repeatedly by a sentinel from an overlooking rock on a steep hillside (Cranbrook). A wild ringing whistle like that of *L. impejanus* but 'distinct in tone' (F. Ludlow).

BREEDING. Unknown. Males collected by Ludlow on 14 May all had enlarged testes c. 25 mm. in length. One female with a large-yolk ovarian egg; another with a large incubation patch.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young (immature) male. Described from a specimen collected by F. Kingdon Ward at the Tsangpo Po-Tsangpo confluence c. 2700 metres altitude (Feb. 1924): 'Differs from adult female in the darker colour of the mantle, the paler, more white colour of the lower back, rump and upper tail-coverts and in the greater amount of cinnamon on the tail-feathers which colour is entirely absent from an adult (♀) from the Tsangpo, but present in slight frecklings in a bird from the Mishmi country and figured in *Proc. Zool. Soc.*, 1879, pl. ii. The upper side of this young male is narrowly barred with faint cinnamon bands instead of frecklings. On the breast and neck the black feathers of the adult are beginning to appear and a few metallic feathers to show on the head' (N. B. Kinnear, 1934, JBNHS 37: 367).

MEASUREMENTS

	Wing	'Culmen'	Tarsus	Tail
♂	317	38	73	223 mm.
♀	280	32	71	185 mm.

Middle toe and claw ♀ 75 mm.

(Delacour)

F. Ludlow's specimens gave: Wing 4 ♂♂ 298-303; 2 ♀♀ 285-287 mm.

90

GALLIFORMES

looking on; then abruptly closed his wings and tail, turned about, and ran back to his feeding place (G. S. Rodon, JBNHS 12: 573). The cock also indulges in a spectacular courtship flight, leaping straight up into the air from a steep hillside, moving slowly with wings held high above line of back, tail partly spread and the white rump conspicuously displayed.

FOOD. Grass- and flower seeds, roots, tubers, shoots, berries (e.g. *Cotoneaster microphylla*), and insects and their larvae, dug up often from under deep snow.

VOICE and CALLS. Call- and alarm notes a wild, ringing whistle reminiscent of the Curlew. Usually uttered from a rock on a precipitous slope, after which the bird planes steeply down the *khud*-side to another perch often far below.

BREEDING. Season, April to June. Nest, a scrape in the ground under shelter of a rock or fallen tree-trunk in undergrowth on a steep hillside, hidden by grass or ferns, etc. Eggs, 4 to 6 pale yellowish or reddish buff, freckled and spotted with reddish brown. Average size of 74 eggs 63.5 × 44.9 mm. (Baker). Incubation period unrecorded. Cock apparently polygynous, but its biology in the wild state very little known.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). Crown dark rufous; a short line back from base of culmen, lores, three short lines on the face, ear-coverts and sides of the occiput black; eye-brows and facial area buff; mantle and wing-down grizzled rufous, back and rump chocolate, with two pairs of lateral buff lines, the outer pair often partly merged with the ventral colouring; loreal line buffy cream; chin and throat smoky white; sides of throat darker; remainder of underparts dirty buffy white, flanks darker' (Delacour).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail	Crest
♂♂	289-320	c. 50-54	c. 70-80	215-235	75-88 mm.
♀♀	259-287	—	—	—	—

(Baker)

Middle toe and claw: ♂ 71, ♀ 77 mm. (Delacour).

Weight ♂♂ 4 lb. 6 oz. to 5 lb. 4 oz. (c. 1.98-2.38 kg.); ♀♀ 4 lb. to 4 lb. 12 oz. (c. 1.80-2.15 kg.) — Hume.

COLOURS OF BARE PARTS. ♂ Iris brown; circumorbital skin bright azure to almost royal blue. Bill horny blackish with a greyish white band (c. 3 mm. wide) along both edges of culmen. Legs and feet olive-brown, each scale on tarsus and toes finely margined with black; soles of feet greenish brown; claws and spurs horny black. ♀ Circumorbital skin paler blue; ridge of culmen more brown less black. Otherwise as in ♂.

291. Sclater's or Mishmi Monal Pheasant. *Lophophorus sclateri* Jerdon

Lophophorus sclateri Jerdon, 1870, *Ibis*: 148 (Mishmi Hills)

Baker, FBI No. 1929, Vol. 5: 337

Plate 34, fig. 7

LOCAL NAMES. *Tratta*, *Poa padoi* (? Mishmi); *Pui di* (Chulikatta Mishmi); *Piddi* (at Pachakshiri).

SIZE. As of 290.

* See Appendix

92

GALLIFORMES

Width of white tips of central tail-feathers (in 2 cases) 19.5 and 22.5 mm. In Mishmi birds upper tail-coverts clear and unstreaked white, whereas birds from Yunnan appear to have more black central streaks on the feathers (SDR).

COLOURS OF BARE PARTS. ♂ Iris brown. Bill horny orange-yellow, darker at tips. Facial area bright blue. Legs greenish brown. ♀ Bill yellowish. Legs and feet brown. Spurs often present (Delacour).

Genus CROSSOPTILON Hodgson

Crossoptilon Hodgson, 1838 (Oct.), Jour. Asiat. Soc. Bengal 7: 864. Type, by monotypy and tautonymy, *Phasianus crossoptilon* Hodgson

Contains large heavy pheasants about the size of the Monal with the ear-coverts prolonged and sticking out behind the head like two small horns or ears whence their popular name of 'Eared Pheasants'. Sides of head naked, covered with bright red papillae. Wings rounded and cambered as typical of the Phasianidae: first primary (as.) short; 5th and 6th equal and longest. Tail compressed, of 20-24 very broad feathers at base, with the webs very soft, broad and decomposed, the long central drooping ones reminiscent of ostrich plumes. Legs powerful, with short blunt spurs on tarsi of male. Sexes alike in coloration; male slightly larger.

As presently known, only one species and race enters the fringe of our northern limits in NEFA.

292. Elwes's Eared Pheasant. *Crossoptilon crossoptilon harmani* Elwes

Crossoptilon harmani Elwes, 1881, *Ibis*: 399, pl. 13 (Eastern Tibet, about 150 miles east of Lhasa)

Baker, FBI No. 1930, Vol. 5: 339

Plate 34, fig. 10

LOCAL NAME. *Cha-nga* (Tibet).

SIZE. Large domestic hen +; about that of Monal Pheasant. Length c. 72 cm. (28 in.).

FIELD CHARACTERS. Overall ashy blue-grey with broad laterally compressed tail, the longer arching disintegrated central feathers reminiscent of ostrich plumes. Above, sides of head naked, deep scarlet. Crown from forehead to nape velvety black. Elongated ear-tufts (coverts) projecting beyond, and a band across nape white. Upperparts deep ashy grey, darker (blackish) on neck, paler on rump and upper tail-coverts. Tail metallic blue-black glossed with green, blue, and purple. Below, chin and throat white contiguous with the nape-band and forming a ring. Rest of underparts ashy grey, deep and glossy on breast, white down centre of foreneck and abdomen. Sexes alike in coloration; male larger.

STATUS, DISTRIBUTION and HABITAT. Very plentiful wherever found. Extreme northern fringes of the Siang, Subansiri, and Lohit (?) Frontier Divisions of NEFA, normally between c. 3000 and 5000 metres altitude; rarely as low as 2400 m. Affects the edges of grassy hill slopes abutting on rhododendron and juniper scrub.

Extralimital. Contiguous parts of SE. Tibet north of the main Himalayan axis from c. long. 91°33' in the Tsangpo valley and c. 92°30' in the Subansiri basin eastward to the Salween valley (c. 31°N., 95°30'E.) where it apparently meets the nominate race (Ludlow, *Ibis* 1944: 378).

PHEASANTS, PARTRIDGES, QUAILS

93

GENERAL HABITS. Keeps in flocks of 5 to 10 birds to dwarf rhododendron jungle whence they come out to feed in the grassy clearings in the morning and evening. Reluctant to fly. When disturbed invariably scurries uphill and into the nearest bushes, and almost impossible to flush without the aid of a dog. It then flies up into a tree if available, otherwise shoots downhill and for considerable distances. Where unmolested becomes astonishingly tame, coming to monasteries in the remotest areas to be fed by the lamas, and even eating out of their hands.

FOOD. As of the Monal — seeds, shoots, roots, tubers, fallen berries (e.g. of mountain ash) in autumn; also insects and their larvae.

VOICE AND CALLS. Uttered chiefly in the early mornings. Loud, harsh and distinctive, resembling that of a guinea-fowl but much louder and more resonant; clearly audible from over a mile away and a sure indication of the presence of the bird in a locality even when not seen. Also has a single note like a heron's squawk (Ludlow).

BREEDING. Only a single doubtful record within Indian limits of eggs brought to Stuart Baker by local Abors in the Mishmi Hills (26 May). In SE. Tibet Ludlow found three nests. One (23 May) placed under a fallen fir tree, was composed of bark and rotten pulp of the tree and lined with moss. It contained 9 cream coloured, unspotted eggs averaging 55.5 × 42.0 mm. in size. (Eggs 'greyish green' vide Delacour.) F. M. Bailey found broods of newly hatched chicks in SE. Tibet on 18 July, about which time also a larger chick was obtained. Male evidently monogynous.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (c. 14 days old). 'Crown velvety black; upper plumage dull black changing to dark ashy grey on the rump and upper tail-coverts; the wings are vermiculated with reddish bars, and the coverts have broad reddish shaft-streaks. White on the head as in the adult, the ear-tufts showing distinctly. Upper breast and flanks black, the feathers centred and edged fulvous. Lower breast and abdomen dirty white, vent and under tail-coverts dull ashy grey tipped with white. Tail-feathers blue-black glossed with blue, showing green in some lights (Baker). 'Iris brown; bill horn coloured, paler below; legs reddish brown' (Bailey).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀ ad.	292-331	c. 40-44	87-93	457-559 mm.
Spur short, c. 15-20 mm.				(Baker)

COLOURS OF BARE PARTS. Iris brown to orange-brown. Bill light reddish horny. Naked facial skin scarlet. Legs and feet scarlet.

Genus *LOPHURA* Fleming

Lophura Fleming, 1822, Philos. Zool. 2: 230. Type, by monotypy, *Phasianus ignitus* [Shaw]

Gennarus Wagler, 1832, Isis von Oken, col. 1228. Type, by monotypy, *Phasianus nycthemerus* Linnaeus

Cf. Delacour, J., 1949, *Ibis*: 188-220.

Contains the Kaleej and Silver Pheasants, most closely allied to junglefowl in morphology and behaviour. Wing rounded: first primary (as.) short; 2nd equal to 9th or 10th in length; 5th and 6th primaries longest. Tail compressed, 'roof-shaped';

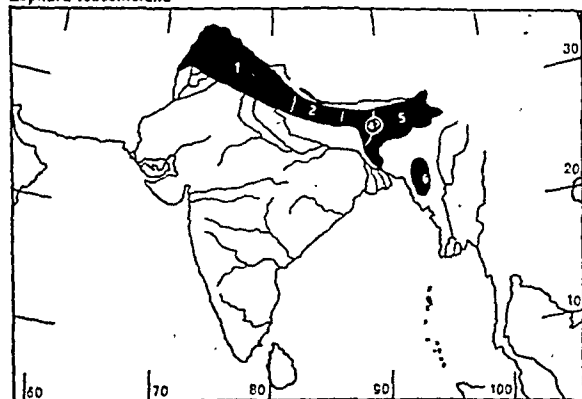
PHEASANTS, PARTRIDGES, QUAILS

95



Male. Above black, glossed with steel blue, the rump feathers broadly edged with white. Tail glossy black and brown, of broad arching sickle-shaped feathers. Long white hairy recumbent crest; naked scarlet face. Below, chiefly brownish grey; the feathers pointed or lanceolate on breast. Female, chiefly reddish brown with pale scaly markings (scalloping); recumbent crest brown, naked patch round eye scarlet. Tail black, not arching or pointed; central feathers rufous-brown with pale vermiculations. (For immature, and downy chick, see Museum Diagnosis.)

STATUS, DISTRIBUTION AND HABITAT. Resident. Western Himalayas from east of the Indus river through part of the NW. frontier districts of W. Pakistan, southern Kashmir (outer lower slopes of Pir Panjal), Punjab, Himachal Pradesh, Garhwal and Kumaon to c. 83°30'E. long. in west-central Nepal (near Baglung — Fleming). Affects all kinds of forest (sal, oak, spruce, rhododendron, etc.) with heavy scrub undergrowth. Partial to the neighbourhood of water and terraced cultivation, between c. 400 m. in the foothills and 3600 metres. Descends somewhat lower from the highest elevations in severe winters.

Lophura leucomelana

Range within Indian limits

1 *L. l. hamiltonii* (293).

2 *L. l. leucomelana* (294). 3 *L. l. melanota* (295). 4 ? *L. l. moffitti* (298).

5 *L. l. lathamii* (296). 6 *L. l. williamsi* (297).

94

GALLIFORMES

of broad arching sickle-shaped feathers in the male. Bill strong; of moderate size. Face naked, brightly coloured, the skin covered with tiny papillae. Tarsi stout, armed with a long sharp spur on each leg in male, exceptionally also in female. Sexes dimorphic: female without elongated sickle-shaped feathers in tail.

Within our limits only one species, in 5 (or 6) races, occurs in the Himalayas and Assam hills, ranging eastward through Burma and the Indochinese subregion to S. China and Hainan Island.

LOPHURA LEUCOMELANA (Latham)

Key to the Subspecies

Males

		Page
A	Crest white or very pale brown.....	<i>L. l. hamiltonii</i> 94
B	Crest black.....	1
1	Plumage entirely black above and below.....	<i>L. l. moffitti</i> 101
	Plumage not entirely black above and below.....	a
a	Upper plumage wholly black, breast whitish.....	<i>L. l. melanota</i> 98
	Upper plumage black, feathers with pale edges and rump barred white; breast largely whitish.....	<i>L. l. leucomelana</i> 97
	Upper plumage black, rump boldly barred with white; breast black.....	<i>L. l. lathamii</i> 99
	Upper plumage finely marked with black and white; breast black.....	<i>L. l. williamsi</i> 101

Females

A	Underparts paler.....	<i>L. l. hamiltonii</i> 94
B	Underparts darker.....	1
1	Central tail-feathers well mottled.....	a
	Central tail-feathers not much mottled.....	b
a	Feathers of upper plumage with pale contrasting edges.....	<i>L. l. leucomelana</i> 97
	Feathers of upper plumage with pale edges barely showing.....	<i>L. l. melanota</i> 98
b	Central tail-feathers plain hair brown.....	<i>L. l. moffitti</i> 101
	Central tail-feathers darker chestnut-brown.....	<i>L. l. lathamii</i> 99
	Central tail-feathers paler chestnut-brown.....	<i>L. l. williamsi</i> 101

293. **Whitcrested Kaleej Pheasant.** *Lophura leucomelana hamiltonii* (J. E. Gray)

Phasianus Hamiltonii J. E. Gray, 1829, in Griffith's Anim. Kingd. 8 (Aves, 3): 27 (India; the type probably came from Nepal, vide N. B. Kinnear, in litt.) Baker, FBI No. 1918, Vol. 5: 320 Plate 35, fig. 4

LOCAL NAMES. *Kaleej*, *Kükera*, *Kalesur* ♂, *Kälä mürghä* ♂, *Kaleri* ♀ (Hindi); *Köla* (Himachal Pradesh).

SIZE. Domestic fowl; length c. 65-73 cm. (25-29 in.).

FIELD CHARACTERS. An obvious first cousin of domestic and jungle fowl.

96

GALLIFORMES

GENERAL HABITS. Keeps in pairs or small family parties which come out to feed in the open in the early mornings and afternoons, on kutch forest tracks and firelines, and in freshly sown fields. In foothills country frequently found in association with Red Junglefowl to which its behaviour and general ecology are very similar. Like the junglefowl too it is a strong flier and gives good sport with the gun, both species often getting up in the same beats. Roosts at night in trees, several birds clumped together along a branch.

FOOD. Grain, seeds, shoots, insects and their larvae, and small reptiles. In crops of specimens in Garhwal the following identified: acorns of *bej* oak (*Quercus incana*) minus outer husk, ripe fruits of *Pyrus pashia* and *Rosa moschata*, green stems of *Viscum japonicum*, pods of *Desmodium tiliacifolium*, bulbs of *Dioscorea* sp., and ripe seeds of *Nyctanthes arbor-tristis*; in the vicinity of travellers' *parāos* (camp sites) and habitations, human excreta (A. E. Osmaston).

VOICE AND CALLS. The crowing is described as 'a loud whistling chuckle or chirrup'. In breeding season male makes a peculiar drumming noise like shaking or flapping a thick piece of cloth in the wind, 'produced partly by rapid vibrations of the wings and partly by the vocal organs' (A. E. Jones). Both sexes cluck in soft undertone when scratching among the thickets for food. When flushed gives vent to a series of guinea-pig-like squeaks and chuckles (Whistler).

BREEDING. Season, between March and June varying with altitude. Nest, a crude collection of leaves and rubbish in a shallow scrape in the ground under shelter of an overhanging tuft of grass or ringal bamboo, or stone, on a jungly hillside. Eggs 6 to 9, and up to 15, pale cream or buffy white to warm reddish buff, very similar to eggs of domestic fowl. Average size of 100 eggs 49.5 × 37.0 mm. (Baker). Incubation entirely by hen; period 24-25 days. Uncertain whether in the wild state cock monogynous or polygynous. Observations in support of both have been recorded. Courtship display of the characteristic pheasant pattern: the cock struts round a hen in a half-circle with the wing on near side expanded and drooped, the opposite one being slightly raised at the elbow to slant the back towards the hen, who usually seems quite uninterested.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). 'Head and upper back chestnut with a dark line from eye to nape as in all species of the genus. Upperparts dark brown with two broad lateral whitish buff bands. Underparts whitish. Wing mottled brown and buff. Legs reddish flesh.

'Young (immature). Dark brown, the head more rufous; ear-coverts blackish. Upper plumage freckled with black, each feather with a subterminal black and a terminal rufous-buff border. Underparts lighter, the feathers with a terminal whitish spot' (Delacour).

As in all subspecies of *leucomelana* young cocks assume adult plumage in their first year.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	225-250	23-30	75-80	230-350 mm.
♀ ♀	203-215	20-25	65-70	205-215 mm. (Delacour)

PHEASANTS, PARTRIDGES, QUAILS 97

Weight ♂♂ 2 lb.-2 lb. 6 oz. (910-1080 gm.); ♀♀ 1 lb. 4 oz. to 2 lb. 4 oz. (564-1024 gm.) — Hume.

COLOURS OF BARE PARTS. Iris brown or orange-brown. Bill greenish white, dusky at tip. Orbital skin vermilion to crimson with slight black feathering. Legs and feet livid white to pale olive-brown or slaty brown.

294. **Nepal Kaleej Pheasant.** *Lophura leucomelana leucomelana* (Latham)

Phasianus leucomelanos Latham, 1790, Index Orn. 2: 633 (India, restricted type locality Nepal, *apud* Baker, 1928, op. cit.: 322)

Phasianus Nipalensis Hodgson, 1827 (Dec.), Quart. Oriental Mag. Rev. and Regist. 8, (Sci.): 44 (Nepal)

Gemmaeus fockelmanni Ghigi, 1913, Riv. ital. Ornitol. 2: 192 (no locality)

Cf. Rand, A. L., & Fleming, R. L., 1952, Fieldiana, Zool., 41: 62 Baker, FBI No. 1919, Vol. 5: 322

LOCAL NAMES. *Kalik kaleej* (Parbutia); *Rehabo* (Nepal).

SIZE. Domestic fowl; slightly smaller than 293. Length c. 60-68 cm. (23-26 in.).

FIELD CHARACTERS. Male. Like Whitecrested Kaleej (293) but with the crest glossy blue-black. Above, lower back, rump, and upper tail-coverts glossy blue-black the feathers narrowly (v. broadly) edged with white. Wing-coverts with more white than in 293. Below, chin and foreneck darker and more glossy; rest of underparts more whitish.

Female differs from ♀ 293 in being redder and more richly coloured, the grey feathers of the underparts conspicuously dark centred and producing a scaly or scalloped effect. Naked orbital skin scarlet as in male.

STATUS, DISTRIBUTION AND HABITAT. Resident. Nepal from about the Ghaghra river (c. 81°15'E.) eastward to about the Arun (c. 87°15'E.), but range imperfectly known; from c. 400 metres in the foothills to c. 3660, the last being the highest elevation recorded (Khumbu, E. Nepal. May — Biswas). Fairly common in the mountains surrounding the duns and Nepal valley. Affects forest with heavy scrub undergrowth; partial to the neighbourhood of water and terraced cultivation. Reportedly occupying a higher zone in Nepal than Red Junglefowl.

[An enigmatical record (specimen ♂, December 1924 (JBNHS 30: 917) from Mussooree, U.P. (c. 30°25'N., 78°0'E.) — possibly an escape from some Maharaja's local pheasantry?]

GENERAL HABITS. As of 293, q.v. 'At end of March cocks collect in open places and challenge other cocks. They make the most extraordinary noises, and appear to dance round in circles. Usually 3 or 4 cocks dancing and fighting, with half a dozen or more hens nearby' (Mrs Proud). More details lacking.

BREEDING. Season, c. April through June; information meagre. Eggs. Seven vicariously collected from two clutches described by Baker as warm buff in colour and varying in size from 46.1 × 27.7 mm. to 53.0 × 39.0 mm. A cock observed in company with two hens and about a dozen tiny chicks (Mrs Proud). Suggesting polygyny?

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

PHEASANTS, PARTRIDGES, QUAILS 99

a 'whistling *psee-psee-psee-psee* unlike anything expected from a pheasant' (M. D. Lister).

BREEDING. Season, March to May. Nest, a scrape in the ground lined with dry grass and bamboo leaves, amongst dense undergrowth in gullies, etc. Eggs, 6 or 7, buff coloured, glossy broad ovals. Average size of 61 eggs 48.7 × 37.3 mm. (Baker).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

♂ Wing 215-240; tail 238-300 mm. (Delacour).

A series collected by Ernst Schäfer in Sikkim gives: Wing 6 ♂♂ 233-248 (aver. 238.7); 6 ♀♀ 211-222 (aver. 215.0) mm. — Stresemann.

Weight ♂♂ 2 lb. 6 oz. to 2 lb. 12 oz. (c. 1080-1150 gm.); ♀♀ 1 lb. 14 oz. to 2 lb. 4 oz. (c. 848-1025 gm.) — Hume.

COLOURS OF BARE PARTS. Iris hazel to orange-brown. Orbital skin scarlet-crimson. Bill greenish horny, black at base, paler at tip. Legs and feet slaty or greenish brown.

296. **Blackbreasted Kaleej Pheasant.** *Lophura leucomelana lathamii* (J. E. Gray)

Phasianus lathamii J. E. Gray, 1829, ex Griffith, Cuvier, Anim. Kingd. 8 (Aves, 3): 26 (Sylhet)

Gallopharis Horsfieldii G. R. Gray, 1845, Gen. Bds. 3: 498, col. pl. 127 (no locality) Baker, FBI No. 1921, Vol. 5: 324

LOCAL NAMES. *Mathura* (Chittagong, Tippera, Goalpara); *Modira* (Sylhet and Cachar Plains); *Dorik*, *Dirrik*, *Dürüg* (Garó Hills); *Drodip* (Cachari); *Dorik* (Dibru-garh); *Vohtep* (Kuki); *Inruitip* (Naga); *Wäba* (Manipur); *Läko* (Bhutan).

SIZE. Same as 294; length c. 60-68 cm. (23-26 in.).

FIELD CHARACTERS. Male resembles Nepal Kaleej (294) but breast entirely black glossed with steel blue and purple, the feathers rounded not lanceolate. Upperparts glossy blue-black with purple sheen, except for broad white fringes, or crescentic barring, on lower back and rump as in 294. Higher on the legs, with the black crest more upright, and tail shorter and straighter.

Female. 'Differs from *melanota* (295) in its more upright crest, its shorter tail, with central rectrices very finely and inconspicuously streaked with black, which appears plain chestnut, its buffy brown throat, the narrower and usually paler borders to the feathers which are rather indistinct on the mantle, and the longer legs' (Delacour).

Young (immature) male like female, as above, but generally darker with contrasting white or pale buff edging to the feathers. 'Cocks take two or even three moults before acquiring the full plumage' (Baker).

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Eastern Bhutan, Assam hills north of Brahmaputra river (NEFA), Garo, Khasi, Cachar, Naga and Patkai Hills; Manipur, Sylhet, Chittagong (E. Pakistan). From c. 100

98 GALLIFORMES

Chick (in down). 'Head chestnut, paler on the forehead and behind the eye; a dark streak from the eye down the neck; centre of back chocolate-brown with broad lateral bands of pale buff; sides dull chestnut; chin and throat yellowish white, remainder of lower parts pale yellowish grey' (Baker).

According to Delacour immatures and downy chicks as in 293, but slightly richer in colour.

MEASUREMENTS

Wing 7 ♂♂ 216-236 mm. (aver. 227.5); 7 ♀♀ 198-211 (aver. 206) mm. Bill (from forehead) ♂♂ c. 35-37 mm.; tarsus ♂♂ 75-80; tail ♂♂ c. 250-305 mm.

Weight ♂♂ 1 lb. 12 oz. to 2 lb. 8 oz. (c. 795-1140 gm.) — Hume.

COLOURS OF BARE PARTS. As in 293.

295. **Blackbacked Kaleej Pheasant.** *Lophura leucomelana melanota* (Hutton)

Euplocamus melanotus 'Blyth' = Hutton, 1848, Jour. Asiat. Soc. Bengal 17(2): 694, in text (Darjeeling)

Baker, FBI No. 1920, Vol. 5: 323

LOCAL NAME. *Kar rhyak* (Lepcha).

SIZE. Same as 294; length c. 60-68 cm. (23-26 in.).

FIELD CHARACTERS. Male. Above, glossy black with violet, green, and purple reflections, the feathers scalloped with velvety black. White shafts of feathers conspicuous only on blue-black mantle. Crest and tail somewhat shorter than in 294. Below, chin and throat blackish brown paling towards breast. Feathers of breast long and lanceolate, white with brown bases producing a broadly streaked effect. Centre of abdomen and vent brown. Under tail-coverts and thighs blackish.

Female similar to Nepal Kaleej (294) but darker richer brown with narrow whitish scalloping. Crest and upper back brighter chestnut than male.

STATUS, DISTRIBUTION AND HABITAT. Resident. Eastern Nepal from about Arun river c. 87°15'E. long. (Mai khola or valley) eastward through Darjeeling district and Sikkim to about the Mo Chu or Sankosh (Gadadhar) river in W. Bhutan c. 89°45'E. long.; between c. 100 metres in the foothills and c. 2700, chiefly c. 600 to 1800 m. Affects densely overgrown steep gullies on the hill slopes; partial to thick cover in the proximity of running water and terraced cultivation.

GENERAL HABITS. As of 293, q.v., and Red Junglefowl. Pairs or small parties come out to scratch for food at the edge of forest clearings, freshly sown fields, and jungle tracks, in the mornings and evenings.

FOOD. As in 293. Among food items specified by Gammie (Sikkim) are tops of several nettles and ferns, and fruit, especially of *Polygonum molle* and the yellow raspberry, *Rubus flams*.

VOICE AND CALLS. When suddenly alarmed and taking wing a sharply repeated *koorchi koorchi koorchi*. In breeding season, when two rival cocks advance towards each other a threatening *koor koor* followed by 'attacking note' *waak waak*. Sometimes answering each other's calls in the jungles (Gammie). One flushed by dog and flying away downhill, as usual, emitted

100 GALLIFORMES

to 2600 metres elevation. Affects dense undergrowth in forest; partial to gullies in the neighbourhood of water and cultivation.

Extremal. Eastward to Irrawaddy river, south through NW. Chin Hills and northern Arakan to c. Akyab.

GENERAL HABITS. As of the other kaleejes, e.g. 293. Is a swift and obstinate runner and almost impossible to flush without a dog unless suddenly surprised. Thus affords poor sport with the gun although perhaps is just as difficult to shoot on the ground as it scurries through the undergrowth giving only fleeting glimpses of itself between bushes and the snappiest of snapshots. Active during mornings and evenings; rests during midday up on low bough of a tree.

FOOD. Like other kaleejes, omnivorous. Bamboo seeds, fallen figs of the various wild *Fici*, and white ants are favourite items. Has been observed darting to and fro picking up winged termites emerging from the ground, and even fluttering up a few feet in the air after them in ungainly sorties. Small snakes and lizards also recorded, as well as human excreta near habitations — lumber camps etc.

VOICE AND CALLS. Contact call between members of a scattered feeding party in cover, a low clucking *kurr-kurr-kurrchi-kurr* (Baker). Male crows, particularly in breeding season, from roosting perch in tree in the evening soon after ascending, and early morning before descending to feed. Unlike junglefowl, usually silent during the day. Challenges rival cocks by 'quickly and repeatedly beating together the tail above his back, and also by beating the wings against his ribs. In the former case the sound is very loud and sharp, lasting a second or two. When drumming against sides noise much lower and softer, and continued for some seconds or even minutes' (Cripps). The duration as described seems rather exaggerated, but the details are obviously of the 'cloth-flapping' drumming as in 293, q.v.

BREEDING. Season, February to October, chiefly April-May and July-August. Nest and eggs as in 293, q.v., and the other kaleejes. Cock evidently monogynous and assists in tending the young. But according to another reliable observer (F. N. Betts), cock invariably accompanied by two and sometimes three hens! ('Progressive polygyny'?). Incubation by female alone. Period 20-21 days (Baker); 23-24 days (Delacour).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). 'Head chestnut with black coronal streak; a dark chestnut streak from the eye, below which the buff is paler; median body-stripe rich chestnut-brown; sides and underparts of body ashy or ashy buff with an ill-defined chestnut band on the breast' (Baker).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	211-253	34-40	76-96	210-295 mm.
		Crest c. 76 and up to 90 mm.; spurs up to c. 25 mm.		
♀♀	203-230	33-35	68-76	190-228 mm.
				Weight ♂♂ 2 lb. 4 oz. to 3 lb. 12 oz. (c. 1025-1700 gm.); ♀♀ c. 715-750 gm. (Baker, SA)

COLOURS OF BARE PARTS. As in other races. Legs and feet plumbeous or brown, sometimes with pinkish tinge. Spurs sometimes pale jade colour.

297. Williams's Kaleej Pheasant. *Leptura leucosticta williamsi* (Oates)

Gallus williamsi Oates, 1893, Man. Game Bds. India, pt. 1: 342
(Kalewa, Chin Hills, Upper Burma)
Baker, FBI No. 1922, Vol. 5: 326

LOCAL NAMES. *Yit* (Burmese); *Rak* (Arakan).

SIZE. Same as 294; length c. 60-68 cm. (23-26 in.).

FIELD CHARACTERS. Resembles *L. l. lathami* (296) in shape, q.v.

Male. *Above*: Crest black; head, neck, back and mantle grey (caused by numerous tiny bars and vermiculations of white or buffy white on a black background). Lower back, rump and upper tail-coverts black, boldly barred with white as in *lathami*. Tail black with narrower white barring. *Below*, completely black.

Female. Very like *q. lathami* but paler [in this like *q. hamiltonii* (293)] with the central pair of rectrices chestnut, the others black or nearly black irregularly barred with white.

Young (immature) and Chick (in down). Unknown.

STATUS, DISTRIBUTION AND HABITAT. Not yet recorded in our limits but possibly extending into SE. Manipur and Mizo (Lushai Hills) from the contiguous Chin Hills area.

Extralimital. 'The Chin Hills, Lower and Upper Chindwin north to Niva and Wawabin, and Eastern Manipur (?); south to the north-eastern parts of the Arakan Yomas' (Delacour).

GENERAL HABITS. In the Chin Hills recorded in non-breeding season in parties of up to 20 males and females together, affecting open forest mixed with bamboo in the proximity of water. In this facies its lighter plumage is as concealing as the darker coloration of the other kaleejes in the sombre evergreen cover they frequent.

FOOD, VOICE AND CALLS. Nothing recorded as different from other races.

BREEDING. Unrecorded within our limits.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS. Wing ♂ 223-247; ♀ 206-220 mm. (Delacour).

COLOURS OF BARE PARTS. As in 296.

298. Moffitt's Kaleej Pheasant. *Leptura leucosticta moffitti* (Hachisuka)

Gallus moffitti Hachisuka, 1938, Bull. Brit. Orn. Cl. 58: 19 (No locality)
Not in Baker, FBI

LOCAL NAMES. Unrecorded.

SIZE. Same as 294; length c. 60-68 cm. (23-26 in.).

FIELD CHARACTERS. Male. Entirely black with steel blue reflections on the breast and upperparts. It has the black back of *melanota* and the black breast of *lathami*, but the breast feathers are lanceolate in shape with faint white shaft-streaks; in this character and in its general shape it stands nearer to *melanota* than to *lathami*. Soft parts as in *melanota*.

Female. Like *melanota* but the throat plain buff and the central rectrices finely peppered as in *lathami*, not vermiculated' (Delacour).

STATUS, DISTRIBUTION AND HABITAT. Unknown. Named from an aviary specimen of unknown provenance imported into California through a

Yara dāri kodi (Telugu); *Kāta kodi* (Tamil, Malayalam); *Nāra fā, Nāgāya, Nāg tē ja* (Bhutan); *Pazak chi, Tenziling* (Lepcha); *Kākhāri* (Bhutan); *Gera gōgār* ♂, *Kōrō* ♀ (Gond); *Ganga* (Orissa); *Dāro* (Cachar); *Yek* (Kuki); *Jera* (Kacha Naga).
SIZE. Domestic village fowl; length ♂ c. 66 cm. (26 in.); ♀ c. 43 cm. (17 in.).

FIELD CHARACTERS. Both sexes closely resemble the Game Bantam domestic breed.

Male. *Above*, chiefly glossy deep orange-red with long yellowish neck-hackles and similarly elongated lanceolate feathers on rump. Broad, laterally compressed metallic black tail with long arching sickle-shaped central feathers. *Below* chiefly blackish brown.

Female. *Above*, crown dull rufous. Forehead and supercilia bright chestnut continued below to meet in a loop on foreneck. Rest of upperparts reddish brown, finely vermiculated with buff and black. *Below*, pale-shafted light rufous-brown.

Young (immature) male. Neck-hackles less developed, paler, and more conspicuously black-centred.

For chick in down see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Outer Himalayas, chiefly foothills and terai but locally up to c. 2000 m. elevation, from northeastern West Pakistan through Kashmir eastward to Assam excluding easternmost NEFA (Mithun Hills, see *G. g. spadiceus*). Southward through ecologically suitable parts of Uttar Pradesh, Madhya Pradesh, Bihar, Orissa, West Bengal, Assam and E. Pakistan. Exact boundaries imperfectly known, but on the eastern side stretches south at least to the latitude of Rajahmundry (c. 17°N) on both banks of Godavari river (NE. Andhra). In the Mahadeo Hills and Mandla district of Madhya Pradesh both this and *G. sonneratii* occur together around the foot of Pachmarhi (c.22°30'N., 78°25'E.) and about half way up the ghat. Above this, and on the Pachmarhi plateau and surrounding hills, the Grey Junglefowl completely replaces the Red. Hybrids with *G. sonneratii* have been collected at Bheraghat in Madhya Pradesh. On the western side Jerdon, *flds* Blanford, recorded it in the Rajpipla Hills (western extremity of the Satpura Range in Gujarat) about a hundred years ago. More recently (1929) observed by a reliable naturalist (C. McCann) in the outliers of the W. Ghats near Bombay. Also reported from Khandala, W. Ghats (c. 18°45'N., 73°25'E.) and we have seen a cockerel artificially hatched from wild eggs allegedly collected in that area. Both the above localities are well within the range of *G. sonneratii*, and the Red Junglefowl must at best be extremely rare here. Crosses between the two species frequently occur in their narrow zone of contact. As first pointed out by Forsyth and repeatedly remarked since, its distribution in India by and large coincides in a striking way with that of the Sal tree (*Shorea robusta*) and the Swamp Deer (*Cervus duvaucelii*), although largely due to human interference the latter has now disappeared from many of its former habitats. This parallel contemporaneousness of ranges is graphically seen, e.g. in Madhya Pradesh where Teak (*Tectona grandis*) of the dry deciduous forests is replaced by Sal in the moist-deciduous and semi-evergreen eastern parts as the predominant tree species. The former biotope is occupied by the Grey, the latter by the Red Junglefowl. Affects moist-deciduous forest

Calcutta bird dealer in 1934. Has bred true in captivity. Only a single wild example (♂) so far obtained: Pe Chu valley, central Bhutan (c. 27°30'N., 90°E.), June 1965 (by K. S. Ranjitsinhji of Wankaner).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS. Wing 242, tarsus 72, tail c. 284 mm. (SA).

COLOURS OF BARE PARTS. Not recorded.

Genus GALLUS Brisson

Gallus Brisson, 1760, Orn. 1: 26, 166. Type, by tautonymy, '*Gallus*' = *Phasianus gallus* Linnaeus

Cf. Delacour, J., 1948, *Ibis*: 462-4.

Contains four species of the true junglefowl confined to the Indomalayan sub-region of which three occur within our limits, the fourth, *G. tenuis*, restricted to Java and neighbouring islands eastward. Males of all three Indian species furnished with a fleshy crest or comb, and two fleshy lobes or wattles hanging from each side of the throat. Wings rounded: first primary (as.) shorter than 10th; 5th primary longest. Tail sharply compressed laterally, of 14 feathers, the central ones greatly lengthened and with pliant shafts so that they droop in a graceful sickle-shaped curve. Feathers of neck (hackles) and of rump long and lanceolate. Legs long and powerful: tarsus longer than middle toe with claw and armed (in ♂) with a long and sharp spur.

Key to the Species
Males

	Page
A Neck-hackles blackish with golden bars or spots..... <i>G. sonneratii</i>	106
B Neck-hackles red or golden-red with no spots.....1	
1 Breast black..... <i>G. gallus</i>	102
Breast reddish orange..... <i>G. leucotis</i>	109

Females

A Breast white, each feather edged with brown..... <i>G. sonneratii</i>	106
B Breast rufous-brown with pale shaft-lines..... <i>G. gallus</i>	102
C Breast mottled brown and black and white..... <i>G. leucotis</i>	109

GALLUS GALLUS (Linnaeus)

Key to the Subspecies

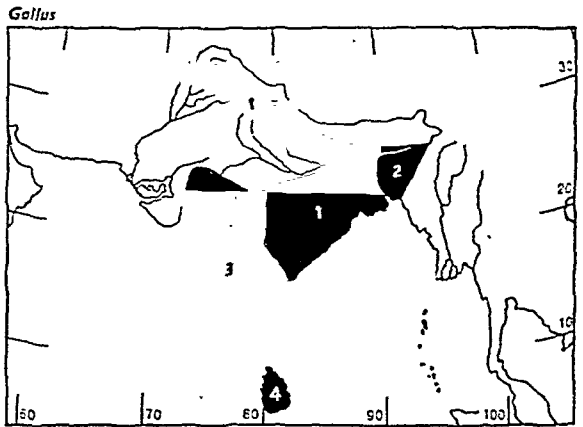
Neck-hackles much pointed and more golden yellow on the terminal third..... <i>G. g. nungli</i>	
Neck-hackles less pointed and deeper golden red on the terminal third..... <i>G. g. spadiceus</i>	

299. Indian Red Junglefowl. *Gallus gallus nungli* Robinson & Kloss

Gallus ferrugineus nungli Robinson & Kloss, 1920, Rec. Ind. Mus. 19: 14, 15
(Chirala, Gaya District, Bihar)

Gallus gallus gallus Koelz, 1954, Contrib. Inst. Regional Exploration,
No. 1: 29 (Koda, Kangra)
Baker, FBI No. 1903, Vol. 5: 295
Plate 35, fig. 6.

LOCAL NAMES. *Jāngli mūngli, Bān mūngli, Lāl mūngli* ♂, *Jāngli mūngli, Bān mūngli* ♀ (Hindi, N. India, Bengal); *Lāl rām kāmāda* (Marathi); *Bān kākār* (Assam);



Range within Indian limits 1 *G. g. nungli* (299).
2 *G. g. spadiceus* (300). 3 *G. sonneratii* (301). 4 *G. leucotis* (302).

Extralimital races E. and S. of 2.

and bamboo and scrub jungle interspersed with patches of cultivation and clearings, especially in hummocky foothills country.

GENERAL HABITS. Keeps in small parties usually a cock and 4 or 5 hens. Comes out in the open in the early mornings and late afternoons, to glean and scratch about for food, retiring into the surrounding undergrowth during the heat of the day. Very shy and wild, skulking away through the thickets on the least alarm. Commonly seen on cart-tracks or firelines running through forest, picking at cattle droppings or gleaning any grain that may have fallen from passing carts. When suddenly come upon the bird rises with a good deal of flutter and cackling, as characteristic of its domestic cousin, often flying up into the branches of a tree, sitting motionless and concealed among the foliage, and slipping away noiselessly when it feels the coast clear. They are fast fliers and afford good sport with the gun over dogs or when driven out by beaters, giving a wide variety of snap shots as they cross a fireline high above the forest canopy or hurtle through the tangle of shrubs and tree-trunks lower down. When flushed in a beat in tall forest and feeling cornered the bird 'chimneys' almost vertically in a series of remarkable zigzags, turning this way and that as it rises to escape through a gap in the leaf canopy high overhead.

FOOD. Grain of all kinds, shoots of grass and crops, tubers, fruits and berries (e.g. *Ficus* and *Zizyphus*), insects (especially grasshoppers and termites), grubs and maggots; occasionally lizards, and doubtless also small snakes, and human excreta near lumber camps, etc. Bamboo seeds highly prized, and large numbers of fowl will collect to feed where there is a flush. Has been observed to raise larger and earlier broods in years of abundant

PHEASANTS, PARTRIDGES, QUAILS

105

bamboo flowering. A quantity of grit is always swallowed with the food. In the Ruby Mines District rubies and elsewhere in Burma sapphires have been found in gizzards.

VOICE and CALLS. Crow of cock very similar to that of domestic Bantam, but somewhat shriller and with a more abrupt ending. Uttered principally at dawn and before sunrise, and also again before sunset while the birds are preparing to roost up in some tree or bamboo clump. It is usually prefaced by a noisy rapping of the wings against the sides and promptly answered by other cocks in the vicinity. Hens have the same range of alarm and conversational cackling and clucking notes as domestic fowls, but unlike the latter do not loudly advertise the laying of an egg.

The Mogul emperor Jehangir, after describing the Red Junglefowl¹ with his characteristic meticulousness, mentions a peculiarity overlooked by later writers. He says: 'One of the peculiarities of these birds is that if they are caught by the feet and turned upside down wherever they are taken they make no sound and remain silent contrary to the domestic fowl which makes an outcry.'

BREEDING. Courtship display characteristic of the family Phasianidae, as commonly seen in the domestic fowl: the cock fluffs out his feathers, expanding and stiffly drooping the wing on the side of the hen till it almost scrapes the ground, raising the closed wing on the opposite side at the shoulder so as to slant the back towards her and running round her in a semicircle with partly lowered head, then pivoting round to repeat the manoeuvre in the reverse direction. *Season*, mainly March to May; but odd clutches may be found from January to October. *Nest*, a scrape in the ground lined with dry grass and bamboo leaves amongst dense undergrowth in forest. *Eggs*, 5 or 6, very like those of the domestic fowl, varying in coloration from pale buff to pale reddish brown. Average size of 150 eggs 45.3 × 34.4 mm. (Baker). Cock apparently monogynous, but to some extent evidently also practising 'progressive polygamy'—not of the 'harem' type. Assists in tending the chicks (of the latest hen?). Incubation by hen alone; period 20–21 days.²

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). 'From base of bill through eyes and down sides of neck, a black line; over this a broad line of pale buffish brown; from base of comb down crown, neck, and dorsum to tail a broad black line outlined on dorsum by a creamy streak on each side; wings chestnut; breast and thighs pale buffish brown; rest of underparts creamy white' (Ticehurst, 1926. Described from a downy chick of *Gallus g. gallus*).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	203–244	18–22	c. 70–80	300–380 mm.
♀♀	177–196	—	—	145–165 mm.

Spur ♂ c. 25 mm., occasionally up to 50 mm. Small spurs sometimes present also in ♀.

¹ *Tuzuk-e-Jehangiri* or Memoirs of Jehangir written by himself between c. A.D. 1603 and 1627 and translated from the Persian in two volumes by A. Rogers and H. Beveridge, 2, 226.

² For further details of ecology and breeding biology see Collias, Nicholas E. & Elsie G. Collias, 1967, 'A field study of the Red Junglefowl in north-central India.' *The Condor* 69(4): 360–86.

PHEASANTS, PARTRIDGES, QUAILS

107

Chanda dist.); *Rākhi rān kōmbā* ♂ (Marathi); *Jāngli murgā* (Gujarati); *Raan kōmbā* (Deccan); *Kattu kōzhi* (Tamil); *Tella ādāri kōdi* (Telugu); *Kēli, Kād kēli* (Kannada).

SIZE. Domestic fowl; length ♂ c. 60–80 cm. (24–32 in.), ♀ c. 46 cm. (18 in.).

FIELD CHARACTERS. General effect as of domestic fowl, but cock with distinctly longer tail.

Male (breeding). *Above*, white-streaked dark grey with glossy purple-black wing quills and long arching, sickle-shaped tail. Neck-hackles (forming a cape), upper back, and mantle, tipped or spangled with peculiar shiny orange or golden yellow sealing-wax like spots and streaks. No elongated lanceolate plumes on rump as in Red. *Below* blackish grey, broadly white-streaked on breast; uniform brownish grey on abdomen; tinged with rusty red on flanks.

In non-breeding plumage, neck-hackles and sickle-shaped rectrices replaced by shorter dull blackish feathers. Comb becomes much reduced.

Female. *Above*, crown and neck speckled brown, the feathers streaked and scalloped paler. Rest of upperparts finely mottled blackish brown and buff, and narrowly streaked with white. *Below*, chin and throat whitish. Rest of underparts white, boldly scalloped with black on upper breast. Normally without, rarely with rudimentary, exceptionally with well-developed spurs—once over 2.5 cm.

Young (immature) male like adult female but more rufous, more boldly blotched and barred; soon showing grey feathers. Tail black.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. Species peculiar to peninsular India almost to the extreme south; not extending to Ceylon. South of a line roughly from Mt Abu (c. 24°30'N., 73°E.) in the west to Pachmarhi (c. 22°30'N., 78°25'E.) in Madhya Pradesh; thence to Polavaram (c. 17°15'N., 81°45'E.) in Andhra near the mouth of the Godavari river with local eastward extensions from it: thus southern Rajasthan, Madhya Pradesh, Andhra, Gujarat, Maharashtra, Madras, Mysore, and Kerala. Frequently hybridizes with Red Junglefowl in their zones of contact. Affects all types of forest from secondary dry-deciduous to moist-evergreen. Chiefly broken foothills country, commonly up to c. 1500 metres in the Satpura and Eastern and Western Ghats complex, and to the highest sholas, c. 2400 m., in the Nilgiris (Dodabetta) and Kerala ranges (Anaimudi peak). Partial to mixed bamboo jungle and the neighbourhood of forest villages and cultivation; in the south particularly to abandoned *tamrāga* clearings and neglected tea, coffee, and rubber plantations overgrown with lantana tangles.

GENERAL HABITS. Similar to those of the Red Junglefowl (299), q.v. Keeps singly or in pairs or small parties of 5 or 6, the sexes either mixed or segregated. Large numbers collect in areas of periodical food abundance such as where bamboos or *karrī* (*Strobilanthes* = *Karrīa*) are seeding. Usually very shy and timid. When emerging into the open to feed in the morning and late afternoon seldom strays far from cover, scuttling headlong into it with outstretched neck and drooping tail on the least suspicion. Where unmolested, however, becomes quite inured to human proximity, feeding around forest villages and in fields even while being ploughed. Such conditions unfortunately are fast disappearing. Roosts up in trees or

106

GALLIFORMES

Weight c. 2 to 3 lb. (910–1360 gm.)—Baker; ♂♂ 1 lb. 12 oz. to 2 lb. 4 oz. (c. 800–1020 gm.); ♀♀ 1 lb. 2 oz. to 1 lb. 10 oz. (c. 485–740 gm.)—Hume.

COLOURS OF BARE PARTS. ♂ Iris reddish brown or orange-red. Comb and wattles scarlet-crimson; lappets white or pinkish. Bill reddish at base; upper mandible brown, lower pale horn. Legs, feet and spurs slaty brown. ♀ Iris brown. Comb scarlet-crimson. Bill yellowish or pale fleshy at base; upper mandible brown, lower pale horn. Legs, feet and claws slaty brown.

MISCELLANEOUS. Rensch (1932) and others have deduced that Ind^a was the original centre of domestication, therefore the Indian species *Gallus gallus* and not *Gallus varius* of Java must be considered the true ancestor of the domestic fowl. Date of domestication uncertain, but evidently the junglefowl already figured as a domestic bird in the Harappa and Mohenjodaro civilizations c. 2500 B.C., and in Egypt and China as early as 1500–1400 B.C.

300. Burmese Red Junglefowl. *Gallus gallus spadiceus* (Bonnaterra)

Perdix spadicea Bonnaterra, 1791, Table Encycl. Méth. 1: 208 (Malacca)

Baker, FBI No. 1904, Vol. 5: 298 (= *G. barchia robinsoni*)

LOCAL NAME. *Tau kyat* (Burmese).

SIZE and FIELD CHARACTERS. As of 299, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Eastern Mishmi Hills, NEFA. Affects undergrowth in moist-deciduous and semi-evergreen jungle, interspersed with patches of cultivation and clearings.

Extralimital. SW. Yunnan, Burma, Siam (except the eastern parts), N. Laos, Malaya, N. Sumatra (Delacour).

GENERAL HABITS, FOOD, VOICE and CALLS. As in the Indian race (299).

BREEDING. Nothing specifically recorded as different from 299. *Season* in the Mishmi Hills unrecorded; in Burma principal months for eggs March to May.

MUSEUM DIAGNOSIS. Male differs from *G. g. murghi* in having the upper plumage a deeper red with the neck-hackles less attenuated, less orange or yellow at the tips, and with the dark central streaks reduced. Ear lappets smaller, usually red or deep fleshy pink, not white or pinkish as in 299.

MEASUREMENTS and COLOURS OF BARE PARTS (excepting lappets) as in the Indian *G. g. murghi*.

301. Grey Junglefowl. *Gallus sonneratii* Temminck

Gallus Sonneratii Temminck, 1813, Fig. et Gall. 2: 246

(India = Eastern Ghats near Madras, restricted by Whistler & Kinnear, 1936, Jour. Bom. nat. Hist. Soc. 38: 682)

Phasianus indicus Leach, 1815, Zool. Miscellany, 2, pl. 61: 6

(India, restricted to Madras)

Gallus sonneratii wangyi Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 29 [Oria (Mt Abu), Sirohi]

Baker, FBI No. 1905, Vol. 5: 298

Plate 35, fig. 9

LOCAL NAMES. *Jāngli murgā* ♂, *Jāngli murgī* ♀ (Hindi); *Kōmri* (Mt Abu); *Gerra kūr* (Maria Goud); *Kātu kōzhi* (Malayalam, Tamil); *Parda kōmri* (Gondi,

108

GALLIFORMES

bamboo clumps, several birds perched together along a branch or arching culm.

FOOD. Grain, shoots of grass and crops, tubers, berries (e.g. *Zizyphus*, *Lantana*, *Streblus asper*) gleaned on the ground or plucked from low bushes, windfallen wild figs (*Ficus bengalensis*, *F. glomerata*, and other species) from underneath the trees, insects, especially grasshoppers and termites, and small reptiles (lizards, and doubtless snakes). Also fly maggots and human excreta (probably ingested with them) near human habitations. Bamboo and *Strobilanthes* seeds when cyclically available attract very large numbers of junglefowl to the seeding areas.

VOICE and CALLS. Crow of cock a curious halting, grating and rather unmusical *kūk-kā-kūrra-kūk* or *kūk-kāyā-kāyā-kūk*. It ends in a low *kyūkūn-kyūkūn* repeated slowly and softly and audible only at close range. Cocks (in breeding season only?) often indulge in a bout of all-round crowing before dawn, when still quite dark, which is joined in by others from far and near. After this there is a lull for a couple of hours till light enough for them to descend from the roosting perch, preceded by another round of crowing. In daytime the call is normally uttered from an ant-hill or fallen log, and usually prefaced by a loud rapping of the wings against the sides. A loud, bellicose, challenging *klick* . . . *kluck-kluck* repeated monotonously every few seconds from a more or less fixed position, maybe for over a quarter of an hour at a stretch, is sometimes emitted by a cock. Exact significance of these calls not understood. There is a sensible difference in timbre between the crow of Kerala birds and those from the Mt Abu area which, moreover, are somewhat paler in coloration.

BREEDING. *Season*, chiefly February to May, somewhat earlier in the south, but locally more or less throughout the year. *Nest* and *eggs* similar to those of the Red Junglefowl, the latter sometimes with a few dark freckles of brown or reddish brown. Normal clutch 3 to 5 or 6, though 6 to 10 have been recorded. Average size of 60 eggs 46.3 × 36.5 mm. (Baker).

Cock *apparently* monogynous, but evidently practising progressive polygyny, pairing with individual hens as they become physiologically mature. Incubation by hen alone; period 20–21 days.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). 'Similar to that of the Red Junglefowl but the lateral bands almost white and the sides and lower parts dull grey' (Baker).

Female (immature) in first feather plumage 'closely resembles adult ♀, but the shaft streakings of the upper plumage and the lanceolate markings of the lower are as a whole much less distinctly defined. The black stippling on the wings and tail also tends to coalesce into barring on the edges of the tertiaries and tail-feathers' (Whistler).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	220–255	32–36	70–80	314–390 mm.
♀♀	190–215	30–33	60–67	100–170 mm.

(Delacour & SA)

Weight ♂♂ 1 lb. 12 oz. to 2 lb. 8 oz. (790–1136 gm.); ♀♀ 1 lb. 9 oz. to 1 lb. 12 oz. (705–790 gm.)—Hume & Baker.

PHEASANTS, PARTRIDGES, QUAILS 109

COLOURS OF BARE PARTS. ♂ Iris dusky chrome-yellow or orange-brown. Bill yellowish flesh colour, dark horny brown on culmen. Comb and wattles bright crimson. Legs and feet yellow, or pale yellow and magenta; claws horny brown, spurs darker. ♀ Iris, bill and legs as in ♂. Rudimentary comb and bare facial skin brick-red or dull crimson.

MISCELLANEOUS. The spangled neck-hackles of the cock are much prized in the U.S.A. for making artificial flies for trout fishing. The lucrative demand resulted in large-scale smuggling abroad of these feathers by unscrupulous businessmen, and a serious depletion of Grey Junglefowl populations, particularly in some of the south Indian districts. Tightening up of Customs vigilance has helped to mitigate the vandalism, but only partially. Fortunately for its preservation, however, the species breeds freely in captivity, and it is to be hoped that before long this industry will be sufficiently developed in America to meet their local demand for hackles and relieve pressure on our indigenous wild stocks.

Among the many methods practised in the different parts of the country for capturing Grey Junglecocks, an unconvincing but nevertheless highly successful one is for a number of persons to throw a wide ring round a cock in fairly open scrub country and chase him to attrition from bush to bush. In his panic the bird evidently prefers to trust to his legs rather than fly, and is soon tired out and secured.

302. Ceylon Red Junglefowl. *Gallus lafayetii* Lesson

Gallus Lafayetii Lesson, 1831, *Traité d'Orn.*, livr. 7: 491 (Ceylon)
Gallus lafayetii xanthimaculatus Deraniyagala, 1955, Admin. Rept. of the Dir. Nat. Museums, Ceylon, for 1954, Pt. IV, Educ., Sci. & Art (E): E5 (Mankulam, N.P., Ceylon)
Baker, FBI No. 1906, Vol. 5: 300
Plate 35, fig. 8

LOCAL NAMES. *Weli kukkulā* ♂, *Weli kikkili* ♀ (Sinhala); *Kāthkōli* (Tamil).

SIZE. Domestic fowl; length ♂ c. 66-72 (26-28 in.) including long tail; ♀ c. 36 cm. (14 in.).

FIELD CHARACTERS. Male differs from Indian Red Junglecock chiefly in having the breast reddish orange instead of black. Feathers at base of naked throat rich violet-purple. Comb larger, crimson-red broadly centred by a yellow patch; shaped like an inverted pear in profile and only slightly crenated. Secondaries of wing purple-black instead of chestnut.

Female. Above chiefly rufous-brown and rufous-buff, finely vermiculated with black. Wings (primaries and secondaries) pale brown mottled with black and buff to produce several broad and distinctive black and buff bands. Below, upper breast, sides of lower breast, and flanks, vermiculated black and rufous-brown and streaked with rufous-buff. Rest of underparts largely black-streaked white.

Young (immature) cock resembles adult ♀ but has the black-centred yellow neck-feathers and upperparts mixed with red. Below: breast rufous-red, belly dull black (Delacour).

PHEASANTS, PARTRIDGES, QUAILS 111

brown. ♀ Iris olive-yellow. Bill dark brown above, yellowish below. Legs and feet brownish yellow.

Genus *PUCRASIA* G. R. Gray

Pucrasia G. R. Gray, 1841, List Gen. Birds, ed. 2: 79. New name for *Eulophus* Lesson 1836 (not of E. L. Geoffroy 1762). Type, by monotypy, *Satyra macrolopha* Lesson.

Head and face in both sexes fully feathered and with a well-developed occipital crest. In male two long tufts of metallic black plumes on either side of crest springing from above ear-coverts, erected in display. Wing less rounded than in most pheasants: 1st primary (as.) considerably shorter than 2nd; 2nd primary equal in length to 8th; 4th primary slightly the longest. Body feathers mostly lanceolate in both sexes. Upper tail-coverts almost as long as tail. Tarsus a little longer than middle toe and claw; armed with a spur in male. Sexes dimorphic in coloration.

Only one Himalayan species within our limits.

PUCRASIA MACROLOPHA (Lesson)

Key to the Subspecies

Males

	Page
A Sides and flanks principally grey.....	1
1 No red nuchal collar..... <i>P. m. macrolopha</i>	113
A red nuchal collar..... <i>P. m. biddulphi</i>	113
B Sides and flanks principally black..... <i>P. m. nipalensis</i>	115
C Sides and flanks principally chestnut..... <i>P. m. castanea</i>	111

Females

A Outer pairs of tail-feathers with black markings more or less following contour of feathers..... <i>P. m. macrolopha</i>	113
B All except outermost pair with black markings forming bars..... <i>P. m. biddulphi</i>	113
C All except outermost pair chiefly chestnut on the outer web, and blackish, white-tipped on the inner..... <i>P. m. nipalensis</i>	115
D Tail chiefly blackish brown (not rufous-chestnut); central feathers greyish brown..... <i>P. m. castanea</i>	111

303. Chestnutmantled Koklas Pheasant. *Pucrasia macrolopha castanea* Gould

Pucrasia castanea Gould, 1855 (1854), Proc. Zool. Soc. London: 99 (Kafiristan)
Baker, FBI No. 1914, Vol. 5: 313

LOCAL NAMES. None recorded.

SIZE. Domestic fowl; length ♂ c. 58-64 cm. (22-25 in.); ♀ c. 52-56 cm. (20-23 in.).

FIELD CHARACTERS. As for the common Koklas (305), q.v., but neck all round, upper back, breast, and flanks chestnut, and middle of abdomen brownish black in male. Tail largely sooty black with practically no chestnut. For female see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Lower Chitral west of Kunar river in NW. Pakistan, the localities particularized being the Pattison and Arreth

110 GALLIFORMES

STATUS, DISTRIBUTION AND HABITAT. Endemic and peculiar to Ceylon. Locally plentiful in the jungles throughout the Island. Resident in all zones, from sea level to the highest mountains.

GENERAL HABITS. As of the Indian species (299), q.v. Very shy and wary in the neighbourhood of villages and roads, but tame and unafraid in remoter areas where unmolested.

FOOD. As in the Indian species, grain, weed-seeds, berries, insects (especially grasshoppers and termites), and small animals such as lizards. Bamboo and *Strobilanthes* seeds when available are particularly favoured.

VOICE AND CALLS. The cock's crow 'is a staccato, musical, ringing chick, *chaw-choyik* — the terminal *ik* being higher in scale than the rest. It is uttered with the head somewhat depressed and the beak jerked sharply up at each syllable' (Henry). This has also been aptly rendered as 'tek... *George Joyce*'. When challenging a rival the crowing is generally prefaced by a 'vigorous clapping of the wings together above the back (*sie*), from 3 to 4 claps' (Henry). This sound, easily imitated by slapping the trousered thighs, frequently lures a cock to the ambushed hunter and to his doom. Hen's cackle a high-pitched metallic *kwikkuk, kwikkukuk*... Besides these both sexes have a hard cackling *clock, clock* and a lower *chock, chock* (Delacour).

BREEDING. Commonly up to c. 1600 metres elevation. Season practically throughout the year, but chiefly December through April, and then again August-September. Nest, a bed of dry leaves in a scrape in the ground between the buttressed roots of a large forest tree, but more commonly up to 3 or 4 metres above in the fork of a tree-trunk, or on top of a broken stump, in cardamom jungle or other dense undergrowth. Eggs, normally 3 to 5 (up to 9 recorded), pale cream, peppered all over with minute light brown or purplish brown specks. More commonly thus stippled than in the Indian species. Average size of 48 eggs 46.3 × 34.5 mm. (Baker).

Crosses freely in captivity with both *Gallus gallus* and *G. sonneratii*, producing fertile hybrids.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). Similar to *G. gallus* (299) but the markings darker; bands on sides of head and neck blackish (Delacour).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
8 ♂ ad.	228-239	34-39	69-82	290-338 mm.
3 ♀ ad.	187-195	30-32	57-63	108-118 mm. (Whistler)

Delacour gives the range as:

	Wing	Tail
♂♂	216-240	230-400 mm.
♀♀	170-180	c. 110 mm.

Weight ♂♂ 1 lb. 12 oz. to 2 lb. 8 oz. (c. 790-1140 gm.) — Baker; ♀♀ 1 lb. 2 oz. to 1 lb. 6 oz. (c. 510-625 gm.) — Hume.

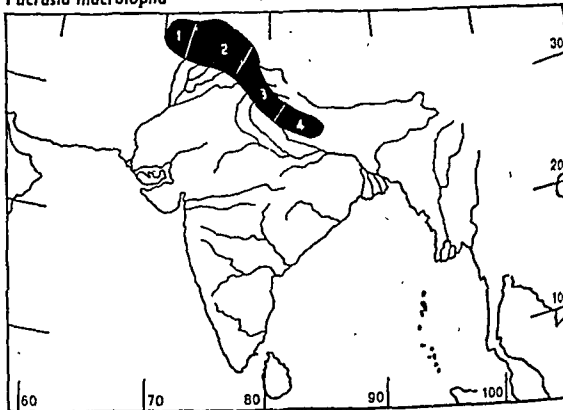
COLOURS OF BARE PARTS. ♂ Iris light golden yellow. Face, throat, and wattles livid or purplish red; comb bright red with large interior yellow patch. Bill brownish red, paler on lower mandible and tip. Legs and feet wax-yellow to pale yellowish

112 GALLIFORMES

valleys, and the valley behind Qila Drosh (H. T. Fulton, JBNHS 16: 61). Possibly also across the river in the southwestern portion of Hindu Rai range. Affects sides of wooded nullahs in oak (*Quercus*) and deodar (*Cedrus*) forest, from c. 1000 to 2300 m. altitude in winter, and up to c. 3400 m. in summer.

Extralimital. Adjacent mountain ranges of Kafiristan and Nuristan (Afghanistan).

Pucrasia macrolopha



Range within Indian limits 1 *P. m. castanea* (303). 2 *P. m. biddulphi* (304). 3 *P. m. macrolopha* (305). 4 *P. m. nipalensis* (306).

GENERAL HABITS, FOOD, VOICE AND CALLS. Little recorded; presumably as of 305. 'The call, usually uttered in the mornings, is a *kūk-ūrūk-ūrūk* very much resembling the call of the junglefowl but with a hint of the Black Partridge' (J. A. S. Roper, JBNHS 34: 1062). Another observer (Fulton) also remarks on the similarity of its call *kōk-kōk-kōk*... *kōk-kōk* to the crow of the Red Junglecock when heard in the distance. Particularly noisy during March and April.

BREEDING. Poorly known. Eggs are laid during May. The nesting site is usually placed on a ledge on some difficult piece of cliff towards the top of a nala' (Roper).

PHEASANTS, PARTRIDGES, QUAILS

113

MUSEUM DIAGNOSIS. For details of adult male plumage see Baker, loc. cit.

Female. 'Resembles *macrolopha*, but paler and greyer; general colour of the tail blackish brown not rufous-chestnut as in *macrolopha*; central tail-feathers greyish brown' (Delacour).

MEASUREMENTS.

♂ Wing c. 240; bill (from feathers) c. 25; tarsus c. 43; tail c. 178. Crest up to 104 mm.; spur c. 10 mm. (Baker).

Two birds obtained by Paludan in Afghanistan (Nuristan) measure ♂ Wing 252, tail 232 mm.; ♀ Wing 228 mm.

COLOURS OF BARE PARTS. Not recorded.

304. **Kashmir Koklas Pheasant.** *Pucrasia macrolopha biddulphi* Marshall

Pucrasia biddulphi Marshall, 1879, Ibis: 461 (Kashmir)

Pucrasia macrolopha bethelae R. L. Fleming, 1947, Fieldiana, Zool., 31: 93 (Manali) Baker, FBI No. 1912, Vol. 5: 312

LOCAL NAMES. *Plās* (Kashmir); *Kūtrōla* (Chamba).

SIZE. Domestic fowl; length ♂ c. 61 cm. (24 in.); ♀ c. 53 cm. (21 in.).

FIELD CHARACTERS. As of the common Koklas (305), q.v. See Key to the Subspecies, and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. Northern Kashmir south-east to Chamba (Himachal Pradesh) and Kulu (Punjab) north to the Rohtang Pass, from c. 2000 to 3400 metres altitude. Intergrades with *castanea* in the west and *macrolopha* in the east. Affects wooded slopes and nullahs in oak and conifer forest.

GENERAL HABITS, FOOD, VOICE and CALLS. As of 305.

BREEDING. *Season*, May-June. *Nest* and *eggs* as in nominate *macrolopha*. Average size of 28 eggs 50.9 × 37.8 mm. (Baker).

MUSEUM DIAGNOSIS. Male. Differs from *macrolopha* (305) in being slightly darker above, with the chestnut of the foreneck extending to hindneck. *Below*, chestnut underparts darker and more mixed with black; black edging to feathers of upper breast usually narrower.

Female has the black markings on outer tail-feathers in bars, not longitudinal streaks as in 305.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 305. Baker gives for ♂♂ wing 233-249 mm.

305. **Koklas Pheasant.** *Pucrasia macrolopha macrolopha* (Lesson)

Satyra macrolopha Lesson, 1829, Dict. Sci. Nat., ed. Levrault, 59: 196

(Bengal, error = Almora Hills, Kumaon)

Baker, FBI No. 1911, Vol. 5: 310

Plate 35, fig. 1

LOCAL NAMES. *Koklās*, *Koklā* (Simla to Almora); *Pokrās* (Kumaon and Garhwal); *Khwookhtar* (Kangra).

SIZE. Domestic fowl; length ♂ c. 61 cm. (24 in.), ♀ c. 52 cm. (21 in.).

FIELD CHARACTERS. A medium-tailed Himalayan pheasant.

PHEASANTS, PARTRIDGES, QUAILS

115

in the ground roughly lined with sticks, leaves and grass, concealed under dense bushes or rocks. *Eggs* 5 to 7, though clutches of 8 and 9 have been recorded (Osmaston, Hume). Pale yellowish stone-colour or pale to rich deep buff, with spots, specks, and blotches of reddish brown. Average size of 68 eggs 51.3 × 37.5 mm. (Baker). Cock believed to be monogynous. Hen alone incubates; period 20-21 days. Chicks, as in most Phasianidae, able to fly in a very few days after hatching, while still little more than tiny balls of fluff.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	215-244	c. 24-29	c. 63-69	221-277 mm.
♀♀	180-218	—	—	172-195 mm.

Crest in ♂ up to 100 mm.; ear-tufts up to 120 mm.; spur 10-19 mm. (Baker).

Weight ♂♂ 2 lb. 8 oz. to 3 lb. 2 oz. (c. 1135-1415 gm.); ♀♀ 2 lb. 4 oz. to 2 lb. 8 oz. (c. 1025-1135 gm.) — Whistler.

COLOURS OF BARE PARTS. Iris dark brown. Bill horny brown to black sometimes tinged with greenish or purplish. Legs and feet dark bluish or purplish grey.

306. **Nepal Koklas Pheasant.** *Pucrasia macrolopha nipalensis* Gould

Pucrasia Nipalensis Gould, 1855 (1854), Proc. Zool. Soc. London: 100

(Nepal and Bhutan = Nepal)

Baker, FBI No. 1913, Vol. 5: 312

LOCAL NAME. *Pokrās* (Nepal).

SIZE. Domestic fowl; same as 305. Length ♂ c. 61 cm. (24 in.), ♀ c. 52 cm. (21 in.).

FIELD CHARACTERS. As for the common Koklas (305), q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION and HABITAT. Resident. From W. Nepal (where it intergrades with nominate *macrolopha*) eastward at least to long. 83°49'E. (Tukucha), an extension of c. 160 km. from Jumla whence Hodgson last reported it a hundred years ago. (R. L. Fleming, JBNHS 50: 661).¹ Complete absence of the species in the eastern Himalayas enigmatical, particularly as it reappears farther east in Yunnan and other parts of China, and Mongolia. Affects wooded nullahs and dense scrub-covered, often precipitous, hillsides in oak and conifer forest, between c. 2000 and 4500 m. altitude.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 305 and other races, q.v.

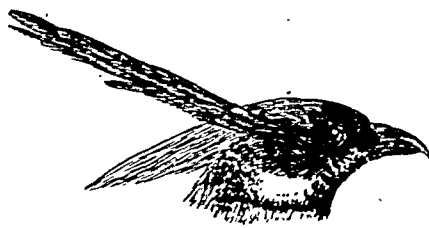
BREEDING. Unrecorded. Presumably same as 305.

MUSEUM DIAGNOSIS. 'Male. Differs from *macrolopha* [305] in having the feathers of the back, rump, sides, and flanks black, more or less edged with grey; wing-coverts black edged with buff or rufous; sides and back of neck, and upper rump black, strongly marked with chestnut; tail dark chestnut.

¹ Dr Biswas informs us that Jumla has always been a popular bird market to which live birds are brought for sale from long distances. Therefore the actual provenance of Hodgson's specimens is uncertain.

114

GALLIFORMES



♂, × c. 1

Male. *Above*, silver-grey streaked with black. Head fully feathered, metallic green. A brown recumbent occipital crest with long, metallic green horn-like tufts of plumes projecting behind on either side of it. A prominent white patch on either side of upper neck. Tail chestnut-brown, of medium length, pointed and wedge-shaped but not downcurving as in kaleej or junglecock. *Below*, largely deep bright chestnut.

Female. *Above*, mottled black-and-brown, finely streaked with buff. Crown chestnut-buff with shorter crest and no ear-tufts. *Below*, throat creamy white. Rest of underparts pale buff streaked with blackish, narrowly on breast broadly on posterior flanks. Under tail-coverts chestnut, spotted with white.

Chick (in down). Unknown.

STATUS, DISTRIBUTION and HABITAT. Resident. Southern Kashmir (Jammu), Himachal Pradesh, Kumaon and Garhwal to W. Nepal, between c. 1500 and 4000 metres; at the lower elevations in winter. Intergrades with *biddulphi* on the west and north, and with *nipalensis* on the east. Affects wooded ravines and steep hillsides, in oak and conifer forest with heavy scrub and ringal bamboo undergrowth.

GENERAL HABITS. As typical of most Himalayan pheasants; perhaps oftener met with singly or in pairs. Though not gregarious, several birds frequently haunting a particular hillside, and often the same forested nullah, day after day. Lies close in cover and difficult to flush without a dog. Rockets upwards when flushed and then shoots down the *khud* at great speed.

FOOD. Shoots, buds, tubers, leaves (e.g. of maidenhair and other ferns), berries, acorns, seeds, and insects.

VOICE and CALLS. Crow of cock, from which the species derives its popular name, a loud ringing but unmusical *kok-kok-kok... kokrās* (or *pokrās*). A variant has also been accurately rendered as *khwa-ka-kā*. Uttered principally in the early morning and evening, but also at other times of the day in cloudy overcast weather, and particularly in the breeding season. A number of cocks will 'explode' in a bout of crowing upon any sudden loud report such as the firing of a gun or a peal of thunder — a peculiarity reminiscent of the Peacock.

BREEDING. In courtship display the cock puffs out his body feathers, erects the long black ear-tufts with the brown crest between them, and struts about in the proximity of the hen. *Season*, April through June. *Nest*, a scrape

116

GALLIFORMES

'Female. Similar to *macrolopha* but redder all over; tail-feathers except the outermost, chestnut on the outer webs, blackish with white tips on the inner webs and with well-marked subterminal black bands' (Delacour). Plumage subject to much individual variation.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
1 ♂	229	27	62	203 mm.
1 ♀	212	29	55	166 mm.
3 other ♂♂	216, 226, 232 mm.			(R. L. Fleming)
Baker gives for ad. ♂♂	Wing 208-228, bill (from feathers) 23-26, tarsus c. 66, crest 68-91 mm.			

COLOURS OF BARE PARTS. As in 305.

Genus *CATREUS* Cabanis

Catreus Cabanis, 1851, in Ersch & Gruber, Allg. Encycl., sect. 1, 53: 221. Type, by monotypy, *Phasianus wallichii* Hardwicke

Closely allied to *Phasianus* but differing from it in the possession of a long narrow occipital crest of hair-like plumes. Wing rounded: 1st primary (as) shorter than 10th; 5th primary longest. Tail long and pointed, not compressed, of 18 feathers, the central pair very long, about four or five times the length of the outermost. Tarsus strong, armed with a well-developed spur in male; occasional and rudimentary in female. Sexes only slightly dimorphic.

Contains a single species confined to the western and central Himalayas.

307. **Chir Pheasant.** *Catreus wallichii* (Hardwicke)

Lophophorus (Phasianus) Wallichii Hardwicke, 1827, Trans. Linn. Soc. London 15: 166 (Almorah Hills)

Baker, FBI No. 1910, Vol. 5: 307

Plate 35, fig. 2

LOCAL NAMES. *Chihir*, *Chir* (Nepal, Kumaon, Garhwal); *Burehil*, *Heril* (hills north of Mussooree); *Chaman* ♂, *Chamani* ♀ (Kulu, Chamba); *Rehar* (Kashmir, in Pir Panjal and Kazing ranges); *Rehar* (Darg, NW, Pakistan).

SIZE. Large domestic fowl. Length ♂ c. 90-118 cm. (36-46 in.); ♀ c. 61-76 cm. (24-30 in.).

FIELD CHARACTERS. A long-tailed West Himalayan pheasant reminiscent of an English hen pheasant.

Male. *Above*, top of head and long narrow backward projecting crest blackish brown, edged paler. A bright crimson naked orbital patch. Upperparts chiefly buffy white and pale rusty, closely barred with black. Pointed tail buffy grey and chestnut, broadly barred with black and ashy grey. *Below*, chiefly buffy white, conspicuously barred on lower breast and flanks. Centre of abdomen blackish.

When planing down a hillside the general colour pattern, rounded wings, and partly open barred and graduated tail are strangely reminiscent of a gigantic Common Babbler (*Turdoides caudatus*).



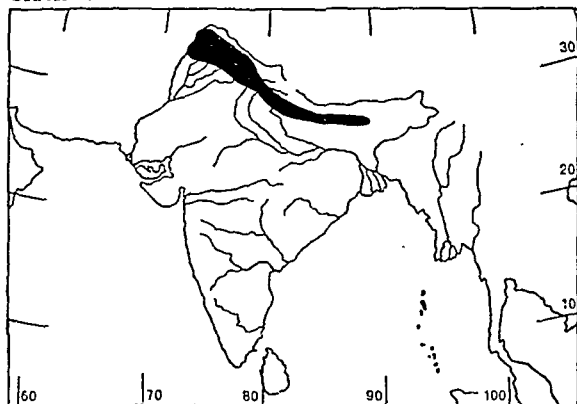
♂ x 4/3

Female. Similar in general effect, but smaller with more chestnut in her underparts and facial patch brick-red rather than bright crimson. Young (immature). Like female but duller, less boldly marked and lacking the crest.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, with practically no seasonal altitudinal movement. The Himalayas between c. 1400 and 3500 metres alt. from Hazara in NW. Pakistan through Kashmir, the Punjab, Himachal Pradesh, Garhwal, and Kumaon to at least the 84th meridian in west-central Nepal (Pokhara). Affects steep rugged hillsides in oak forest, covered with long grass and *Berberis* scrub, and cut up by wooded ravines and hollows.

Catreus wallichii



■ Distributional range

GENERAL HABITS. Keeps in coveys of 5 or 6 which feed on the open hillsides well hidden among the undergrowth. Is an extreme skulker with a marked predilection for running away uphill rather than taking to wing. Lies very close in cover and almost impossible to flush without a dog till almost trodden on, especially so after being once fired at. When flushed it usually hurtles down the *khud* at terrific speed with wings pulled in at the sides.

Genus SYRMATICUS Wagler

Sympticus Wagler, 1832, Isis von Oken, col. 1229. Type, by monotypy, *Phasianus reevesii* J. E. Gray

Long-tailed pheasants resembling *Catreus* in shape but without a crest. Wing rounded: 1st primary (as.) between 7th and 10th in length. Face bare in male, feathered in female. Tail not compressed; of 16 or 18 very long and strongly graduated feathers. Tarsi long and stout, armed with well-developed spurs in male, often showing as rudimentary knobs even in female. Sexes dimorphic.

Genus represented by only a single species and subspecies within our eastern limits.

308. Mrs Hume's Barredback Pheasant. *Sympticus humiae humiae* (Hume)

Callophapsis humiae Hume, 1881, Stray Feathers 9: 461 (Manipur)
Baker, FBI No. 1907, Vol. 5: 303
Plate 35, fig. 7

LOCAL NAMES. *Loiningkhai* or *nainungkhai* (i and n interchangeable — Manipur); *Nongin* (Chiru — a hill tribe in Manipur).

SIZE. Large domestic fowl; length ♂ c. 90 cm. (36 in.); ♀ c. 60 cm. (24 in.).

FIELD CHARACTERS. A long straight-tailed pheasant like the Chir but male much brighter coloured and lacking the crest. Above, head, neck (all round), and rump glistening steel blue, the last narrowly scalloped with white. Bare facial skin bright crimson. Back and mantle rich golden bay colour, scalloped with black. Conspicuous broad white bars on scapulars, and two narrower white ones on wing (white edging to coverts). Tail long, narrow-pointed, grey with several narrow chestnut-and-black cross bands. Below, chin, throat and foreneck glossy steel blue. Lower breast like back, changing to deep chestnut on abdomen and flanks.

Female. Above, head reddish brown, crown streaked with black. Bare red patch round eye much smaller than in ♂. Rest of upperparts chiefly sandy brown, streaked, mottled, and barred with black. Tail mainly chestnut, shorter and less pointed than ♂, the graduated rectrices broadly barred with black and tipped white. Below, chiefly sandy greyish brown and sandy rufous, sparsely black-spotted on upper breast, barred with pale grey on lower breast and flanks.

Young (immature) male like ad. female but duller.

STATUS, DISTRIBUTION and HABITAT. Rare and patchy; very little known. Manipur, Patkai, Naga, and Mizo (Lushai) hills, between c. 900 and 2000 m. elevation. Specific localities mentioned: *Manipur*. Ukhrul (25°N., 94°25'E.), just below c. 1800 metres; Heika, c. 1500 m.; valley of Thoubal river, a tributary of Manipur river, at c. 900 m.; Irang valley (Higgins, JBNHS 37: 89); *Naga Hills*. Manipur side of Kohima-Imphal valley south of Karong (25°18'N., 94°5'E.); hills south of Jessami village c. 50 km. ESE. of Kohima (25°40'N., 94°8'E.) (Ripley, JBNHS 50: 479). Affects mixed open forest interspersed with grass and bracken patches on steep rugged hillsides.

Extralimital. Contiguous parts of northern Burma, west of Irrawaddy river (Chin Hills etc.).

The covey usually remains loosely together when feeding, the birds rising more or less at the same time and giving the experienced hunter a chance to bring off a quick right and left. Silent during daytime but very noisy before retiring for the night; also before daybreak when still quite dark, prior to descending from the trees to feed.¹ The birds roost in company in patches of oak forest lining or overhanging gullies, their progress towards the sleeping places in the evening being betrayed by a series of clamorous squeaks and chuckles which must surely render them vulnerable to poachers and predators.

FOOD. Roots and tubers dug out of the ground, seeds and berries, and grain when available. Also insects and grubs. Reported not to eat grass or leaves like other pheasants, but Whistler has found leaves of rue in the crops of birds shot.

VOICE and CALLS. Crow, of both sexes, uttered early morning and at dusk, a distinctive loud and far-reaching *chir-a-pir*, *chir-a-pir*, *chir*, *chir*, *chirua*, *chirua*, and so on. In addition, various clucks and chuckles to express contentment, alarm and other emotions are also emitted.

BREEDING. Courtship display of cock of the lateral pattern as familiar in the jungle and domestic cocks and common to most Phasianidae. Season, principally late April to early June. Nest, a scrape or depression roughly lined with a few leaves and grass at the foot of a boulder on a rugged hillside in open oak or chir pine forest, usually well concealed by overhanging grasses etc. Eggs, 9-14, dull creamy white to pale grey-buff, sparsely and irregularly freckled and blotched with light reddish brown. Average size of 48 eggs 53.4 × 39.3 mm. (Baker). Cock evidently monogynous; assiduous in tending the young. Incubation by hen alone; period c. 26 days.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). 'Centre of crown chocolate-brown; a narrow black line from posterior corner of eye to ear-coverts, where it expands, and then, narrowing again, continues back down side of neck. Rest of head creamy buff, paling on lower face; lower neck and upper parts grizzled grey with dark chocolate shoulder spots; anterior half of wing and entire centre of back (which has two lateral lines of pale grey), chin and throat creamy white; remainder of underparts more greyish. This downy plumage is unlike that of any other pheasants, and more like certain partridges' (Delacour).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	235-270	25-29	74-78	450-580 mm.
♀♀	225-245	24-27	60-63	320-470 mm. (Delacour)

Weight ♂♂ 3 lb. 4 oz. to 3 lb. 12 oz. (c. 1475-1700 gm.); ♀♀ 2 lb. 12 oz. to 3 lb. (c. 1250-1360 gm.) — Whistler.

COLOURS OF BARE PARTS. Iris golden hazel to orange-brown; orbital skin ♂ bright crimson, ♀ duller or brick-red. Bill pale yellowish brown or pale bluish horny. Legs and feet plumbeous or greyish brown, sometimes fleshy brown.

¹ Delacour's statement based on Wilson that they usually sleep on the ground (p. 205) may be only partially true.

GENERAL HABITS, FOOD, VOICE and CALLS. Very poorly known. Published field notes scanty; not suggesting any significant difference from Chir (307). Alarm note a subdued muttering *buk-buk-buk-buk-buk* (G. Heinrich, Chin Hills). 'They rise with an easily recognisable chuckle' (Wickham, U. Burma). A distinctive clucking while running away through undergrowth (Blandy).

BREEDING. No authentic information since eggs mostly obtained vicariously through local tribals. Season, April and May. Nest and site apparently similar to Chir's. Eggs. Full clutch believed to be of 6 to 10, creamy to rosy white. Average size of 43 eggs (presumed authentic) 48.7 × 35.3 mm. (Baker). Incubation period and other details unknown.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	206-225	25-29	58-66	400-535 mm.
♀♀	198-210	20-25	55-60	c. 200 mm. (Delacour)

Weight ♂ '2 lb. 6 oz. (c. 1080 gm.); spur 8.3 to 17.7 mm.' (Baker).

COLOURS OF BARE PARTS. Iris brown to orange; orbital skin deep crimson. Bill greenish horny, darker on base and culmen, paler at tip. Legs and feet dull light brown. In ♀ smaller orbital patch red.

Genus POLYPLECTRON Temminck

Polyplectron Temminck, 1813, Fig. et Gall. 2: 363. Type, by monotypy, *Polyplectron chinquis* = *Pavo bicalcaratus* Linnaeus

Contains smallish pheasants reminiscent of spurfowl, of grey, grey-brown or buff plumage with metallic coloured eye-spots or ocelli on the wings and tail. First primary, (as.) shortest; 2nd shorter than 10th; 6th primary generally longest. Inner secondary almost as long as primaries. Tail of moderate length, of 20 to 24 graduated feathers much rounded, and fan-shaped when open; central rectrices considerably longer than the others. Sides of the face nearly or quite naked. Tarsi much longer than middle toe and claw; in males usually armed with two (sometimes one or three, sharp-pointed spurs on each. Sexes slightly dimorphic; female smaller, duller and with fewer ocelli.

Represented in the northeastern parts of our area by one species in two races.

POLYPLECTRON BICALCARATUS (Linnaeus)

Key to the Subspecies

General colour more buffy-brown,.....P. b. *bicalcaratus*
General colour more grey and less buff.....P. b. *bakeri*

309. Bhutan Peacock-Pheasant. *Polyplectron bicalcaratum bakeri* Lowe
Polyplectron bicalcaratum bakeri Lowe, 1925, Ibis: 477 (Bhutan)
Baker, FBI No. 1901, Vol. 5: 291

LOCAL NAMES. *Munaweer*, *Dyodahuk*, *Droderik* (Assam); *Droderung* (Garo); *Du dip*, *Dao dai dip*, *Mejoor* (Cachar); *Burumunui* (Kacha Naga); *Kaimdr* (Chittagong).

PHEASANTS, PARTRIDGES, QUAILS 121

SIZE. Domestic hen. Length ♂ c. 64 cm. (25 in.); ♀ c. 48 cm. (19 in.).
FIELD CHARACTERS. Male. *Above*, head and neck brownish buff with a short frowzy crest of upstanding hair-like feathers. Rest of upperparts mainly greyish brown spotted on back and finely barred on rump and upper tail-coverts with whitish. Mantle, wing-coverts, and tail 'studded' or 'embossed' with brilliant violet green-blue, white-rimmed eye-spots or ocelli, larger and more elongated near tips of rectrices. *Below*, chin and throat whitish. Rest of underparts like back, the whitish barring on breast and flanks more defined. On under surface of tail the ocelli show up as black spots.

Female. Similar but smaller, duller and with shorter tail. Crest-feathers less hair-like. Ocelli less brilliant on mantle feathers, obsolete on the shorter rectrices. Whitish on throat more extensive.

Young (immature) male. Like female.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Duars and normally up to c. 1200 m. alt. in Sikkim, N. Bengal (Darjeeling and Jalpaiguri dists.), Bhutan and adjoining NEFA in the Dafia Hills (Kameng and Subansiri Frontier Divisions). The birds of the Mishmi Hills, further east, are darker and may belong to an undescribed race. Occurs also in Assam hills in Lakhimpur district (Dibrugarh) and south of Brahmaputra river through Sylhet (E. Pakistan), Cachar, Nagaland and Manipur. Chittagong examples intermediate but closer to nominate *bicalcaratus* (310). Affects dense evergreen forest.

GENERAL HABITS. Rather reminiscent of Spurfowl. Keeps singly or in pairs. A great skulker and extremely swift on its legs, keeping to dense undergrowth and seldom giving a glimpse of itself. Difficult to find and almost impossible to flush even with a dog.

FOOD. Grain, seeds, berries, wild figs, insects, grubs, snails and other small animals. Bamboo seeds when available, and white ants are especially relished.

VOICE AND CALLS. A deep guttural *hoo* rapidly repeated about seven times, and soft chuckling notes (Baker). 'Commonest call *ok-kok-kok-kok* not unlike that of cock English pheasant' (Higgins). In captivity several calls described by Delacour (p. 287) among which 'a sort of warbling song as the cock fully displays to the hen', consisting of a long, continuous flow of little chirps, up and down in scale, rising and falling, and lasting several minutes until the hen has moved away.

BREEDING. Display of cock beautiful and spectacular. He begins by running round hen with tail partly fanned and wings spread and drooping. Presently he sinks low in front of her till his breast rests on the ground. The tail and wings are raised and fully spread out fanwise to flaunt the brilliant metallic ocelli, his head meanwhile partly hidden among the fluffed-out plumage. Hen usually seems uninterested during this performance, but sometimes she responds by an inferior display of a similar pattern, whereupon copulation takes place. Season, March to June—chiefly April and May. *Nest*. A shallow scrape or natural depression roughly lined with a few dry leaves, invariably well hidden under dense vegetation. *Eggs*, normally 2; rarely 3, 4, and even 5, pale cream colour to rich chocolate-buff, more

PHEASANTS, PARTRIDGES, QUAILS 123

Tail in both sexes of 20 feathers, long and graduated; normally concealed by the ocellated train in the male. Under tail-coverts downy as in Adjutant Stork. Wings rounded: first primary (as) shorter than 10th. Tarsus very long and strong, armed with a spur in the cock.

The genus is found in the Indochinese and Indomalayan subregions.

Key to the Species

	Page
A Crest-feathers ending in spatulate, half-moon shaped drops.....	123
B Crest-feathers ending in points.....	126

311. Indian Peafowl. *Pavo cristatus* Linnaeus

Pavo cristatus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 156

('India orientalis, Zeylona' = India)

Baker, FBI No. 1897, Vol. 5: 282

Plate 33, fig. 1

LOCAL NAMES. *Mūr*, *Manjūr*, *Mayūra* (Hindi); *Mayūr* (Bengali); *Mūr* (Sindhi); *Mūr* ♂, *Lāndār* ♀ (Maharashtra); *Manja* ♂, *Mania* ♀ (Orissa); *Mabja* (Bhute); *Mongyung* (Lepcha); *Moira* (Assamese); *Wāhong* (Manipur); *Dode* (Garo); *Mōyil* (Malayalam, Tamil); *Menūra* (Sinhala); *Nemāli* (Telugu); *Nārilu* (Kannada); *Mūr* ♂, *Dhāl* ♀ (Gujarat).

SIZE. Domestic turkey. Length ♂ c. 92–122 cm. (40–46 in.) without train, c. 2 to 2.25 metres in full plumage; ♀ c. 86 cm. (38 in.).

FIELD CHARACTERS. Familiar and almost universally known. The fan-shaped crest of spatula-tipped wire-like feathers together with the brilliant glistening blue neck and breast, and the sweeping metallic bronze-green train, boldly ocellated with purplish black-centred coppery discs or eye-spots, make the cock unmistakable. Lower back light bronze-green narrowly scalloped with black. Scapulars and outer surface of wings close-barred with black and buff. A good deal of chestnut in wings (primaries and their coverts).

Female. Somewhat smaller, similarly crested but without the sweeping train. *Above*, head and nape rufous-brown. Rest of upperparts brown, faintly mottled paler. *Below*, lower neck metallic green instead of blue; breast buffy brown glossed with green; abdomen buffy white. Primaries brown with no chestnut as in male.

Young (immature) male. Like adult female but with the primaries largely chestnut.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally up to c. 1800 m. elevation (rarely even 2000 m.) in the outer Himalayas and peninsular hills, practically throughout the subcontinent south and east of the Indus river, including Jammu and southern Kashmir. Eastward to about Lakhimpur district in Assam (c. 95°E.), thence south through Nagaland, Manipur, Mizo (Lushai Hills), and Chittagong west and south to the extreme tip of the Peninsula. Also indigenous and resident in Ceylon where locally plentiful in the low-country Dry zone. Introduced and now fairly established with a semi-feral status in parts of Sind (W. Pakistan), e.g. Hyderabad, Mirourkhas, Umarmot and Schwan areas. Very common and abundant

122

GALLIFORMES

or less stippled all over with white. Average size of 40 eggs 46.5 × 35.9 mm. (Baker).

Cock evidently monogynous. Incubation by hen alone; period c. 21 days. According to Baker, when the downy chicks begin to run about they generally keep close behind the mother under her tail, which is spread out like an umbrella over them.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). *Above*, dark chestnut with two faint darker streaks down the sides of the back with broad streaks of buff outside them. *Below*, pale buff; a dark spot on each wing (Baker).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	210–240	22–25	75–80	350–400 mm.
♀♀	175–215	18–20	65–70	230–255 mm. (Delacour)

Weight ♂♂ 1 lb. 4 oz. to 2 lb. (c. 568–910 gm.) — Baker.

COLOURS OF BARE PARTS. ♂ Iris white to pearl grey. Facial skin yellowish flesh colour, sometimes more reddish. Bill creamy flesh colour, black at tip and on culmen. Legs and feet dark slaty or greenish plumbeous to blackish. ♀ Iris brown, grey-brown, or grey. Facial skin dull flesh-coloured. Legs and feet paler than in ♂.

310. Burmese Peacock-Pheasant. *Polyplectron bicalcaratum bicalcaratum* (Linnaeus)

Pavo bicalcaratus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 156 (China, restricted type locality Tonkin or Yunnan vide Stresemann, 1952, Ibis 94: 510 = Yunnan)

Baker, FBI No. 1900, Vol. 5: 289

Plate 35, fig. 10

LOCAL NAME. *Katrār* (Chittagong, E. Pakistan).

SIZE. Domestic hen. Length ♂ c. 64 cm. (25 in.); ♀ c. 48 cm. (19 in.).

FIELD CHARACTERS. As for 309 q.v., see Key to the Subspecies.

STATUS, DISTRIBUTION AND HABITAT. Resident. Chittagong Hill Tracts, E. Pakistan. The birds here somewhat intermediate between the two races but closer to nominate *bicalcaratum*. Affects dense evergreen jungle; foothills and up to c. 1200 metres elevation.

Extralimital. Burma (Chin and Kachin Hills) east to W. Tonkin, south to S. Tenasserim, Thailand and central Laos.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 309.

BREEDING. Not specifically recorded within Indian limits. Same as in 309.

MUSEUM DIAGNOSIS. Differs from *bakri* (309) in both sexes being more brownish buff less grey in coloration. Most of the whitish markings are replaced by buff.

MEASUREMENTS AND COLOURS OF BARE PARTS as in 309.

Genus PAVO Linnaeus

Pavo Linnaeus, 1758, Syst. Nat., ed. 10, 1: 156. Type, by tautonymy, *Pavo cristatus* Linnaeus

Contains the familiar Peafowl distinguished by their erect occipital crest of feathers and the resplendent plumage of the cocks with greatly lengthened upper tail-coverts.

124

GALLIFORMES

in Gujarat and Rajasthan and locally wherever protected on religious or sentimental grounds. Introduced successfully also in the Port Blair area and elsewhere in the Andaman Is. In wild state affects moist- and dry-deciduous forest in the neighbourhood of streams. Where semi-feral, found in the precincts of villages and cultivation, in close association with man.

GENERAL HABITS. Keeps in small flocks or droves consisting usually of a cock and 3 to 5 hens. After the breeding season segregated parties of adult males and of females with their immature broods are more common. In the wild state the birds emerge cautiously into forest clearings, and ploughed or newly sown fields in the early mornings and late afternoons to scratch the ground for food. An hour or so after sunrise they troop down to the water to drink, tripping gingerly over the dry leaves, craning their necks at every step and peering inquisitively through the bushes with the utmost circumspection. The birds also drink at dusk before retiring to roost. They spend the heat of the day in impenetrable thickets of lantana and the like. Peafowl are possessed of phenomenally keen eyesight and hearing and are excessively wary and wide awake at all times, ducking their heads and slinking away through the undergrowth on the least suspicion. The cock's cumbersome-looking train, carried horizontally a few inches above ground, is apparently no impediment to swift progress through the thickest cover. The birds prefer to trust to their legs for escape, running one behind the other when driven by beaters, and seldom take to wing except when flushed by a dog or to cross some open river-bed or ravine. They rise with a loud flapping of wings, even an old cock with his long, heavy train rocketing almost vertically to clear the tree-tops. When properly launched they fly fast and strongly with rapid flaps and glides and dextrous twists and turns to avoid tree-trunks and other obstacles.

When surprised in the open with a brood of small chicks, the hen pulls out the family to safety with amazing adroitness, crouching low with neck outstretched to take full advantage of every little dip and unevenness in the ground for concealment as she swiftly makes for cover in a manner inconceivable for so large a bird.

Peafowl roost at night in tall trees; the jungle resounds with their loud and ugly *may-awee* calls at dusk and early dawn before the birds descend to feed. They often call from the roost also during the night, and the crashing of a tree or a sudden clap of thunder is sure to release an immediate burst of responsive caterwauling by all the cocks in the neighbourhood. Cocks are quick to detect the presence of the larger cats on the prowl and herald the marauders' progress through the forest with loud warning alerts which are taken up by other cocks and by langur monkeys.

FOOD. Omnivorous. Seeds, grain, lentils, groundnuts, tender shoots of crops, flower-buds, berries and drupes (e.g. *Carissa*, *Lantana*, *Zizyphus*), wild figs (*Ficus glomerata* and other species), centipedes, scorpions, lizards, small snakes (once c. 20 cm. long), insects (e.g. locust hoppers, beetles, caterpillars), worms and grubs have all been more or less regularly found in crops and stomachs. In and around villages also human excreta. In areas where it is semi-feral and abundant it is destructive to cereal and crops in the highest degree, and a veritable scourge to the small vying with the sacred monkeys in the work of devastation.

VOICE and CALLS. Normal 'crow' of cock a loud and harsh metallic trumpet-like *may-aw* shrieked several times, varying in pitch. Also a series of short, gasping screams *kā-ān . . . kā-ān . . . kā-ān* (or *cain . . . cain . . . cain* pronounced as in French) repeated 6 to 8 times rapidly with an inane pumping action of the head and neck, well likened to 'something between the screams of a hysterical old woman and the bray of a donkey'. Alarm call when suspicious and agitated a double-syllabled brassy *kōk-kōk* or *cain-kōk*, and variations of the same. This commonly uttered by a hen with neck-feathers fluffed out like a bottle brush and repeated intermittently for many minutes, especially when leading a brood of chicks.

BREEDING. The display or 'dance' of the cock consists of erecting and fully fanning out the ocellated train which is slightly tilted and arched forward. His half-open chestnut wings are drooped at the sides and go through a continuous shaking or quivering. In this posture he faces the hen (or hens), and with legs partly flexed struts and prances from one foot to the other in mincing steps as if stalking her — an action reminiscent of the holding manoeuvre, with arms stretched out, in the Indian game of *Āta-Pāta*. From time to time he goes through violent paroxysms of shivering the erected train, the quills producing a 'zizzing' sound, and thus slowly pivots round to exhibit his posterior — the greyish under tail-coverts and black rump surmounted by the radiating glistening white shafts of the fanned-out train. The hen usually appears completely unconcerned during all these amorous antics, but she occasionally responds with an inferior imitation of the cock's movements. (A cock once observed interrupting his full display to chase off a rival intruding too near the coterie.) *Season*, in the northern and central part of its range chiefly after the break of the rains in June, continuing through September; in southern India chiefly April and May; in Ceylon chiefly January to March. *Nest*, a scrape in the ground, sometimes unlined at others roughly so with sticks, grass, and leaves. Usually well concealed in thorny undergrowth (e.g. *Lantana*, *Zizyphus*). Semi-feral birds often nest in ancient forts and ruined buildings, and frequently even on the flat roofs of houses in a village. *Eggs*, 4 to 6, broad, blunt ovate pale cream or *café au lait* to buff in colour, with a finely pitted surface. Average size of 100 eggs 69.7 × 52.1 mm. (Baker). Cock progressively polygynous. Female alone incubates; period c. 28 days. An exceptional case of a cock incubating a clutch of 5 eggs by himself for a week until all the eggs gradually disappeared, is recorded by Yuvraj Shivraj-kumar of Jasdhan (1956, JBNHS 54: 464).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for a note on moult, Marien, D., 1951, *Amer. Mus. Novit.*, no. 1518: 20-1.

Chick (in down). 'Pale buff; a dark brown mark across the nape from one eye to the other; back darker rufous-brown; wing pale dull chestnut mottled with brown' (Baker).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail	Train
♂♂	440-500	40-44	140-155	400-450	1400-1600 mm.
♀♀	400-420	37-40	120-130	325-375	— mm.

(Delacour)

Weight ♂♂ 9 lb. to 11 lb. 4 oz. (c. 4-6 kg.); ♀♀ 6-9 lb. (c. 2.75-4 kg.) (Baker).

CRANES, RAILS, BUSTARD-QUAILS

FOOD. As in 311.

VOICE and CALLS. An equally far-carrying *āow-aw*, *āow-aw*, *āow-aw* uttered with head well raised up; sometimes actually while displaying. A peculiar *tak-tak-ker-r-r-r-oo-oo*, *ker-r-r-r-oo* while walking about in search of a companion that had been shot (H. C. Smith).

BREEDING. 'Dance' similar to that of 311. Copulation followed when a hen quietly approached an *ex parte* displaying cock. He gave a loud scream on seeing her, made a rush at her with drooping train, and held her down by the head with his bill. After the act she walked away, and he soon resumed strutting and showing off as before (C. M. Inglis). *Season*, chiefly January through April, but July to September also recorded. *Nest* and *eggs* as in 311, the latter — 3 to 6 in a normal clutch — indistinguishable from those of the Indian bird, but pointed eggs said to be commoner. Average size of 36 eggs 72.7 × 53.5 mm. (Baker). Cock progressively polygynous (or promiscuous?). Incubation by hen alone; period 26-28 days.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). *Above*, crown and a streak from occiput to near ear blackish brown; sides of head and throat lemon-yellow; occiput and rest of neck (all round) brownish buff, browner on hindneck; a dusky streak from nape to below ear-coverts. Back sepia-brown. Down on wings rufous-brown, feathers pale Indian red tinged with yellow and marked with black except at tip; markings on primaries lighter. Tail brown. *Below*, breast brownish buff; remainder of lower plumage pale lemon yellow; sides of thighs pale rufous-yellow. Iris greyish brown. Bill creamy yellow purer yellow above the nostrils, reddish in front of nail. Legs and feet yellow, reddish between the scutac in front of tarsus; claws pink; soles of feet yellower than the rest (Inglis).

A 14-day old chick flew on to the roof of a small house. Crest became noticeable 23 days after hatching. When a month old body feathers started appearing. Already at 1½ months the chicks began showing off. When 2½ months old they commenced getting metallic feathers on the back and sides of neck (Inglis).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail	Train
♂♂	460-540	42-45	160-170	400-475	1400-1600 mm.
♀♀	420-450	40-43	135-145	400-450	— mm.

(Delacour, for nominate race)

Weight ♂♂ 8½ to 11 lb. (c. 3.85-5 kg.) — Baker.

COLOURS OF BARE PARTS. Iris dark brown or hazel brown. Orbital skin bluish green; naked cheeks yellow to pale orange. Bill dark horny brown darker at tip, paler at base. Legs and feet dark grey-brown or horny brown; claws blackish.

Order GRUIFORMES

(For anatomical details see Stresemann, E., 1927-34, *Aves* (Turnices: 759, Ralli: 763, Helionithes: 765, Otides: 774, Grues: 772)

Baker, E. C. Stuart, 1922-30, *Fauna Brit. India* (Hemipodii, 5: 440, Grallae, 6: 1 [Fulicariae: 1, Grues: 48, Otides: 59])

Family TURNICIDAE: Bustard-Quails

Genus TURNIX Bonnaterrae

Turnix Bonnaterrae, 1791, *Tabl. Encyc. Méth., Orn.*, pt. 1: lxxxii, 5. Type, by a subsequent designation, *Tetrao gibraltarius* Gmelin = *Tetrao syloaticus* Desfontaines

COLOURS OF BARE PARTS. Iris dark hazel brown. Bare facial skin livid white. Bill dark horny, darkest along culmen and at tip. Legs and feet greyish brown to dark horny brown; claws blackish.

MISCELLANEOUS. The peacock is considered sacred in Hindu mythology as the vehicle of the god Kartikeya the son of Lord Shiva and his consort Parvati, and a brother of elephant-headed Ganesha. It is, besides, a subject of voluminous folklore throughout the country. For an account of its place in mythology and Sanskrit literature and poetry see Thaker, J. P., 1963, *Pavo* 1(1): 1-18.

The long ocellated feathers of the peacock's train are shed after the breeding season and picked up and collected in large quantities by villagers for export chiefly to Europe and America, and for being made up locally into fans and other gaudy gimcracks. The export has now been prohibited as a measure of protection for the species, a step perhaps unnecessary considering that the trade was almost entirely confined to dropped feathers available in marketable quantities only in areas where the birds are already well protected by sentiment and therefore abundant enough to make the collection of the feathers economically worth while. An average adult cock's full train contains about 200 + feathers (2 counted 206, 210).

In 1963 the peacock was officially designated as the National Bird of India.

312. **Burmese or Green Peafowl.** *Pavo muticus spicifer* Shaw & Nodder

Pavo spicifer Shaw & Nodder, 1804, *Nat. Misc.* 16: pl. 642. (India)

Baker, FBI No. 1898, Vol. 5: 284

Plate 33, fig. 2

LOCAL NAMES. *Pegu majūra* (Calcutta bird dealers); *Wahong* (Manipur).

SIZE. Same as Indian Peafowl (311), q.v.

FIELD CHARACTERS. Male readily distinguished from Indian peacock by overall green (v. blue) coloration. Crest upstanding, pointed (not fan-like), of lanceolate shot blue-green feathers. Bare facial skin blue and yellow. Neck and breast glistening bronze-green and purple finely scalloped with black. Train more tinged with copper-bronzy violet in certain lights.

Female. More or less similar to male but without train. Upper tail-coverts as long as tail, golden green cross-banded with pale rufous mottling.

Young (immature) male like adult female (above), but with the lower back greenish bronze instead of brownish black.

STATUS, DISTRIBUTION and HABITAT. Resident. North Cachar and Manipur (now very rare or almost extinct), Mizo (Lushai Hills), and Chittagong Hill Tracts (E. Pakistan); plains level to c. 1000 metres elevation. Recently recorded from Jalpaiguri district, W. Bengal, where possibly run wild from imported ancestors (Daniel, J. C., 1957, *J. Bengal nat. Hist. Soc.* 29: 11). Affects dense forest, keeping to the neighbourhood of streams and shifting cultivation.

Extralimital. Adjoining W. Burma, probably east to Irrawaddy river. **GENERAL HABITS.** As in the Indian bird. Owing to persecution, excessively shy and wild everywhere.

Contains small ground birds superficially very like true quail (to which they are only distantly related), but readily distinguished in the hand by the absence of the hind toe or hallux. Called Hemipodes or Bustard-Quail on account of the three-toed bustard-like foot. They differ from true quail also in the absence of a crop.

Family remarkable for its breeding biology. Females polyandrous, larger than males and more brightly coloured, sharing this reversal of the normal condition in birds with the Painted Snipe and a few other species. Widely distributed in the Old World. Represented by three species and several races in our area.

Key to the Species

	Page
A Breast barred across with black or white or quite black in the centre <i>T. susinator</i>	132
B Breast never barred or black in the centre 1	
1 Central tail-feathers lengthened; dark marking on sides of breast and flanks V-shaped <i>T. syloatica</i>	128
Central tail-feathers not lengthened; dark breast markings rounded <i>T. tanki</i>	129

313. **Little Bustard-Quail.** *Turnix syloatica dussumieri* (Temminck)

Hemipodius Dussumieri Temminck, 1828, *Pl. col.*, livr. 76, pl. 454, f. 2 (Bengale)

Baker, FBI No. 2003, Vol. 5: 450

Plate 32, fig. 1

LOCAL NAMES. *Ginwa louwa*, *Chhota louwa*, *Dābki* (Hindi); *Chhota bāūr* (Bengali); *Tura shimaj* (Mathura); *Tirra gūndri* (Santhali); *Libbia* (Purnea); *Darui* (Ratnagiri); *Chinna* or *Telladabba gūndla* (Telugu); *San gūndla* (Orissa); *Chhota sānvorī* (Assam); *Sorbil* (Manipur); *Daoduma kashiba* (Cachar); *Inrubuma gajeba* (Naga); *Tutu bāūr* (Sind).

SIZE. Bush Quail —. Length ♂ c. 13 cm. (5½ in.), ♀ slightly larger. **FIELD CHARACTERS.** An unmistakable quail and one of our tiniest game birds. Distinguished from the two other three-toed species by its smaller size and distinctly pointed little tail. *Above*, crown blackish brown with a whitish median line or 'centre parting'. Hindneck ferruginous scalloped with buff. Upperparts irregularly barred rufous and black. *Below*, white or whitish excepting breast which is brownish buff with black-and-chestnut spots on its sides.

Sexes more or less alike; female slightly larger. For young (immature) see Museum Diagnosis.

BUSTARD-QUAILS

129

STATUS, DISTRIBUTION AND HABITAT. Resident, but also seasonally nomadic in parts. From c. 2400 metres elevation in the outer Himalayas (including Nepal and Sikkim) southward through the Peninsula (hill and plain) to Kerala. In the west, Kutch, Rajasthan and Sind (in the last apparently a rains visitor), north to the Punjab Salt Range, at least to c. 72°E. Eastward it extends through the Assam Valley to Dibrugarh and Sadiya; also Khasi, Cachar, and Naga hills, Manipur, Mizo (Lushai Hills) ?, Tripura, and East Pakistan in Sylhet, Tippera and Chittagong, plains and hill tracts. Affects grass-and-scrub jungle bordering cultivation and grassland.

Extralimital. Burma (including Shan States). The species, in numerous other races, is found from S. Spain south and east through Africa to the Indochinese subregion, Formosa, Java, and the Philippines.

GENERAL HABITS AND FOOD. As of the genus; see under 318.

VOICE AND CALLS. 'Drumming' of female similar to 318, but softer and less loud. It is a remarkable mixture of a purr and a coo uttered with the plumage fluffed, the bird 'turning and twisting about in the same way as an old cock pigeon' (E. A. Butler).

BREEDING. Season ill defined. Practically all year but chiefly during the rains. *Nest*, as in 318—a scrape in the ground sparsely lined with grass, in scrub jungle. *Eggs*, normally 4, greyish white finely speckled and sometimes blotched with yellowish brown, reddish brown, or black—similar to those of 318. Average size of 60 eggs 21.3 × 17.3 mm. (Baker). Hen polyandrous; incubation and care of the young by cock alone. Period of incubation c. 12 days (10 according to locals in Cachar).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young (immature). Above, reddish brown, becoming brighter rufous on the nuchal region, indistinctly barred with blackish brown and spotted with white, especially on wing-coverts. Below, breast paler buff than in adult, spotted with black.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	61-71	c. 10-11	c. 18-20	c. 31-37 mm. (Baker)
♀♀	73-75			

Weight ♂♂ 1½ to 1½ oz. (c. 36-43 gm.)

COLOURS OF BARE PARTS. Iris light yellow to straw colour. Bill plumbeous white to plumbeous. Legs and feet pale fleshy white to pale blue-grey.

TURNIX TANKI Blyth

Key to the Subspecies

- Larger; wing over 90 mm. *T. t. blanfordii*
Smaller; wing under 90 mm. *T. t. tanki*

314. Indian Yellowlegged Button Quail. *Turnix tanki tanki* Blyth

Turnix tanki Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 180. No locality = Bengal, based on drawing by Buchanan Hamilton [Not *Turnix maculatus* Vieillot = synonym of *Turnix maculosa* (Temminck)]

Baker, FBI No. 2005, Vol. 5: 454

Plate 32, fig. 5

LOCAL NAME. *Lourea* (N. India); *Bâtér* (Bengal); bustard-quails usually not distinguished specifically.

SIZE. Bush Quail ±. Length ♂ c. 15 cm. (6 in.); ♀ slightly larger.

* See Appendix

BUSTARD-QUAILS

131

Affects grassland, preferably damp spots, intermixed with low scrub, and growing crops of millet etc.

GENERAL HABITS, FOOD, VOICE AND CALLS. As of the genus; see under 318. Sometimes associates closely with the Bustard-Quail (318), so much so that in one instance specimens of both species together were secured in the same shot! (SA). Has been frequently taken at lights at night (on migration?).

BREEDING. Season, March to November, but chiefly after the break of the SW. monsoon rains in June—particularly August and September. *Nest*, as in 318 a scrape in the ground in grassland, sometimes completely arched over by the growing grass, looking like a domed structure with a lateral entrance. *Eggs*, 4 in a normal clutch also similar to those of 318 in shape, coloration, and markings. Average size of 60 eggs 22.8 × 17.9 mm. (Baker). Female polyandrous with a breeding biology more or less identical with 318.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	71-84	c. 14	c. 23	c. 26 mm.
♀♀	79-93	14-15	25-28	c. 30-40 mm. (Baker, SA)

eight ♂♂ c. 1½ to 1½ oz. (c. 36-43 gm.)—Hume.

COLOURS OF BARE PARTS. Iris pale straw colour to white. Bill fleshy white or euish white tinged with yellow at base; sometimes brownish on culmen. Legs, feet and claws yellow, sometimes with an orange tinge.

315. Burmese Yellowlegged Button Quail. *Turnix tanki blanfordii* Blyth

Turnix blanfordii Blyth, 1863, Jour. Asiat. Soc. Bengal 32: 80 (Burma and Arrakan, type from Thayetmyo)

Baker, FBI No. 2004, Vol. 5: 453 (= *maculatus*)

LOCAL NAMES. *Dooduma g-jao* (Cachar); *Irruhuma ghâhêrta* (Naga).

SIZE. Bush Quail ±. Length ♂ c. 16 cm. (6½ in.), ♀ slightly larger.

FIELD CHARACTERS. As for 314, q.v. Slightly larger and with barring on back somewhat more pronounced.

STATUS, DISTRIBUTION AND HABITAT. Resident (? or seasonal [winter ?] visitor): Assam south of Brahmaputra river, Nagaland, Manipur, Mizo (Lushai Hills), E. Pakistan ? up to c. 2000 m. elevation. Affects grassland intermixed with low scrub, and growing crops of millet etc.

Extralimital. Burma, Thailand, Yunnan, Cochinchina, Manchuria.

GENERAL HABITS, FOOD, VOICE AND CALLS. As of the genus; see under 318.

BREEDING. Season, mainly May to August but odd nests more or less throughout the year. *Nest* and *eggs*, indistinguishable from those of 318, breeding biology in general identical. Average size of 100 eggs 25.5 × 18 mm. (Baker).

130

GRUIFORMES

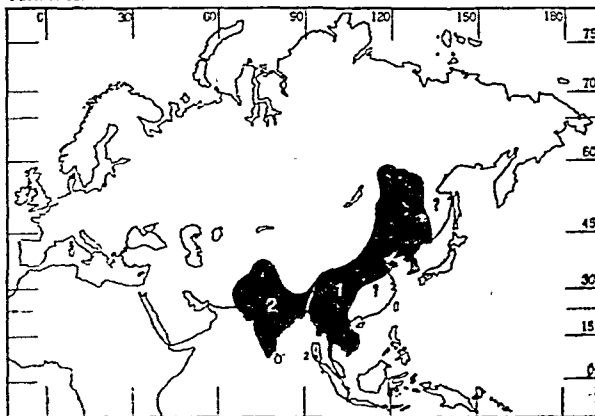
FIELD CHARACTERS. Male. Above, crown blackish mixed with rufous and buff, with a paler median line ('centre parting'). Supercilia and sides of head buff. Upperparts greyish brown, irregularly cross-banded and vermiculated with black (obsolete in old birds). Wing-coverts buff spotted with black. Below, chin and throat whitish. Rest of underparts pale buff, darker and rusty brownish on middle of breast, conspicuously black-spotted on sides of breast.

Female. Similar but slightly larger, and with a broad orange-rufous half-collar on back and sides of neck.

In flight, away from observer, this chestnut collar and whitish underparts are diagnostic. Both sexes distinguishable also by bright yellow legs and bill. (See fig. of very similar 315, Plate 23, facing p. 112.)

STATUS, DISTRIBUTION AND HABITAT. Resident (?) practically throughout the subcontinent from c. 1200 metres up in the outer Himalayas (locally c. 2000 m.) southward through the Peninsula, plain and hill, to Madras and Kerala; and from Sind and Kohat in W. Pakistan across to E. Pakistan and Assam north of Brahmaputra river. South of the Brahmaputra it is, according to Baker, replaced by the race *blanfordii* (315), but exact limits and

Turnix tanki



■ Distributional range 1 *T. t. blanfordii* (315). 2 *T. t. tanki* (314).

status of the two races hereabouts difficult to define. Evidently nomadic (or migratory?) in semi-desert areas, e.g. Punjab, Rajasthan, Sind and NW. Pakistan, its movements depending upon the rains and availability of suitable grass cover. Does not extend to Ceylon, but occurs in the Andaman Is. and more commonly Nicobars (Teressa, Camorta, Car Nicobar), apparently this race and not the Burmese *blanfordii* as might be expected.¹

¹ Three recent specimens from the Nicobars agree with the Indian population in size, but are described as 'much darker above with little or no rufous. The rufous collar of the ♀ is also much darker' (Abdulali, H., 1967, JBNHS 64(2): 158).

132

GRUIFORMES

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

Wing ♂♂ 92-96 mm., ♀♀ 97-105 mm. (Baker). Weight 1 ♀ 63 gm. (Ripley)

COLOURS OF BARE PARTS. As in 314.

TURNIX SUSCITATOR (Gmelin)

Key to the Subspecies

	Page
A Upper plumage very dark and boldly marked with black and, to a less extent, with rufous.....	1
B Upper plumage decidedly paler.....	2
1 A well-marked rufous collar on female.....	<i>T. s. leggei</i> 135
No rufous collar on female.....	<i>T. s. plumbeipes</i> 132
2 General tint of upper plumage pale rufescent.....	<i>T. s. taigooi</i> 133
General tint of upper plumage pale isabelline.....	<i>T. s. bengalensis</i> 132

316. Northern Bustard-Quail. *Turnix suscitator plumbeipes* (Hodgson)

Coturnix Plumbeipes 'Farbattia' = Hodgson, 1837, Bengal Sport. Mag. 9:346 (Nepal)
Baker, FBI No. 1997, Vol. 5: 445

LOCAL NAMES. *Sanserai* (Assam); *Dooduma* (Cachar); *Irruhuma* (Kacha Naga); *Yohubum* (Kuki); *Timokpho* (Lepcha); *Timik* (Bhutia).

SIZE. Bush Quail ±. Length ♂ c. 15 cm. (6 in.), ♀ slightly larger.

FIELD CHARACTERS. In general as for the Indian race *taigooi* (318).

STATUS, DISTRIBUTION AND HABITAT. Resident. Nepal, northern Bihar, Bengal and Sikkim duars, east through Assam and E. Pakistan (Sylhet, Tippera, Chittagong Hill tracts); from plains level to c. 2400 metres elevation. Intergrades with *taigooi* (318) in southern Bihar and with *bengalensis* (317) in lower W. Bengal. Affects grassland and scrub jungle.

Extralimital. Burma (N. Arakan).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 318, q.v.

BREEDING. Season, more or less throughout the year with two principal flushes: April-May and August-September. *Nest* and *eggs* as in 318. Average size of 60 eggs 24.9 × 20.2 mm. (Baker). Female polyandrous with same breeding biology as 318.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. See Key to the Subspecies.

MEASUREMENTS

Wing ♂♂ 77-90 mm.; ♀♀ 92-98 mm. (Baker).

Weight ♂♂ 1.6 to 2 oz. (c. 43-57 gm.); ♀♀ 1.5 to 2.56 oz. (43-72 gm.)—Hume.

COLOURS OF BARE PARTS. As in 318.

317. Lower Bengal Bustard-Quail. *Turnix suscitator bengalensis* Blyth

Turnix bengalensis Blyth, 1852 (1849), Cat. Bds. Mus. Asiat. Soc.: 256, in text

(Lower Bengal)

Turnix suscitator isabellinus Robinson & Baker, 1928, Bull. Brit. Orn. Cl. 48: 62

(Calcutta)

Baker, FBI No. 2000, Vol. 5: 448 (= *isabellinus*)

LOCAL NAMES. *Gûla*, *Gûdûra* (Hindi); *Gûla* (Bengal).

SIZE. Bush Quail \pm . Length σ c. 15 cm. (6 in.); ϕ slightly larger.
FIELD CHARACTERS. In general as for 318, q.v. See Museum Diagnosis.
STATUS, DISTRIBUTION and HABITAT. Resident. Lower Bengal in the 24-Parganas, Hooghly and Nadia districts. Possibly also the adjacent E. Pakistan districts of Khulna and Jessore. Intergrades with *taigoo* in southern Bihar and with *plumbipes* north of Nadia district (Bengal) and in southern East Pakistan. Affects grassland and scrub jungle, often entering compounds and jungly gardens on the outskirts of Calcutta city.

GENERAL HABITS, FOOD, VOICE and CALLS. Nothing specifically recorded as different from 318.

BREEDING. Season, apparently restricted to the monsoon months, June to September. Nest and eggs as in 318. Average size of 16 eggs 23.8 \times 19.1 mm. (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies. As compared with *taigoo* (318), very pale, the general tint being more isabelline less rufous. White lines on upperparts very fine. Underparts rufous and dark in relation to upper.

MEASUREMENTS

Wing σ 77 mm., ϕ 83-84 mm. (Baker).

COLOURS OF BARE PARTS. As in 318 and the other races.

318. Indian Bustard-Quail. *Turnix suscitator taigoo* (Sykes)

Hemipodius Taigoo Sykes, 1832, Proc. Zool. Soc. London: 155 (Dukhun)

Baker, FBI No. 1998, Vol. 5: 447

Plate 32, fig. 2

LOCAL NAMES. Gūlu, Gūndlu, Gūndra, Sālu gūndra (Hindi); Kalada σ , Pared ϕ (Telugu); Ankadik σ , Kurung kadik ϕ (Tamil); Durwa (Ratnagiri); Karchakki (Kannada).

SIZE. Bush Quail \pm . Length σ c. 15 cm. (6 in.); ϕ slightly larger.
FIELD CHARACTERS. Superficially a typical little quail with a distinctive white eye. In flight, prominent pale buff patches on wing-shoulders are good pointers to its identity.

Male. Above. Crown dark brown with an indistinct pale central streak or 'parting'. Sides of head white, stippled with black. Rest of upperparts variegated rufous-brown, black, and white, with the wing-coverts boldly spotted with black and buff. Below, chin and throat whitish; rest of underparts rusty buff banded with black on foreneck and breast.

Female. Somewhat larger and more richly coloured. Above like male.

Below, rusty buff. Chin, throat, foreneck and centre of breast black; sides of breast and anterior flanks barred with black.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident (nomadic in the rains?). From Punjab in the west, the whole of continental and peninsular India south of the range of *plumbipes*, i.e. roughly south of 23°N. lat. Possibly also Sind in W. Pakistan whence not yet recorded. Plains level to c. 2500 m.



ϕ , x c. 1

elucidation. A detailed comparative study of the Indian bustard-quails (Turnicidae) is commended to field ornithologists.

MUSEUM DIAGNOSIS. See Baker, loc. cit., and Key to the Subspecies.

Chick in down (newly hatched). Above, dark chestnut-buff, with pale buff and black crescentic marks on back; a dark (blackish) coronal streak; a broad white line from lores through eye to nape; wings with a pale and a dark bar. Below, pale whitish buff; inside of thighs chestnut.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
σ σ	72-85	c. 15	c. 22-23	c. 35-37 mm.
ϕ ϕ	77-90	15-17	22-25	33-41 mm. (SA, HW)

COLOURS OF BARE PARTS. Iris white, occasionally yellowish. Bill bluish slate, darker on culmen, dark brown at base. Legs and feet slate or leaden grey.

319. Ceylon Bustard-Quail. *Turnix suscitator leggei* Baker

Turnix javanica leggei Baker, 1920, Bull. Brit. Orn. Cl. 43: 9 (Cocowatte, Ceylon)

Baker, FBI No. 1996, Vol. 5: 442

Plate 32, fig. 3

LOCAL NAMES. Bota wathad (Sinhala); Kādai (Tamil).

SIZE. Bush Quail \pm . Length σ c. 15 cm. (6 in.); ϕ slightly larger.

FIELD CHARACTERS. In general as for 318, q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION and HABITAT. Race endemic in Ceylon. Common in all zones, lowlands and hills up to c. 1500 m. Affects grass and scrub country.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 318.

BREEDING. Season, practically throughout the year with two main flushes: January to March and July-August. Nest and eggs as in the Indian races but clutch size usually smaller — of 3 eggs instead of 4. One observer, T. S. U. De Zylva, records c/3 as common (CBCN, July 1978: 39). Average size of 47 eggs 23.3 \times 19.1 mm. (Baker).

MUSEUM DIAGNOSIS. As compared with *taigoo*, upperparts darker and duller brown, besides a rufous collar in female. Below, abdomen and vent a darker richer chestnut.

MEASUREMENTS

Wings σ 76-84 mm., ϕ 81-90 mm. (Baker, HW).
 Weight 8 σ 35-52 (av. 46). 7 ϕ 47-68 (av. 60.7) gm. — BNHS
COLOURS OF BARE PARTS. As in 318.

Family GRUIDAE: Cranes

(For morphology see Stresemann, 1927-34, Aves: 772-3; Baker, 1929, 6: 49; Witherby, 1940, 4: 449; Van Tine & Berger, 1959, p. 428.)

Key to the Genera

	Page
A Head and neck feathered throughout.....	<i>Anthropoides</i> 146
B Head and neck not feathered throughout.....	<i>Grus</i> 135

Genus GRUS Pallas

Grus Pallas, 1766, Misc. Zool.: 66. Type, by tautonymy, *Ardea grus* Linnaeus

In this genus of cranes crown bare in adults but sides of head and neck feathered excepting in the Sarus (*G. antigone*), which has almost the entire head and neck naked.

elevation. Replaced in Ceylon by the race *leggei* (319). Affects grassland and scrub jungle bordering villages and cultivation, and open light deciduous forest.

GENERAL HABITS. Though common and generally distributed, nowhere found so numerically concentrated as the true quails often are. Normally met with singly; occasionally pairs, rarely also small parties. Sedentary; haunting the same spots day after day. A great skulker, flushed with difficulty only when almost trodden on. Flies low in the typical quail manner but with a softer whirr of wings, and tumbles headlong into the tangled undergrowth after a short 'hedge-hopping' flight. When undisturbed, walks about quietly under the thickets, scratching and turning over the mulch for food. The presence of the birds in appropriate shrubbery is usually first revealed by the circular little scrapes dotted about in the mulch where they have been busily rummaging and dust-bathing.

FOOD. As in all other bustard- and button quails, grass- and weed seeds, grain, green shoots and small insects, e.g. termites and black ants. Among the last, *Camponotus compressus* has been identified. In captivity 'whole butterflies two inches across the wings' (F. Finn).

VOICE and CALLS. A loud drumming uttered by the pugnacious and polyandrous hen as a challenge to rival Amazons and in order to advertise her position to an eligible cock. The *dr-r-r-r-r-r-r* sounds very much like a two-stroke motorcycle engine in the distance. It runs for 15 seconds or more at a burst, and in the breeding season may be heard at all hours of the day and also through the night. It is usually prefaced by 3 or 4 deep, long-drawn *groos* (about 3 in two seconds) audible at closer range and reminiscent of the harsh timbre of the Red Turtle Dove (*Streptopelia tranquebarica*). There is also a more subdued but equally far-carrying booming call *hoon-hoon-hoon-hoon* (or *oof, oof, oof* — Inglis) sometimes heard for five seconds or more at a stretch. It is uncertain by which sex and under what conditions this is produced. Presumably it is the same call which Baker described as starting with the bird in a semi-erect sitting position 'but gradually lowering her breast to the ground with outstretched wings, and blowing herself out with each boom until she looked like a little feather balloon'.

BREEDING. Season, practically throughout the year, chiefly June to October. Nest, a scrape or depression in the ground in grassland, scrub jungle or crops, lined with grass and with the growing grasses arching over to form a bower, leaving a lateral entrance; sometimes the scrape is unlined. Eggs, almost invariably 4, greyish white profusely speckled and blotched with reddish brown or blackish purple; broad, obtuse ovals in shape with a highly glossed surface. Average size of 60 eggs 24.7 \times 19.4 mm. (Baker). Incubation period 13-16 days. Female polyandrous, evidently not promiscuous but practising successive polyandry. She battles with rival hens for the possession of a cock and does the courting. After the eggs are laid she loses interest and goes in search of a new mate. The cock settles down to incubate them and later rears the chicks all by himself. In this he displays great solicitude, indulging in the 'broken wing' trick and other diversionary antics when faced by would-be predators. How many clutches a hen lays in the course of a season has not been ascertained, and there are many other points in the accepted version of the breeding biology that need

Head and neck fully feathered in young of all species. Wings long and wide: 3rd primary (as.) usually longest; inner secondaries lengthened and considerably exceeding the primaries. Tail short, rounded to almost square. Tibia naked on lower half; toes short, strong, with short blunt claws. Sexes alike in plumage.

Cranes have exceptionally powerful, stentorian voices made possible by the specialized structure of the trachea or windpipe — abnormally lengthened, convoluted and coiled — which functions as a highly efficient resonating organ.

All the species in India are Palearctic migrants except the Sarus.

Key to the Species

	Page
A Plumage white.....	<i>G. leucogeranus</i> 144
Plumage not white.....	1
1 Whole head and upper neck unfeathered.....	<i>G. antigone</i> 141
Crown of head unfeathered.....	a
a Head, throat and upper neck white, fore part of crown black....	140
Throat and upper neck blackish, tail blackish.....	<i>G. nigricollis</i> 139
Throat slaty grey with broad band of white from behind eye down sides of neck.....	<i>G. grus</i> 136

320. Eastern Common Crane. *Grus grus lilfordi* Sharpe

Grus lilfordi Sharpe, 1894, Cat. Bds. Brit. Mus. 23: 250 (Type locality fixed by Whistler & Kinnear, 1936, Jour. Bom. nat. Hist. Soc. 38: 695, Jhelum River near

Jalalpur, Punjab)

Baker, FBI No. 2034, Vol. 6: 50

Plate 7, fig. 10

LOCAL NAMES. Kūrinch, Kūrch (Hindi); Koonj (Sind); Kūlam, Kūlang (Deccan, Andhra).

SIZE. Goose \pm . Standing c. 140 cm. (c. 4½ ft) to top of head.

FIELD CHARACTERS. A large, tall stork-like grey bird with black flight-feathers and long neck and legs. Head and upper neck blackish with a dull red naked patch on nape. A prominent broad white band running from behind eye down sides of slaty-black upper neck. Tail concealed by a mass of drooping curly brownish grey plumes (elongated tertiaries). Sexes alike.

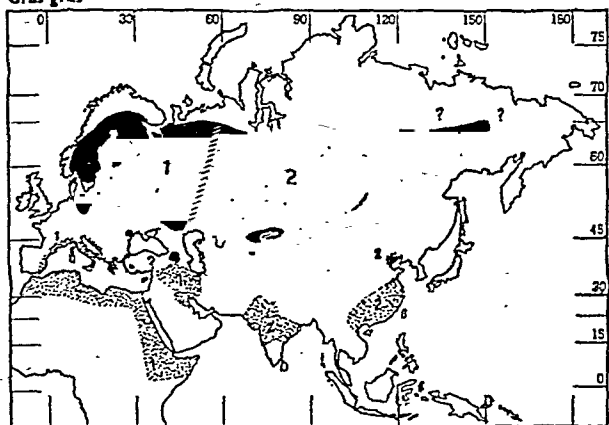
Young (immature). Overall rufous-isabelline due to the grey body-feathers being edged with this colour. Whole crown and neck clothed with rusty feathers. Residual traces of this plumage occasionally seen in some of our winter visitors.

STATUS, DISTRIBUTION and HABITAT. Winter visitor, principally September-October to March-April. Commonest and most abundant in the northwestern parts of the subcontinent: Sind, Rajasthan, Gujarat, Punjab, Uttar Pradesh, diffusing eastward to Bihar, Orissa and West Bengal, and south through Madhya Pradesh and northern Andhra. Overflying Nepal Valley on migration but halting only in the Terai and duns. Occasionally straggling farther east and south, thus recorded near Lakhimpur and Cachar in Assam, and the Bombay Deccan to c. 18°N.

CRANES

137

lat. Doubtless straggles somewhat farther south exceptionally, but unrecorded from Mysore where the Demoiselle is a more or less regular winter visitor. Affects fields of winter crops, e.g. wheat and gram, sandy river-beds, etc.

Grus grus

■ Breeding range ▨ Winter
1 *G. g. grus* (RE).
2 *G. g. lilfordi* (320).

Extralimital. Breeds in Transbaikalia on Tarsi-nor (c. 43°20'N., 117°E.) and the Onon and Argun rivers; probably from the basin of the Yenisey eastward. Winters in China, Hainan I., and N. India (Peters); Burma (Smythies).

MIGRATION. No ringing data. Observations scanty but indicating arrival in NW. Pakistan in August-September directly overflying the Safed Koh Range of Afghanistan (c. 3800 m.) rather than its western shoulder which is considerably lower. Also large flocks overflying Kurram Valley, between 3rd week February and end of March but rarely halting (Rattray, Whitehead). Enormous numbers (possibly mixed with Demoiselle cranes) in long successive wavy lines and echelons, one upon another, also commonly observed on northward migration (SSE.-NNW.) flying at tremendous heights across the Great Rann of Kutch from the 2nd week of March, chiefly after forenoon when thermals available. The concourse of birds spirals upwards on the currents to greater heights then breaks up into V-shaped echelons or wavy diagonal lines, glides more or less horizontally for a mile or so, swirling up once more to regain height, and so on for as far as the eye can reach. Also recorded on northward migration in March through Baluchistan (Delme-Radcliffe) and over Lahore (A. J. Currie). Passage in smaller lots continues through April to at least mid May in the northernmost areas; then recorded over Dharmasala and the Dhola Dhar

CRANES

139

321. Blacknecked Crane. *Grus nigricollis* Przevalski

Grus nigricollis Przevalski, 1876, Mongol. i Strana Tangut 2: 135 (Koko-nor)
Baker, FBI No. 2036, Vol. 6: 52
Plate 7, fig. 9

LOCAL NAME. *Kuting* (Ladakh).

SIZE. Sarus crane (323) ±.

FIELD CHARACTERS. A tall grey bird like the Common Crane (320) but with black head and neck. Lores and entire crown naked and dull red instead of merely a nape patch. A small patch of white feathers below and behind eye instead of the broad white band down side of neck. Drooping curving plumes concealing tail black *contra* brownish grey in Common Crane. Sexes alike; female slightly smaller.

STATUS, DISTRIBUTION and HABITAT. Rare and very restricted: Ladakh (summer); Apa Tani valley, Subansiri Frontier Division, NEFA (winter), E. Bhutan (Biswas, November 1973). Affects high-altitude lake environs in Tibetan Plateau facies (c. 4300 to 4600 metres) in summer; open fallow paddyfields and swampy land (c. 1500 m. alt) in winter. No other records within our limits.

Extralimital. 'Breeds about the lakes of high central Asia from Ladakh to Koko-nor. Recorded in winter from Yunnan and Tonkin (= N. Vietnam)'—Peters.

MIGRATION. 'Every year (from time immemorial *vide* the local inhabitants) a flock varying between 20 and 40 birds arrives in the Apa Tani valley about mid-November and leaves again in a body about the end of February' (F. N. Betts, 1954, JBNHS 52: 605).

GENERAL HABITS. Reported to be very sedentary in the Apa Tani valley, never leaving its confines. Not molested by the local inhabitants and unafraid of them, but excessively shy of anyone not in tribal dress. The birds become restless before outward migration in February-March then suddenly bursting into choruses of trumpeting while feeding, first one bird then another, also starting to prance and caper.

FOOD. Only fallen grain recorded, but presumably as Common Crane's.

VOICE and CALLS. Loud and trumpet-like, resembling the Sarus Crane's but somewhat higher in pitch.

BREEDING. Courtship of same pattern as the Sarus's and other cranes' consisting of mutual bowing, prancing, leaping, posturing and trumpeting (see under 323). *Season*, chiefly May-July. Putative localities in Ladakh mentioned by B. B. Osmaston Tso Kar and Tso Moriri lakes (c. 4600 m. alt.) and swamps near Shushal (c. 4300 m.) in which neighbourhoods pairs were observed in summer, and two old nests found by Meinertzhagen. According to local Ladakhis, *vide* Meinertzhagen, the birds arrive in their breeding haunts c. last week in May, and leave again c. October. *Nest*, a huge and deep pad of vegetation on marshy ground. In the Manasarowar region of W. Tibet SA found a fresh egg laid directly on a spongy grass-covered semi-floating hump or 'islet' in a treacherous bog, 25 June. *Eggs*, 2 in a normal clutch, greenish grey or olive-grey with faint crude splotches of reddish brown all over, denser at the broad end. Average size of 12 eggs 101.2 × 64.1 mm. (Baker). Incubation period unknown.

MUSEUM DIAGNOSES. For details of plumage see Baker, loc. cit.

138

GRUIFORMES

Range (c. 4600 m.). Earliest dates recorded in 8 years for incoming migrants overflying the Salt Range in Rawalpindi dist., 15 August; average 25 August (Waite).

GENERAL HABITS. In its winter quarters keeps in large flocks often of several hundred strong, either by itself or in association with the Demoiselle (326) of very similar status and habits. The birds spend the warmer parts of the day, and all night, massed together on open sandbanks of rivers, preening themselves or standing on one leg with neck twisted round and head nestling in the feathers of the back. But there are always a number of sentinels ceaselessly keeping vigil who sound the alert on the least suspicion, so that despite the sleepy spectacle a gathering presents it is impossible to take the birds by surprise. The din of a great concourse taking to the air on alarm, accompanied by the high-pitched calls in varying keys, has been well likened to the distant roar of the sea. From this safe refuge the flocks fly out morning and evening to cultivation within easy reach and do havoc to newly sown and ripening crops especially wheat and gram. They fly in wide V-formation with neck and legs outstretched and heavy flapping of the broad wings punctuated with glides.

The birds circle over the feeding ground before alighting to make sure that the coast is clear, volplaning down in half spirals with legs dangling, as in a vulture arriving at a carcass, and braking vigorously to land.

The *kroon* ranks high as a sporting bird both for its delicate flesh and for the skill, patience and hard work entailed in circumventing it.

FOOD. Chiefly vegetarian. Shoots of grass and cereal crops, tubers, grain, insects and small reptiles. Particularly fond of the young pods of arhar dal (*Cajanus indicus*), and of groundnut (*Arachis hypogaea*) which is vigorously dug out of the soil. Said to do great damage to watermelons grown in the dry river-beds in the Punjab, jabbing into them with the pointed bill.

VOICE and CALLS. A loud, sonorous high-pitched trumpeting *krook-krook* carrying enormous distances. Uttered in varying keys and clearly audible even when the birds are no more than tiny midges up in the sky. Along with the honking of geese it is a sound that bears a peculiar exhilaration for the sportsman's ear.

BREEDING. Extralimital. *Season*, May-June. *Nest*, an untidy heap of vegetable matter in a swamp. *Eggs*, two, greyish olive to greenish brown.

MUSEUM DIAGNOSES. For details of plumage see Baker, loc. cit.; for a fuller account of the biology of the very similar, only somewhat darker nominate race, *Witherby*, 1940, 4: 449-55.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	533-608	105-118	225-258 mm.	192-205 mm. (Baker)

Weight 9½-13 lb. (4.3-5.9 kg.). — Hume.

COLOURS of BARE PARTS. Iris orange-red to red-brown or crimson. Bill dingy green, paler and yellower towards tip. Legs and feet black; soles paler and browner.

GRUIFORMES

140

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	625-668	124-137	223-252	234-247 mm. (Baker)

COLOURS of BARE PARTS. Iris yellow. Bill horny grey or horny green, more yellow towards the tip. Legs and feet black (F. Ludlow).

322. Hooded Crane. *Grus monacha* Temminck

Grus monacha Temminck, 1835, Pl. col., livr. 94, pl. 555 (Hokkaido and Korea)
Baker, FBI No. 2035, Vol. 6: 51
Plate 7, fig. 11

LOCAL NAME. *Wobumal* (= like a Sarus — Manipur).

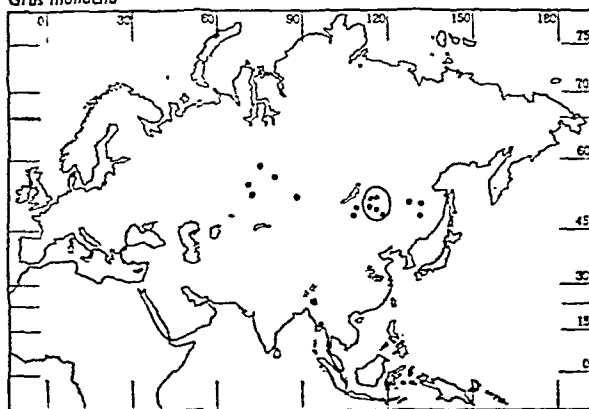
SIZE. Considerably smaller than Sarus; Demoiselle Crane ±. Standing c. 90 cm. (3 ft) high.

FIELD CHARACTERS. An elegant dark slaty grey crane with distinctive white head and about three-quarters of the neck — the 'hood'. Lores, forehead and forecrown naked, the last red (brighter in breeding season), overgrown with black bristly feathers. Sexes alike.

In the distance the white head and brown-toned upperparts are striking features.

Young (immature). Paler grey. Head well covered with bristly feathers: whitish on forehead with a black patch on either side, grey with black shafts on crown, black on lores.

STATUS, DISTRIBUTION and HABITAT. Vagrant. Only one definite record within our limits: a young bird shot in North Cachar (December 1899)

Grus monacha

■ Breeding areas ▨ Wintering areas

by Baker who saw several other examples on two occasions on the Subansiri river, N. Lakhimpur district, Assam (NEFA). Apparently winter visitor to Manipur in small numbers (Higgins) but its occurrence and status there need confirming.

Extralimital. Breeding range not definitely known. Recorded with uncertain status in SE. Siberia from Lake Baikal to the Amur, south to NW. Mongolia and Usuriland; also in Korea and Japan. Winters in China south to the Yangtze Valley (Peters). No reliable record as yet from Burma.

GENERAL HABITS. Haunts open plains and marshes. Apparently not numerous anywhere, and keeping only in small parties even when migrating.

FOOD, VOICE AND CALLS. Nothing specifically recorded as different from other cranes, e.g. 320.

BREEDING. Extralimital and very little known.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	510-545	92-110	208-220	155-180 mm. (Baker)

COLOURS OF BARE PARTS. 'Iris yellow. Bill greenish tinged with red towards the base. Legs and feet dull reddish' (Blyth); horny black (Hartert).

GRUS ANTIGONE (Linnaeus)

Key to the Subspecies

- A white collar.....*G. a. antigone*
No white collar.....*G. a. sharpii*

323. Indian Sarus Crane. *Grus antigone antigone* (Linnaeus)

Ardea Antigone Linnaeus, 1758, Syst. Nat., ed. 10, 1: 142 (Asia = Farther India, as restricted by Hartert, 1921)

Baker, FBI No. 2038, Vol. 6: 55

Plate 7, fig. 7

LOCAL NAMES. *Sarus* (Hindi); *Khur sang* (Assam).

SIZE. Vulture +; standing the height of a man to top of head, c. 156 cm. (5 ft)

FIELD CHARACTERS. The largest of our Indian cranes. A huge long-legged, long-necked grey bird with naked red head and upper neck. Sexes alike; female slightly smaller.

Young (immature). Rather brownish grey overall, with the whole head and neck covered with short rusty buff or cinnamon-brown feathers.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, moving locally with conditions of drought and flood, throughout the northern parts of the subcontinent south of the Himalayas (including Nepal terai), from Sind and Punjab eastward through Uttar Pradesh, Bihar and northern Bengal (duars) to W. Assam. Has been seen in Kashmir Valley, c. 1700 m. — (A. E. Ward, 1907, JBNHS 17: 945). This is about the highest elevation recorded though in suitable places up to c. 1650 m. below Dharmasala it is

duetting all the time. In the midst of all this activity the female sometimes crouches invitingly, legs partly flexed, and copulation takes place. More often, however, the dance dies down as it began, the birds presently resuming their normal activities. *Season*, ranges overall from July to December and even to March, but chiefly during the four monsoon months ending October. *Nest*, a huge pile of reeds, rushes, and straw, about a metre in diameter at the top, placed on a bund in the midst of flooded paddyfields, or on a hummock islanded in a swamp or jheel. *Eggs*, normally 2, greenish- or pinkish white in colour, sometimes spotted and blotched with brown or purple; inner membrane bright orange. Average size of 100 eggs 104.4 × 64.3 mm. (Baker). Nest-building, incubation and care of young shared by both sexes, though male chiefly does the watch and ward. Period 28 days (Alipore Zoo, Lahiri, JBNHS 53: 131). The Mogul emperor Jahangir (reigned A.D. 1605-27), whose Memoirs contain some remarkably accurate observations on the Sarus, gives the interval between laying of 2 eggs as 48 hours, and incubation period as 34 days (see Sâlim Ali, JBNHS 32: 57-60).

Post-natal imprinting of vital commands on a newly hatched chick described by Sâlim Ali (JBNHS 55: 166-8). Before leaving nest on suspicious approach of a human, the brooding parent sounded the alert — a short, subdued, staccato *kor-r-r*, obviously also a command to the hatchling to freeze. On chick continuing to fidget and cheep, parent stalked back to nest, repeated the *kor-r-r* note, at the same time administering a gentle peck to the chick. Upon this the chick immediately stopped cheeping and froze. In another pair of Sarus, flanking on either side and leading away a pair of older downy chicks from suspected danger, the same *kor-r-r* command was given by a parent as soon as suitable marshy land and cover were gained, resulting in magical disappearance of the chicks. After careful search one chick discovered lying doggo half submerged in a puddle at the base of a grass tussock while one of the parents gave the 'broken-wing' distraction display, interpolating its agitated trumpeting with *kor-r-r* note commanding the chicks to continue lying doggo.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). Entirely covered. *Above*, head, neck (and throat) pale isabelline; from base of hindneck two broad lines of dark brown, enclosing a paler brown median stripe, run to tail; a large buffish spot opposite base of each wing; wings cinnamon-brown, tip buffish white. *Below*, lower neck, sides of breast and belly, vent and thighs darker isabelline; centre of breast and belly white (Tiechurst).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	670-685	172-182	c. 310-355	255-263 mm.
♀ ♀	625-645	—	—	—

Weight 15 lb. 1 oz. to 17 lb. 6 oz. (c. 6-80-8 kg.) — Hume.

COLOURS OF BARE PARTS. Iris orange. Bill pale greenish horny with dark tip. Bare skin of crown and lores ashy green; papillous skin of head and neck orange-red, deeper and brighter in breeding season. Legs and feet fleshy red to red.

apparently more frequent (Hingston, 1921, JBNHS 27: 571). South through eastern Rajasthan, Gujarat and northern Madhya Pradesh, diffusing decreasingly south to a diagonal line roughly from Surat (c. 21°N.) to the west to the Godavari delta (c. 16°30'N.) on the east. Most numerous in Gujarat, eastern Rajasthan, and the Gangetic Plain — almost everywhere protected by popular sentiment. Affects open cultivated well-watered plains, marshland, and jheels.

GENERAL HABITS. Normally seen in pairs; sometimes family parties consisting of parents with one, or two, young of the previous brood. At certain seasons, e.g. late winter, also in loose congregations of 60 to 70, or more (once c. 150), adults and adolescent young. These congregations, attended by a great deal of trumpeting, prancing, and mutual display, are more social 'gatherings of the clan' than integrated flocks, pairs and parties breaking away from time to time for their normal avocations. The bird rises off the ground rather heavily but when well launched flies strongly with powerful rhythmic strokes of the broad splayed wings. Usually only short commuting flights between the feeding ground and the midday resting place on the edge of some jheel or river, and at seldom more than treetop height, but on rare occasions as if to prove the rule the birds will soar and circle aloft in the heavens just like migratory cranes, apparently with no object other than for fun. Sarus pair for life; the faithfulness and devotion of the couple to each other have become legendary in India, and popular sentiment is responsible for the universal protection which the bird enjoys. It is seldom molested by the local inhabitants and, contrary to its migratory congeners, exhibits surprising tameness everywhere.

FOOD. Perhaps less vegetarian than our other cranes. Largely a fish-eater depending on availability. Other animal items include crustaceans, frogs, lizards, locusts, grasshoppers and other large insects. Vegetarian items: grain gleaned in the stubbles, tubers and corms of aquatic and marsh plants, green shoots of grasses and cereals, groundnut pods, etc. Occasionally does considerable local damage to newly sown crops.

VOICE AND CALLS. A very loud sonorous far-carrying trumpeting, usually as a duet by paired birds, both from the ground and on the wing. As soon as one bird starts its mate invariably answers and joins in. The duetting is uttered with neck fully upstretched by both birds, bills pointing to the sky, body feathers fluffed and shuffled, and kept up for half a minute or more. The calls serve variously as a display of affection between the pair, as alarm-signal and warning, a greeting, a summons for help, and as a means of maintaining contact between distant pairs. They may be heard during the night as well as in daytime.

BREEDING. Courtship display during breeding season exceedingly animated, spectacular and also somewhat ludicrous; mutually performed like the duetting, though female sometimes less active. The male usually gives the cue by suddenly flicking his wings half open, bowing, giving a little leap, dipping and pumping his forepart up and down, throwing up his head and trumpeting loudly. This invitation to dance is promptly taken up by the female. For the next two or three minutes the two birds go through a bout of vigorous curtsying, prancing, capering and wildly leaping at, around, and away from each other as if completely demented,

324. Burmese Sarus. *Grus antigone sharpii* Blanford

Grus (Antigone) sharpii Blanford, 1895, Bull. Brit. Orn. Cl. 5: 7 (Burma)

Baker, FBI No. 2039, Vol. 6: 56

LOCAL NAMES. *Khur sang* (Assam); *Woinu, Woinaret* (Manipur).

SIZE. As of 323; standing the height of a man.

FIELD CHARACTERS. As for Indian Sarus (323), q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION AND HABITAT. Resident. Assam east of Kamrup district (c. 91-92°E.), south to Manipur. Affects the neighbourhood of lakes, swamps and large rivers.

Extralimital. Burma, Thailand, Cambodia, Laos, Vietnam. Sparingly recorded from northern Malay Peninsula (Perlis and Perak).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the Indian race, but much shier and wilder everywhere due to lack of sentimental protection.

BREEDING. *Season*, July-September. *Nest* and *eggs* as in 323. Average size of 15 eggs 102.5 × 64.9 mm. (Baker).

MUSEUM DIAGNOSIS. Plumage overall darker than in the Indian bird. No ring of white feathers at base of neck. Inner secondaries practically same colour as back.

MEASUREMENTS. Wing ♂ ♀ 600-675 mm. (Baker).

COLOURS OF BARE PARTS. As in 323.

325. Siberian or Great White Crane. *Grus leucogeranus* Pallas

Grus Leucogeranus Pallas, 1773, Reise Russ. Reichs 2: 714 (Swamps bordering the

Ischim, Irtych, and Ob rivers)

Baker, FBI No. 2037, Vol. 6: 53

Plate 7, fig. 6

LOCAL NAMES. *Kare khar* (NW. Pakistan); *Tunhi, Chini kiling* (Uttar Pradesh); *Burmuch* (Bihar). Alternative English name 'Snow-wreath'.

SIZE. Common Crane (320) ±. Standing c. 140 cm. (c. 4½ ft) to top of head.

FIELD CHARACTERS. An exquisitely beautiful snow-white crane with naked reddish face; immaculate, like egret, at rest, showing black wing-quills in flight. On a cursory distant view could be mistaken in flight for White Stork (63), q.v. Sexes alike.

Young (immature). Whole head and face feathered cinnamon-rufous; rest of plumage white tinged and dappled with cinnamon-buff.

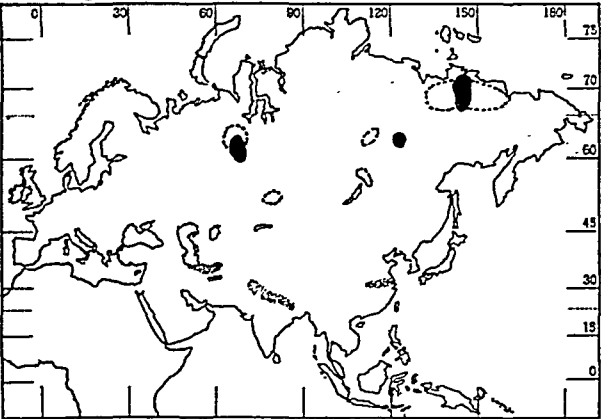
STATUS, DISTRIBUTION AND HABITAT. Uncommon and sparse but regular winter visitor chiefly to NW. Pakistan and N. India, straggling east to Bihar (Jainagar 24°23'N., 85°39'E. — Inglis) where apparently familiar to *mirshikars* (professional birdcatchers) as *burmuch*. Recorded once as far south as the Nagpur area in Madhya Pradesh (c. 21°N., 79°E. — McMaster). Selective and faithful to specific wintering grounds, among its better known regular haunts being Pyagpur jheel (Uttar Pradesh) and Keoladeo Ghata Bharatpur (Rajasthan). Two small parties of stragglers recorded from Larkana and E. Narra districts, Sind, and also the Delhi neighbourhood

CRANES

145

(Najafgarh jheel) — Hume, c. 1875. Affects only open jheels and swamps, not cultivated fields like Common and Demoiselle cranes.

Grus leucogeranus



■ Breeding areas ▨ Wintering areas

Extralimital. Breeds locally in SE. Russia and in Siberia, south to Turgai, the upper Ob, N. Turkestan, Transbaikalia, and Ussuriland. Winters also in China.

MIGRATION. Arrives in NW. Pakistan between middle and end October — occasionally somewhat earlier; in its easterly and more southerly haunts seldom before late November or early December. Leaves again end March or early April, but observed (presumably this species) migrating northward high over the Himalayas in Chamba (Himachal Pradesh) c. 1000 metres above observer's level c. 4400 m. as late as May (Donald, JBNHS 51: 270).

GENERAL HABITS. Met with in family parties of 3 or 4, or small flocks of 12-15 birds. Larger gatherings in some years at favourite wintering places, e.g. Keoladeo Ghana where largest flock observed of about 72. More addicted than other cranes to wading and resting in shallow water, and feeding with head submerged. Does not raid winter crops like wheat and gram. Usually wild and wary, but where unpersecuted becomes comparatively trustful.

FOOD. More or less exclusively vegetarian; largely bulbs, corms, shoots and seeds of aquatic plants with which considerable quantities of coarse grit are swallowed.

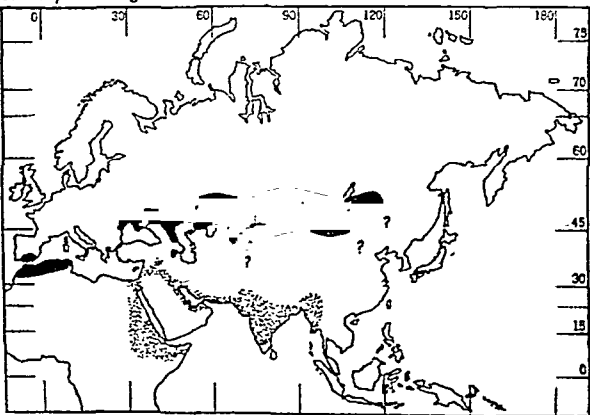
VOICE AND CALLS. A pleasant, soft, musical *koonk-koonk* uttered chiefly in flight. According to Baker 'their call has been syllabified as *karekhar* rapidly but rather softly repeated'. We have not heard any call answering to this description.

CRANES

147

observers. Winter visitor also to Nepal terai and dun, overflying the Valley on migration; occasionally making short halts. Affects fields of winter crops (especially wheat and gram), paddy stubbles, sandy river-beds, and flat open margins of jheels and tanks.

Anthropoides virgo



■ Breeding range ▨ Winter

Extralimital. Breeds in SE. Europe and the greater part of C. Asia, north to c. 60°, south to N. Mongolia. Also on the high plateaux of Algeria. Winters in NE. Africa to the White and Blue Niles, and Ethiopia; likewise Middle East, India, Burma and China.

MIGRATION. No ringing data. See under Common Crane (320). Observations on the two species combined owing to unreliability of discrete identifications. Regular autumn migration over Kohat (NW. Pakistan) commences punctually between 25 and 27 August. Earliest arrival date in Mysore 20 December; latest departure 5 March.

GENERAL HABITS. As of 320, q.v. Visits the subcontinent in colossal numbers. One typical large feeding flock in the Punjab (apparently mixed with Common Crane) described as a broad band of birds about 1½ miles long. When bunched together on alarm they looked like a pebbly beach c. 500 x 100 yards (A. A. Phillips, quoted by Whistler). Feeds in the mornings and late afternoons in newly sown or stubble fields of wheat, gram, and paddy; also ripening cereal crops. Spends the rest of the day and night lazing on open sandbanks in large rivers or the margins of jheels. Always uncannily vigilant and difficult to circumvent without ruse, but like the Common Crane excellent for the table and keenly sought after by sportsmen.

FOOD. As in 320. The large quantity of wheat, gram, and paddy usually found crammed in stomachs of specimens shot, even though partly gleaned

146

GRUIFORMES

BREEDING. Extralimital and little known. *Season*, c. June. *Nest* and *eggs* said to be indistinguishable from those of the Common Crane (320).

MUSEUM DIAGNOSIS. See Field Characters.

Chick (in down) — captivity bred. 'Entirely covered. Underparts dirty buff, belly white. Head and neck dark isabelline; creamy streak on each scapular, rest of upperparts pale chestnut, darker on mid dorsum' (Ticehurst).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	635-645	185-197	275-285	205-218 mm. (Baker)
♀♀	538-620			

COLOURS OF BARE PARTS. Iris creamy golden yellow. Naked skin of head reddish. Bill: culmen to nostril dusky orange-brown, rest of bill dusky pinkish flesh. Legs and feet flesh pink; claws horny brown.

Genus ANTHROPOIDES Vieillot

Anthropoides Vieillot, 1816, *Analyse*: 59. Type, by monotypy, *Demoiselle* of Buffon = *Ardea virgo* Linnaeus

Bill and legs proportionately shorter than in *Grus*. Head fully feathered. A tuft of long white plumes springing from behind ear-coverts. Feathers of lower neck long and lanceolate; inner secondaries much lengthened and pointed but not disintegrated as in *Grus*.

326. Demoiselle Crane. *Anthropoides virgo* (Linnaeus)

Ardea virgo Linnaeus, 1758, *Syst. Nat.*, ed. 10, 1: 141 ('In Oriente' = India)

Baker, FBI No. 2040, Vol. 6: 57

Plate 7, fig. 8

LOCAL NAMES. *Kārkārā* (Hindi); *Ghanto* (Nepal); *Kārkūcha* (Marathi); *Kārkārō* (Gujarati); *Koonj* (Sind, Kutch); *Kūldm*, *Kūldng* (Deccan); *Kurra* (Bihar); *Gayāra* (Orissa); *Wada koraka* (Telugu); *Karkoncha* (Kannada).

SIZE. Sarus —; standing c. 76 cm. (2½ ft) to top of head.

FIELD CHARACTERS. A dainty little grey crane with black head and neck and conspicuous white ear-tufts behind eyes. Black feathers of lower neck long, pointed, and falling over breast. Elongated sickle-shaped brownish grey secondaries drooping over tail. Sexes alike.

Young (immature). Like adult but with head wholly grey instead of the crown only. Black of neck browner behind, more grey in front with no apron of lengthened plumes on breast. Drooping grey secondaries shorter, only slightly overhanging tail.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor. Commonest and most abundant in the northwestern and west-central portions of the subcontinent diffusing eastward, occasionally to Bhutan, Assam and East Pakistan (not common east of Bihar); southward more or less regularly to Mysore (generally rare south of c. 16°N.). Its winter quarters and migration dates and routes largely overlap those of the Common Crane (320), the two species usually found in association, and seldom reliably differentiated by

148

GRUIFORMES

in stubbles, indicates the magnitude of the damage to cereal crops that cranes in their hundred thousands must annually cause.

VOICE AND CALLS. Sonorous high-pitched *krook-krook* like Common Crane's but somewhat softer.

BREEDING. Extralimital. On their breeding grounds pairs said to assemble into large congregations morning and evening and go through elaborate communal displays or dances consisting of vigorous bowing, leaping, and sprinting around with ear-tufts and breast-plumes raised. *Season*, May to July. *Nest* etc. as in other cranes; *eggs* also 2, greenish- or yellowish grey, sparsely blotched with reddish brown and grey.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	450-530	65-70	170-187	165-182 mm. (Baker)

Weight ♂♀ 5 lb. to 6½ lb. (c. 2.25-3 kg.) — Hume.

COLOURS OF BARE PARTS. Iris red-brown to crimson or red. Bill pale greenish with red tip. Legs and feet black.

Family RALLIDAE: Rails, Coots *

(For morphology see Stresemann, 1927-34, *Aves*: 763-5; Baker, 1929, 6: 3; Witherby, 1941, 5: 173-4; Van Tyne & Berger, 1959: 431)

Key to the Genera

	Page
A Bill from gape as long as, or longer than, the tarsus.....	<i>Rallus</i> 148
B Bill from gape much shorter than tarsus.....	I
1 Frontal shield absent or only slightly developed.....	a
Frontal shield well developed.....	b
a Second quill longest; first between fifth and seventh.....	I
Third to sixth quill longest; first shorter than eighth.....	II
I Tarsus longer than middle toe without claw.....	<i>Crex</i> 158
Tarsus as long as or shorter than middle toe without claw....	<i>Porzana</i> 159
II Tarsus longer than middle toe without claw. Plumage banded below.....	<i>Rallina</i> 154
Tarsus as long as or shorter than middle toe without claw. Plumage not banded below.....	<i>Amasornis</i> 164
b Toes with membranous fringe divided into convex lobes. Plumage black or blackish grey.....	<i>Porzana</i> 180
No lobate fringe on toes.....	III
III Plumage blue; frontal shield truncate behind.....	<i>Porphyrio</i> 177
Plumage not blue; frontal shield not truncated behind.....	a¹
a¹ Toes with a narrow straight-edged lateral fringe. Sexes alike.....	<i>Gallinula</i> 174
Toes without any fringe. Sexes differing.....	<i>Gallinula</i> 172

Genus RALLUS Linnaeus

Rallus Linnaeus, 1758, *Syst. Nat.*, ed. 10, 1: 153. Type, by subsequent designation, *Rallus aquaticus* Linnaeus

* See Appendix

RAILS, COOTS

149

Hypotaenidia Reichenbach, 1852, Av. Syst. Nat.: 23. Type, by original designation, *Rallus pectoralis* 'Cuvier' not *Rallus pectoralis* Temminck = *Hypotaenidia australis* Pelzeln

Wing short: 1st primary (as.) between 6th and 8th in length; 2nd primary usually longest. Tail shorter than half length of wing. Nostril linear, placed in an elongate groove on each side of mandible. Feathers of forehead bristly or slightly stiffened. Tarsus slender, usually shorter than middle toe with claw. Toes, long, slender, free. The genus is widely distributed in the Palearctic, Oriental & Australasian regions.

Key to the Species

Bill slender. No white markings on back.....	<i>R. aquaticus</i>	Page
Bill stouter. Back marked with black bars or spots.....	<i>R. striatus</i>	152

RALLUS AQUATICUS Linnaeus

Key to the Subspecies

Darker above and below.....	<i>R. a. indicus</i>
Lighter above and below.....	<i>R. a. korejewi</i>

327. **Turkestan Water Rail.** *Rallus aquaticus korejewi* Zarudny

Rallus aquaticus korejewi Zarudny, 1905, Orn. Monatsb. 13: 209 (Northern Turkestan, Buchara, Transcaspia and east Persia)

Baker, FBI No. 2007, Vol. 6: 6

Plate 36, fig. 1

LOCAL NAMES. None recorded.

SIZE. Grey Partridge —; length c. 28 cm. (11 in.).

FIELD CHARACTERS. A partridge-like bird somewhat slender and longer legged, found in reedy marshes; resembling also a small all-brown moorhen. Above, greyish olive-brown boldly streaked with black. Below, chin and throat white; sides of head, neck, and breast pale slaty grey; flanks barred black and white. The comparatively long and slender orange-red bill immediately distinguishes it from other rails. Sexes alike. See Key to the Subspecies.

Young (immature). Above, much more definitely barred with white on the wing-coverts. Below, with broader pale rufescent edges to the feathers.

STATUS, DISTRIBUTION and HABITAT. Resident and breeding in Kashmir and Ladakh (?); straggling south in winter as far at least as Madhya Pradesh (Sehore). Common in Kashmir Valley (c. 1500 m.) on all extensive jheels — Hokarsar, Anchar, and others. Owing to paucity of specimens and dependable sight records, status of the two races in our area remains uncertain. Affects reedy marshes.

Extralimital. 'Known to breed in Transcaspia, eastern Persia, Turkestan, Zaidam, Kashmir and Ladakh. Winters in NW. India and E. China, casually elsewhere' (Peters).

GENERAL HABITS. Keeps singly or in pairs to swampy reed-beds, inundated sugarcane fields, etc., venturing out to feed at the edge in the early morning and dusk, and in cloudy drizzly weather. Walks about with upright carriage and high-stepping gait, tail partly cocked and jerked up from time to time as in Moorhen. But an inveterate skulker, unobtrusive and shy, scuttling into cover on the least suspicion, legs flexed and with lowered head and tail. Difficult to see and even more to flush, thus possibly much

RAILS, COOTS

151

MEASUREMENTS. Wing ♂♂ 128-136 mm.; ♀♀ 116-126 mm. (Baker).

COLOURS OF BARE PARTS. Iris reddish-brown to brick-red. Bill: upper mandible dark brown with a stripe on the base bright orange-red to vermillion; base of lower mandible also red but paler, the terminal third grey to dark horny brown. Legs and feet fleshy pink to brownish pink.

328. **Indian Water Rail.** *Rallus aquaticus indicus* Blyth

Rallus indicus Blyth, 1849, Jour. Asiat. Soc. Bengal 18(2): 820

(Lower Bengal and India generally)

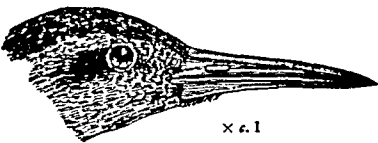
Baker, FBI No. 2006, Vol. 6: 4

LOCAL NAME. *Ambukukūt* (Bengal).

SIZE. Grey Partridge —; length c. 28 cm. (11 in.).

FIELD CHARACTERS. As for 327, q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION and HABITAT. Winter visitor to eastern Nepal terai (JBNSHS 65: 327) and Kathmandu Valley; Bengal south to Calcutta, Bangladesh and NE. India.



Extralimital. 'Breeds in E. Siberia from the Lena east to Amur and Ussuriland, south to Transbaikalia, Chihili, and Korea; Japanese Islands from Sakhalin to Kyushu. Winters in E. Bengal, Assam, Burma, SE. China' (Peters). Burma (Smythies).

MIGRATION. Nothing recorded beyond Baker's statement that 'On their first appearance in India these birds are often so exhausted as to allow themselves to be captured by hand without attempting to move'.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 327.

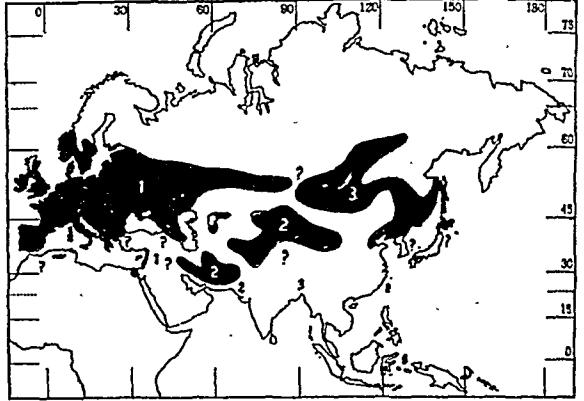
BREEDING. Extralimital. Season, May-June. Nest and eggs as in 327. MUSEUM DIAGNOSIS. Differs from Turkestan race (327) in being darker olive-brown, less grey, above and below; distinct brownish wash on upper breast (v. clear grey); more white on throat (v. white largely lacking); brown eye-stripe more prominent behind eye. From nominate *aquaticus* by paler brown edges to feathers of upperparts, paler and more brownish (v. more slaty grey) underparts, and a brown stripe through eye to ear-coverts. For details of plumages of *R. a. aquaticus* see Witherby, 1941, 5: 1967.

MEASUREMENTS				
	Wing	Bill	Tarsus	Tail
♂♂	120-130	40-43	c. 40-45	52-65 mm. (Baker)
♀♀	110-122	36-40 (from feathers)		
For the nominate race Witherby gives:				
♂♂	115-126	37-44	39-45	50-60 mm.
♀♀	109-116	33-39	—	—
COLOURS OF BARE PARTS. As in 327.				

150

GRUIFORMES

Rallus aquaticus



■ Breeding range Black numerals = Winter
1 *R. a. aquaticus* (RE). 2 *R. a. korejewi* (327). 3 *R. a. indicus* (328).

commoner in appropriate habitats than it appears to be. When suddenly come upon, flutters up feebly, flying with dangling legs just above the tall reeds for a few metres and dropping into cover again. But is capable of strong sustained flight over long distances when on migration. Swims jerkily for short distances like Moorhen, with frequent twitches of tail.

FOOD. Small freshwater snails complete with shells, slugs, worms, and insects. Also vegetable matter, e.g. shoots and seeds of grasses and marsh plants, and occasionally paddy.

VOICE and CALLS. Chiefly heard at early dawn and late into the dusk — a curious 'scream' reminiscent of the squealing of 'a small pig in trouble' (B. B. Osmaston). Other calls difficult to fix when issuing from within thick reed-beds tenanted by several species of rails and others, with the producers in hiding.

BREEDING. Season, in Kashmir Valley (c. 1500 m. elevation) late May to early August. Nest, an unlined pad of loosely put-together dry rushes, aquatic weeds, and grass, usually well concealed in herbage in a swamp a few inches above water. Eggs, normally 5-8 (once 10), glossy broad ovals, pale creamy to warm buff faintly tinged with green, flecked and blotched with pale reddish brown or purple-brown, and secondary markings of lavender or pinky grey. Average size of 50 Kashmir eggs 36.2 x 25.9 mm. (Baker). Both sexes partake in nest-building and incubation; female's share greater. Incubation period recorded elsewhere (for nominate race) 19-20 days (Witherby).

MUSEUM DIAGNOSIS. Similar to Indian Water Rail (328) but paler and more grey above and below. Brown eye-stripe faint or absent behind the eye.

Chick (in down). Velvety black all over.

GRUIFORMES

RALLUS STRIATUS Linnaeus

Key to the Subspecies

Paler and smaller.....	<i>R. s. albicenter</i>
Darker and larger.....	<i>R. s. obscurior</i>

329. **Indian Bluebreasted Banded Rail.** *Rallus striatus albicenter*

Swaipson

Rallus albicenter Swainson, 1838, Animals in Menageries: 337 (India)

Baker, FBI No. 2008, Vol. 6: 7

Plate 36, fig. 2

LOCAL NAMES. *Kānān kochi* (Tamil); *Wadi kodi* (Telugu); *Kirimeti korowala* (Sinhala); *Tuttuterippan* (Malayalam).

SIZE. Grey Partridge —; length c. 27 cm. (10½ in.).

FIELD CHARACTERS. A short-tailed marsh bird like the waterhen, seen skulking amongst reeds etc.

Male. Above, head and sides of neck rufous-chestnut. Rest of upperparts dark brown with irregular wavy white bands and spots. Below, chin and throat white; foreneck and breast ashy blue. Abdomen and flanks blackish, conspicuously barred with white. The partly red bill, reddish eyes, and olive-grey legs are further clues to its identity.

Female, duller above and whitish on belly.

Young (immature). Feathers of back streaked with dark brown, the white bars and spots absent or obsolete. Crown and neck rufous-brown freely streaked with dark brown.

STATUS, DISTRIBUTION and HABITAT. - Resident; moving about locally under stress of drought-flood. Kutch, Madhya Pradesh, eastern Nepal, Darjeeling, Jalpaiguri duars, NE. India. Southward through Bangladesh and peninsular India to Kerala; from plains level to c. 1300 m. Also Sri Lanka. Affects reedy swamps and mangroves, margins of village tanks, inundated paddy cultivation, etc.

GENERAL HABITS. Usually solitary or in pairs. Much commoner than more widespread than apparent, but an inveterate skulker and therefore easily overlooked. Walks about with an upright carriage and high-stepping gait, bobbing head and jerking stub tail at each step, but crouching on slinking away into the reeds on the least alarm. The elongated toes enable it to slip lightly over floating vegetation in quest of food. Flight typical of rails, slow and laboured flapping, with the legs dangling behind. Swims well and can even dive on occasion.

FOOD. Seeds and shoots of marsh plants, molluscs, crustaceans, grub worms, and insects.

VOICE and CALLS. Normally very silent. 'A rather sharp though loud whistled note' by one bird of a pair feeding together (Hume). 'Sho- jerking screams, not very loud.' Also 'a deep low note, probably male's audible only at very close range (Baker).



RAILS, COOTS

153

BREEDING. *Season*, more or less over its entire range (including Ceylon) from the break of the rains in mid June to September-October. *Nest*, a pad of matted weeds, reed stems and grass c. 20-25 cm. across placed on the ground or on the debris of broken-down reeds, well concealed amongst vegetation on the edge of a marsh. *Eggs*, 5 to 7, and up to 9, cream to warm salmon-buff in colour, smooth textured and with a fair gloss, handsomely blotched and spotted with reddish- or purplish-brown or deep red, more densely at the broad end. Average size of 200 eggs 33.7 × 25.8 mm. (Baker). Both sexes partake in building the nest and incubation. Period believed to be 19-22 days. Courtship display *ride* Baker of the normal rail pattern: the male approaches the female with drooping, quivering wings, the stub tail held erect and constantly flicked forward over the back, head held low and stretched out parallel to the ground. When close to the female he stops and jerks himself upright on his toes, spreads out his wings, and soon crouches again. Copulation follows if the female responds, otherwise the antics are repeated.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	108-131	31-34	34-37	38-41 mm. (Baker)

Weight 3.6 to 5 oz. (c. 100-142 gm.) — Hume.

COLOURS OF BARE PARTS. Iris light brown (in young birds) to Indian red (in adults). Bill: upper mandible and tip of lower horny brown to dark brown; lower mandible and commissure dull yellowish red to bright red. Legs and feet olive-grey, olive, or fleshy grey.

330. Andaman Bluebreasted Banded Rail. *Rallus striatus obscurior* (Hume)

Hypotaenidia obscurior Hume, 1874, *Stray Feathers* 2: 302 (Andaman Islands)

Rallus striatus nicobarensis Abdulali, 1966, *JBNHS* 63: 420

(Nancowri, central Nicobars)

Baker, *FBI* No. 2009, Vol. 6: 9

LOCAL NAMES. None recorded.

SIZE. Same as 329; Grey Partridge —.

FIELD CHARACTERS. As for 329, q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION AND HABITAT. Resident and common in both the Andaman and Nicobar groups of islands. Affects forest, marshy meadows, reedy swamps and paddylands.

GENERAL HABITS, FOOD, VOICE AND CALLS. As of 329, q.v. Also a great skulker and adept at hiding itself, only rarely flushed, and then flying heavily with legs dangling. Utters a deep croak very like the note of *Rallina cuningii* (333) — A. L. Butler.

BREEDING. *Season*, more or less throughout the year, chiefly June to November. *Nest*, a pad of dry grass on swampy ground, usually well concealed in thick grass or herbage, or in jungle (A. L. Butler, B. B. Osmaston).

RAILS, COOTS

155

Young (immature). Head and neck like back, rufous-brown. Breast pale dull brown; rest of underparts whitish obscurely barred with brown.

STATUS, DISTRIBUTION AND HABITAT. Status as resident or migratory, and to what extent, uncertain. Baker obtained it on several occasions in N. Cachar (c. 800 m. alt., Assam). No other Indian or E. Pakistan records. Affects reedy swamps and marshes; also shrubby bordering paddyfields etc.

Extralimital. 'Burma south over the Malay Peninsula; Sumatra; Java; Borneo; Lesser Sunda Is.; Philippine Is. (Palawan, Balabac, Mindoro); Palau Is.; Moluccas (Halmahera, Batjan, Buru)' (Peters).

GENERAL HABITS AND FOOD. As of 327, and typical of all rails and crakes. A skulker in marshy reed-beds and undergrowth, difficult to flush or observe, thus comparatively little known.

VOICE AND CALLS. Unrecorded.

BREEDING. Extralimital. Unrecorded within our limits. *Season*, in Burma August-September. *Nest* and *eggs* similar to 332.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	118-131	20-21	—	49-51 mm. (Baker)

COLOURS OF BARE PARTS. Iris crimson or blood-red. Bill blackish, the base paler and tinged with greenish or plumbeous-slate. Gape and orbital skin (fine ring round eye) crimson. Legs and feet coral red; claws slate.

332. Indian or Slaty-legged Banded Crake. *Rallina eurizonoides* (Jerdon)

Z. (epomia) nigrolineata Hodgson, in Gray, G. R., 1844, *Zool. Misc.*: 86 (Nepal). *Nomen nudum.*

Rallus superciliosus Eyton, 1845, *Ann. and Mag. Nat. Hist.* 16: 230 (Malacca). *Nec* *Rallus superciliosus* Vieillot, 1819, *Nouv. Dict. Hist. Nat.* 28: 565.

Zepornia nigrolineata 'Hodgk.' = G. R. Gray, 1846, *Cat. Bds. Nepal*: 143 (Nepal)

In synonymy of *Rallus superciliosus* Eyton, *nomen nudum.*

Porzana amauroptera 'Blyth' = Jerdon, 1864, *Bds. India* 3: 725 (Northern India)

Baker, *FBI* No. 2014, Vol. 6: 16

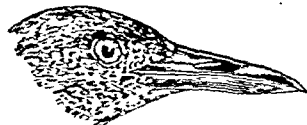
Plate 36, fig. 5

LOCAL NAMES. *Daobui lei* (Cachar); *Kirimeti kororakā* (Sinhala); *Kānān kāchi* (Tamil).

SIZE. Between Quail and Partridge; length c. 25 cm. (10 in.).

FIELD CHARACTERS. Confusingly similar to 331 but with chin and throat pure white. Most readily distinguished from it by absence of white bars on wing quills and coverts, and above all by slaty (r. coral-red) legs. Sexes alike.

Young (immature) has upper-parts of head and neck dark olive-brown, concolorous with back. Sides of head and neck more ashy brown; scapulars and wing-coverts with sparse white and black bars.



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GRUIFORMES

154

Eggs, normally 6, sometimes 7 or 8, slightly glossed, pinkish stone-colour or dun, spotted and blotched chiefly at the broad end with reddish brown or bright chestnut and secondary greyish markings. Average size of 150 eggs 36.0 × 27.5 mm. (Baker).

MUSEUM DIAGNOSIS. Differs from the Indian race (329) in being darker and larger. *Above* much blacker; *below*, chin and throat much less white; breast deeper grey.

Chick (in down). All black. Iris greyish brown; bill blackish; legs and feet dark brown. The first feathers to appear are the grey feathers of the breast (A. L. Butler).

MEASUREMENTS. ♂ ♀ Wing 129-136; bill (from feathers) 33-36 mm. (Baker).

COLOURS OF BARE PARTS. Iris dark brown. Bill Indian red, tips of both mandibles and whole culmen deep horny brown. Legs and feet dark greenish horny (Davison).

Genus RALLINA G. R. Gray

Rallina 'Reichenbach' = G. R. Gray, 1846, *Gen. Bds.* 3: 595. Type, by original designation, *Rallus fasciatus* Raffles

Differs from *Rallus* in having a shorter bill which is much shorter than middle toe, which again is shorter than the tarsus. Wing rounded: 3rd primary (as.) longest. In *Rallina cuningii* (333) secondaries slightly longer than primaries; in other species slightly shorter.

The genus ranges from India and Ceylon to Australia; represented by three species within our limits.

Key to the Species

	Page
A Back and wings rufous-brown; culmen 20 to 21 mm.; legs red.....	154
B Back and wings olive-brown; culmen 27 to 28 mm.; legs slaty.....	155
C Upper plumage deep ruddy-chestnut; culmen 29 to 33 mm.; legs olive-green.....	157

331. Malayan or Redlegged Banded Crake. *Rallina fasciata* (Raffles)

Rallus fasciatus Raffles, 1822, *Trans. Linn. Soc. London* 13(2): 328

(Benkulen, western Sumatra)

Baker, *FBI* No. 2015, Vol. 6: 17

Plate 36, fig. 3

LOCAL NAMES. None recorded.

SIZE. Between Quail and Partridge; length c. 23 cm. (9 in.).

FIELD CHARACTERS. A marsh-haunting ground bird like partridge, less plump and longer legged.

Male and Female: Whole head, neck, and breast cinnamon chocolate-brown. Rest of upperparts rufous-brown. Wing quills and coverts blackish with broad white bars. Underparts strikingly banded black and white. Readily distinguished from very similar Banded Crake (332) by coral red (v. slaty) legs.

GRUIFORMES

156

STATUS, DISTRIBUTION AND HABITAT. Resident and local migrant, found in well-wooded, well-watered tracts, especially during the monsoon season, practically throughout our area, from NW. Pakistan to eastern Assam (including Nepal) and to the extreme south of the Peninsula (Kerala, Rameswaram Island). Judging from its calls not uncommon, and locally even numerous. Winter visitor to Ceylon (October/November to March/April). Affects a wide range of jungle habitats, plains and up to at least 1600 metres elevation in the Himalayas (Darjeeling district) and peninsular hills — Western Ghats (Khandala), Biligirirangans, hills of Kerala, Coorg and Mysore, and others.

Extralimital. Burma, Malay Peninsula, Vietnam.

MIGRATION. Little known except that at certain times of year, especially at the commencement and end of the SW. monsoon, exhausted birds widely and commonly reported blundering into houses for refuge from gales, while evidently on some sort of migratory passage. Arrives on the west coast of Ceylon from India about October.

GENERAL HABITS. Like other rails, partly nocturnal. Is shy and scuttles into thick cover on the slightest suspicion, with legs partly flexed and head and tail lowered. Normally walks with a high-stepping gait and upright carriage, tail slightly cocked and twitched from time to time like Moorhen, and wings partly drooping at the sides. When flushed often flies up into a tree, perching on a branch seemingly quite at home. Swims short distances jerkily, also like Moorhen.

FOOD. Animal and vegetable: molluscs, worms, insects, shoots and seeds of marsh plants.

VOICE AND CALLS. Chiefly heard at early dawn and late into the dusk, especially during the breeding season; also in daytime in misty overcast weather. The following calls described: a cry rather like that of a domestic hen after laying an egg; a cry like the Paddy Bird's (*Ardeola grayii*) when suddenly alarmed; a noise like *krrrrr*, pronounced in a subdued voice, when suspicious of danger (T. R. Bell). During breeding season bird answers bird hidden in dense grass and scrub with a *Kok* note which 'said through one's nose is the exact sound' (C. M. Inglis). Calls persistently during night, mostly a double note *kek-kek, kek-kek, kek-kek, kek-kek*, and so on, like the Spotted Scops Owl (*Otus spilocephalus*) but much harsher (W. H. Matthews, in *epist.*). 'A long drumming croak *krrrrrrrrr-kr-kr-kr-kr-kr-kr*' (Mrs Lushington, Ceylon). A repeated hissing like a snake but deeper and more guttural (W. H. Matthews); 'a peculiar noise somewhat resembling the swearing of a cat' (B. B. Osmaston) — both (probably the same) by an incubating bird when nest closely approached.

BREEDING. *Season* during the SW. monsoon, June to September, the months of heaviest rainfall in the Western Ghats. Nests in the densest jungle as well as open scrub, from plains level to at least 1600 m. elevation in the peninsular hills. Also in the outer Himalayas (Dehra Dun dist. c. 750 m., Darjeeling dist., c. 1000 m.). *Nest*, an untidy pad of dead leaves and grasses and a few thin twigs, with a slight central depression. Placed in bamboo clumps, on masses of tangled creepers, on top of an overgrown tree stump etc. up to a metre or so above ground, not necessarily in the vicinity of a swamp. *Eggs*, 4 to 8, pale creamy white with a fair gloss. Average size of

100 eggs 28.1 × 20.0 mm. (Baker). Both sexes incubate and tend the young. Period unrecorded. The incubating bird displays extraordinary pluck and pugnacity, standing up and puffing out its plumage at approach of a hand, pecking viciously at it, and repeating the process without leaving (Osmaston).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.
Chick (in down). Velvety black all over.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	122-132	27-28	39-46	55-64 mm. (Baker)

COLOURS OF BARE PARTS. Iris: adult crimson red; immature dull brown. Bill green; terminal half of upper mandible and tip of lower dark brown. Legs and feet: adult dull greenish plumbeous, plumbeous, or black; imm. greenish plumbeous.

333. Andaman Banded Crane. *Rallina canningi* (Blyth)

Euryzona canningi 'Tyler' = Blyth, 1863, Ibis: 119 (Andaman Is.; type from Port Canning)
Baker, FBI No. 2016, Vol. 6: 18
Plate 36, fig. 12

LOCAL NAMES. None recorded.
SIZE. Grey Partridge ±; length c. 34 cm. (13½ in.).
FIELD CHARACTERS. More or less as for Slaty-legged Banded Crane (332), q.v., but larger. Differs from it also in being deep glossy ruddy chestnut above and on breast (v. rufous-brown). No white on throat; bill pale green. Sexes alike.

Young (immature) has the chestnut parts duller. Lower parts dark grey with a chestnut tinge, narrowly banded and streaked with dirty white instead of black broadly barred with pure white as in adult (Butler).

STATUS, DISTRIBUTION and HABITAT. Resident; common. Andaman Islands. (Details of range not worked out. Apparently absent in the Nicobars.) Affects marshy jungle.

GENERAL HABITS. Typical of the family. A great skulker in reeds and herbage on marshland; seldom seen but readily snared, thus proving its abundance (80 caught within 1 square mile!). 'Carries itself high on the legs, head generally rather drawn in, and feathers always more or less ruffled up to produce a very round and ball-like outline' (A. L. Butler). A peculiarity described by the same observer needs confirming. 'In drinking they seemed to raise the head much less than most birds, drinking steadily for many seconds without lifting the bill at all.'

FOOD. Small fish (?), molluscs, worms, insects (beetles, grasshoppers and caterpillars). Large grasshoppers shaken about and battered before swallowing.

VOICE and CALLS. 'A curious deep croak sounding something as if a man were trying to say *koop! koop!* with his mouth under water.' Alarm-note when a snared bird is approached 'a sharp *chick, chick*'. When handled 'sometimes utters a cry like that of a wounded rabbit' (A. L. Butler).

GENERAL HABITS. Like the other rails, but more restricted to dry grassland and standing crops. Distinctly crepuscular. Very difficult to flush and seldom seen, but its presence advertised by its constant calls.

FOOD. Insects, worms, snails as well as seeds and other vegetable matter.

VOICE and CALLS. Of male, a loud rasping disyllabic *arp-arp* or *crake-crake* persistently repeated throughout the day and night in long unbroken runs. The calls have a peculiar ventriloquistic quality.

BREEDING. Extralimital. Nest on ground in grassland or corn fields. Eggs, 8-12, pale greenish grey to reddish brown.

MUSEUM DIAGNOSIS. For details of plumages (and bionomics) see Witherby, 1941, 5: 174-80. Baker's description, loc. cit., is misleading.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	135-150	20-23	34-43	40-50 mm.
♀ ♀	130-145	19-23	—	—

(Witherby)

COLOURS OF BARE PARTS. Iris pale brown. Bill pale brown, darker at tip, more flesh-coloured on lower mandible. Legs and feet pale flesh.

Genus PORZANA Vieillot

Porzana Vieillot, 1816, Analyse: 61. Type, by monotypy and tautonymy, *Marouette* of Buffon = *Rallus porzana* Linnaeus

Differs from *Crex* in having the tarsus shorter than middle toe and claw. Bill short and fairly stout. First primary (as.) about equal to 6th or 7th; 2nd primary longest and subequal with 3rd.

Genus practically cosmopolitan.

Key to the Species		Page
A	Breast spotted with white; wing over 110 mm.	<i>P. porzana</i> 162
B	Breast immaculate; wing under 110 mm.	1
1	Head uniformly brown (both sexes); outer edge of primary brown; wing over 94 mm.	<i>P. parva</i> 159
	Head marked with black (both sexes); outer edge of primary white; wing under 93 mm.	<i>P. pusilla</i> 160
C	Breast (adults) vinous chestnut; young dark olive.	<i>P. fusca</i> 164

335, 336. Little Crane. *Porzana parva parva* (Scopoli)

Rallus parvus Scopoli, 1769, Annus I, Hist.-Nat.: 108 (probably from Carniola)
Porzana parva illustris Gavrilenko, 1926, J. Orn. 74: 700 (Tarim River, Turkestan)
Baker, FBI No. 2012, Vol. 6: 13
Plate 36, fig. 4

LOCAL NAMES. None recorded.
SIZE. Grey Quail ±; length c. 20 cm. (c. 8 in.).
FIELD CHARACTERS. A quail-like swamp bird.
Male. Supercilia and sides of head and neck dark ashy grey; centre of crown and neck rufous-tinged dark brown. Rest of upperparts olive-brown feebly marked with sparse narrow white streaks except on wing-coverts. Upper back, scapulars and innermost secondaries also broadly streaked with black. *Below*, chin, throat and rest of underparts dark ashy grey barred with white posteriorly.

BREEDING. Season so far recorded between June and August. Nest a collection of grass and leaves at the foot of some big tree or under tangled undergrowth in forest, not necessarily close to water. Eggs, similar to those of Indian Banded Crane (332), larger, whiter and more glossy. Average size of 32 eggs 40.6 × 30.8 mm. (Baker). Share of the sexes in incubation, and period, unrecorded.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.
Chick (in down). Rich chestnut, slightly greyish under the wings. Bill dusky olive (Butler).

MEASUREMENTS. ♂ ♀ Wing 151-163; bill (from feathers) 29-33; tarsus 56-62; tail 73-92 mm. (Baker).

COLOURS OF BARE PARTS. Iris scarlet; in some mottled with tiny specks of gold round pupil. Bill bright apple-green, whitish at tip ('this green colour is so delicate that it gives the bill, which is hard and strong, the appearance of being soft and weak'). Legs and feet olive-green (Butler).

Genus CREX Bechstein

Crex Bechstein, 1803, Orn. Taschenb. Deutschl. Th. 2: 336. Type, by monotypy and tautonymy, *Crex pratensis* Bechstein = *Rallus crex* Linnaeus

Differs from other rail species by its comparatively short, stout bill of which depth at base is equal to more than half length of culmen. Tarsus as long as middle toe with claw. Wing rather broad: 1st primary (as.) about equal to 5th or 6th; 2nd primary longest.

Contains a single Palearctic species extending to N. Africa and W. Asia.

334. Corncrake or Landrail. *Crex crex* (Linnaeus)

Rallus Crex Linnaeus, 1758, Syst. Nat., ed. 10, 1: 153 (Europe, restricted type locality Sweden, ex Fn. Svec.)

Baker, FBI No. 2010, Vol. 6: 10
Plate 36, fig. 7

LOCAL NAMES. None recorded.
SIZE. Grey Partridge —; length c. 25 cm. (10 in.).

FIELD CHARACTERS. A quail-like bird, standing somewhat higher on the legs. *Above* yellowish buff or yellowish ashy, the feathers boldly streaked with dark brown. A grey-blue stripe over eye. *Below*, chin and throat whitish, breast pale ashy grey. Flanks and under tail-coverts broadly barred with reddish brown. Sexes more or less alike.

In the sluggish rail-like flight chestnut-coloured wings conspicuous.

STATUS, DISTRIBUTION and HABITAT. Casual vagrant. Only two records from within the subcontinent: one reported to Blyth as having been shot in the 1870s, the other obtained by Scully in Gilgit (8 October, c. 1881) 'while on autumn migration'. More recently, in the 1950s (?), one reported flying on board ship near Ceylon, presumably also on migration (Evenden *in litt*). Two specimens, Colombo (Oct. 1970, Sept. 1972), therefore presumably rare but regular visitor (CBCN, Sept. 1972).

Extralimital. Breeds in the British Isles, N. Europe and Asia north to about the Arctic circle and east to C. Siberia, south to the Pyrenees, N. Italy, Macedonia, N. Persia. Turkestan, and Altai. Winters chiefly in N. and E. tropical Africa. Many instances of casual occurrence' (Peters).

Female. *Above*. Supercilia and face paler grey, otherwise as in ♂. *Below*, chin, throat and foreneck whitish; rest of underparts isabelline-buff, barred brown and white on vent and under tail-coverts.

Young (immature). Like female but with very pale, almost whitish underparts.

STATUS, DISTRIBUTION and HABITAT. Winter visitor, apparently uncommon; hitherto recorded only in Gilgit and W. Pakistan (Baluchistan, Sind). A specimen from Bombay city! (SA & HA, 1968, JBNHS 65: 217-18). Karwar, Karnataka (specimen, BNHS coll.). Its distribution within our limits and numerical status need to be worked out. Paucity of museum skins and liability of misidentification from fleeting glimpses of these small similar-looking crakes renders assessment difficult. Affects reed-beds in and around wheels and swamps.

Extralimital. According to Peters the nominate race breeds locally in E. and S. Europe, SW. Asia, and possibly in NW. Africa. Winters chiefly in the Mediterranean lands, Arabia, Iraq, Sind, and Baluchistan; *P. p. illustris* Gavrilenko breeds from E. Turkestan to the valley of the Tarim in western Chinese Turkestan, and 'doubtless winters in W. India'. However, this race is of doubtful validity, and rejected by both Meinertzhagen (1954, *Birds of Arabia*) and more recently by Vaurie (1965, *The Birds of the Palearctic Fauna* 2). The composite breeding range will therefore stand for the species, which has no races.

MIGRATION. No ringing data or other specific information.

GENERAL HABITS. Very similar to Baillon's and the Spotted Crakes (337, 338), qq.v. Trips lightly over the dry floating lotus leaves and stems, swimming from stem to stem. A great skulker and difficult to flush. Scuds along close to the surface with hurried wing-beats very like quail, but with legs dangling until the bird is well under way. Tumbles headlong into cover after a short flight.

FOOD. Chiefly aquatic insects.

VOICE and CALLS. Unrecorded in India.

BREEDING. Extralimital. Nest and eggs similar to those of 337.

MUSEUM DIAGNOSIS. For description of plumages (and bionomics) see Witherby, 1941, 5: 187-90.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♂	102-110	16.5-19	28-32	50-57 mm.
♀ ♀	95-106	16-18	—	—

(from feathers) (Witherby)
Weight 1.5 to 1.9 oz. (c. 42-56 gm.) — Hume.

COLOURS OF BARE PARTS. Iris and orbital ring crimson. Bill grass green, tip greyish, base of upper mandible at gape red. Legs and feet green.

337. Eastern Baillon's Crane. *Porzana pusilla pusilla* (Pallas)

Rallus pusillus Pallas, 1776, Reise Rus. Reichs 3: 700 (Dauria)
Baker, FBI No. 2013, Vol. 6: 14
Plate 36, fig. 6

LOCAL NAME. *Jhilli* (Nepal, N. Bihar).
SIZE. Grey Quail ±; length c. 19 cm. (7½ in.).

RAILS, COOTS

161

FIELD CHARACTERS. A quail-like swamp bird — our smallest rail.

Adult. *Above.* Supercilium and cheeks ashy grey. A brownish streak through eye over ear-coverts to sides of neck. Rest of upperparts rufescent olive-brown broadly streaked with dark brown. Scapulars, back, rump, and upper tail-coverts with narrow white paint-like smears. Edge of wing at shoulder white, conspicuous in flight. *Below,* neck, breast and anterior abdomen grey; posterior abdomen, vent, and under tail-coverts barred brown and white. Sexes alike.

× c. 1

Young (immature). *Above,* brown eye-streak broader; otherwise more or less like adult but paler. *Below,* almost white; sides of neck, breast, and flanks suffused with ruddy brown.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Breeds abundantly in Kashmir (to c. 1800 metres) where common throughout summer. Very probably also breeds elsewhere within our limits, but no definite records. Spreads out practically throughout the area, including Ceylon and Andaman Is., in suitable biotopes in winter, when there is apparently also an influx of extralimital migrants. Recorded as a passage migrant in many localities, but owing to secretive habits and liability of confusion with the other two *Porzanas* its status remains undetermined. Affects reedy marshes and jheels, irrigated crops, etc.

Extralimital. 'Breeds in C. and E. Asia from the upper Ob to Amurland and Japan, south to Kashmir, Mongolia, N. China and Korea; lower Himalayas in N. India. Winters from Kashmir and the lower Himalayas to India, Ceylon and Burma, and from S. China to the Malay Archipelago and the Philippines' (Peters).

MIGRATION. No ringing data. Recorded as a passage migrant in many northern localities in September-October and again in March-April — even as late as end May or first week June in the NW. frontier of W. Pakistan (Whitehead, JBNHS 12: 345). Often flies into houses at night attracted by the lights.

GENERAL HABITS. Usually keeps singly or in pairs. As great a skulker as its other relations, thus oftener heard among reed-beds than seen, and then mostly when put up in a snipe shoot. On undisturbed jheels or ponds, however, occasionally quite tame, tripping lightly over the floating vegetation or swimming from leaf to leaf in quest of food, twitching up its stub tail every little while in the typical Moorhen manner and unafraid so long as the observer remains quiet. When alarmed, calmly slips under a lotus leaf or similar object, peering out cautiously from its hiding-place from time to time to assure itself that the danger is past.

FOOD. Largely seeds of aquatic plants; also insects, worms, and molluscs.

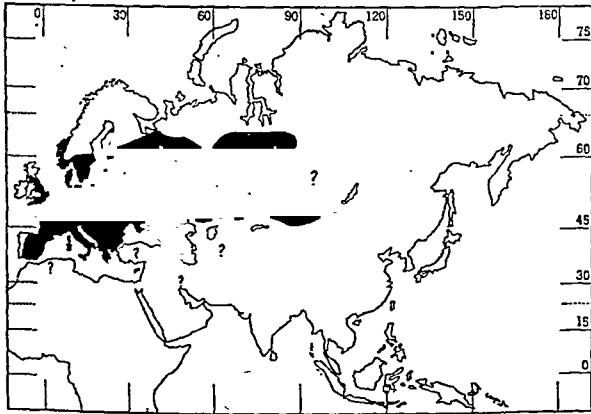
VOICE AND CALLS. A single loud high-pitched *crak* followed after a pause by another, then by a succession of *craks* in increasing tempo till it ends in an unbroken run. Reminiscent of the trilling of a dabchick.

BREEDING. Season, in Kashmir May to August, chiefly June and July. *Nest,* a collection of grass or reeds placed in soft marsh grass, in grass on the

RAILS, COOTS

163

Porzana porzana



■ Breeding range

Extralimital. 'Breeds in the British Isles, Europe and W. Asia, north to Norway, Finland and the upper Ob, south to the islands in the Mediterranean, and NW. Kashmir. Winters in S. Europe, and in Africa chiefly north of the Sahara, but south to Damaraland and Bechuanaland; also in India from Sind to Bengal' (Peters). Its breeding in NW. Kashmir (as above), presumably Gilgit, needs confirming.

MIGRATION. No ringing data. Arrives in N. India in September-October apparently by a different route to that taken in spring. 'Passes through Kohat (NW. Pakistan) in fair numbers in March and April' (Whitehead, 1909, *Ibis*: 270).

GENERAL HABITS AND FOOD. As in 336 and 337, qq.v. Like them also largely crepuscular.

VOICE AND CALLS. Not intelligibly described in its winter quarters when birds mostly silent.

BREEDING. Extralimital. *Nest* and site as in Baillon's Crake (337). *Eggs,* 8-12, greyish to greenish buff profusely spotted and blotched with reddish or purplish brown.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Under tail-coverts uniform buff, unbarred.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	112-119	19-21	c. 33-35	47-52 mm. (Baker)

Weight ♂ ♀ 3 to 4 oz. (c. 85-114 gm.) — Hume.

COLOURS OF BARE PARTS. Iris reddish brown to red. Bill yellow, orange at base, darker and more greenish along culmen and at tip. Legs and feet bright olive-green.

162

GRUIFORMES

side of a bank or at the base of a bush, in a swamp or on the edge of a lake. Often anchored in water amongst growing rice crops with a number of stems bending over to form a canopy; in very similar situations to those chosen by Ruddy Crake (339). Position of nest usually given away by bird sitting very close and flying straight off it when almost trodden on. *Eggs,* 5 to 8 or 9 yellow-brown, olive, or pale brown, profusely streaked and freckled with reddish brown. Average size of 82 eggs 28.4 × 20.6 mm. (B. B. Osmaston). Proportionately large for the bird, and how such large clutches are effectively covered by so small a body is puzzling. Both sexes incubate. Period (in European race) 20-21 days; unrecorded in India.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). All black; a greenish tinge to the tips of the down.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	84-91	14-16	27-28	40-46 mm. (Baker)

Weight 1.1 to 1.8 oz. (c. 28.5-52 gm.) — Hume.

COLOURS OF BARE PARTS. Iris red (adult), reddish brown (imm.), dull blue-brown (chick). Bill horny green to green, darker at tip and on culmen. Legs and feet yellowish green to dull green; claws horny brown.

338. Spotted Crake. *Porzana porzana* (Linnaeus)

Rallus Porzana Linnaeus, 1766, Syst. Nat., ed. 12, 1: 262

(Europe = France, ex Brissonian reference)

Baker, FBI No. 2011, Vol. 6: 11

Plate 36, fig. 8

LOCAL NAMES. *Jhilli* (N. Bihar); *Khairi*, *Gurguri khairi* (Bengal); *Venna mudi kōzhi* (Tamil).

SIZE. Grey Quail +; length c. 23 cm. (9 in.).

FIELD CHARACTERS. A quail-like swamp bird.

Adult. *Above.* Supercilium, sides of head and neck grey, speckled with white. Rest of upperparts rufescent olive-brown broadly streaked with black. Hindneck and upper back spotted with white. Scapulars, lower back, rump, upper tail-coverts and inner secondaries narrowly streaked with white. Wing border white at carpal joint. *Below,* chin, throat, and abdomen white. Breast brownish grey speckled with white; flanks brownish grey barred with white. Vent and under tail-coverts buff. Sexes alike.

Young (immature). More brown less grey below, with the white of chin and throat more extensive.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor recorded from practically every part of our area from Sind to Assam and south in the Peninsula at least to Belgaum (Mysore). Perhaps commoner than supposed wherever appropriate facies available, but overlooked due to its skulking habits and silence in non-breeding season. Affects reedy jheels and seepage or spillage marshes from reservoirs and canals.

164

GRUIFORMES

PORZANA FUSCA (Linnaeus)

Key to the Subspecies

Larger; wing 99 mm. or over *P. f. fusca*

Smaller; wing 97 mm. or less *P. f. zeylanica*

339. Northern Ruddy Crake. *Porzana fusca fusca* (Linnaeus)

Rallus fuscus Linnaeus, 1766, Syst. Nat., ed. 12, 1: 262 (Philippines)

Porzana fusca bakeri Hartert, 1917, Nov. Zool. 24: 272 (Bhim Tal, Kumaon)

Baker, FBI No. 2019, Vol. 6: 21

Plate 36, fig. 9

LOCAL NAME. *Di daobui gajao* (Cachar).

SIZE. Grey Quail +; length c. 22 cm. (c. 8½ in.).

FIELD CHARACTERS. A skulking stub-tailed ground bird of reedy swamps, of the general effect of the familiar Whitebreasted Waterhen.

Adult. *Above,* forehead, forecrown, supercilia, and sides of face (the mask) vinous-chestnut. Rest of upperparts dark olive-brown. *Below,* chin and centre of throat whitish; throat to lower breast vinous-chestnut. Abdomen and flanks olive-brown; under tail-coverts blackish with white fringes. Sexes alike. Dangling bright red legs conspicuous in feeble flight.

Young (immature). *Above,* darker than adult. Crown colorous with black; supercilia and sides of head and neck dull white. *Below,* dull white barred with dusky brown. Flanks and thighs dull olive-brown; under tail-coverts as in adult.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident and possibly migratory to some extent. Pakistan and N. India from the NW. Frontier district through Kashmir and Nepal to Assam up to c. 1800 metres along the lower Himalayas. Southwest to Delhi (specimens, Donahue, JBNHS 64: 414), thence eastward to Bengal and E. Pakistan. Curiously enough, occurrences in peninsular India, excepting on the western side as given under *P. f. zeylanica* (340), completely unrecorded save for a specimen from Chanda (Maharashtra, c. 20° N.) in Brit. Mus. Affects swampy localities — edges of inundated rice-fields, reedy banks of canals and spillage marshes, etc.

Extralimital. N. Burma (Chin Hills, Arakan); Thailand.

GENERAL HABITS. Typical of the rails. A shy and extreme skulker, slipping away into the herbage on the slightest alarm, threading its way swiftly through the reed stems, flushed only with difficulty, and usually very silent; thus easily overlooked. Pairs probably roost together in thick bushes at night as do its relatives in Indonesia.

FOOD. Aquatic insects and their larvae, molluscs, seeds and shoots of marsh plants.

VOICE AND CALLS. 'A very soft *crake* uttered as a single note at considerable intervals' (Baker). 'A metallic *teck* repeated every two or three seconds, usually followed by a bubbling note, much like that of the Dabchick but louder' (R. S. P. Bates). A short low *chuck* when feeding (Julian Donahue). Heard rarely, and chiefly in the very early mornings and evenings.

Hume renders another (or the same note ?) as *keek-keek-keek*. Even in the breeding season the bird is apparently much less noisy than other crakes.

BREEDING. *Season*, in Kashmir and NW. Pakistan, June, July and August; in Bengal and E. Pakistan (Sunderbans), July to September. Breeds abundantly in all these areas preferring rice-fields and ditches to large jheels. *Nest*, a pad of dry grass and leaves of aquatic plants placed on swampy ground amongst grass, reeds or rice plants which sometimes bend over to form a canopy over the nest. *Eggs*, 6-9, pale *caft-au-lait* spotted all over, but chiefly at the broad end, with pinkish brown and pale purplish grey markings. Average size of 92 eggs 32.6×23.5 mm. (B. B. Osmaston). Both sexes share in nest-building, incubation and tending the young. Incubation period unrecorded.

MUSEUM DIAGNOSIS. Larger than *zeylonica* (340); variable in tone of plumage, but tending to be darker both above and below.

Chick (in down). Black with fulvous spots behind the ear-coverts.

MEASUREMENTS

	Wing	Bill (from feathers)
♂ ♀	97-110 105-109	21-24 mm. (Baker) — (Whistler)

COLOURS OF BARE PARTS. Iris crimson (ad.), brown (imm.), glaucous blue-brown (downy chick). Eyelids plumbeous grey with a red rim. Bill horny green to brownish green; tip of lower mandible yellowish. Legs and feet reddish orange to brick-red.

340. Southern Ruddy Crake. *Porzana fusca zeylonica* (Baker)

Amaurornis fuscus zeylonicus Baker, 1927, Bull. Brit. Orn. Cl. 47: 73 (Ceylon)
Baker, FBI Nos. 2017, 2018, Vol. 6: 20

LOCAL NAMES. *Punchi korowakā* (Sinhala); *Kānān kōzhi* (Tamil); *Chankōzhi* (Malayalam).

SIZE. Grey Quail ±; length c. 22 cm. (c. 8½ in.).

FIELD CHARACTERS. As for 339, q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION AND HABITAT. Resident, and partially migratory in winter. Ceylon, and the Western Ghats strip of country northward at least to Bombay (specimen in BNHS collection) from plains level to c. 2000 metres. In Ceylon, scattered sparingly through all zones (low country and hills up to c. 1200 m.), its numbers augmented in winter by migrants arriving October-November and leaving March-April (Phillips). Affects reeds and brushwood on the edge of jheels, swamps and inundated rice-fields.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the northern race (339).

BREEDING. *Season*, in both Ceylon and SW. India normally June to September commencing after the break of the SW. monsoon rains. *Nest* and *eggs* as in 339, the latter averaging somewhat smaller — 30.0×22.3 mm. (Baker).

MUSEUM DIAGNOSIS. Differs from the north Indian race (339) only in being smaller. Coloration variable in tone, but size range diagnostic.

Placed on wet ground in forest undergrowth; sometimes a metre or two up in bushes and trees, once c. 6 metres from the ground recorded by Baker. *Eggs*, 5 to 7, occasionally 8, handsome and richly coloured, pale cream to pale salmon-pink, boldly blotched with deep red-brown, purplish brown or brick-red, more densely at the broad end, with secondary markings of grey and lavender. A second type of egg is rather feebly marked and resembles those of the Whitebreasted Waterhen (344) q.v. Average size of 80 eggs 33.9×26.1 mm. (Baker). Both sexes share in nest-building and incubation; period unrecorded.

MUSEUM DIAGNOSIS.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	112-119	21-27 (from feathers)	37-39	57-60 mm. (Baker)

COLOURS OF BARE PARTS. Iris blood red (ad.); brown (imm.). Bill pale bluish green, tipped paler and greyer; a red patch near base, brighter in breeding season. Legs and feet dull red to bright brick-red.

342. Brown Crake. *Amaurornis akool akool* (Sykes)

Rallus Akool Sykes, 1832, Proc. Zool. Soc. London: 164 (Dukhun)
Baker, FBI No. 2024, Vol. 6: 25
Plate 36, fig. 10

LOCAL NAMES. None recorded.

SIZE. Grey Partridge —; length c. 28 cm. (c. 11 in.).

FIELD CHARACTERS. A skulking stub-tailed brown and ashy swamp bird. *Adult.* Above, indistinct supercilia and sides of head and neck ashy grey; rest of upperparts, wings and tail dark olive-brown. Below, chin and centre of throat whitish; rest of underparts ashy grey passing into brown posteriorly. Sexes alike; female somewhat smaller.

Young (immature). ?

STATUS, DISTRIBUTION AND HABITAT. Resident; possibly also local migrant. Kashmir eastward through Nepal (lowlands and duns to c. 800 m. alt.) to W. Assam (Gauhati); south through the Punjab, Delhi and Gangetic Plain, Gujarat, Maharashtra, Madhya Pradesh and Andhra to southern Mysore. Status on eastern side of the Peninsula south of Orissa unknown; also up to what altitudes it occurs in the peninsular hills. Affects swampy reed-beds, *Pandanus* brakes, herbage lining watercourses, irrigation channels, etc.

Extralimital. SE. China, NE. Indochinese countries, the Philippines (Peters).

GENERAL HABITS. Nothing specifically recorded as different from the typical rails. Largely crepuscular. Shy and secretive. Emerges cautiously at the edge of reed-beds and shrubbery to feed in the early mornings and evenings, walking about with characteristic constant jerks of the stub tail and scuttling into cover with lowered head on the least suspicion. When alarmed will sometimes run to earth under a large stone or in a hole in a bank and remain there for many minutes peering out circumspectly before emerging. Clambers among the reeds and on the broad *Pandanus* leaves with the agility of the Whitebreasted Waterhen. Less difficult to flush than some of its congeners, but an equally feeble flier with legs dangling.

MEASUREMENTS

	Wing	Bill (from feathers)
♂ ♀	87-97 (once 99) 90-98	19-20 mm. (Baker) — (Whistler)

COLOURS OF BARE PARTS. As in 339.

Genus AMAURORNIS Reichenbach

Amaurornis Reichenbach, 1853 (1852), Av. Syst. Nat.: xxi. Type, by original designation, *Gallinula olivacea* Meyen

Differs from *Porzana* and *Gallinula* (pp. 159, 174) in its more rounded wing: 3rd primary (as.) longest; 2nd equal to 5th or 6th; 1st much shorter. Tarsus shorter than middle toe with claw. Bill short, about two-thirds length of tarsus; variable in shape, being rather swollen at the base in some species but not in others.

Key to the Species

	Page
A Breast white; bill swollen at base	<i>A. phoenicurus</i> 168
B Breast dark grey; bill not swollen at base	
Back rufous-brown	<i>A. bicolor</i> 166
Back dark olive	<i>A. akool</i> 167

341. Elwes's Crake. *Amaurornis bicolor* (Walden)

Porzana bicolor Walden, 1872, Ann. and Mag. Nat. Hist. 9(4): 47
(Rungbee, Darjeeling)
Baker, FBI No. 2025, Vol. 6: 26
Plate 36, fig. 11

LOCAL NAMES. None recorded.

SIZE. Grey Quail ±; length c. 22 cm. (c. 8½ in.).

FIELD CHARACTERS. A quail-like chestnut and slate marsh bird.

Adult. Above, head and neck dark ashy grey; rest of upperparts rufous-brown. Tail black. Below, sides of head pale grey; chin whitish; rest of underparts dark ashy grey. Sexes alike.

Young (immature). ?

STATUS, DISTRIBUTION AND HABITAT. Resident. Nepal (?), Sikkim, Bhutan to E. Assam; Khasi and Cachar hills; Manipur. To at least c. 2800 metres in Bhutan (Ludlow), and reportedly to c. 3600 m. in Sikkim (Stevens). Affects patches of jungle in and around rice cultivation, grass-bordered streams, pools or swampy patches in forest, often very dense.

Extralimital. Shan States (Burma), Yunnan, W. Szechuan, N. Vietnam.

GENERAL HABITS, FOOD, VOICE AND CALLS. Except that like *Amaurornis akool* (342) and other rails it is a great skulker, emerging at the edge of cover in the early mornings and evenings, and scuttling in on the least alarm, very little specifically known. Call unrecorded.

BREEDING. *Season*, in the Khasi Hills where it breeds freely, mid-May to end August up to c. 1800 metres and possibly higher. *Nest*, a rough pad of loosely put-together twigs and grass with a slight depression in the centre.

FOOD. Insects and their larvae, molluscs, worms, and seeds of marsh plants.

VOICE AND CALLS. As of most rails very imperfectly known. Various described as 'a short plaintive note heard at daybreak and just before sunset' (Blewitt); 'a shrill rattle-like call' frequently emanating from sugarcane fields (around Poona) attributed to this species by Betham, but not proved; 'a long-drawn-out vibrating whistle, gradually descending a little in the scale' (B. B. Osmaston).

BREEDING. *Season*, chiefly May to August, varying with locality: March and October (Poona), and September (Gujarat and Sikkim terai) also recorded. *Nest*, a pad of grass, rush-blades and sticks with a slight depression in the centre, well concealed in raised grass tussocks in or near the edge of a swamp. One nest recorded c. 1.5 metres above ground in a collection of flood-wrack on top of a stunted acacia on a river bank. *Eggs*, 5 or 6, very like richly coloured eggs of *Rallus aquaticus* (327) — creamy buff to pale salmon-pink sparsely flecked and blotched with pale reddish brown, purple-brown or pale brick-red, the markings somewhat more concentrated at the broad end. Some eggs are less richly marked and resemble those of the Waterhen (344). Average size of 50 eggs 34.9×26.5 mm. (Baker). Both sexes take part in incubation; period unrecorded. The birds are close sitters and often betray the nest by running off it like a rat when almost trampled on.

MUSEUM DIAGNOSIS.

Chick (in down). All black.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	114-131	28-33	46-51	54-63 mm. (Baker)

Females average smaller than males.

Weight ♂♂ 4-6 oz. (c. 114-170 gm.); ♀♀ 3.7-4.9 oz. (c. 110-140 gm.) — Hume.

COLOURS OF BARE PARTS. Iris blood red (ad. ♂), brown (imm.). Bill horny green to pale green, bluish at tip. Legs and feet fleshy brown to livid purple.

AMAURORNIS PHOENICURUS (Pennant)

Key to the Subspecies

	Page
A Smaller; wing 142-160 mm.	<i>A. p. phoenicurus</i> 169
B Larger; wing 157-173 mm.	<i>A. p. insularis</i> 171

343, 344. Indian Whitebreasted Waterhen. *Amaurornis phoenicurus*

phoenicurus (Pennant)

Gallinula phoenicurus Pennant, 1769, Indian Zool.: 10, pl. 9 (Ceylon)
Fulica chinensis Boddaert, 1783, Table Pl. enlum.: 54. (China, ex Daubenton, pl. 896,
 restricted to Hongkong by Stresemann, 1913, Nov. Zool. 20: 304)
Amaurornis phoenicurus maldivus Phillips & Sims, 1958, Bull. Brit. Orn. Cl. 78: 53
 (Hulule Island, North Malé Atoll, Maldive Archipelago)
 Baker, FBI Nos. 2021, 2022, Vol. 6: 23, 24
 Plate 36, fig. 17

LOCAL NAMES. *Davāk*, *Dahāk*, *Dauk* (Hindi); *Pānpairā* (Bengal); *Kināti* (Uttar Pradesh); *Bān mūrghi* (Bihar); *Jāl mūrghi* (Madhya Pradesh); *Kuku kōmbdi* (Marathi, Bombay); *Davāk* (Gujarati); *Būda kōdi* (Telugu); *Kuraki* (Sind); *Kureyn* (Gond); *Pāni dūboi* (Assam); *Uren konthou* (Manipur); *Korowakā* (Sinhala); *Kānān kōchi* (Tamil); *Kula kōchi* (Malayalam).

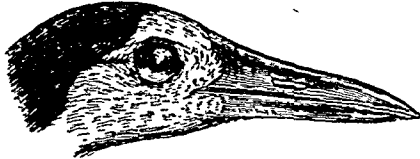
SIZE. Grey Partridge ±; length ♂. 32 cm. (c. 12½ in.).

FIELD CHARACTERS. A familiar dark slaty grey stub-tailed skulking swamp bird with prominent white facial mask and underparts.

Adult. Above, forehead, supercilia, and sides of head pure white; hindneck, crown and rest of upperparts dark slaty grey. Below, from chin to vent pure white; sides of breast and flanks slaty grey; posterior flanks, vent, and under tail-coverts rufous. Sexes alike.

Young (immature). White facial mask obscured by slaty-tipped feathers. Upperparts more olive-brown than slaty grey.

For downy chick see Museum Diagnosis.



x.c.1

STATUS, DISTRIBUTION AND HABITAT. Resident. Throughout West Pakistan (decreasing in the northwest) and northern India including Nepal (bhabar and duns), Sikkim and Bhutan duars, Assam. South throughout peninsular India, Laccadive (Lakshadweep) and Maldive archipelago, Ceylon (Sri Lanka). Plains and hills up to c. 1500 m. (to 2000 m. in the Nilgiris). Widely dispersed during the rainy season. Affects reedy marshland, edges of inundated rice-fields, rain-filled ponds and roadside ditches, village tanks and their neighbourhood.

Extralimital. Burma, Thailand, S. China, Malay Peninsula south to about the latitude of Malacca, and Cambodia; Formosa (Taiwan) and Hainan.

GENERAL HABITS. Our commonest and most familiar rail; less shy and secretive than most of its tribe. Frequently found in the surroundings of

villages, running about under roadside and boundary hedgerows and shrubbery, even entering rambling compounds and public parks within the limits of populous towns. The stumpy tail is constantly jerked up as the bird saunters about, flashing the chestnut coverts underneath. Clambers up amongst thorny bamboo clumps and shrubs with great agility, especially in the breeding season when it mounts into their tops to command an open view of the surroundings and utter its resounding calls. It does this while remaining partly hidden in the foliage, and withdraws deeper inside or quickly descends to the ground on alarm. Has the typical feeble flight of rails with legs dangling. Swims buoyantly like moorhen.

FOOD. Insects and their larvae, molluscs, worms, seeds and shoots of marsh plants. Among the stomach contents of five specimens analysed at Pusa were found — in addition to vegetable matter such as seeds and roots of water weeds — 169 insects of which 103 were weevils (Curculionidae) of the genus *Mylocherus*, the majority being the species *discolor*. There were also broken pieces of the shells of *Melania tuberculata*, *Corbicula orientalis* and *Unio favidus* (Mason & Lefroy, 1912).

VOICE AND CALLS. Bird very silent in the dry season and thus liable to be overlooked. Becomes exceedingly boisterous as soon as the monsoon commences. The calls begin with loud raucous roars, croaks and chuckles and settle down to a monotonous metallic *krr-kwaak-kwaak*, *krr-kwaak-kwaak*, etc. or *kook . . . kook . . . kook* somewhat like the Coppersmith barbet's but louder, higher in pitch and faster in tempo. They are of astonishing volume for the size of the bird, the roars and cackles in particular being, according to E. H. Aitken (EHA), more appropriate to a bear being roasted over a slow fire! The bird calls throughout the night and also on cloudy overcast days, in unbroken runs of often fifteen minutes or more.

BREEDING. Season, mainly coincident with the SW. monsoon — June-July to October. **Nest**, a shallow, cup-shaped pad of twigs, creeper stems, and flags of bulrushes. Placed on the ground in tangled undergrowth by the margin of a tank, ditch or inundated rice-field, or concealed in the interior of a shrub or thorny bamboo clump up to 2 or 3 metres from the ground. Sometimes it may be well away from water. **Eggs**, 6 or 7, rather long smooth ovals, cream or pinkish white, streaked and blotched with some shade of reddish brown. Average size of 100 eggs 40.5 × 29.7 mm. (Baker). Breeding males pugnacious, but their battles rather formalized and usually innocuous. Both sexes incubate and tend the young, one parent leading the brood while the other brings up the rear. Newly hatched chicks extraordinarily active, and adepts at diving and dispersing when followed. Incubation period unrecorded.

MUSEUM DIAGNOSIS. There is considerable individual variation in the colour of the underparts, some birds having the grey sides of the breast strongly barred with olive. This character is inconstant and does not justify racial separation.

Chick (in down). Uniformly black, with blackish bill and legs.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
12 ♂♂	148-178	38-42	53-63	59-80 mm.
14 ♀♀	138-168	34-36	52-59	46-71 mm.

Weight 10 ♂♂ 152-230 (av. 188.7) gm. — BNHS.

COLOURS OF BARE PARTS. Iris crimson (ad. ♂), brown (imm.). Bill sage green; base of upper mandible red, tip and lower mandible paler and more yellow. Legs and feet dull chrome-yellow or yellowish green.

The descriptions of the Chinese and Ceylonese White-breasted Waterhens, *Amaurornis phoenicurus chinensis* and *A. p. phoenicurus*, are amalgamated under the name of the Indian Whitebreasted Waterhen (No. 343, 344).

345. Andamans Whitebreasted Waterhen. *Amaurornis phoenicurus insularis* Sharpe

Amaurornis insularis Sharpe, 1894, Cat. Bds. Brit. Mus. 23: 162

(Andaman and Nicobar islands)

Amaurornis phoenicurus leucocephalus Abdulali, 1964, JBNHS 61: 412 (Car Nicobar)
 Baker, FBI No. 2023, Vol. 6: 25

LOCAL NAMES. *Jāngli mūrghi* (Andamans); *Takoor* (Car Nicobar).

SIZE. Grey Partridge ±; length c. 32 cm. (c. 12½ in.).

FIELD CHARACTERS. Same as for the North Indian race (343), q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Andaman and Nicobar islands. Affects thick jungle far from water as well as brushwood near streams, and mangrove swamps. Fairly common on volcanic Barren I. (12°18'N., 93°49'E.) despite absence of fresh water.

GENERAL HABITS AND FOOD. As of 343.

VOICE AND CALLS. Some calls apparently peculiar and distinct. 'Emitting a most extraordinary variety of improbable sounds' (B. B. Osmaston). Among various other loud and raucous far-carrying calls 'an extraordinary duck-like quack never heard in Ceylon. From this quacking, unseen bird mistaken for some exceptionally noisy duck' (A. L. Butler).

BREEDING. Season, June-July. **Nest**, sometimes in thick brushwood, sometimes on the ground in rushes and grass (Osmaston). **Eggs**, normally 4 in a clutch; occasionally 5 or 6. Average size of 50 eggs 40.8 × 31.0 mm. (Baker).

MUSEUM DIAGNOSIS. Larger than 343, darker and blacker in general coloration with very little olive tint. White on forehead more extensive.

MEASUREMENTS. ♂♀ Wing 157-173; bill (from feathers) 37-44 mm. (Baker).

COLOURS OF BARE PARTS. As in the Indian races.

[A new race, *A. p. leucocephalus*, has recently been described by Abdulali (1964, JBNHS 61(2): 412) on a single specimen collected by him on Car Nicobar. The characters given for the holotype are: Adult (♀). Whole head and neck white except for irregular grey spots on crown and nape. No olive-green in upper and lower parts. More white on breast than in *insularis*, the white ventral stripe narrower and broken in the middle on anterior abdomen. Six further specimens collected in Car Nicobar since tend to confirm the distinctness of the Nicobar population (Abdulali, H., 1967, *ibid.* 64(2): 158).]

Genus GALLICREX Blyth

Gallixrex Blyth, 1852 (1849), Cat. Bds. Mus. Asiat. Soc.: 283. Type, by monotypy, *G. cristatus* = *Fulica cinerea* Gmelin

Horny shield on forehead pointed posteriorly; much larger in male than female; in breeding male ending in a fleshy horn-like protuberance. Bill stout, moderately long, about equal to hind toe without claw. All toes long, the middle toe without claw longer than tarsus. Wing rounded: 1st primary (as.) between 6th and 8th in length; 2nd and 4th primaries equal; 3rd slightly the longest. Sexes dimorphic; male much larger than female.

Contains a single species spread over a wide area from India to Japan.

346. Kora or Watercock. *Gallixrex cinerea cinerea* (Gmelin)

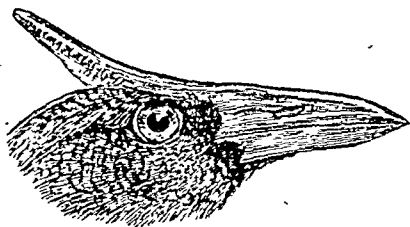
Fulica cinerea Gmelin, 1789, Syst. Nat. 1(2): 702 (China, ex Latham)
 Baker, FBI No. 2027, Vol. 6: 29

Plate 36, fig. 13

LOCAL NAMES. *Kora*, *Kengra* (Hindi); *Toobka*, *Kora* (Bihar); *Kora*, *Jāl mārāg* (Bengal); *Khōra sorāi* (Assam); *Uthm* (probably from its call — Manipur); *Wāl kākūlā* (Sinhala); *Temir kōchi* (Tamil); *Thepporikkāndā* (Malayalam); *Coeli kākūlā* (Maldives).

SIZE. Grey Partridge ±. Length ♂ c. 43 cm. (17 in.); ♀ c. 36 cm. (14 in.).

FIELD CHARACTERS. A rail-like swamp bird. Both sexes alike in non-breeding plumage: above, dark brown, broadly scalloped with fulvous;



♂, x c. 1

below, pale buffy brown with fine wavy darker bars. A small triangular yellowish horny shield on forehead. Female considerably smaller.

Male (breeding). Overall black, scalloped with grey. Its most striking features are the bright red fleshy horn (continued backward from the frontal shield) projecting above the crown, and the bright red eyes and legs.

Young (immature). Like female but less barred below.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident in well-watered areas, dispersing widely during the monsoon with the creation of adequate marshy conditions in otherwise low-lying dry localities. All India south of the Himalayas from W. Pakistan (Sind, Punjab) east to Assam and East Pakistan, south through the Peninsula, and Ceylon. Andaman Is., Nicobars, Maldive Archipelago. Affects reedy swamps, low-lying rice and irrigated sugarcane cultivation, rush-bordered channels, ponds, ditches, borrow-pits, etc.

Extralimital. Eastward to S. and E. China, Korea, Japan, south to the Malay Peninsula, Indochina, Sumatra, Java, Borneo, the Philippines and Celebes (Sulawesi).

GENERAL HABITS. Rail-like. Largely crepuscular, keeping to cover during daytime and emerging to feed in the early mornings and evenings, or in cloudy, overcast and drizzly weather. Saunters about with characteristic jerking of tail, never straying far from edge and scuttling into cover on the least alarm. Flight feeble, with rapid flaps, the long legs dangling below. Males highly pugnacious during breeding season indulging in furious and long-sustained battles with rivals, jumping and clawing at each other, trying to get hold of opponent's neck in bill and hold him down. In spite of seeming ferocity, little serious damage usually suffered by the combatants beyond scratches and loss of neck-feathers.

FOOD. Largely vegetarian — seeds and shoots of green crops, wild and cultivated rice, to which latter it may do some local damage; also aquatic insects and their larvae, molluscs, worms, etc.

VOICE AND CALLS. Calls of three sorts, all with a remote suggestion of 'booming'. Produced more or less continuously, with a definite rhythm and a few seconds' silence between each series. Posture of bird and sounds produced obviously interdependent. With head up utters a series of 10 to 12 *kok-kok-kok-kok* somewhat like the booming notes of Chestnut Bittern.

frontal shield, red in adults; nostrils long and narrow. Second primary (as.) longest, or 2nd and 3rd subequal; 1st primary about equal to 5th or 6th.

Genus widespread in the Old and New Worlds; only a single species within our limits.

347. Indian Moorhen. *Gallinula chloropus indica* Blyth

Gallinula chloropus? var. *indicus* Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 887 (Calcutta) Baker, FBI No. 2026, Vol. 6: 28

Plate 36, fig. 14

LOCAL NAMES. *Jāl mūrghi*, *Pāni mūrghi* (Hindi); *Tēch* (Kashmiri); *Bodor* (Bihar); *Jāl mūrghi*, *Dakab paira* (Bengal); *Jumbū kōdi*, *Bolli kōdi* (Telugu); *Paat ūren* or *ūrel* (= 'lake waterhen' — Manipur); *Wil kukkulā* (Sinhala); *Tannir kōzhi*, *Kāndā kōli* (Tamil); *Pātta kōzhi* (Malayalam); *Jāl kākādi* (Gujarati); *Pān kōmbdi* (Marathi).

SIZE. Grey Partridge ±; length c. 32 cm. (12½ in.).

FIELD CHARACTERS. General effect on land typical of rail; on water that of a small duck.

Adult. Above black, slaty grey and brown with a diagnostic white border to the closed wings. Below slaty grey, paler and whitish on centre of abdomen. Under tail-coverts white with a black central patch. Green bill, bright red frontal shield on forehead, longish green legs with long slender toes are additional pointers. Sexes alike.

Young (immature). Overall more brown less grey, the lower parts much mixed with white. Bill and frontal shield greenish brown.

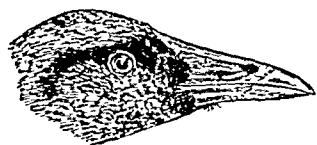
For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident and partly winter visitor, where its numbers everywhere get vastly augmented. All India, both Pakistans, Nepal, Ceylon. Chiefly lowlands, but also breeding up to considerable elevations in the outer Himalayas and peninsular hills, e.g. to c. 2400 metres in Kashmir and c. 2000 m. in the Nilgiris. Affects jheels and swamps, with beds of sedges and bulrushes, and tangles of lotus and other floating vegetation interspersed with sheets of open water. Also reed-margined ponds, village tanks, ditches, etc. Shifts locally with water conditions.

Extralimital. Southern Tibet, S. and E. China, Japan, Burma, Thailand, central Malay Peninsula, Cambodia, Hainan (?), Formosa and the Ryukyu Islands.

MIGRATION. No ringing data. In the Kurram Valley, NW. Pakistan (where small numbers breed) recorded as occurring chiefly on spring migration passage in March and April (Whitehead, 1909, *Bir*: 271). Passes through Chitral in May (Perreau, JBNHS 19: 920). Common only on passage in Gilgit in April and October (Scully, SF 10: 142).

GENERAL HABITS. Keeps in pairs or small parties; after influx of winter migrants in larger congregations, often of 50 or more. Spends most of its time on the water, paddling about amongst the lily pads and other floating



x c. 1

Then suddenly lowers head steeply and utters a number of deeper, hollower, metallic notes *utumb-utumb-utumb* (u as in 'put') more rapidly than the previous series. (The *utumb* sound is of the volume and quality of a lemon-sized pebble dropped into a deep well.) After 10 or 12 *utumbs* raises head again, uttering maybe 5 or 6 *kluck-kluck-kluck* notes while doing so. With head back in the original position the bird is now ready to begin it all over again. The calling continues thus for half an hour (or more) at a stretch. It is accompanied by a puffing out of the neck and raising of its feathers as in a Bittern (*Botaurus*) booming (K. K. Neelakantan, JBNHS 55: 560-1).

BREEDING. Season, chiefly the monsoon months, June to September. In Ceylon, May and possibly July-August (January-February also recorded); in the Maldives June-July (Phillips). *Nest*, a large concave or deep cup-shaped pad of sedges, rush-leaves, grass, etc. sometimes domed over with the surrounding substrate to form a bower. Placed in tangled reed-beds in large swamps and jheels, or amongst standing rice plants in an inundated rice-field. *Eggs*, normal clutch 3 to 6 (sometimes up to 8 and even 9) rather long ovals closely resembling Coot's; from almost white through pale pink or yellowish stone-colour to deep brick-pink, with longitudinal blotches and spots of reddish brown fairly profuse all over but slightly denser at the broad end. Average size of 100 eggs 42.2 × 31.0 mm. (Baker). Cock probably monogynous, but not proved. Also not known whether he assists in incubation; period unrecorded.

MUSEUM DIAGNOSIS

Chick (in down). Black above, more brownish below.

MEASUREMENTS

	Wing	Bill (culmen)	Tarsus	Tail
♂♂	211-227	37-38	75-77	77-83 mm.
♀♀	172-184	32-34	65-68	65-75 mm. (Baker)

COLOURS OF BARE PARTS. ♂ (breeding). Iris bright red. Bill and shield at base blood red, paling to dusky yellow at tip; 'horn' bright red. Legs and feet dull to bright red. ♀ and non-breeding ♂: Iris yellow or yellowish brown. Bill and small triangle at its base (on forehead) yellowish. Legs and feet dull greenish brown.

MISCELLANEOUS. Highly prized as a fighting bird in Sylhet, East Pakistan, large sums of money being wagered on the mains. Fanciers used to collect the eggs and hatch them with the heat of their own bodies in a half-coconut shell for protection, wrapped in cloth and kept tied against their bellies day and night. Incubation takes about 24 days, during which time the human incubator is constrained to eschew all baths! Whether this practice is still in vogue is not known.

Genus GALLINULA Brisson

Gallinula Brisson, 1760, Orn. 1: 50; 6: 2. Type, by tautonymy, *Gallinula* Brisson = *Fulica chloropus* Linnaeus

Toes extraordinarily long, fringed with narrow straight-edged lateral membranes (not broad and lobed as in Coot). Middle toe without claw much longer than tarsus. Bill of moderate length, base of culmen continued on forehead as a flat rounded

vegetation. Rides high like a duck, its swimming accompanied by rhythmical jerky bobs of the head and upward flicks of the erect tail, flashing the white coverts underneath. This action also characteristic as the bird saunters about with an upright carriage over the floating tangles in search of food. Usually keeps to the edge of reed-beds, withdrawing into them quickly and quietly on alarm. Trusts to its legs and paddling for escape, and flies reluctantly, either clambering up reed stems to launch itself from a height or skittering along the water like a coot to get airborne. Is a seemingly feeble flier with rapidly flapping wings and dangling legs but capable of sustained long-distance migration over high mountains. Creditable diver when hard pressed.

FOOD. Omnivorous: seeds, fruits, and shoots of water-plants, molluscs, insects and their larvae, young frogs and small fish. Sometimes wanders into cultivation away from swamps to feed in the early morning and at dusk, and to some extent nocturnally. For some details see Mukherjee, A. K., 1974, JBNHS 71(2): 194-7.

VOICE AND CALLS. Normally very quiet, only an occasional loud *karuck* announcing its presence in a reed-bed. Noisy when breeding, mostly in the mornings and evenings — a sharp, loud and abrupt *kirrik-krek-rek-rek* constantly uttered. Also a number of softer chuckling notes. 'A cackling "laugh" lower in pitch than the Little Grebe's' (Nicholls). Clucking noises when alerting or commanding chicks: 'Unborn chicks even before breaking the shell understand these calls of their parents, ceasing their subdued chirping the moment they hear the danger call' (R. S. P. Bates, 1952: 295).

BREEDING. Season, in Kashmir (where it is perhaps the commonest water bird and breeds abundantly on the Dal, Anchar, and other lakes) May to August, chiefly June and July; in the Peninsula during the SW. monsoon months July, August, September; in Ceylon March to August. Sometimes two successive broods raised. *Nest*, a bulky mass of sedges and bulrush leaves placed in a dense reed-bed a few inches above water level; rarely even in a tree near or overhanging water. *Eggs*, 5 to 12, pale yellowish to warm buff stone-colour, thinly and more or less evenly spattered all over with small blotches of dark reddish brown. Average size of 71 eggs 41.4 × 29.6 mm. (B. B. Osmaston, 1927, JBNHS 32: 146). Both sexes share nest-building, incubation and care of the young; incubation period c. 21 days. The perturbed parents occasionally slap the water with the wings (akin to injury-feigning) in an attempt to draw away the intruder from the brood.

MUSEUM DIAGNOSIS. For details of plumages (and bionomics) of the nominate race see Witherby, 1941, 5: 197-204. *G. c. indica* differs from it only in being somewhat smaller, with a relatively smaller bill.

Chick (in down). Deep grey-black all over.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	152-172	♂♂ 38-41 ♀♀ 32-35	47-50	52-68 mm. (Baker)

Female only slightly smaller than male.

11 ♂♂ tarsus 46-50 mm.; middle toe without claw 55-67 mm. (V. C. Ambedkar).

RAILS, COOTS

177

COLOURS OF BARE PARTS. Iris red. Frontal shield and base of bill red, the terminal third greenish yellow. 'Tibia and front of tarsus greenish yellow, hinder part of tarsus and all toes slaty green; an orange ring round the tibia just below the feathered portion' (Oates).

347a. Malay Moorhen. *Gallinula chloropus orientalis* Horsfield

Gallinula orientalis Horsfield, 1821, Trans. Linn. Soc. London, 13: 195 (Java)

LOCAL NAMES. None recorded.

SIZE AND FIELD CHARACTERS. As of 347. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. A single example collected in March 1964 near Port Blair marks an addition to the avifauna of the Andaman Is. as well as of India. Status not known (Abdulali, JBNHS 61(3): 514-15).

Extralimital. Southern Malay Peninsula, Sumatra, Java, Borneo, Kangean, Bali, Lombok, Sumbawa and Celebes (Sulawesi) — Peters.

GENERAL HABITS, FOOD, VOICE AND CALLS. Unrecorded.

BREEDING. Unrecorded.

MUSEUM DIAGNOSIS. Differs from 347 in having the frontal shield wider, extending back on forehead to above the eyes. Plumage somewhat darker, practically the entire upperparts being without any olive-brown tinge.

MEASUREMENTS. Sex? Wing 170; bill (from gape) 30 mm. (Abdulali).

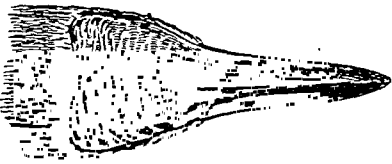
COLOURS OF BARE PARTS. As in 347.

Genus PORPHYRIO Brisson

Porphyrio Brisson, 1760, Orn. 1: 48; 5: 522. Type, by tautonymy,

Porphyrio Brisson = *Fulica porphyrio* Linnaeus

Large moorhens distinguished by blue coloration and by the broad frontal shield covering the whole anterior crown, and truncated posteriorly. Bill deep, short, and compressed. Nostril short, rounded, not placed in a groove. Wing rounded: 1st



From above, $\times c. 1$

primary (as.) equal to 6th or 7th; 2nd, 3rd and 4th longest and subequal. Tarsus and toes very long and powerful. Sexes alike.

Genus represented in Africa, Madagascar, the Mediterranean region, S. Asia, Malay Archipelago to Australia, New Zealand and the Pacific islands. A single species within our limits.

PORPHYRIO PORPHYRIO (Linnaeus)

Key to the Subspecies

Generally larger, particularly tarsus and toes. Tarsus 92 to 97 mm.; middle toe without claw 100 to 104 mm. *P. p. seistanicus*

RAILS, COOTS

179

Young (immature) paler, with frontal shield and bill blackish; legs and feet pale orange-brown.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident and possibly local migrant. West Pakistan from southern Baluchistan (Hingol river area, Las Bela, Sibi) eastward through Assam, Manipur and E. Pakistan, and south throughout the Peninsula: terai and plains. One occurrence in Chitral. Very rare in Kashmir, but a few usually on Anchar and Wular lakes in summer, and doubtless breeding. Andaman and Nicobar Is. Common in Ceylon (low-country Wet and Dry zones). Affects dense reed-beds around large swamps and jheels.

GENERAL HABITS. Usually keeps in parties of 5 to 10; at large swamps sometimes in bigger congregations of up to 50 or more. Stalks through the marshy reed-beds or wades over matted floating vegetation, constantly flicking its stub tail in the typical rail manner, flashing the white patch underneath. Fond of clambering among the reeds working up to the tops in ungainly hand-over-hand style, clinging and balancing itself insecurely on the pliant bending stems. Dozens may frequently be seen thus sunning themselves at the top of a reed-bed on a misty morning. Swims well but is averse to do so unless compelled, preferring to cross even narrow stretches of water by flapping low over the surface with dangling legs; or it will climb up to the tops of the bulrushes and flop across to the other side. Noisy and quarrelsome, especially in the breeding season when the birds are constantly cackling and chasing one another. Not particularly shy except where much harried; then becoming excessively secretive and cunning. Is highly relished as a delicacy by certain classes and often suffers considerable local persecution at their hands. Flight seemingly feeble, attained by laboured wing-beats, but is quite fast once the bird is properly launched: the neck is extended in front, the large ungainly legs and feet trail behind.

FOOD. Mainly seeds, grain and vegetable matter; also insects and molluscs. Recorded fighting in larger numbers to rice-fields in the evenings. Does considerable occasional damage to rice crop not only by cutting the stalks above the roots* to eat the tender pith (J. R. Cripps) and the ripening grain, but also by trampling down the plants with its large and heavy feet.

VOICE AND CALLS. Has a wide repertoire of noisy hooting, cackling, clucking and hoarse rippling notes. While feeding, a party maintains contact by soft *chuck-chuck* notes. The birds scatter on disturbance and fly off in different directions but soon re-unite with the help of louder rallying *chucks* uttered by the members. One caught by a Tawny Eagle (*Aquila rapax*) 'cried very like domestic fowl caught to be killed' (E. A. Butler).

BREEDING. Season, chiefly during the SW. monsoon, June to September. Also recorded in other months locally, e.g. Andhra, November and February; Mysore, November-December-January; Ceylon, January-May and occasionally July-August. *Nest*, a large pad of firmly interwoven rush-, paddy-, or grass stems, placed on a floating islet of matted weeds or up to a metre or so above water level among partially submerged bulrushes and reeds. Eggs, 3 to 7, long ovals pale yellowish stone to reddish buff in colour, spotted and blotched with reddish brown. Average size of 100 eggs 50.5 \times 35.7 mm. (Baker). Apparently both sexes share in building the nest; period

178

GRUIFORMES

Smaller; tarsus 88 to 90 mm.; middle toe without claw 90 to 95 mm. *P. p. poliocephalus*

348. Baluchi Purple Moorhen. *Porphyrio porphyrio seistanicus* Zarudny & Härmis

Porphyrio poliocephalus seistanicus Zarudny & Härmis, 1911, Jour. f. Orn. 59: 240 (Seistan)

Baker, FBI No. 2028 (part), Vol. 6: 32

LOCAL NAME. *Būṭmī* (Persian).

SIZE. Village hen \pm ; length c. 43 cm. (17 in.).

FIELD CHARACTERS. As for 349, q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION AND HABITAT. Resident and partly migratory. West Pakistan, in northern Baluchistan. Birds from c. south of Chagai are closer to the Indian *poliocephalus*. Affects large low-lying reedy swamps.

Extralimital. Shores of the Caspian Sea, Lake of Antioch in Syria, Iraq, E. Iran, W. Turkestan, and Afghanistan. (For details of range see Vaurie, 1965, 2: 358.)

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 349.

BREEDING. Nothing specifically recorded as different from 349, q.v.

MUSEUM DIAGNOSIS. Differs from Indian Purple Moorhen (349) in being larger, with stouter bill, larger casque, and larger legs and feet (see Key). No difference in coloration.

MEASUREMENTS. Wing σ^7 260-270; ϕ σ 241, 256 mm. (Hartert). Dr C. B. Ticehurst measured birds from Baluchistan: 1 σ^7 Wing 269; 2 ϕ σ 258, 268 mm. Other measurements of 3 ϕ σ in Bombay Nat. Hist. Soc. collection:

Bill (from posterior end of casque to tip)	Tarsus	Middle toe (without claw)
63, 67, 72	85, 97, 102	95, 108, 111 mm.

COLOURS OF BARE PARTS. As in Indian birds.

349. Indian Purple Moorhen. *Porphyrio porphyrio poliocephalus* (Latham)

Gallinula poliocephala Latham, 1801, Index Orn., Suppl.: 68 (India)

Baker, FBI No. 2028, Vol. 6: 32

Plate 36, fig. 19

LOCAL NAMES. *Kaim*, *Kalim*, *Kharim*, *Khima* (Hindi); *Kaim*, *Kām pākhi* (Bengal); *Wān tech* (Kashmir); *Kaim* (Cachar); *Karim*, *Korma* (N. Bihar); *Kham charāi* or *sorāi* (Assam); *Lili jalal kauri* (Sylhet); *Omū* (Manipur); *Nila bolli kōdi* (Telugu); *Neela kōzhi* (Malayalam); *Kittā*, *Kittala* (Sinhala); *Neel kūkādī* (Gujarati); *Kambala pittī* (S. Konkani).

SIZE. Village hen \pm ; length c. 43 cm. (17 in.).

FIELD CHARACTERS. A handsome but rather clumsy purplish blue rail with long red legs and enormous toes. The bald red forehead running back from the short heavy red bill, and white patch under the stumpy tail — flashed conspicuously as the bird flicks it up at each step — are additional clues. Sexes alike, but bald forehead (casque) smaller in extent in female.

180

GRUIFORMES

of incubation and male's participation unknown. The male performs an elaborate though ludicrous courtship display, holding up water-weeds in his bill, facing the female and bowing and showing off before her to the accompaniment of loud chuckles. The components of this display have not been studied.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down) c. 2 days old. Uniformly black with whitish shafts (excepting at base and tip) on head, wings, and upper back. Bill pale blue (with white egg-tooth), dark cherry-red or magenta at base of both mandibles. Forehead shield indicated only by slight baldness. Forecrown (above this) dark cherry-red or magenta showing through sparse black down. Legs and feet pale pinkish red; eyelids pale magenta. Newly hatched chick active and precocious; conceals itself by sinking beneath the water surface, only keeping the culmen exposed. When separated from parent utters almost incessantly a comparatively loud *peep, peep* like young drongo (SA).

MEASUREMENTS

	Wing	Bill (culmen)	Tarsus	Tail
σ^7 ϕ	244-271	41-49	88-90	82-108 mm.

Weight 6 σ^7 ϕ 510-785 (av. 662.5) gm. — BNHS.

Female quite as big as male; and largest measurements above refer in each instance to a female. (Baker)

Bill (4 σ^7) from posterior edge of casque to tip 61, 62, 68, 70 mm. Middle toe (without claw) 98, 98, —, 100 mm. (SA).

COLOURS OF BARE PARTS. Iris σ^7 deep blood red, ϕ and imm. brown-red. Bill and casque blood red-brown, generally paler at tip more brown at centre of casque and middle of lower mandible. Legs and feet pale dingy red to dull red, browner at the joints; claws dull red, darker at tips.

Genus FULICA Linnaeus

Fulica Linnaeus, 1758, Syst. Nat., ed. 10, 1: 152. Type, by subsequent designation, *Fulica atra* Linnaeus (Gray, 1840)

Distinguished from all other Indian rails (Rallidae) by the possession of a broad lobed membrane fringing the toes, one to each phalange. Tarsus shorter than middle toe without claw, with a ridge-like membranous fringe behind. Bill of moderate length, rather deep and compressed, the culmen produced posteriorly over forehead in a knob-like flat or horny shield. Sexes alike.

Genus represented in the Old and New Worlds. Only a single species within our limits, resident and partly migratory.

350. Coot. *Fulica atra atra* Linnaeus

Fulica atra Linnaeus, 1758, Syst. Nat., ed. 10, 1: 152 (Europe, restricted type locality Sweden, ex ref. to Fn. Svec.)

Baker, FBI No. 2029, Vol. 6: 34

Plate 36, fig. 15

LOCAL NAMES. *Dasari*, *Dasari*, *Aari*, *Khaskul*, *Thekari* (Hindi); *Kārendab*, *Jāl kēkū* (Bengal); *Kāsar*, *Serār* (Bihar); *Barra goār* (Purnea); *Bolli kōdi* (Telugu); *Kēer*, *Poonar* (Marathi); *Aed*, *Dasadi* (Gujarati); *Kēpūt*, *Kolūr*, *Kolur* (Kashmir); *Aeri* (Sind); *Kekdi* (Kutch); *Perron*, *Ngēru perron* (Manipur).

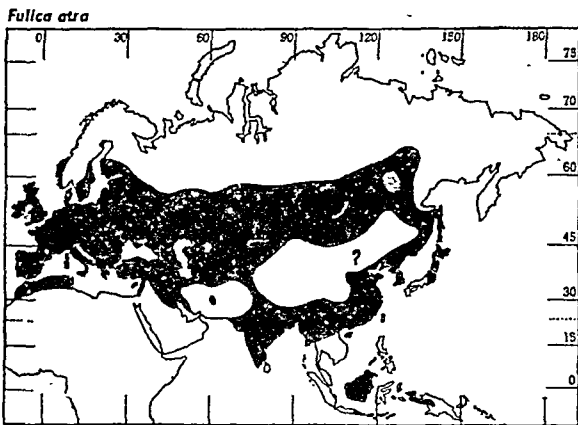
SIZE. Three-quarter grown duck \pm ; length c. 42 cm. (16 in.).

FIELD CHARACTERS. A slaty black, dumpy and practically tailless water bird — rather duck-like when swimming — with stout pointed ivory-white bill and flat, rounded, horny shield covering forehead. Sexes alike.

Young (immature). *Above*, greyish brown. *Below*, paler brown mottled with white.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident as well as common and abundant winter visitor. All India including Assam, both Pakistans, Nepal, Ceylon (uncommon and only recently established). Breeding up to c. 2500 metres locally in the Himalayas — in Kashmir and elsewhere; also in small numbers, widely but somewhat erratically almost throughout the plains. Affects rush-bordered weedy jheels and tanks with expanses of open water. Very abundant in winter, in congregations of tens of thousands on the larger jheels, especially in West Pakistan and northern India.



■ Distributional range

Extralimital. Breeds over the greater part of Europe and Asia south to N. Africa, Asia Minor, and southern China; Azores; Iceland. Migratory in the northern part of its breeding range and occurring in winter south to the Sudan, Arabia, India, Java, and Celebes (Sulawesi) — Peters; Borneo (Smythies).

MIGRATION. A bird ringed in Indore (c. 23°N., 76°E.) on 12.ii.1929 recovered near Veliko Alekseyevskiy (c. 41°N., 69°E.) in Uzbekistan, U.S.S.R., in March 1929; another ringed at Lake Alakol (c. 47°N., 75°E.) in Kazakhstan, U.S.S.R., in July 1938 recovered near Srinagar, Kashmir (c. 34°N., 75°E.) on 19.ii.1939. The straight-line map distance between the points is c. 2240 and 1600 km. respectively.* A common spring and autumn migrant through Gilgit (Scully). Observed on northward passage through Chaman

See Appendix

BREEDING. Non-colonial. *Season*, in Kashmir (where nesting commoner and more regular than elsewhere in our limits) end May to August, chiefly June-July; in N. India till about September; in the Peninsula (more sporadic) chiefly July-August; in S. India November-December. Not yet recorded in Ceylon. *Nest*, a large compact mass of rushes and flags placed amongst reeds, slightly above water-level. *Eggs*, 5 to 12, normally 6 to 10, fine textured, yellowish- or brownish grey in colour, stippled and spotted with reddish brown and purplish black. Average size of 100 Indian eggs 53.1 x 35.6 mm. (Baker). Birds very quarrelsome and pugnacious when nesting, darting at intruders along the water, neck thrust menacingly forward and closed wings raised over the back as in an angry swan. Both sexes share nest-building, incubation and tending the young; incubation period about 21 days. The claret-headed downy chicks sometimes thrust their bills into parents' gullet to receive food.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for the various plumage phases and structure (also bionomics) Witherby, 1941, 5: 204-8. Pure and partial albinos have been taken in India.

Chick (in down). Top of head bare with the exception of some black hairs; a number of minute red papillae at base of forehead and in front of the eyes to the bill; throat and round the neck orange, rest of plumage blackish blue, mixed on the back with orange hairs and on underparts with grey. Iris dull black; bill red at base, pink in the middle and tipped purplish black (Gordon Dalglish).

MEASUREMENTS

	Wing	Bill (culmen)	Tarsus	Tail
♂ ♀	185-220	33-38	56-64	54-63 mm. (Baker)

Weight 20 ♂ ♀ (autumn/winter) 390-800 (av. 540.5) gm. — BNHS. Witherby gives for British birds 'Wing 200-225; bill from shield 33-38 mm.' Sexes more or less equal in size.

Weight 1 lb. to 1 lb. 15 oz. (c. 450-875 gm.) — Scully.

COLORS OF BARE PARTS. Iris red, red-brown, or blood-red. Bill and shield ivory white, the former tinged with pinkish at base. Legs and feet dull greenish; tibia orange.

Family HELIORNITHIDAE: Finfoots

(For morphological details see Stresemann, 1927-34, Aves: 765-6; Baker, 1929 FBI, 6: 36)

Genus HELIOPAIS Sharpe

Heliopais Sharpe, 1893, Bull. Brit. Orn. Cl. 1: 37. Type, by original designation, *Podica personata* G. R. Gray

Bill rather stout, with culmen considerably curved; longer (from gape) than tarsus. No frontal shield as in Coot, but in breeding season a small fleshy horn from base of culmen. Nostril long and narrow, pervious, placed nearly in centre of upper mandible. Tarsus very strong; shorter than middle toe without claw. Toes fringed laterally with a lobed web. Wing rounded: 1st primary (as.) equal to 5th or 6th; 2nd primary (or 2nd and 3rd) longest. Rectrices 18, broad and stiff, slightly graduated, equal in length to about half the wing. Sexes differing slightly. Contains a single Indomalayan species.

(Baluchistan) and Kandahar (S. Afghanistan) in February and March (Ticehurst), and through Chitral in late April and early May (Perreau).

GENERAL HABITS. Gregarious, usually keeping in parties and flocks. In winter, numbers vastly augmented by northern immigrants; then locally in enormous swarms, often blackening large expanses of water. The birds paddle about in great discrete herds or rafts, diving expertly to get at the submerged water-weeds. When disturbed the nearest will merely skitter away towards the centre, half running half flying, and soon flop down to resume the paddling, with the characteristic gentle bobs of the head and neck at each stroke. The pattering din set up by such a close-packed herd at the firing of the first shot on a jheel, or at the stoop of a marauding eagle, is like the roar of the sea, and quite bewildering. Requires a good deal of pattering along the surface to get airborne, but when well under way is capable of strong and sustained flight over long distances and high mountains as shown by its bi-annual migrations. The flight consists of hurried, almost vibrating, flaps of the short blunt wings, neck stretched in front and legs trailing behind the tubby body. Owing to rather feeble flight and rank flavour seldom shot by sophisticated sportsmen. Long after the firing commences in a duck shoot and the more esteemed species such as pintail and gadwall have moved off to other jheels or rocketed high out of gunshot, coots will continue to fly around fussily close above the guns as if fully confident of the immunity they enjoy. Often the birds will merely skitter away into open water to join the other floating herds. They are, however, more highly esteemed as a delicacy than any duck species by the fisherfolk and other lake dwellers. The mounds of coot feathers bestrewn the precincts of fishing villages by the larger jheels in N. India and W. Pakistan (e.g. the Manchar Lake in Sind before the Sukkur Barrage project) testify to their popularity as an article of food, and the vast abundance in which they are killed.* Around many such jheels coots form the staple diet of the local inhabitants for several months in the year besides providing remunerative sustenance to professional netters. Large numbers are rounded up by gangs of villagers and killed with sticks when flightless through moult (end June, Baluchistan — Ticehurst; early and mid October, Rajasthan — Salim Ali). A harried bird will often dive and keep under for inordinately long periods hidden among the weeds, holding on to a stalk with its bill, only the culmen breaking the surface. During the winter months moreover, the birds are subjected to heavy predation by raptors of several species particularly the Ringtailed and Spotted Eagles (*Haliaeetus leucorhynchus* and *Aquila clanga*). Despite these incessant ravages by man and beast the coot as a species continues to hold its own — an indication of its hardiness and resiliency.

FOOD. Chiefly vegetable matter — shoots and seeds of aquatic plants and wild and cultivated rice. Also worms, insects and molluscs, and occasionally small fish. For some details see Mukherjee, A. K., 1974, JBNHS 71(2): 197-200.

VOICE AND CALLS. Often heard at night — a clear and loud trumpet-like cry. Also a variety of soft chuckling and other abrupt, not unpleasant, sounds.

* For some local methods of capture see Salim Ali, 1927, 'A Sind Lake', JBNHS 32: 460-71.

351. Masked Finfoot. *Heliopais personata* (G. R. Gray)

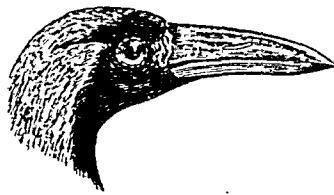
Podica personata G. R. Gray, 1849 (1848), Proc. Zool. Soc. London: 90 (Malacca) Baker, FBI No. 2030, Vol. 6: 36 Plate 1, fig. 7

LOCAL NAMES. None recorded.

SIZE. Domestic duck \pm ; length c. 56 cm. (22 in.).

FIELD CHARACTERS. A cormorant-shaped olive-brown and white water bird, with a velvety black facial mask and throat, bordered by a narrow white line. Conspicuous stout orange or yellow bill. On water could be mistaken for a large grebe at first sight.

Female has chin and centre of throat and foreneck white; black forehead narrower.



x c. 1

Young (immature). Like female but without any black on forehead. Black surrounding throat mottled with white.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Rare. East Pakistan, eastern Assam, and probably NE. Manipur. Ideal biotope: inundated depressions in forest with trees, cane brakes

and dense tangled masses of creepers. **Extralimital** Burma, Thailand, Malay Peninsula, Sumatra.

GENERAL HABITS. Shy and secretive. Keeps singly or in pairs or trios to dense forest pools and streams. Normally rides high on the water with much of the body above water line. When alarmed sinks low like a darter, finally only with the head and neck showing. Swims with coot-like rhythmic movements of head and neck at each paddle. Dives well on occasion, but whether does so in feeding not known. On land carries body rather upright — at 45 degrees to ground. Runs like rail at great pace, climbing up on shore and retreating into nearest jungle on alarm. Rises off water after pattering along surface for several metres like coot, legs dangling till properly airborne. Flight fairly strong but usually low. Commonly perches on boughs and tree-trunks overhanging water. Other habits not known; probably also similar to those of the African Finfoot, *Podica senegalensis* (Vicillot). (See C. R. S. Pittman, Bull. Brit. Orn. Cl. 82: 156-60.)

Both its flesh and eggs highly relished by locals. Flesh described as 'delicious' by W. Davison.

FOOD. Molluscs, crustaceans, insects, small fish (perhaps also frogs), and vegetable matter.

VOICE AND CALLS. A loud grunting quack while settling on water. A rather high-pitched bubbling sound like blowing air through a tube into water, whence its Burmese name *Te balon* = 'water bubbler' (Hopwood).

BREEDING. Only once recorded within our limits — Assam, July 1904. *Season* (in Burma) July-August. *Nest*, a more or less circular pad of twigs,

BUSTARDS

185

c. 40 cm. in diameter, with a central depression; placed from a metre to 3 metres in a horizontal branch of a partially submerged tree in dense jungle swamp. Eggs, normally 5 or 6, rather spheroidal, fine textured, highly glossed, reminiscent of some of the bustards. Ground colour cream faintly tinged pinkish or greenish, with small primary blotches of reddish brown or blackish brown all over (sometimes more numerous at the broader end), and secondary markings of lavender grey. Average size of 44 eggs 52.0 × 43.7 mm. (Baker). Both sexes incubate; incubation period, share of the sexes in nest-building, and other details unknown.*

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). 'Whole chick well covered with down. Upper parts dark grey-brown; dusky white over eye and on cheeks; chin and upper throat whitish, lower throat mixed with grey-brown; breast and belly white; flanks grey-brown.'

*Note: The large strong bill, well-marked digital claw as in other rails, long soft downy tail (unlike the Rallidae), and the "finned" feet. The red papillomatous specialized down on the head of *Fulica atra* is not represented in *Haliastur* (Ticehurst, Bull. BOC. 49: 65-6).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	248-253	52-56	46-51	98-124 mm.
♀♀	232-241	41-50		(Baker)

COLOURS OF BARE PARTS. Iris dark brown; eyelids pea-green. Bill bright chrome yellow, brownish in the centre. Legs and feet pea-green; edges of lobed webs yellow. Erectile horn or wattle at base of culmen (in breeding male) c. 15 mm. long, bright yellow.

Family OTIDIDAE: Bustards

(For morphological details see Baker, 1929, FBI 6: 59; Witherby, 1940, Handbook 4: 436; Stresemann, E., 1927-34, Aves: 774.)

Key to the Genera

	Page
A A ruff on each side of neck; sexes alike..... <i>Chlamydotis</i>	191
B No ruff. Sexes differing in size or breeding plumage or both.....1	
1 Wing about four times the length of the tarsus..... <i>Otis</i>	185
Wing two to three times the length of the tarsus.....a	
a Wing in males and females c. 180-248 mm..... <i>Sypheoides</i>	195
Wing in males and females c. 338-363 mm..... <i>Eupodotis</i>	193
Wing in males and females c. 460-762 mm..... <i>Choriotis</i>	183

Genus OTIS Linnaeus

Otis Linnaeus, 1758, Syst. Nat., ed. 10, 1: 154. Type, by subsequent designation, *Otis tarda* Linnaeus

Tetrax T. Forster, 1817, Syn. Cat. Brit. Bds.: 20. Type, by tautonymy, *Otis tetrax* Linnaeus

Wings ample, rounded; 3rd primary (as.) usually longest. Tarsi equal to about quarter length of wing; together with bare portion of the tibia covered with small scales. Hind toe absent; three front toes short, stout, scutellated above. Bill shorter than head, broader than high at base. No crest or ruff, though in some species the male has long bristly feathers with few and short webs on each side of throat.

* See Appendix

BUSTARDS

187

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	595-635	41-47	142-150	210-235 mm.
♀♀	455-495	35-40	113-126	176-210 mm.

Weights recorded for European birds ad. ♂♂ 24-37 lb. (c. 11-17 kg.); ad. ♀♀ average c. 15 lb. (c. 7 kg.).

COLOURS OF BARE PARTS. Iris dark brown. Bill plumbeous with black tip. Legs and feet earthy brown or greenish brown; claws black.

MISCELLANEOUS. Apparently like the Snowcock (*Tetrao gallus*) emits a disgusting stench soon after being killed.

333. Eastern Little Bustard. *Otis tetrax orientalis* Hartert

Otis tetrax orientalis Hartert, 1916, Nov. Zool. 23: 339, pl. 2

(Sarepta, southern Russia)

Baker, FBI No. 2042, Vol. 6: 62

Plate 37, fig. 1

LOCAL NAMES. *Chhota tiloor*, *Obāra* (Punjab); *Chānāz* (Baluch).

SIZE. Country hen; length c. 46 cm. (18 in.).

FIELD CHARACTERS. Superficially reminiscent of the floricans, 356 and 357.

Male (breeding). Above, crown and upperparts finely vermiculated sandy buff. Face blue-grey. Neck (all round) black, distinctly patterned like a white loosely hanging necklace with a prominent black-and-white pectoral collar below it. Rest of underparts white.

Female (winter). Above more or less like female with finer vermiculations. Below, black crescentic markings on breast ill-defined.

Female. Above sandy buff with the head and neck streaked with black and buff. Below, chin and throat whitish; breast pale buff irregularly barred with black crescentic markings; rest of underparts white.

STATUS, DISTRIBUTION AND HABITAT. Rather rare but fairly regular winter visitor to northern West Pakistan; frequently taken in Peshawar and adjoining districts. One record from Gilgit and several sporadic ones from Kashmir, the latest in January 1964 (Haigam, Col. H. Nedou). Stragglers have been obtained in Ludhiana and Gurdaspur districts, Punjab, and Saharanpur district, U.P. Status in Baluchistan needs investigating. According to C. B. Ticehurst (JBNS 34: 481) confusion with some other bustard is implicit in Baker's records of its abundance there. So far only one definite record (specimen) of a straggler from Baluchistan—from Ormara in Makran. Affects open coarse grassland and mustard crops.

Extralimital. Breeds in E. Europe and W. Asia from Poland to NE. Kazakhstan, south to Greece, the Black Sea, Transcausia, and Afghanistan. Migratory in the northern part of its breeding range to winter quarters in Syria, Iraq, and NW. India.

GENERAL HABITS. Usually keeps in small parties of 3 or 4, sometimes up to a dozen birds. Lies close in cover, but when flushed is easy to shoot. More highly esteemed as quarry for trained Saker or Charagh falcon and often hunted thus. Called 'Butterfly Houbara' from its peculiar vagaries

186

GRUIFORMES

Key to the Species

Length of wing in males c. 595-635 mm.; females c. 455-495 mm....	<i>O. tarda</i>	186
Length of wing in males c. 241-256 mm.; females c. 242-260 mm....	<i>O. tetrax</i>	187

352. Great Bustard. *Otis tarda dybowskii* Taczanowski

Otis Dybowskii Taczanowski, 1874, Jour. f. Orn. 22: 331 (Dauria)

Baker, FBI No. 2041, Vol. 6: 60

Plate 37, fig. 2

LOCAL NAME. *Doodagh* (Chitral).

SIZE. Vulture +; length c. 102 cm. (c. 40 in.).

FIELD CHARACTERS. A huge ground bird reminiscent of a small ostrich; readily distinguished from Great Indian Bustard (354) even at long range by whitish instead of black crown of head.

Male. Above, head and neck pale grey with conspicuous whitish bristly 'moustaches'. Rest of upperparts rufous-buff finely barred with black. Below, white with a broad rich chestnut band across breast, sometimes visible only as chestnut patches on sides of upper breast.

Female smaller than male and without chestnut breast-band or moustaches.

In flight—long neck extended forward, legs tucked under tail—the broad rounded wings look very white with contrasting black tips.

STATUS, DISTRIBUTION AND HABITAT. Rare vagrant in winter. Has been recorded less than a dozen times in the last 70 years at long intervals, in West Pakistan—Chitral, Peshawar district (Mardan, Risalpur), N. Baluchistan, N. Sind (Jacobabad); all in years of particularly severe winters further north in central Asia. Of the 6 specimens procured within our limits 4 were in Peshawar district. Keeping around and feeding in gram and mustard cultivation.

Extralimital. 'Breeds from the southeastern Altai, Transbaikalia and the Amur region south to N. Mongolia, Manchuria, and Ussuriland. Winters in China, Korea, and Japan; casual in N. India' (Peters).

GENERAL HABITS. Closely resembling those of Great Indian Bustard (354), q.v. Keeps in droves of 5 to 15 birds. Usually very wild and shy, flying off at long range. Said to feed and fly in flocks like geese, whereas *Choriotis* feeds widely scattered and flies individually.

FOOD. Mainly vegetable matter—leaves and grain of crops, in NW. Pakistan chiefly gram and mustard. A specimen weighing 17 lb. (c. 8 kg.) had in its gizzard solid vegetable matter weighing 2 lb. (c. 900 gm.). Insects and other small animals also eaten.

VOICE. Very silent in winter; no call recorded in India. During the bizarre nuptial display male utters a deep moan with ludicrously puffed-out throat.

BREEDING. Extralimital. Eggs—2 or 3—laid on a trampled-down spot amongst crops.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.; for further details of plumage phases and structure (also bionomics) of the nominate (European) race, Witherby, 1940, 4: 437-41. Our race *dybowskii* differs from it in the adult male having a much paler grey head and neck and more grey (v. white) on the wings (coverts).

GRUIFORMES

188

in flight which is otherwise strong and direct attained by very rapid wing-beats and reminiscent of both partridge and florican. The bird often rises to a height and turns and twists erratically before resuming a straight course. The noise produced by its quick movement through the air is likened by one observer (Willoughby Verner, Spain) to 'a sibilant see-see-see suggestive of steam from a railway engine as it gets under way'.

FOOD. Chiefly vegetarian: shoots, leaves and grain. Also insects and small animals.

VOICE AND CALLS. Very silent. None recorded in India.

BREEDING. Extralimital. Season, May to July. Nest a scanty pad of grass amidst crops. Eggs 3 or 4.



Fourth primary (as.) of adult ♂ showing emarginations

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.; for details of plumage phases and structure (also bionomics) Witherby, 1940, 4: 441-4; Hartert, 1916, *Neotoma Zoologica* 23: 337-9.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	247 (two)	22-25	64-70	91-108 mm.
	241-257 (14 measured)			
♀♀	242-260	—	—	—

(Witherby)

Weight of Indian-collected specimens 1½ to 2 lb. (c. 600-900 gm.).

COLOURS OF BARE PARTS. Iris light yellow to orange, browner in young. Bill blackish, tinged with grey or greenish horny; greenish or yellowish at base. Legs and feet yellow or greenish yellow to yellowish brown.

Genus CHORIOTIS G. R. Gray

Choriotis 'Pr. B.' = G. R. Gray, 1855, Cat. Gen. Subgen. Bds.: 109. Type, by original designation, *Otis erab* Linnaeus

Distinguished from all other Indian genera of Otidae by its great size, black-crested head, and lengthened feathering of the throat and foreneck. Bill and legs comparatively longer than in *Otis*. Wings broad, very long and pointed.

Male much larger than female. Only a single species confined to peninsular India with its nearest congener in Australia.

354. Great Indian Bustard. *Choriotis nigripes* (Vigors)

Otis nigripes Vigors, 1831 (2 March), 1830-31, Proc. Zool. Soc. London: 35

(Himalayas = Foothills of NW. India side Ticehurst, 1950, J. Bom. nat. Hist. Soc. 34: 482-3)

Baker, FBI No. 2043, Vol. 6: 64

Plate 37, fig. 5

LOCAL NAMES. *Sokān*, *Gagmān*, *Hān* (Hindi); *Tepār*, *Gargān* (Punjab); *Godān* pronounced *Godān* (Jaikhar, Rajasthan); *Gānān*, *Gargān* (Sind);

Gūdīd (Kutch); *Chōrār* (Gujarati); *Hām* (Marathi); *Serailu*, *Bherār* (Madhya Pradesh); *Mardhōnk*, *Maldhōnk*, *Karadhōnk*, *Karlōnk* (Deccan); *Heri hākki*, *Arkujina hākki*, *Tere-laddu* (Kannada); *Bat-mela* or *Bat myka* (Telugu); *Kānal myle* (Tamil = 'mirage peacock'), and variants.

SIZE. Vulture +; standing over a metre to top of head. Length ♂ c. 122 cm. (48 in.); ♀ c. 92 cm. (37 in.).

FIELD CHARACTERS. A huge ground bird reminiscent of a small ostrich. Horizontal carriage of body and stout bare legs characteristic.

Male. *Above*, deep sandy buff finely vermiculated with black. Crown of head black and crested. *Below* white, with a black band or gorget across lower breast.

In flight the large size, white neck stretched in front with contrasting black cap on head, white underparts with dark breast-band, and large whitish patches near tips of the broad wings make its identity unmistakable.

Female similar but much smaller, with the white of head and neck less pure, more vermiculated with black. Pectoral band absent or merely indicated on the sides; occasionally fairly complete.

Young (immature) male differs from female in having buff spots on the crown, hindneck, and upper back.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident and seasonally nomadic, dispersing widely in monsoon with creation of grasslands. Once (c. century ago) ranged from the present Pakistan (Sind, Punjab) east to W. Bengal and Orissa, and southward through the Peninsula to southern Madras (Tiruchirappalli). Distribution now much constricted and numbers dwindling due to human population-pressure — encroachment on its habitats by cultivation, plus direct persecution. Presently rare or absent over much of its former range, but still not uncommon in remote areas of Rajasthan, e.g. Jaisalmer. Casually or regularly seen, and also breeding in small numbers, in parts of Gujarat (Saurashtra, Kutch), and Deccan (Ahmednagar district), sporadically south to Mysore. Affects wide open spaces of scanty grassland interspersed with scrub and cultivation in more or less semi-desert country.

GENERAL HABITS. Normally met with in scattered pairs, or parties of 5 or 6, but droves of up to 25 or 30 not unknown; largest recorded 34. Excessively shy and wary; can seldom be approached within gunshot except by subterfuge — in a bullock-cart or on or behind a camel to which the birds have become inured. However, surprisingly, and foolishly, unperturbed by noise and rattle of jeeps which now largely responsible for its rapid decimation by poachers. Runs at great speed and prefers to squat and freeze behind a bush rather than fly away. Takes a few steps before rising in air; with favourable wind almost straight off the ground. Flight rather vulture-like, with deliberate rhythmical strokes of the huge wings, never very high above ground, but often sustained for many miles before realighting.

FOOD. Omnivorous. Grain (whole ears of barley recorded) and tender shoots of various crop plants of which mustard is a favourite. Drupes and berries, e.g. *Zizyphus* and *Carissa*. Also locusts, grasshoppers, beetles (Cantharidae, Scarabidae and Buprestidae); at certain seasons largely the green

of the breast of others is excellent; the flesh of every part of the *Kharchal* is delicious' (Sálim Ali, 1927, JBNHS 32: 60). This is precisely the reason for the present-day deteriorating status of the bird, and unless effective practical measures are taken for its preservation, the species is in real danger of early extinction; this despite the total official ban on its killing and the taking of its eggs. In the defunct *Oriental Sporting Magazine* a writer proudly signing himself 'Lover of all Sports' claimed that in the 20 years between 1809 and 1829 he shot no less than 961 Great Indian Bustards in the neighbourhood of Ahmadnagar in the Deccan — an indication of their abundance in those days.

A pure albino among a flock of 9, glistening white 'like an egret', recorded from Kutch (M. K. S. Vijayarajji, 1926, JBNHS 31: 526).

Genus CHLAMYDOTIS Lesson

Chlamydotis Lesson, 1839, Rev. Zool.: 47. Type, by monotypy, *Otis houbara* Desfontaines = *Prophias undulata* Jacquin

Separable from all other genera of Otididae by the presence of a curious crest of isolated feathers thinly webbed at the base. A ruff on either side of neck; feathers of lower-neck lengthened, overhanging breast. Sexes alike; female somewhat smaller.

Contains a single species with two races, the nominate N. African, and the other central Asian wintering in NW. India.

355. Houbara Bustard. *Chlamydotis undulata macqueneii* (J. E. Gray)

Otis Macqueneii J. E. Gray, 1832, in Hardwicke's Ill. Indian Zool. 2(12): pl. 47 (Himalayas = foothills of NW. India vide Ticehurst, 1930, J. Bom. nat. Hist. Soc. 34: 482)

Baker, FBI No. 2044, Vol. 6: 67

Plate 37, fig. 4

LOCAL NAMES. *Tiloor*, *Hobāra*, *Obāra* (Punjab); *Taloor* (Sind); *Tilōr* (Rajasthan); *Sīārā tiloor* (Kutch); *Chārz*, *Chārūs* (Baluchi); *Sārā*, *Sārē* (Pushtu).

SIZE. Domestic hen +; standing c. 60 cm. (2 ft) to top of head. Length ♂ c. 73 cm. (29 in.); ♀ 66 cm. (26 in.).

FIELD CHARACTERS. Superficially a smaller edition of the Great Indian Bustard, also with longish bare legs and horizontal carriage of body.

Male. *Above*, sandy buff, pencilled, vermiculated and splodged with blackish. A short black-and-white crest, a ruff of black-and-white feathers on each side of neck, and a tuft of greyish plumes from lower throat overhanging the breast. *Below*, white, barred with blackish on flanks.

Female. Somewhat smaller with ruff and neck-plumes less developed.

Young (immature). Differs from female in having numerous sandy-coloured arrowhead markings on upper plumage, smaller crest and ruff.

In flight, with neck outstretched, the white underparts and the round white patches near the blackish wing-tips are prominent.

STATUS, DISTRIBUTION AND HABITAT. Breeds in small numbers in Baluchistan (Makran). Common winter visitor to the rest of West Pakistan (Sind, Punjab) straggling east to Delhi. Southward through Rajasthan and N. Gujarat (Banaskanta, Kutch, NW. Saurashtra). Abundance varying locally

blister beetle (*Cantharis tenuicollis*), which often taints its flesh. Lizards, centipedes and snakes (one 2 ft long, and a poisonous phoorsa — *Echis carinata*) likewise recorded. Pebbles usually found in stomachs (stones of 1 inch and 1½ in. recorded), and once a complete egg of quail (*Coturnix*).

VOICE AND CALLS. Usual alarm call, a bark or bellow something like *hook*, whence one of its local names *Hookna* (Gwalior). In nuptial display a deep booming moan audible up to 500 metres away.

BREEDING. Season, principally between March and September; locally also in other months. *Nest*, a shallow depression in the ground at the base of a bush in grass-and-scrub country, sometimes sparsely lined with grass. *Eggs*, normally a singleton, very rarely two, drab or pale olive-brown in ground colour, faintly blotched with deep brown. Average size of 88 eggs 79.4 × 59.6 mm. (Baker). Polygynous, each cock having 3 to 5 hens. Nuptial display of cock, given from some slight eminence or mound, consists of strutting and posturing and inflating the special gular sac (with opening under the tongue) to grotesque proportions so that it stretches all down the throat protruding below like a wobbling bag between the legs. The tail is erected well over the back and moved quickly up and down. Sometimes performed when there is no hen in the vicinity; when there is one she usually seems quite uninterested. The sequences leading to copulation have not been observed. Incubation by hen alone; period unrecorded.

(For details of the fantastic and extravagant nuptial display see Hume & Marshall, 1879, *Game Birds of India, Burma, and Ceylon* 1: 9-10; Dharmakumarsinhji, R. S., 1962, 'Display, Posturing and Behaviour of the Great Indian Bustard *Chlorotis nigricaps* (Vigors)', *Proc. 2nd All-India Congr. Zool.* (1962), pt. 2: 277-83.)

Eggs suffer great destruction from marauding House Crows. On approach of an enemy the hen indulges in a distraction display, flying about zigzag with legs dangling (Dharmakumarsinhji).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). *Above* buff, with black marks on head and back. *Below*, buffy white.

	MEASUREMENTS			
	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	614-762	c. 85-95	c. 190-208	— mm.
♀♀	460-540	—	—	—
1 ad. ♀ (Kutch)	564	88 (from skull)	162	250 mm. (SA)

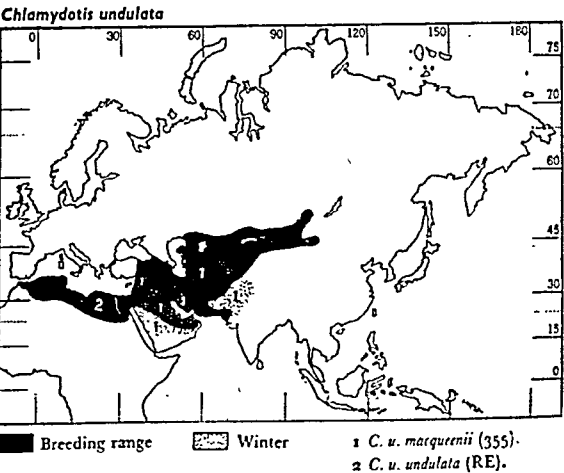
Weight ♂♂ 18-32 lb. (c. 8-14.5 kg.); ♀♀ 8-15 lb. (c. 3.50-6.75 kg.). — Various authors.

Crest feathers c. 5 cm. long; less developed in ♀.

COLOURS OF BARE PARTS. Iris pale to bright yellow. Eyelids (unfeathered) cream colour. Bill greyish white to greyish brown, blackish at tip and base of upper mandible, yellowish on lower. Legs and feet yellowish cream, greyish white, or pale plumbeous.

MISCELLANEOUS. In his *Memoirs* the Mogul emperor Babur comments on the savouriness of its flesh thus: 'The flesh of the leg of some fowls, and

from year to year. Affects open hummocky semi-desert country with sand-dunes and flat salt-encrusted plains or *pats*, sparsely dotted with xerophytic bushes (e.g. *Gapparis*, *Salvadora*, *Suaeda*, *Salola*) interspersed with mustard fields and other winter cultivation around the far-flung desert canal colonies. In Kutch and Saurashtra in the sandy undulating grassland along the edge of the Rann, and among the coastal sand-dunes covered with *khip* (*Leptadenia spartium*) and similar vegetation; in riverain Punjab in low sparse tamarisk scrub on the sandy flood plains flanking rivers.



Extralimital. Breeds from the Syrian desert, SE. Transcaucasia, and Transcaspia, north to about lat. 51° in Turgai and Turkestan, east to Zaissan Nor, south to the Sinai Peninsula, Arabia, E. Persia, and Baluchistan. Winters chiefly in Palestine, Arabia, NW. India, and Egypt (Peters).

MIGRATION. No ringing data. Passes through the Quetta area of Baluchistan on spring migration from end of March and in April. Then in large numbers on the plains between Pishin and Khwaja Amran (where 4 guns have shot 60 birds in a day at this season — Meinertzhagen). Passes through again in autumn (Ticehurst). Fairly plentiful on spring migration in March in the Kohat and Kurram valleys, NW. Pakistan (Whitehead). In the Sirsa area of the Punjab c. 29°N., 75°E. 'a few birds began arriving in September, but were not plentiful till December' (Heath).

GENERAL HABITS. Similar to 354, q.v. Excessively wild and unapproachable on foot, especially on a cloudy windy day. Normal method of shooting it is from camel back or from behind a good stalking camel which is walked round the bird in ever-narrowing circles. When closely approached thus, the bird squats, sometimes behind an absurdly diminutive bush, often on

BUSTARDS

193

the open sand with no protection at all. It lies doggo here with neck outstretched flat in front, the unblinking yellow eye closely following the intruder's movements. The bird's contours and coloration blend so perfectly with the substrate that special effort is needed to pick it out, even at 15 metres distance, even knowing all the time that it is there! In Kutch the nature of the coastal sand-dunes lends itself to the birds being driven over the guns by a line of beaters, and good sport can sometimes be had. The flight, seemingly heavy with slow wing-beats, is in fact considerably swifter than it appears. But the Houbara provides best sport when hunted with trained falcons, particularly the Cherrug (*F. cherrug*) and the Peregrine (*F. peregrinus*) as is still quite popular in NW. Pakistan. When chased by the falcon the bird constantly tries to spiral upwards to avert a stoop from above. If successful it is said to squirt a gummy liquid (anal) on to its pursuer, clogging its wings and sometimes causing it to fall to the ground like a stone.

FOOD. Omnivorous, but largely vegetarian: young shoots of wheat, mustard and other oilseed crops, flowers of various ground weeds, drupes and berries of bushes such as *Zizyphus jujuba* and *Grewia populifolia*. Also insects: black ants, termites, locusts and grasshoppers, and beetles (Tenebrionidae, Scarabidae, Cantharidae and others). Rarely centipedes, lizards, and small snakes as well.

VOICE AND CALLS. Very silent. None recorded.

BREEDING. Chiefly extralimital; in small numbers in Baluchistan (Makran). Nowhere else authentically reported within our boundaries. Nest, a bare depression in the sand or amongst stones in desert, under shelter of a small bush or grass tussock. Eggs, 3 or 4 brownish stone colour, tinged with olive and blotched and spotted with amber-brown and pale secondary markings. Average size of 140 eggs 62.3 x 45.1 mm. (FBI).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.: for further information (plumage phases, structure, bionomics, etc.) Witherby, 1940, 4: 446-9.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	363-411	34-38	c. 125	216-241 mm.
♀♀	342-381	30-34	—	—
♂♂	383-430	35-42	93-102	185-205 mm. (Baker)
♀♀	345-380	32-36	—	— (Witherby)

Middle toe 42-51 mm. (Baker).

Weight ♂♂ 4 lb. to 5 lb. 4 oz. (c. 1.80-2.40 kg.); ♀♀ 2 lb. 10 oz. to 3 lb. 12 oz. (c. 1.20-1.70 kg.).—Hume.

COLOURS OF BARE PARTS. Iris pale to bright golden yellow. Bill: upper mandible blackish, lower mandible and gape greenish or yellowish horn. Legs and feet greenish, plumbeous, or brownish yellow.

Genus *EUPODOTIS* Lesson

Eupodotis Lesson, 1839, Rev. Zool.: 47. Type, by subsequent designation, *Otis rheas* Rüppell not Gmelin = *Otis senegalensis* Vieillot

Very like the next genus, *Sypheotides*, differing from it only in that the adult male does not have a non-breeding or 'eclipse' plumage, retaining sexual dimorphism throughout the year. Represented in our area by a single Indochinese species.

BUSTARDS

195

FOOD. Omnivorous; largely vegetarian: shoots and flowers of mustard and other oilseeds and crops, succulent grasses, seeds, berries, wild cardamom. Among insects chiefly locusts, grasshoppers, beetles, ants. Occasionally takes lizards and small snakes. A good deal of gravel usually found in stomachs.

VOICE AND CALLS. Normally very silent. When startled a shrill metallic *chik-chik-chik*. Ordinary note same, but softer and more plaintive.

BREEDING. Season, in Assam March to June, chiefly late March and early April; elsewhere June-July-August recorded. Nest, a slight depression on the ground in the vast expanses of grassland along the Himalayan foothills. Nests very difficult to find as incubating female runs off through the rootstocks, flying only when a long way away. Eggs, almost invariably 2, smooth, glossy, regular ovals, olive-green with small and large blotches of purple and purple-brown and a few secondary markings of pale purplish grey. Average size of 100 eggs 64.3 x 45.8 mm. (Baker). Incubation by female alone; period c. 30 days. On circumstantial evidence male promiscuous, attracting individual ready-to-breed females by his extravagant display. He springs up vertically 8 or 10 metres above the grass-tops with a little croak and a peculiar deep humming, hovering on extended quivering wings, and floats down perpendicularly to the same spot, repeating the manoeuvre every little while. Courts approaching female in the manner of a turkey cock, raising and spreading tail, trailing wings on ground, and humming as before. (Mechanics of this sound unknown.) After copulation he apparently takes no further interest in raising a family.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). Above and below warm rufous-buff. Crown rufous mixed with rufescent brown and bordered by a stripe of the same colour from each side, meeting behind at the nape and continuing partly down the back of the neck; ear-coverts bordered with rufescent brown; back and wings mixed rufous-buff and rufescent brown; a patch of rufous bordered by rufescent brown from lower neck to breast and a patch of rufescent brown on each side of the breast; thighs with three broad rufescent brown bands on outer side. Iris hazel brown (C. M. Inglis, JENHS 28: 1134).

MEASUREMENTS. ♂♂ Wing 338-368; Bill (from feathers) 38-39 mm. (Baker).

Tarsus c. 165; Tail c. 190 mm. Female only slightly larger than male but usually heavier. Weight ♂♂ 4 to 5 lb. (1.60-2.25 kg.).

COLOURS OF BARE PARTS. Iris yellow or brown. Bill dark horny or plumbeous brown, yellowish on lower mandible and at gape. Legs and feet straw-yellow, sometimes tinged with green or plumbeous, or paler and dingier.

Genus *SYPHEOTIDES* Lesson

Sypheotides Lesson, 1839, Rev. Zool.: 47. Type, by subsequent designation, *Otis erilis* Latham = *Otis indica* J. F. Miller

Differs from *Otis* and *Chlorotides* in its comparatively longer tarsus equal to about one-third length of wing. Primaries very attenuated; notched on inner web. Unlike *Eupodotis*, male has a seasonal female-like non-breeding or eclipse plumage, but separation of the genus on this character alone inconsistent with other similar cases and seems doubtfully necessary.

Has only a single species confined to the Indian subregion.

194

GRUIFORMES

356. Bengal Florican. *Eupodotis bengalensis bengalensis* (Gmelin)

Otis bengalensis Gmelin, 1789, Syst. Nat. 1(2): 724 (Bengal)

Baker, FBI No. 2046, Vol. 6: 71

Plate 37, fig. 3

LOCAL NAMES. *Chārās*, *Chārg*, *Chārāt* (Hindi); *Dāhār* (Bengal); *Abāk* ♂, *Bor* ♀ (Terai); *Ūlī rāra* (= peacock of the *ulū* grass. Nowgong, Assam); *Deo tīrling* (Cachar).

SIZE. Domestic hen +; standing c. 55 cm. (c. 2 ft) to top of head. Length ♂ c. 66 cm. (26 in.); ♀ slightly larger.

FIELD CHARACTERS. A typical bustard with longish bare legs and horizontal carriage of body.

Male. Moppy crested head, neck, and underparts velvety jet black. Back buffy brown, heavily mottled and vermiculated and with bold black arrowhead marks. A bunch of elongated plumes overhanging breast. Exposed parts of closed wings showing up as a glistening white patch. In flight large size, outstretched neck, legs tucked under body, and conspicuous black-and-white (or pied) plumage make its identity unmistakable.

Female and ♂ in first plumage. Overall rufous-buff and sandy-buff, mottled with black on back and with bold arrowhead marks. No white patch on wings. Crown of head dark brown with a bold buff coronal streak or 'centre parting'.

Young (immature) males, vide Baker, assume the adult or a semi-adult plumage at the first spring moult, but often revert to the juvenile plumage the following autumn. Once fully acquired (presumably at the second spring moult) the adult ♂ plumage is retained in all seasons.

STATUS, DISTRIBUTION AND HABITAT. Resident. Assam, East Pakistan, duars and terai of Bhutan, Bengal, Nepal, and Kumaon (Uttar Pradesh), west to about the Jumna (Yamuna) river. Commonest in Assam Valley from about the Mishmis east of Sadiya westward to the Manas river, chiefly north of Brahmaputra in the extensive grassland and *chairs* going right into the Bhutan and NEFA foothills. Rare south of Brahmaputra Valley; stragglers obtained in Tippera and Chittagong; absent in Manipur. Less common, rare, or a straggler west of the Manas in Nepal and Kumaon terai. Affects tall grassland interspersed with scattered scrub and bushes, especially where grazed down to about half-metre height or regenerating after the seasonal firing.

GENERAL HABITS. Unlike bustards of the genus *Otis*, not gregarious. Keeps in widely spaced solos, sometimes 4 to 8 birds thus in a restricted vicinity. Feeds out in fairly open short grassland or burnt patches in the early morning and evening, retiring into thicker cover as the morning advances. The sexes also keep more or less segregated, males and females usually to different patches. Very wary in open country, but in tall concealing grass lies low and flushes only when within a few metres. Flies long distances at grass-top height when flushed and runs on speedily upon alighting so that the bird has moved a long way off by the time the observer reaches the spot. Flight like other bustards, by rhythmic strokes of the broad wings, neck outstretched and legs and feet tucked under body — not trailing behind as in a stork or crane.

GRUIFORMES

196

357. Leekh or Lesser Florican. *Sypheotides indica* (J. F. Miller)

Otis indica J. F. Miller, 1782, Icon. Anim., pl. 33 (India)

Baker, FBI No. 2045, Vol. 6: 69

Plate 37, fig. 6

LOCAL NAMES. *Leekh*, *Chhota chārāt* or *chārāz*, *Bārsāti* or *Kālā chārāz* or *tūgdār* (Hindi); *Chhota dāhār*, *Likh* (Bengal); *Khār mār* (Gujarat); *Tūloer* (Kutch); *Khār mār* = grass peacock, *Tārnār* (Sind); *Khār tūtār* (Bhil); *Chini mār* (Belgaum); *Kannoul* (Kannada); *Niala nimli* (Telugu); *Waragu kōzhi* (Tamil); *Chāitta kōzhi* (Malayalam).

SIZE. Domestic hen. Length ♂ c. 46 cm. (18 in.); ♀ c. 51 cm. (20 in.).

FIELD CHARACTERS. A small bustard with the typically longish bare legs and horizontal carriage of body.

Male (breeding). Chiefly black-and-white with a tuft of narrow spatulate-ended upcurving black plumes projecting behind the head, three on either side.

Male (winter: non-breeding). Similar to female, but with much white on wing.

Female. Overall sandy buff, mottled and with blackish arrowhead marks on back. Two parallel blackish stripes down centre of throat and



foreneck. Forehead and crown black with a pale median stripe or 'centre parting'. No head plumes. Slightly larger than male.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; irregular local migrant, and also nomadic in the rainy season (SW. monsoon). W. Pakistan (coastal Makran, southern Sind), Punjab, Rajasthan, Gujarat (including Saurashtra and Kutch), south through the Peninsula to Mysore and Madras; straggler to Kerala. Wandering erratically eastward through Uttar Pradesh, Nepal (Valley? and terai), Bihar, Orissa, W. Bengal to slightly east of Teesta river in Bhutan duars (c. 89°E.). Rare in the coastal strip between the Western Ghats and the sea. Affects tall grassland with scattered bushes, and standing crops of cotton and millets; chiefly plains, but a vagrant has been obtained in the Nilgiris at c. 1000 metres.

MIGRATION (local). Of about 500 males in breeding plumage ringed by Rao Shri Dharmakumarsinhji in the erstwhile Bhavnagar State of Gujarat in seven successive seasons (between 1943 and 1949), 18 have so far been recovered. Ten of these were in the same area where ringed, the others mostly well within a radius of 50 kilometres. The recoveries were all in subsequent breeding seasons, of birds that had presumably returned to breed; they ranged from one to four years after ringing. No recoveries have been reported in the non-breeding season, or from peninsular India whence

the birds are believed to be derived (excepting one of a male from Baroda), therefore the off-season migratory movements still remain obscure.

From his observational data Dharmakumarsinhji suggests that the majority of breeding birds in Saurashtra and Kutch are immigrants from peninsular India. They arrive on the south-east coast of Saurashtra from the direction of Gujarat and Bombay across the Gulf of Cambay (flying individually, not in flocks) from the end of May to August depending upon the timing and intensity of the SW. monsoon, returning in the same south-easterly direction about October/November, the males apparently leaving before the females.

GENERAL HABITS. Broadly similar to 356, q.v. Much less shy and wild than other bustards or Bengal Florican. When flushed usually flies a considerable distance, running on immediately upon alighting and difficult to flush a second time. Wing-beats more rapid than other bustards' and reminiscent of Redwattled Lapwing. Capable of astonishing turn of speed when flushed by beaters and chased by trained 'waiting on' Peregrine or Cherrug falcon. Normally relies for safety chiefly on lying low and running through cover.

FOOD. Insects of all kinds, mainly grasshoppers (Acrididae), beetles (Cantharidae, Chrysomelidae, Buprestidae, Scarabidae); sometimes centipedes, lizards, and frogs. Also takes vegetable matter: shoots of crops, grass and herbs, seeds, drupes and berries, e.g. *Zizyphus*. At certain seasons feeds very largely on blister beetles (*Mylabris*), tainting the flesh which is otherwise highly esteemed as a table delicacy. Insects secured on ground and on grasses by jabbing at them with pointed bill like cattle egret, or leaping up in the air to snap at such as a flying grasshopper.

VOICE AND CALLS. A characteristic harsh frog-like croak emitted by male during his jumping display; sometimes from the ground. Also 'a short whistle-like call when frightened' (Dharmakumarsinhji). A low chuckle constantly uttered while feeding. Croak of female similar but distinctive. Another 'q' call, *peeco*, apparently meant to attract attention of male.

BREEDING. Season, chiefly July, August, and September as soon as sufficient grass cover becomes available in otherwise dry areas. Disperses to breed over vast tracts of country in years of good rainfall. No special nest. Eggs normally 4, sometimes 3 or 5, laid on the bare ground often even without any depression, in some bare patch of short grass or in crops. Colour: some shade of olive-brown, variously mottled, streaked and blotched with brown. Average size of 57 eggs 49.1 x 41.3 mm. (Baker). Incubation by hen alone; period unrecorded. On circumstantial evidence male promiscuous, like Bengal Florican, attracting individual ready-to-breed females by his well-known springing display, mating with them, and taking no further interest in raising the family. The attraction or advertisement display serves to repel rivals from a territory and attract eligible hens. It is given from a bare spot, usually some little eminence in grassland or standing crops. The cock flexes his legs and springs perpendicularly in the air to a height of two or three metres depending on the surrounding grass. At the apogee the neck is arched backwards till almost resting on the back and he utters a guttural frog-like croak. The wings are partially open level with the body and fluttering rapidly, the legs pulled in as in the sitting

358. Pheasant-tailed Jacana. *Hydrophasianus chirurgus* (Scopoli)

Tringa chirurgus Scopoli, 1786, Del. Flor. et Faun. Insubr., fasc. 2: 92

('In nova Guiana' = Luzon ex Sonnerat)

Baker, FBI No. 2032, Vol. 6: 42

Plate 36, fig. 16

LOCAL NAMES. *Piho*, *Pihya* (Hindi); *Gund kân*, *Gair koo* (Kashmir); *Surdal*, *Sakdal*, *Mitwa*, *Dal kûkra*, *Bhepi*, *Jâl manjor*, *Jâl mûyâr*, *Jâl kokra*, *Chitra billai* (Bengal, Bihar); *Lobo dak* (Santhal); *Râni didao gophita* = 'Little White Water Princess' (Cachar); *Tem pârâbâ* = Cock fowl (Manipur); *Pân kukkulâ*, *Ballal sêru*, *Vil girâvâ* (Sinhala); *Alîwa*, *Manal purâ* (Tamil); *Tâmara kôchi* (Malayalam).

SIZE. Grey Partridge. Length (excluding tail) c. 31 cm. (12 in.).

FIELD CHARACTERS. In breeding plumage a striking white and chocolate-brown rail-like marsh bird with enormous spidery toes and pointed sickle-shaped pheasant tail. Face and foreneck white; hindneck pale silky golden yellow. In flight, the large amount of white in plumage and pointed down-curved tail are diagnostic pointers. In the distance pied colour pattern, long gently curving tail and slow flapping wing-action reminiscent of Magpie (*Pica pica*). Sexes alike; female slightly larger.

In non-breeding (winter) plumage chiefly pale brown and white with a black 'necklace' on upper breast, and minus the long tail. In flight, hair-brown head and back, and white wings with black tips conspicuous.

Young (immature). No yellow on sides of neck; dark gorget broken up with white. Crown dull rufous-brown; feathers of upperparts pale-edged producing a faintly scalloped effect.

STATUS, DISTRIBUTION AND HABITAT. Resident; moving locally with conditions of flood and drought. All India (including Assam and Manipur), both Pakistans, Nepal, Ceylon. In summer normally up to c. 1500 metres in Kashmir Valley (once recorded on Vishan Sar lake, c. 3700 m.) and the outer Himalayas. A straggler taken in Gilgit (Scully, 1882, SF 10: 142), and once recorded at Patseo in Lahul, c. 3800 m. (Whistler, 1925, *Ibis*: 203). Mostly descending to the plains in winter. Affects lotus, *singara* (*Trapa*), water hyacinth (*Eichhornia*) and other floating-vegetation-covered jheels, tanks, and ponds.

Extralimital. Burma, Thailand, and eastward to S. China and Formosa, south to Malay Peninsula, Java, Cambodia, Philippine Islands.

GENERAL HABITS. Feeds in the open among the surface vegetation on large jheels as well as small village and temple tanks, sometimes submerging head completely. Trips about lightly on the floating water-lily and *singara* leaves and tangles, the enormous spreading toes functioning like snowshoes to distribute and support its weight; calmly steps on to the next leaf when the supporting one has slowly sunk down to belly level. Normally not shy; frequently seen moving about complacently on village tanks in the proximity of people noisily bathing and washing round the edge. Gregarious in winter, then often collecting in flocks of 50 to 100 birds. Non-breeding dress very obliterative when feeding amongst the surrounding dry lily pads, but black-tipped white wings flash into prominence, as in pond heron, when the bird rises. Flight feeble and rail-like, reminiscent also of lapwing, with the large feet dangling behind; seldom more than 2 or 3 metres above the surface. The purpose of the wingspur is obscure. It is apparently not used in fighting.

position. The bird then floats or parachutes down vertically to the starting-point; tail spread, legs gradually lowered for landing and often kicked forward and back as if running on air, to steady himself. A complete spring occupies 4 or 5 seconds and is soon repeated. Activity is most intense in the early mornings and late afternoons, but continues more or less throughout the day if cloudy and drizzly. While serving to safeguard his territory and attract hens, the display unfortunately renders the cock particularly vulnerable to enemies, chiefly human, and is responsible for much of the decimation of the species by poachers and vandalistic 'sportsmen'.

(For an excellent study of the courtship display, behaviour, and habits of the Lesser Florican see Dharmakumarsinhji, K. S., 1950, *J. Bom. nat. Hist. Soc.* 49: 201-16.)

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). 'An almost uniform dirty pale yellow colour with an unclosed V on the crown of the head in dingy black, and blotches, rather stripy, of black on the wing, back and sides, and about the ears; legs and beak a colour between pale blue and pale pink and on the tip of the beak a little lump of pale pearly white (Davidson quoted by Hume).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	180-204	31-38	c. 85-95	82-114 mm.
♀♀	209-248	37-42	—	—

(Baker)

Weight ♂♀ 1 lb. 2 oz. to 1 lb. 10 oz. (c. 510-740 gm.) — Hume.

COLOURS OF BARE PARTS. Iris pale yellow or brownish fawn colour. Bill: upper mandible horny brown, lower yellowish flesh. Legs and feet fleshy or dusky yellow ('old discoloured ivory' — SA).

Order CHARADRIIFORMES

Stresemann, E., 1927-34, *Aves*: 774-5 (Laro-Limicolae); Witherby *et al.*, 1940, *Handbook*, 4: 151-2

Family JACANIDAE: Jacanas

(For morphological characters see Baker, 1929, FBI 6: 39; Stresemann, E., op. cit.: 767-8; Van Tyne & Eerger, 1959, *Fundamentals of Ornithology*: 437);

Key to the Genera

	Page
A A lappet at base of bill resting against forehead (less pronounced in young birds); primaries not attenuated.....	201
B No frontal lappet; first and fourth primaries attenuated.....	198

Genus HYDROPHASIANUS Wagler

Hydrophasianus Wagler, 1832, *Isis von Oken*, col. 279. Type, by original designation, *Parra chinensis* auct. = *Tringa chirurgus* Scopoli

Bill more slender than in *Metopidius* with no lappet at base. Toes similarly elongated, but hind claw shorter. 1st and 4th primaries (as.) attenuated, the first into a barbed shaft terminating in a spatulate web, the fourth prolonged into an attenuated point. Wing furnished with a strong sharp spur at the carpal joint, or bend. Both sexes assume a nuptial plumage and are alike, but female larger.

Contains a single species.

* See Appendix

FOOD. Chiefly vegetable matter — seeds, roots, etc. Also aquatic insects and their larvae, and bivalves and other molluscs.

VOICE AND CALLS. In winter a peculiar nasal mewling *teun, teun* uttered chiefly when a flock flies off on alarm. In breeding season — 'a loud musical me-e-ou, me-e-ou or me-onp' often taken up by another bird in the vicinity. It has many shortened variants 'perhaps the commonest being a loud open kloo' (R. S. P. Bates). A third call described as uttered by the cock alone to attract the female (A. Hoffmann).

BREEDING. Season, in Kashmir from about 2nd week of May into July; in the plains during the SW. monsoon, principally June to September; in Ceylon mainly March to July, but also in January. Nest, an insignificant skimpy pad or raft of grass or weed stems freely floating or resting on partly submerged vegetation (*Hydrilla*); sometimes eggs laid directly on *singara*, water-lily, or water hyacinth (*Eichhornia*) leaves. Eggs, 4, peg-top shaped, glossy greenish bronze or rufous-brown, unmarked. Average size of 100 eggs 37.4 x 27.6 mm. (Baker). Incubation by male alone; period c. 26 days.

Contrary to accepted belief and published accounts, now ascertained that the larger female is polyandrous as in Painted Snipe (*Rostratula*). The following facts also established: Male acquires territory in rivalry with other males which female later helps to defend vigorously while her liaison with the owner lasts. Eggs laid at 24-hour intervals, in the morning. Male commences incubation from the first egg. Frequently removes the clutch to a distance maybe of several metres, when disturbed, as by observer's hide. This done by pressing egg between throat and breast and dragging or rolling it over the matted vegetation, himself walking backwards. Eggs similarly floated across any intervening narrow channels of clear water or over partly submerged mat of *Hydrilla* (confirmed and photographed by Peter Jackson). Sometimes by holding pointed end in bill and dragging egg backwards (J. S. Serrao & P. B. Shekar, 1962, *Newsletter for Birdwatchers* Vol. 2(1)). Male tends the nidifugous chicks in early stages with 'great solicitude, performing 'broken-wing' and 'rat-run' distraction displays to mislead an intruder. Downy chicks lie doggo at command often fully submerged, hidden under a floating leaf, except for the bill sticking out at an angle. He rears two, and sometimes three families in a season. How many clutches a female lays in a season here unknown; in China 7-10 clutches recorded at intervals of 9-12 days between each (Hoffmann, A., 1949, *Zoologischer Jahrbücher*, Bd. 78, Hft 4, Jena).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

For description of chick just getting out of down plumage, see Whistler, H., 1940, *JBNHS* 41: 483.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	182-242	25-29	54-59	145-325 mm.

(generally over 200 mm.)

(Baker)

Weight 10 ♂♀ 120-180 (av. 143.4) gm. — BNHS.

COLOURS OF BARE PARTS. Breeding. Iris brown. Bill slaty blue, paler at tip. Legs and feet pale bluish plumbeous. Non-breeding. Iris pale yellow. Bill basal half yellow, terminal half brown. Legs and feet dull greenish to dull plumbeous (Baker).

JAÇANAS

201

Genus METOPIDIUS Wagler

Metopidius Wagler, 1832, Isis von Oken, col. 279. Type, by subsequent designation, *Parra centa* Cuvier = *Parra indica* Latham

Head small. Bill moderately long, straight, and compressed, the culmen curved at tip; a lappet at base resting against the forehead and rounded behind. Tail short. Wing not rounded: 1st and 2nd primaries (as.) subequal and longest; a tubercular



× c. 2/3

spur on carpal joint. Toes greatly elongated: middle toe without claw longer than tarsus; hind claw excessively long. Tarsus with transverse shields in front and behind. Sexes alike in all seasons; no special nuptial plumage, but female larger than male. Contains a single species.

359. Bronzewinged Jaçana. *Metopidius indicus* (Latham)

Parra indica Latham, 1790, Index Orn. 2: 765 (India)

Baker, FBI No. 2031, Vol. 6: 40

Plate 36, fig. 18

LOCAL NAMES. *Dāl pipi*, *Jāl pipi*, *Karaiya* (Bengal); *Pipi*, *Kundai* (Bihar); *Kattai* (Purnea); *Kālo jāl mājār* (Gujarati); *Pipi* (Cachar); *Thamāñchenbi* = 'running on lotus leaves' (Manipur).

SIZE. Grey Partridge ±; length ♂ c. 28 cm. (11 in.); ♀ c. 31 cm. (12 in.).

FIELD CHARACTERS. A leggy swamp bird somewhat like a moorhen, with enormous spidery toes. Head, neck, and breast glossy black. Back and wings metallic greenish bronze. Stub tail chestnut-red. A broad white stripe from eye to nape. Sexes alike; female somewhat larger.

Young (immature). Above, crown and nape rufous-brown; a short dull white supercilium. Back more or less as in adult but paler; upper tail-coverts barred white and brown. Tail rufous with terminal black band. Below, chiefly sullied rufous-white.

STATUS, DISTRIBUTION and HABITAT. Resident; common and widely spread. All India (excepting western Punjab and western Rajasthan), east through Assam and Manipur, south through the Peninsula to Kanyakumari. Also Nepal (terai) and East Pakistan. Absent in West Pakistan and Ceylon. Affects floating-vegetation-covered jheels, and tanks in the plains and plateau country largely co-existing with 358. Does not ascend the hills.

Extralimital. Burma, Thailand, Vietnam, Cambodia, Malay Peninsula, Java, Sumatra.

GENERAL HABITS. Very similar to 358, q.v. When surprised in the open, far from cover, partially submerges itself for concealment, keeping only the bill exposed. If persistently harried, as sometimes by local shikaris, will take refuge on dry land amongst standing crops whence it will flush like Painted Snipe when walked up. Is a good diver and swimmer, but poor on the wing.

CHARADRIIFORMES

202

flying coot-like with neck extended and large feet trailing clumsily behind. After a few metres, low above the surface, re-aligns on the floating weeds to continue 'leaf trotting'.

FOOD. As in 358, chiefly vegetarian, but also insects and molluscs.

VOICE and CALLS. A short harsh cry, or grunt, given as contact note between individuals. An agonistic or aggressive shrill, wheezy, piping seek-seek-seek etc.

BREEDING. Season, June to September, commencing soon after the SW. monsoon has properly set in. Nest, a flimsy pad of a few roughly put-together grasses or weed stems, placed on matted vegetation. Eggs often laid directly on floating lotus or *singara* (*Trapa*) leaves. Eggs normally 4, very glossy and handsome, peg-top shaped, bronze-brown with an irregular network of blackish scrawls. Average size of 120 eggs 36.4 × 25.1 mm. (Baker). Female occasionally helps male by bringing a few grasses to the nest during their temporary liaison. Contrary to published accounts, and correlated with her larger size, female polyandrous with a similar breeding biology to 358 and Painted Snipe (D. N. Mathew, 1964, JBNHS 61(2): 295-302). Incubation by male alone; period not definitely determined, but certainly longer than the '14 to 16 days' presumed by Baker. Details require further study. Chicks tended entirely by male. When alarmed, one observed scurrying off over floating weeds with a newly hatched chick tucked under his wing completely hidden except for its long legs dangling, and dropping it by opening wings when safety attained (Kingsley Kefford).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂	153-177	37-41	65-68	40-52 mm.
4 ♀♀	170-184	40-45	70-72	43-51 mm.
Hind claw ♂	65-70; ♀	54-75 mm.		(SA)

Weight 10 ♂♀ (ad. & imm.) 94-210 (av. 154.6) gm. — BNHS.

COLOURS OF BARE PARTS. Iris brown. Bill greenish yellow, tinged with red at base, pure yellow at tip; frontal lappet livid red. Legs and feet dull green.

Family HAEMATOPODIDAE: Oystercatchers

Treated as a genus (*Haematopus*) of the family Charadriidae by many authors. Characters as of the genus (below). See also Van Tyne & Berger, 1959, *Fundamentals of Ornithology*: 439.

Genus HAEMATOPUS. Linnaeus

Haematopus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 152. Type, by monotypy, *Haematopus ostralegus* Linnaeus

Characters as of the family. Bill very long, compressed, slightly truncated at end. Nostril linear, narrow, placed near the base of a groove which extends about half way to tip of upper mandible. Wings long and pointed: 1st primary (as.) longest. Tarsus short, stout, and reticulated throughout. No hind toe; anterior toes short, stout, and edged laterally with a narrow membrane; slightly webbed, especially between 3rd and 4th toes.

Genus cosmopolitan; one species with two races within our limits.

OYSTERCATCHERS

203

HAEMATOPUS OSTRALEGUS Linnaeus

Key to the Subspecies

Outer web of first and occasionally second primary black; outer web of remaining primaries marked with white.....*H. o. ostralegus*
Outer web of first five or six primaries black; outer web of remaining primaries marked with white.....*H. o. osculans*

360. Oystercatcher or Sea-Pie. *Haematopus ostralegus ostralegus* Linnaeus

Haematopus Ostralegus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 152

(Europe and America = *Oland*)

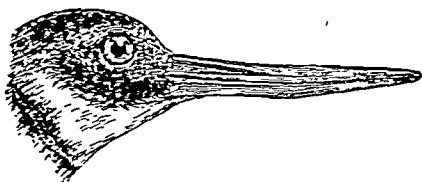
Baker, FBI No. 2110, Vol. 6: 165

Plate 39, fig. 5 and Plate 42, fig. 1

LOCAL NAMES. *Darya gajpān* (Hindi); *Terra kali ulanka* (Telugu); *Dōbāh* (Sind).

SIZE. Grey Partridge ±; length c. 42 cm. (16 in.).

FIELD CHARACTERS. A striking black and white shore bird with stoutish bare red legs, and long straight laterally compressed orange-red bill, snipe-like but blunt or truncated at tip. In flight the broad white band across the black wings, white lower back and underparts contrasting with the black head, breast, and tail are diagnostic pointers. Sexes alike.



Juvenile, × c. 2/3

Young (immature) has the black parts browner, feathers of mantle narrowly edged or scalloped with white. Centre of chin and throat whitish; a broad white patch on foreneck.

STATUS, DISTRIBUTION and HABITAT. Winter visitor mainly to the sea coasts and offshore islands. Commoner on the west coast than the east; abundant in W. Pakistan on the Makran coast and about Karachi. Ceylon (northern coasts). Has been recorded once (subspecies?) at Wular Lake, Kashmir, obviously on passage (Ward, JBNHS 17: 946), and sporadically on shingle banks of large rivers inland and fairly high up in the hills also on migration. Considerable numbers of non-breeding birds overwinter on the West Pakistan coast (Karachi, Makran). Affects sandy and rocky sea shores.

Extralimital. Breeds on the coasts of Europe, south to N. Spain. Also on the coasts of the Black and Caspian seas. Winters south to Africa.

MIGRATION. No data.

CHARADRIIFORMES

204

GENERAL HABITS. Keeps in small scattered flocks on the seashore amongst dunlins, sand plovers and other waders, running about and probing into the wet sand for food at low tide, bunching up on rocks and marking time when the water rises. Always exceedingly wild and wary. In fading light, silhouette when flying away from or towards the observer very like Whistling Teal (*Dendrocygna*).

FOOD. Largely marine molluscs; also sand worms (Annelida) and small crustaceans. The specialized bill helps to prise limpets off rocks and chisel out the contents from the shells.

VOICE and CALLS. A loud plaintive whistle or pipe repeated in varying tempo and shrillness depending on whether uttered as a contact note or alarm call. Curiously enough this whistle is also sometimes very reminiscent of the Whistling Teal's.

BREEDING. Extralimital. Season, c. May-June. Nest, a depression on the shingly seashore above high-tide mark. Eggs, 3 or 4, brownish buff spotted with black and dark grey.

MUSEUM DIAGNOSIS. For details of plumages, structure, etc. (also bionomics), see Witherby, 1940, 4: 418-21.

Some of our winter visitors possibly belong to the rather paler — more brownish less black — race *longipes* Buturlin, as suggested for Sind birds by Ticehurst. In that race bill 84-97 mm. (aver. 89.5), tarsus 47-55 mm. (aver. 50.3) in 14 adults (Vaurie, 1965, 2: 369).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	240-261	77-90	c. 48-54	99-114 mm. (Baker)

COLOURS OF BARE PARTS. Iris red or orange-red. Bill bright orange-red, paler and duller at extreme tip. Legs and feet dull brownish purple or purple-red.

361. Chinese Oystercatcher. *Haematopus ostralegus osculans* Swinhoe

Haematopus osculans Swinhoe, 1871, Proc. Zool. Soc. London: 405 (North China)

Baker, FBI No. 2111, Vol. 6: 166

LOCAL NAMES. As for 360.

SIZE. Same as 360.

FIELD CHARACTERS. Indistinguishable from 360, q.v. (see Key and Museum Diagnosis).

STATUS, DISTRIBUTION and HABITAT. Unknown except that a pair of oystercatchers once found breeding in the Khulna Sunderbans of E. Pakistan presumably belonged to this eastern race. But no specimens collected at the time and no confirmation since.

Extralimital. 'Breeds on the coasts (and probably some of the larger rivers) of NE. Asia from E. Siberia, Kamchatka and the Commander Is., south to Korea, N. China and Japan. Winters south to S. China, N. Burma and Bengal' (Peters).

GENERAL HABITS, FOOD, VOICE and CALLS. Presumably as of 360.

BREEDING. Two fresh eggs taken on 22 April (1922) on stony ground near the seashore in Khulna Sunderbans of East Pakistan, where young

PLOVERS

205

also seen the following year (Stanford, JBNHS 39: 867). The eggs — deep brownish buff spotted with black, lavender and dark grey — measured 53.6 × 39.7 and 52.5 × 40.0 mm. (Baker).

MUSEUM DIAGNOSIS. Like 360 but slightly larger and with a longer bill. The amount of white on the primaries is generally less, the first primary (as.) seldom showing any white at all on the inner web.

MEASUREMENTS. Wing ♂ ♀ 260–277 (once 284); bill (from feathers) c. 90–98 mm. (Hartert).

COLOURS OF BARE PARTS. As in 360.

Family CHARADRIIDAE: Plovers, Sandpipers, Snipe

Baker, E. C. S., 1929, FBI 6: 152–3; Witherby *et al.*, 1940, Handbook 4: 154–5 (Scolopacidae)

Key to the Subfamilies

	Page
A Toes lobed.....Phalaropinae	321
B Toes not lobed.....I	
I Bill short to medium-long, pigeon-like, never decurved or recurved, with swollen area at tip of upper mandible, contracted in middle portion.....Charadriinae	205
Bill short to very long; straight, decurved or recurved; tip of upper mandible occasionally flattened and pitted but never swollen vertically.....Scolopacinae	241

Subfamily CHARADRIINAE: Plovers

For morphological characters see Baker, *op. cit.*, 6: 167; Stresemann, E., 1927–34, Aves: 774–5, 777; Witherby, *op. cit.*

Key to the Genera

A Tail white narrowly barred with dusky except in immatures which have spots on margins of outer tail-feathers. Back spotted..... <i>Pluvialis</i>	219
B Tail white or white basally with a broad black band on the distal half and often with a narrow white terminal band..... <i>Vanellus</i>	205
C Tail-feathers grey or brown, occasionally white-tipped; outer tail-feathers white or white-tipped..... <i>Charadrius</i>	225

Genus VANELLUS Brisson

Vanellus Brisson, 1760, Orn. 1: 48; 5: 94. Type, by subsequent designation and tautonymy, *Vanellus* Brisson = *Tringa vanellus* Linnaeus

Hoplopterus Bonaparte, 1831, Giorn. Acad. Sci. Lett. Arti, Roma 49: 55. Type, by monotypy (id. 1838), *Charadrius spinosus* Linnaeus

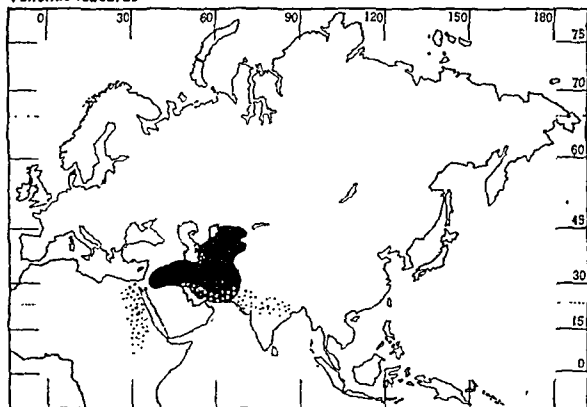
Lobivanellus 'Strickl.' = G. R. Gray, 1841, List Gen. Bds., ed. 2: 84. Type, by original designation, *L. goensis* Gmelin = *Tringa indica* Boddaert

Chettusia Bonaparte, 1841, Iconogr. Faun. Ital., Uccelli, Intr.: 12, 115. Type, by monotypy, *Charadrius gregarius* Pallas

Lobipluvia Bonaparte, 1856, Compt. Rend. Acad. Sci. Paris 43: 418. Type, by monotypy, *Charadrius bilobus* Gmelin = *Charadrius malabaricus* Boddaert

PLOVERS

207

Vanellus leucurus

■ Breeding range ■ Winter

Extralimital. Breeds on the Kighiz Steppes, Transcaspiya, parts of Syria, Iraq and Iran. Winters chiefly in NW. India; in small numbers also in Egypt and Sinai.

MIGRATION. One ringed Bharatpur 11. xii. 1969 recovered Tipdeh, Zabol, Iran (31° 01' N., 61° 29' E.) 3. iii. 1978. Passes through Quetta Valley and N. Baluchistan in large flocks on spring and autumn migration (Delme-Radcliffe, Ticehurst).

GENERAL HABITS. Gregarious; in large flocks when migrating. Usually in smaller flocks or parties of 6 to 25 birds in winter quarters, commonly in association with Redshanks and other waders. While a flock is standing inert in a marsh (resting), frequently one bird then another stretches both wings vertically upwards back to back ('flag-waving') — evidently a contact signal. Flight and behaviour similar to the Redwattled and other lapwings.

FOOD. Aquatic insects, worms, tiny freshwater shrimps and molluscs.

VOICE AND CALLS. Rather silent in winter. Calls variously described as 'a soft whistle... also a *chee-ziz* call like that of a Shikra' (Dharmakumar-sinhji); 'much more mellow than that of *Vanellus indicus*' (Fleming); 'more like that of the Lapwing [Pewit] but not so plaintive' (Meinertzhagen); a double-noted rather subdued *pi-wick* of lapwing quality (SA).

BREEDING. Extralimital; in Iraq (on the Euphrates marshes) gregariously among mixed nesting colonies of pratincoles and terns. *Season*, mid May to mid June. *Eggs*, 4, laid in shallow depressions on the edges of marshes or semi-submerged islets.

MUSEUM DIAGNOSIS. No crest; much white in wings. Tarsus with small scutellations. Hind toe small but distinct. For details of plumage see Baker, *loc. cit.*

206

CHARADRIIFORMES

Microstareops Sharpe, 1896, Cat. Bds. Brit. Mus. 24: 123 (in key), 133. Type, by monotypy, *Pluvianus cinerea* Blyth

Cf. Stresemann, E., 1934, Handbuch der Zoologie, Aves, Berlin: 777 (alternative suggestions of classification).

Delacour, J., 1951, L'Oiseau et la Rev. Fr. d'Orn. 22: 7.

Bock, W., 1958, Bull. Mus. Comp. Zool. 118(2): 57–66 (Genera of Lapwings).

Jehl, J. R., 1968, Mem. San Diego Soc. Nat. Hist., 3: 1–53.

Key to the Species

	Page
A Tail white..... <i>V. leucurus</i>	206
B Tail white basally, with a broad black band on the distal half and often with a narrow white terminal band.....I	
I Wing unicoloured..... <i>V. vanellus</i>	210
Wing with a broad wing stripe.....a	
a Hind toe present.....I	
Hind toe absent.....II	
I Wattles not present..... <i>V. gregarius</i>	210
Wattles present.....a ¹	
a ¹ Secondaries pure white..... <i>V. cinereus</i>	211
No white on secondaries..... <i>V. indicus</i>	212
II Outer tail-feathers white with wide subterminal black bar..... <i>V. spinosus</i>	216
Outer tail-feathers entirely white..... <i>V. malabaricus</i>	218

362. Whitetailed Lapwing. *Vanellus leucurus* (Lichtenstein)

Charadrius leucurus Lichtenstein, 1823, in Eversmann's Reise von Orenburg nach Buchara: 137 (Between the Kuwan and Jan Daria, Turkestan)

Baker, FBI No. 2123, Vol. 6: 183

Plate 38, fig. 14 and Plate 39, fig. 4

LOCAL NAMES. None recorded.

SIZE. Grey Partridge ±; length c. 28 cm. (11 in.).

FIELD CHARACTERS. A light brown and white plover, very like Yellow-wattled Lapwing (370) in general effect but minus the black cap and, unlike it, always seen near water. Long yellow legs. *Above* head and back pinkish brown with indistinct pale greyish white forehead and supercilia. *Below*, chin, throat and foreneck ashy grey; breast darker grey; abdomen pinkish buff; under tail-coverts rosy white. Sexes alike. In flight readily identified by its white lower back and tail, and the bold black and white bands on the wings.

Young (immature). *Above* much darker, almost blackish, the feathers broadly edged (scalloped) with rufous-brown. *Below* sullied white.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor (c. September to March). Not uncommon in West Pakistan (southern Baluchistan, Sind, Punjab) and northwestern India (Punjab, Rajasthan, Gujarat) diffusing in smaller numbers through Uttar Pradesh, northern Madhya Pradesh. N. Bihar and Nepal (terai) east to W. Bengal and E. Pakistan. Has straggled as far south as Bombay and may do so further, but Baker's record of Mysore untraceable. Affects marshy grassy edges of large jheels.

208

CHARADRIIFORMES

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	173–189	35–38	72–75	71–78 mm.
♀♀	167–186	—	—	—
	(from skull)			(SA)

Weight 20 ♂ ♀ (autumn/winter) 100–185 (av. 129.9) gni. — BNHS.

COLOURS OF BARE PARTS. Iris brown to blood red. Bill black. Legs and feet pale yellow.

363. Sociable Lapwing. *Vanellus gregarius* (Pallas)

Charadrius gregarius Pallas, 1771, Reise Russ. Reichs 1: 456 (Volga, Jaiku, and Samara)

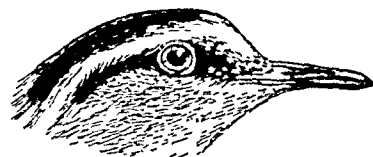
Baker, FBI No. 2122, Vol. 6: 182

Plate 38, fig. 15

LOCAL NAMES. None recorded.

SIZE. Grey Partridge ±; length c. 33 cm. (13 in.).

FIELD CHARACTERS. In winter (non-breeding plumage) as mostly seen in India (and as shown on the plate): *Above*, crown brown; forehead buffy white running backward in broad white supercilia meeting on hindneck; a brown line from lores through eye and ear-coverts bordering the supercilia



× c. 1

below. Rest of upperparts ashy grey; lower back and tail white, the latter with a black subterminal band. A good deal of white in wings (outer secondaries). *Below*, chin and throat white; breast smoky grey mottled with brown. Rest of underparts smoky white. Legs black.

In flight the distinctive head pattern, large white patch (secondaries) in the black wings, and black subterminal tail-band, are diagnostic clues.

In summer (breeding plumage) the crown and eye-stripe become black, the forehead and supercilia pure white. *Below*, throat and upper breast ashy grey; lower breast black and chestnut; abdomen and vent white.

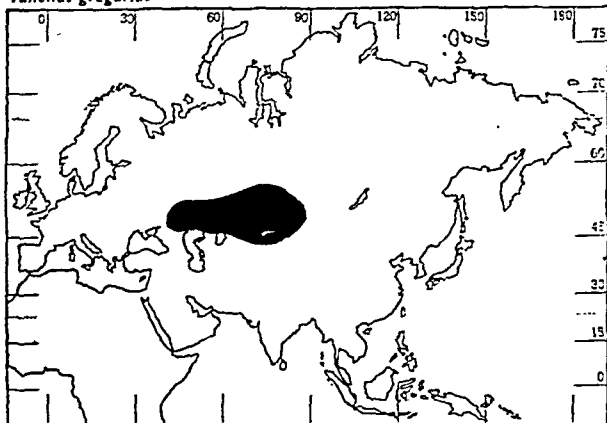
Sexes alike.

Young (immature). Like non-breeding adult but with feathers of upperparts edged with light rufous.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor, September–October to March–April. Regular and fairly common in W. Pakistan (Baluchistan, Sind, Chitral Valley), and NW. India (Kashmir, occasional) and Uttar Pradesh, diffusing east through N. Bihar, sporadically to W. Bengal. South through Rajasthan and Gujarat, erratically farther south in the Peninsula (Bombay, Ahmednagar, Ratnagiri); straggling to Kerala (Trivandrum)

PLOVERS

209

Vanellus gregarius

Breeding range

and Ceylon. Less addicted to jheels and marshes than Whitetailed Lapwing (362). Affects dry waste land in the neighbourhood of cultivation, ploughed fields and stubbles, in plains and plateau country.

Extralimital. Breeds in southern and middle Russia, Kirghiz Steppes, Transcaspiia, W. Siberia to Tomsk and Zaisan-nor. Winters in NE. Africa to Sudan, besides N. India.

MIGRATION. No ringing data. Recorded on spring (March-April) and autumn passage migration through the Kurram Valley (Rattray, Whitehead) and Gilgit (Scully).

GENERAL HABITS. Keeps in small parties of 5 or 6 or flocks of 20 to 100 or more, the latter chiefly before spring emigration when many birds have assumed the handsome breeding plumage. Actions, flight and behaviour typical of the plovers, e.g. Redwattled and Yellow-wattled Lapwings, more particularly like the Peewit (364).

FOOD. Chiefly insects such as grasshoppers and crickets, but very little specifically recorded.

VOICE AND CALLS. Also unrecorded in India, the birds being very silent in winter. According to Meinertzhagen call not at all like that of 364. A single wailing note uttered on the ground and in the air (Baker).

BREEDING. Extralimital. *Season*, mainly between mid April and mid June. *Eggs*, 4, site etc. very similar to those of the Peewit.

MUSEUM DIAGNOSIS. No crest. Wing pointed: 1st primary (as.) minute, 3rd primary longest, 2nd equally long or slightly shorter. Tarsus reticulated. Hind toe small but distinct.

For details of plumage see Baker, loc. cit.; for structure and plumage phases (also bionomics), Witherby, 1940, 4: 392-5.

PLOVERS

211

MIGRATION. No ringing data. Passes through Thal, NW. Pakistan 33°24'N., 70°36'E. (alt. c. 750 m., at the junction of Kurram and Miranzai valleys) in February (Rattray); through Gyantse (Tibet, 28°55'N., 89°38'E.) in March-April, and again in autumn (Ludlow).

GENERAL HABITS. Keeps in pairs or small scattered flocks, running about with short mincing steps, stopping now and again to pick up some titbit, tilting the body at a steep angle without flexing the legs, as typical of the plover family. Often foraging on wet meadows or grazing land in proximity of cattle. Assembles in large flocks before migration, and on passage. Normal flight rather sluggish and wobbly, with slow wing-beats, but bird capable of considerable speed when occasion demands. In nuptial display—not seen in winter quarters—male performs extravagant aerobatics, rising, falling and tumbling in the air.

FOOD. Chiefly insects, molluscs, and worms.

VOICE AND CALLS. Largely silent in winter; a rather plaintive mewing *pee-wit* uttered singly, unmistakable when once heard. Birds as noisy as Redwattled Lapwing at nesting time.

BREEDING. Extralimital. *Season* chiefly end March to end May. *Eggs*, 4, laid in scrape on bare ground in open fallows or pastures; peg-top shaped, olive-brown or drab, spotted and blotched with blackish.

MUSEUM DIAGNOSIS. Wing: in ♂ 3rd primary (as.) longest, 2nd equals 4th; in ♀ 2nd and 3rd primaries longest, 1st equals 4th. Tarsus reticulated. A small hind toe present. For details of plumage see Baker, loc. cit.; for plumage phases and structure (also bionomics), Witherby, 1940, 4: 395-403.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	220-236	23-27	44-48	108-119 mm.
		(from feathers)		(Hartert)

Weight 2 oo? 180, 200 gm. — BNHS.

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet orange-brown.

365. Greyheaded Lapwing. *Vanellus cinereus* (Blyth)

Pluvialis cinereus Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 587 (Calcutta)

Baker, FBI No. 2129, Vol. 6: 191

Plate 38, fig. 12 and Plate 39, fig. 3

LOCAL NAME. *Selarg* (Manipur).

SIZE. Grey Partridge +; length c. 37 cm. (14½ in.).

FIELD CHARACTERS. Above, entire head and neck grey; back light brown; rump, upper tail-coverts, and tail white, the last with a broad black subterminal band. Primaries black, secondaries white. Below, neck and breast ashy grey bordered by a chocolate-and-black pectoral band. Rest of underparts, including underwing, white. Sexes alike.

Young (immature) has head, neck, and breast light brown like back and no dark pectoral band.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor (September-October to end March-April). Regularly in small flocks in W. Bengal (near Calcutta); quite common in Assam, Manipur, and East Pakistan; also in Kathmandu Valley, Nepal. Occurs in N. Bihar, and stragglers recorded in Kashmir,

210

CHARADRIIFORMES

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
		(from feathers)		
♂ ♀	198-211	26-31	56-62	74-90 mm.
♀ ♀	199-212	27-30	—	—
				(Witherby)

COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet black.

364. Peewit, Lapwing or Green Plover. *Vanellus vanellus* (Linnaeus)

Tringa Vanellus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 148

(Europe, Africa. Restricted type locality, Sweden)

Baker, FBI No. 2121, Vol. 6: 180

Plate 38, fig. 9 and Plate 39, fig. 1

LOCAL NAME. *Sābāz titi* (Bengal).

SIZE. Grey Partridge; length c. 31 cm. (12 in.).

FIELD CHARACTERS. An apparently black and white plover with long slender upstanding pointed crest. Sexes alike; female's crest somewhat smaller.

Adult winter (non-breeding). Crown blackish brown; face, chin, throat and foreneck white more or less speckled with brown or black; scapulars, innermost secondaries and black breast-feathers scalloped with fulvous; rest of underparts as in summer.

Summer (breeding). Above, forehead, crown, and long crest of narrow feathers black, glossed with green; sides of head and neck white with black patches. Upperparts metallic glossy bronze-green and violet-purple; upper tail-coverts cinnamon; tail white with a broad metallic black subterminal band. Below, throat, foreneck, and breast black; rest of underparts white; under tail-coverts cinnamon.

In overhead flight the apparently pied plumage, black breast and white underparts, including underside of wings, are leading pointers. ♂ distinguishable from ♀ in air by broader rounder wings obviously correlated with his aerobatic nuptial display.

Young (immature). Above, brown narrowly scalloped with fulvous, the back and wings slightly glossed with purple, bronze, and green. Below, like adult in winter.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor: September-October to March-April. Fairly common in W. Pakistan (Baluchistan, Sind, N.W.F. Province including Chitral, Punjab) and in NW. India (including Gilgit, Ladakh, Kashmir) and Uttar Pradesh. Erratically and in small numbers east through N. Bihar, Nepal (Valley and lowlands), NEFA (Subansiri Frontier Division) to Cachar and Lakhimpur, south and east of Brahmaputra river in Assam; Manipur and E. Pakistan. A straggler to Rajasthan and probably N. Gujarat. Affects fallow land and stubbles, irrigated fields, shingly river banks, marshland bordering jheels in cultivated plains country.

Extralimital. Breeds in Europe and N. Asia east to Siberia, south to Spain, N. Italy, Transcaspiia, Turkestan, and N. China. Migratory in the northern part of its range. Winters in S. Europe, N. Africa, Asia Minor, SW. Asia, and across northern India and Burma to S. China and Japan.

212

CHARADRIIFORMES

Dehra Dun, Rajasthan (JBNHS 65: 484) and the Andaman Islands. A large proportion of our visitors are young birds without the pectoral band. Affects marshy places—the edge of jheels etc. (typical snipe ground), banks of rivers, and wet grazing grounds, ploughs and stubbles.

Extralimital. Breeds in Mongolia, China south to the Yangtse Valley, Manchuria, Korea, and Japan. Winters in S. China, E. India, Burma, Malaya and the Indochinese countries (Peters).

MIGRATION. Nothing recorded. In eastern China migrates in successions of large flocks (La Touche).

GENERAL HABITS. Gregarious; keeps in parties of 5 or 6, or flocks of up to 50 or so. Actions and behaviour typical of the lapwings, e.g. the Redwattled, with which it commonly associates.

FOOD. Mainly insects, worms, molluscs.

VOICE AND CALLS. Seldom heard in winter. 'A harsh version of the Redwattled Lapwing's call' (R. L. Fleming). 'A plaintive *chee-it, chee-it*' (Baker). 'When approached, rises with a cry of "Did all eat?"' (W. Davison).

BREEDING. Extralimital. *Season*, apparently mid May to end June. *Eggs*, 4, peg-top shaped, similar in colour and markings to those of 364. Laid in a slight depression on bare ground.

MUSEUM DIAGNOSIS. Tarsus long and slender, scutellated in front reticulated behind. A small hind toe present; also a lappet at base of bill (lores) as in *V. indicus* and *V. malabaricus*. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	228-255	35-39	c. 75-79	93-112 mm.
		(from feathers)		(Baker)

Weight 1 o? 284 gm. — BNHS.

COLOURS OF BARE PARTS. Iris red. Rim of eyelid and lappet bright yellow. Bill basal two-thirds bright yellow, terminal third black. Legs and feet bright yellow; claws black (La Touche).

VANELLUS INDICUS (Boddaert)

Key to the Subspecies

	Page
A A white band from eye to ear-coverts only..... <i>V. i. atrocyaneus</i>	215
B A white band down each side of the neck to breast.....	1
1 Larger; wing 212-240 mm..... <i>V. i. indicus</i>	212
Smaller; wing 201-209 mm..... <i>V. i. lankae</i>	214

366. Redwattled Lapwing. *Vanellus indicus indicus* (Boddaert)

Tringa India Boddaert, 1783, Table Pl. enlum.: 150 (Goa, ex Daubenton, pl. 807)

Sarcogrammus indicus eigner Laubmann, 1913, Falco 9: 30 (Sonmiani, Makran)

Baker, FBI Nos. 2125, 2126, Vol. 6: 187, 189

Cf. Ripley, S. D., 1946, *Spolia Zeylanica* 24: 203-4

Plate 38, fig. 11 and Plate 39, fig. 2

LOCAL NAMES. *Titeri*, *Titri*, *Titi*, *Titri* (Hindi); *Tātekhār* (Sind); *Halatut*, *Hata-tutu* (Kashmir); *Balighora*, *Tatāka* (Assam); *Titri* (Marathi); *Titādi* (Gujarati); *Yempha chilāna* (Telugu); *Alkati* (Tamil); *Cherkani* (Malayalam).

SIZE. Grey Partridge +; c. 33 cm. (13 in.).

FIELD CHARACTERS. A familiar leggy plover, bronze-brown above white below, with black breast, head and neck, and a crimson fleshy wattle

PLOVERS

213



x c. 1

in front of each eye. A prominent broad white band from behind eyes running down sides of neck to meet the white underparts. Producer of the well known *Did-ye-do-it?* calls. Sexes alike.

Young (immature). *Above*, black feathers of the head fringed with brown. *Below*, chin, throat and foreneck white; sides of neck

sullied white.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; migrating altitudinally in spring and autumn (e.g. in N. Baluchistan and NW. Pakistan) and spreading out widely in the monsoon on creation of requisite habitats. Both Pakistans and all India (including Assam north of Brahmaputra river) south through the Peninsula to Kanyakumari, up to c. 2000 m. in the Nilgiris and c. 1800 m. in Kashmir, Kulu etc. Nepal (terai, bhabar, and dun, to c. 1100 m. even in winter. 'Very common during monsoon in Nepal Valley' — Proud), Sikkim terai, Bhutan duars. Affects the neighbourhood of water in open country and cultivation — jheels, tanks, rivers, ditches and puddles. In the rainy season pairs very commonly seen on the grassy shoulders of motor highways.

Extralimital. Eastern Transcaspiia, Iraq, SW. Iran, S. Arabia, Afghanistan.

GENERAL HABITS. Usually keeps in pairs or trios — occasionally small loose flocks of 6 to a dozen — in open well-watered country, sometimes in grassy glades within deciduous forest with rain puddles and pig-wallows. Here often a source of great annoyance to the sportsman, spoiling his stalk by its ceaseless vigilance and frantic screaming, betraying him to the quarry. Somewhat crepuscular and nocturnal, feeding casually during the day but spending most of the time standing about drowsing on a rock amid stream or bund separating fields. Feeds more actively in the early mornings and evenings and throughout the night, especially when moonlit. Runs about with mincing steps in irregular zigzag spurts, dipping forward steeply now and again (with unflexed legs) to pick up a morsel. Flight rather slow, with deliberate flaps and often a rapid fluttering action of the wing-tips, but bird capable of remarkable speed when chasing off an intruder from proximity of its nest or young, and of astonishingly agile turns and twists and other antics when hunted with a hawk.

FOOD. Ants, beetles, caterpillars and other insects, molluscs, and a quantity of vegetable matter.

VOICE AND CALLS. The most familiar and diagnostic is a loud penetrating *Did ye do it? or Pity to do it!* shrieked either placidly or frantically, just once or twice or repeatedly, as occasion demands. Varied by *did-did-did-did*, or *káb-káb-káb-káb* and quite frenzied when accompanying the 'dive-bombing' demonstrations. Both sexes apparently have the same calls.

BREEDING. Season, principally from March to August-September, the peak periods varying locally. *Nest*, a natural depression or scrape in the

PLOVERS

215

SIZE. Grey Partridge +; c. 33 cm. (13 in.).

FIELD CHARACTERS. As of 366, q.v. For subspecies see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Ceylon. Common in the low-country Wet and Dry zones, to c. 300 m. elevation. Affects well-watered open terrain and paddyfields.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the Indian race (366).

BREEDING. Season, April to August, occasionally March and September (Phillips). *Nest*, site, and eggs as in 366.

MUSEUM DIAGNOSIS. Differs from the Indian race in being somewhat smaller,

and deeper coloured above with the gloss — especially the purple gloss — more pronounced. South Indian birds show some intergrading between the peninsular Indian and Ceylonese forms.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
4 ♂♂	211-220	35-39	73-76	105-115 mm.
3 ♀♀	208-214	34-37	68-78	101-107 mm. (Whistler)

COLOURS OF BARE PARTS. As in 366.

368. Burmese Redwattled Lapwing. *Vanellus indicus atronuchalis* (Jerdon)

Lobivanellus atronuchalis 'Blyth' = Jerdon, 1864, Bds. India 3: 648 (Burma)

Baker, FBI No. 2127, Vol. 6: 189

LOCAL NAMES. *Deo duyip* (Cachar); *Salangkak* (Manipur).

SIZE. Grey Partridge +; c. 33 cm. (13 in.).

FIELD CHARACTERS. As of 366, q.v. For subspecies see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Assam south of Brahmaputra river, Manipur, Mizo (Lushai Hills) and East Pakistan (Surma Valley, Tipperah, Chittagong). Affects well-watered open country and up to c. 600 m. elevation.

Extralimital. Burma, SW. Yunnan, Malay Peninsula and the Indo-chinese countries.

GENERAL HABITS, FOOD. Not different from the Indian race (366).

VOICE AND CALLS. Also similar but recorded as being only a trisyllabic *Did ye do?*, whence its Burmese name *telededu*.

BREEDING. Season, March to June, chiefly March-April. *Nest*, site, and eggs as in the Indian race, the last said to average somewhat darker. Average size of 48 eggs 41.5 x 29.8 mm. (Baker).

MUSEUM DIAGNOSIS. Differs from the Indian race in having the white line down side of neck restricted to a patch on and just behind the ear-coverts, leaving the whole neck black all round. The black neck is divided from the bronze-brown back by a narrow white or lilac band.

MEASUREMENTS. ♂♀ Wing 200-221 mm.; bill (from feathers) 27-32 mm. (Baker).

COLOURS OF BARE PARTS. As in 366.

214

CHARADRIIFORMES

ground sometimes lined with mud pellets or goats' droppings and paraped with bits of dry cowdung or pebbles. Sited on waste or stony land, fallow fields, dry beds of village tanks, and shingle banks or islets in rivers. Some unusual sites recorded, e.g. the flat concrete roof of a residential bungalow in New Delhi, and a heap of ballast between two railway tracks in Ghosana station yard (Rajasthan). Every time a train came in the incubating bird flew up, returning immediately the train left! (McCann, JBNHS 42: 442, photo). Eggs, 4, pyriform or peg-top shaped, variable in coloration but some shade of grey-brown or drab, blotched with blackish. Average size c. 42 x 30 mm. Incubation by both sexes; period 28-30 days. In very hot weather, on sunbaked substrate, the birds regularly wet their breast and belly feathers before taking turns on the eggs. On a high-pitched warning note, *pit*, by the partner incessantly on guard, incubating bird leaves nest and slinks off rising in the air only when some distance away to join its mate in the noisy aerial demonstrations. (For behaviour when incubating see Naik, R. M., et al., 1961, JBNHS 58: 222-30, 3 photos.)

Both eggs and downy chicks superbly camouflaged: on a subdued *pit* or *cluck* command from the parents the chicks instantly squat behind a stone or clod and lie doggo becoming completely obliterated. Immediately they receive the 'all clear' — a series of high-pitched *clucks* — they rise mechanically, as on the press of a button, and resume their feeding actively, completely unperturbed by the recent emergency! The parents also indulge in the 'broken wing' distraction manoeuvres on occasion.

MUSEUM DIAGNOSIS. In common with *V. cinereus* and *V. malabaricus*, possesses curious fleshy wattles in front of eyes. Bill of moderate length: culmen flattened at base; dertrum slightly swollen. Nostrils linear placed in grooves extending over more than half length of upper mandible. Wing long, furnished with a spur at the bend; 2nd primary (as.) longest in both sexes. Tarsus long, reticulated throughout; a small hind toe present. For details of plumage see Baker, loc. cit.; for subspecies, Key.

Chick (in down). 'Upperparts grey-brown mottled with black; behind eyes and round occiput a broad black collar, under this from below eyes, a broad white collar. Pectoral band black; chin and rest of underparts white, tinged with buff on belly and flanks' (Ticehurst).

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	217-238	34-40	65-76	108-125 mm.
♀♀	208-237	33-38	70-77	106-127 mm.
		(from skull)		(SA)

Weight 20 ♂♀ (ad. & imm.) 149-229 (av. 189.3) gm. — BNHS.

COLOURS OF BARE PARTS. Iris red-brown to red; eyelids and wattle crimson-red. Bill red or orange-red, black at tip. Legs and feet greenish yellow to bright yellow claws black.

367. Ceylon Redwattled Lapwing. *Vanellus indicus lankae* (Koelz)

Lobivanellus indicus lankae Koelz, 1939, Proc. Biol. Soc. Washington 52: 82

(Galgamuwa, Ceylon)

Baker, FBI No. 2125 (part), Vol. 6: 186

LOCAL NAMES. *Kiraluwa*, *Kirala* (Sinhala); *Alkatti* (Tamil).

216

CHARADRIIFORMES

369. Spurwinged Lapwing. *Vanellus spinosus duvaucelii* (Lesson)

Charadrius Duvaucelii Lesson, 1826, Dict. Sci. Nat., ed. Levrault, 42: 38 (Calcutta)

Charadrius centralis Wagler, 1827, Syst. Av. no. 2 (Calcutta)

Baker, FBI No. 2124, Vol. 6: 184

Plate 38, fig. 10

LOCAL NAME. *Ngahoihi* = 'fish chaser' (Manipur).

SIZE. Grey Partridge; length c. 31 cm. (12 in.).

FIELD CHARACTERS. General effect unmistakably like Redwattled Lapwing. *Above*, forehead, crown and full occipital crest black. Upperparts chiefly vinous-grey and sandy brown; upper tail-coverts and tail white, the latter black on its terminal half. Primaries and primary coverts black; central secondaries white. *Below*, chin, cheeks and throat black bordered with white; upper breast white shading into vinous-grey on sides of neck and browner grey on lower breast. Centre of abdomen black; rest of underparts white. Sexes alike.

In flight the black wings with a broad white patch or band, together with the contrasting black-and-white patterned head, throat and belly are diagnostic pointers. On ground the hunched posture with body rigid and horizontal and head and neck almost furtively sunk into the shoulders is characteristic.

Young (immature). Undescribed.

STATUS, DISTRIBUTION AND HABITAT. Resident, with some seasonal nomadic movement. East Pakistan and eastern and central India — Assam, Manipur, Bengal, Bihar, Orissa, Andhra, northern and eastern Madhya Pradesh; west in Uttar Pradesh to c. 76°E., Nepal and Sikkim (terai and bhabar and to c. 900 m. alt. in the former even in winter), Bhutan. Not Kashmir as given by Baker. Affects sandbanks and shingle beds in flowing rivers above tidal limits. Normally not at jheels or stagnant waters.

Extralimital. Eastward to SW. Yunnan and N. Vietnam, south to peninsular Thailand and S. Vietnam.

GENERAL HABITS. Normally keeps singly or in pairs; rarely parties of 3 to 6, hardly ever in large flocks. In general effect, ecology and behaviour very similar to other lapwings, especially Redwattled (366) and Peewit (364). Coloration remarkably obliterative in its native environment of dry river sand and shingle (on this colour scheme and its utilization see Hingston, JBNHS 32: 219). Flight seemingly sluggish with deliberate steady flaps, but bird capable of considerable speed on the wing, as well as of swimming and diving when occasion demands. One on a shingle bank apprehending attack by Peregrine was observed launching out in the water, swimming with ease and diving expertly at each stoop of the falcon, remaining submerged for 3 or 4 seconds, bobbing up and then diving again at the second stoop, thus baffling the marauder. The bird then swam ashore and resumed its normal activities (Livesey).

Whether the well-developed pointed spur on the wing is employed in fighting, and how it is used, remain to be shown.

FOOD. Insects, worms, crustaceans — sometimes of considerable size. Also said to take frogs and tadpoles, and 'pursue fish cut off in pools of water'. Eight stomachs examined at Pusa all contained small molluscs only, chiefly *Melania tuberculata* (Mason & Lefroy, 1912).

PLOVERS

217

VOICE and CALLS. A sharp, insistent, high-pitched *did, did, did* several times repeated as the bird rises, sometimes ending with 2 or 3 staccato notes sounding like *did-did-do-weet, did-did-do-weet*. Distantly resembling the Redwattled Lapwing's calls yet quite distinctive.

BREEDING. Season, March to June. Nest, a shallow scrape or form on an exposed sand- or shingle bank in a river — quite in the open, unprotected by stone or bush. Eggs, normally 4 sometimes only 3, very similar to those of the Redwattled Lapwing, olive- or yellowish stone colour, blotched and spotted with shades of brown and black. Average size of 100 eggs 41.1 × 29.4 mm. (Baker). Baker's statement that the female alone incubates needs confirming, as also the incubation period '22 to 24' days.

An elaborate display (nuptial?) has been described on two separate occasions by independent observers with the following sequences: Four birds standing apart on a sandbank in a river; two approach each other slowly; stoop body to horizontal and whirl or spin themselves rapidly round in several complete circles to the accompaniment of vocal clamour; draw themselves bolt upright (in position of penguin or standing man) heads thrust high, and puff out breasts showing off the black-and-white patterned underparts ostentatiously. In this strutting position run or shuffle with short quick steps side by side exactly as if 'dressing by a flank' in military jargon; at times all four birds (only 3 in one case) shuffle side by side thus, almost touching each other. Occasionally one bird bobs his body up and down and squares up to another with a threat of a blow from his wing, without any actual fight resulting. The birds chatter continuously. In one case all four birds actively engaged in the antics, in the other only 3 — the 4th (♀?) seemingly just an uninterested spectator; the latter observation made in September, after the breeding season, the former in March before its commencement (Hingston, JBNHS 32: 219; Stanford, *ibid.* 37: 223-4).

(For a fuller account of habits and breeding biology of the nominate race, see Helversen, O. v., 1963, 'Beobachtungen zur Verhalten und zur Brutbiologie des Spornkiebitzes', *Jour. für Ornithologie* 104(1): 89-96.)

MUSEUM DIAGNOSIS. No lappet on bill. Wing rounded, armed with a long curved spur on the bend or carpal joint; 2nd primary (as.) longest. Tibia bare for c. 20 mm. above joint; tarsus long, slender, reticulated throughout; no hind toe. For details of plumage see Baker, *loc. cit.*

Chick (in down). Undescribed.



Wing spur, × c. 1

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	185-205	26-28	c. 64-67	88-94 mm.
	(from feathers)			(Baker)

Weight 3 ♂♂ 164-185, 1 ♀ 143 gm. — BNHS.

Bill (from skull) c. 34-36 mm. — Biswas, SA.

There is no difference in the measurements of the sexes.

PLOVERS

219

or *kankar* (mud pellets). Eggs, 4, of the normal peg-top shape of plovers' eggs, usually arranged in nest with pointed ends inward to occupy least space. Colour, buff to olive-stone, irregularly blotched with dark brown and purplish grey. Average size of 200 eggs 36.4 × 26.9 mm. (Baker). An erythristic type of egg often found which when laid on red laterite soil (as usual but not invariable), proves adaptively coloured in a high degree. Both eggs and downy chicks superbly camouflaged on the bare ground — the latter buffy or fawn-grey, disruptively stippled with black and rufous. A broad white collar on hindneck further disrupts the pattern in an astonishing way, but once spotted, this same feature becomes conspicuous enough thereafter to betray the chick 'freezing' in the open every time. Both sexes share in incubation; period not recorded. As in Redwattled Lapwing the birds regularly wet their belly feathers in very hot weather before taking turns on the eggs. Water carried thus even after hatching of the first chicks evidently for quenching their thirst; possibly also to small chicks after they wander away from the nest. (For observations on incubatory adaptations in this species see Jayakar, S. D. & Spurway, H., 1955, *Zool. Jahrb., Abt. allgemeine Zool. u. Physiol.*: 53-72.)

MUSEUM DIAGNOSIS. Bill slender than in *Vanellus indicus* (366). Tarsus long and slender with transverse shields in front instead of reticulations throughout. No hind toe. 2nd primary (as.) generally longest in both sexes; 1st and 3rd subequal.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	186-205	26-29	60-65	72-84 mm.
♀♀	181-205	28-30	57-62	71-80 mm.
	(from skull)			(SA, HW)

Weight 2 oo? 108, 109 gm. — BNHS.

There is a clinal increase in size from south to north but no difference in coloration.

COLOURS OF BARE PARTS. Iris white to silver-grey or pale lemon-yellow. Bill black, yellow or greenish yellow at base and gape. Legs and feet bright yellow.

Genus *PLUVIALIS* Brisson

Pluvialis Brisson, 1760, Orn. 1: 46; 5: 42. Type, by tautonymy, *Pluvialis aurea*

Brisson = *Charadrius pluvialis* Linnaeus

Squatrola Curvier, 1817 (1816), Règne Anim. 1: 467. Type, by tautonymy, *Tringa squatarola* Linnaeus

Wings long and pointed: first primary (as.) longest. Tail short and rounded. Tarsus covered with hexagonal scales all round; outer and middle toes connected by a small web at their base. Sexes alike but with a distinct breeding plumage sometimes partially seen whilst the birds with us. A small hind toe present in *P. squatarola*; absent in *P. apricaria* and *P. dominica*.

Genus more or less Holarctic.

Key to the Species

		Page
A	Axillaries black.....	<i>P. squatarola</i> 220
B	Axillaries white.....	<i>P. apricaria</i> 221
C	Axillaries grey.....	<i>P. dominica</i> 222

218

CHARADRIIFORMES

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet horny brown or reddish black.

370. Yellow-wattled Lapwing. *Vanellus malabaricus* (Boddaert)

Charadrius malabaricus Boddaert, 1783, Table Pl. enlum.: 53

(Malabar Coast, ex Daubenton, pl. 880)

Baker, FBI No. 2128, Vol. 6: 190

Plate 38, fig. 13

LOCAL NAMES. *Zirdi* (Hindi); *Jithiri* (W. Pakistan); *Laori* (Mhow, M.P.); *Chilawa* (Telugu); *Alkatti* (Tamil); *Marjakkanni* (Malayalam); *Kiralawa*, *Kiralā* (Sinhala). **SIZE.** Grey Partridge —; c. 27 cm. (10½ in.).

FIELD CHARACTERS. A leggy sandy brown plover with white belly, black cap, bright yellow lappets of skin above and in front of eyes and bare yellow legs. In flight a white bar (secondaries and greater coverts) on the black wings conspicuous. Above, crown of head ('skull-cap') silky black, surrounded by a thin white line. Upperparts sandy brown; tail white, with a broad black terminal band. Below, chin and throat black; breast sandy brown; rest of underparts white separated from breast by a thin black line. Sexes alike.

Young (immature). Above, pale sandy brown narrowly barred with rather darker brown. Below, chin whitish; throat and upper breast with traces of darker brown marks.

STATUS, DISTRIBUTION and HABITAT. Resident, with some local migratory or nomadic movement away from wetter areas in monsoon; thus appearing in many parts only as a winter (dry-season) visitor. From cis-Indus lower Sind in West Pakistan eastward through N. India to W. Bengal and E. Pakistan. Nepal Valley (occasional). Southward throughout the Peninsula; Ceylon (low-country Dry zone). Affects barren waste land, stubbles, and fallow fields in drier biotope than Redwattled Lapwing. Much less dependent on proximity of water; even near jheels keeps to a higher zone away from muddy shores.

GENERAL HABITS. Very similar to those of the Redwattled Lapwing (366) except that it frequents drier facies and is less dependent on the proximity of water: sometimes the two species occur side by side. Usually met with in pairs, only occasionally in small parties of 5 or 6. On the whole much less noisy and demonstrative than Redwattled. Under excitement the black cap sometimes stands up on the crown like the long erect pile of a silken carpet, reminiscent of a miniature steep-sided tableland!

FOOD. Chiefly insects — grasshoppers, beetles, etc.

VOICE and CALLS. Not like Redwattled Lapwing's as stated by Baker but a plaintive long-drawn *ti-ee, ti-ee* punctuated by a high-pitched, quick-repeated *twit-twit-twit*. Uttered chiefly when nest or chicks approached, the parents circling agitatedly overhead, diving at and making as if to strike the intruder.

BREEDING. Season, over most of its range March-April to July; occasionally (as in Ceylon) to August. Nest, an unlined shallow scrape on dry open sunbaked fallow- or waste land, sometimes encircled by a parapet of pebbles

220

CHARADRIIFORMES

371. Blackbellied or Grey Plover. *Pluvialis squatarola* (Linnaeus)

Tringa Squatarola Linnaeus, 1758, Syst. Nat., ed. 10, 1: 149 (in Europa = Sweden)

Charadrius hypomelus Pallas, 1776, Reise Russ. Reichs 3: 699 ('Colit paludes borealis orae'). New name for *Charadrius helvetica* Linnaeus

Cf. Delacour, J., 1951, op. cit.: 6

Baker, FBI No. 2102, Vol. 6: 156

Plate 38, fig. 6 and Plate 44, fig. 1

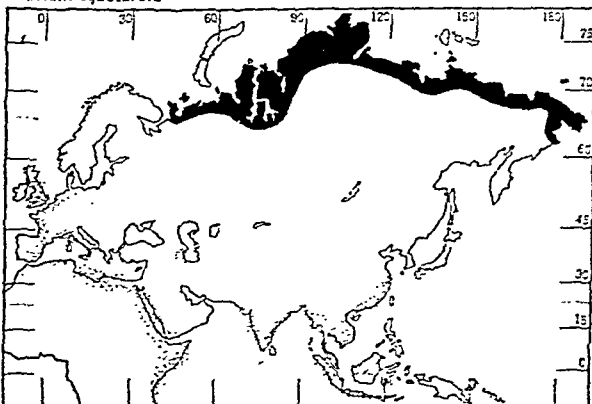
LOCAL NAME. *Bādā bātēn* (Hindi, Bengali).

SIZE. Grey Partridge; length c. 31 cm. (12 in.).

FIELD CHARACTERS. Winter (non-breeding plumage, as commonly seen in India). Above, forehead and lores white speckled with black; sides of head and neck white streaked with brown. Rump, upper tail-coverts and tail white narrowly barred with brown. Rest of upperparts dark brown conspicuously scalloped with pale brownish grey. Below, foreneck, breast and flanks streaked and spotted with brown; rest of underparts white. Sexes alike.

Summer (breeding plumage). Above, black profusely barred and spangled with silvery grey or pearly white. Below, from chin to middle of abdomen black; lower abdomen and under tail-coverts white. Sexes alike. In flight a large black oval patch (axillaries) under the wing (armpit), the whitish rump and tail and whitish wing-bar are conspicuous and diagnostic in both winter and summer plumages.

STATUS, DISTRIBUTION and HABITAT. Winter visitor chiefly to the seaboard — Pakistan (Makran, Sind), Kutch, Saurashtra, down the western side of the Peninsula and up the eastern coast. Ceylon (commoner along the NW coast); Andaman, Nicobar, Laccadive and Maldive Islands. Less commonly to inland waters — erratically or as a straggler — mostly on migration passage

Pluvialis squatarola

■ Breeding range ▨ Winter

PLOVERS

221

in autumn and spring. Recorded thus in Kashmir, Uttar Pradesh, Bihar, Nepal, Assam, Rajasthan, Madhya Pradesh and Deccan. Doubtless also occurs inland elsewhere. Affects sandy seashore between the tidemarks, and mudflats by lagoons, estuaries and tidal creeks.

Extralimital. Breeds on the Arctic tundra of Europe and Asia from the Kanin Peninsula to E. Siberia; Kolguev, Great Lyakov and Wrangel Is. (also in Arctic N. America). In the Old World migrates south through Europe and Asia to winter quarters in Africa, Madagascar, India, Burma, Thailand, Malaya, etc.

MIGRATION. No ringing data. Arrives on the Sind coast (Karachi harbour) in early August; leaves by end April, earlier than most waders. Latest date in two successive years 6 May (Ticehurst). Small numbers in non-breeding plumage stay behind and may be seen in the winter quarters in all months. They moult into the non-breeding dress again in autumn.

GENERAL HABITS. Gregarious. Sometimes seen in very large flocks; more commonly of 20 to 30 birds. Usually pairs or parties of 5 or 6 mixed with redshanks, dunlins, and other waders. Keeps more to the open sandy seashore and tidal mudflats than Golden Plover, which prefers marshy meadows slightly above this zone. Occasionally seen at freshwater pools not far from tidal influence. Actions on ground typical — running about in short spurts with mincing steps, dipping forward body obliquely to pick up food, and so on. Flight very swift with much agile turning, twisting and banking in unison, as characteristic of the gregarious plovers. Always excessively wary and difficult to approach. Is good eating and a coveted sporting bird.

FOOD. Almost entirely animal: insects, tiny molluscs and crustaceans, worms, etc. Occasionally seeds of marsh plants.

VOICE AND CALLS. A shrill musical pipe not unlike the Golden Plover's, constantly uttered in flight; occasionally while feeding. Alarm note a double whistle repeated 2 or 3 times at intervals of a couple of seconds.

BREEDING. Extralimital. Normal clutch 4 eggs laid in a depression in the tundra moss, June-July.

MUSEUM DIAGNOSIS. Unlike Golden Plover possesses a small hind toe and claw. Nostrils linear placed fairly close to base of bill in a rather deep, broad groove. For description of plumage see Baker, loc. cit.; for further details of morphology (also bionomics), Witherby, 1940, 4: 377-81.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	182-202	27-32	43-50	69-82 mm.
♀♀	186-202	27-31	—	—
	(from feathers)			(Witherby)

Weight 7 oo? (winter) 138-188 (av. 164) gm. — BNHS.

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet dusky grey.

372. Golden Plover. *Pluvialis apricaria apricaria* (Linnaeus)

Charadrius apricarius Linnaeus, 1758, Syst. Nat., ed. 10, 1: 150 ('Oelandia, Canada' restricted type locality, Lapland ex Fn. Svec., where based on a Rudebeck drawing)

Cf. Lönnberg, E., 1931, *Ibis* 306-7.

Baker, FBI No. 2119, Vol. 6: 176

Plate 44, fig. 5

LOCAL NAME. *Chhōla bātān* (Hindi).

PLOVERS

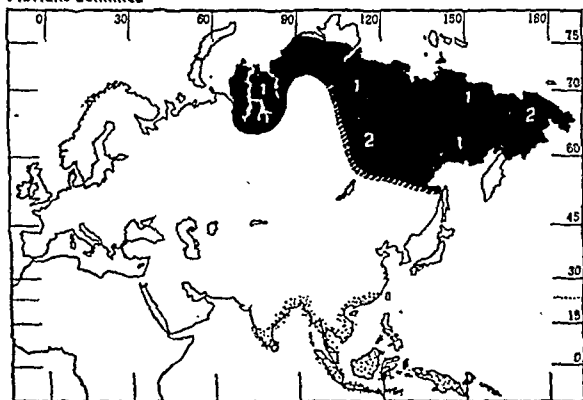
223

In flight the very narrow and pointed wings and fanned-out tail (as in a pigeon) are suggestive pointers. Smaller size, absence of white wing-bar, and smoky grey underwing and axillaries (v. white underwing and black axillaries) distinguish it from Grey Plover; from Golden Plover (372) by colour of underwing and axillaries, which in that species are pure white.

Summer (breeding). Above, forehead white running back in a broad band over the eyes and down sides of neck and breast. Rest of upperparts blackish brown spangled with white and golden yellow. Below, from throat to vent black.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor, chiefly September-October to April. Most abundant in Assam (N. Cachar), Manipur, East Pakistan and eastern India (West Bengal, N. Bihar), more thinly diffused westward to West Pakistan (Sind, N.W.F. Province) and southward through the Peninsula to Mysore, Madras, and Kerala. Nepal (passage migrant?); Ceylon (regular and abundant in the low-country Wet and Dry zones,

Pluvialis dominica



■ Breeding range ▨ Winter 1 *P. d. fulva* (373).
2 *P. d. dominica* (RE).

wandering up to c. 1300 m. in the hills); Andaman, Nicobar, Laccadive and Maldiva islands. Affects muddy shores of jheels and coastal lagoons, ploughed, freshly sown and partially inundated fields, wet grazing grounds and maidans, tidal mudflats, etc.

Extralimital. Breeds in N. Siberia from the Yalmal Peninsula to the Yenisey river (overlapping the range of *P. a. apricaria*), east to W. Alaska, south in E. Siberia to the Stanovoy Mountains and Kamchatka. Winters in India, Burma, Thailand, Malaysia, Indochinese countries, S. China; also in Oceania, Australia, and Hawaii Is.; straggles west to E. Africa and east to the Pacific coast of N. America.

222

CHARADRIIFORMES

SIZE. Grey Partridge —; length c. 27 cm. (10½ in.).

FIELD CHARACTERS. Similar to Grey Plover (371).

Winter (non-breeding). Like the commoner Eastern Golden Plover (373), q.v., also without a white wing-bar, but with brighter black and gold-spangled upperparts. In flight the pure white underwing and axillaries distinguish it from the above which has them greyish brown and from Grey Plover (371) in which the underwing is white and axillaries black. Seen alike in all plumages.

Summer (breeding). Brightly gold-spangled above, black below. More or less as Eastern Golden Plover (373) and doubtfully distinguishable from it except in flight, again by the pure white v. sooty grey underwing and axillaries.

STATUS, DISTRIBUTION AND HABITAT. Winter vagrant. Singly or in small flocks mixed up with Eastern Golden Plover and other waders. Odd specimens identified from West Pakistan (Baluchistan and Sind — Gwadar on Makran coast, Karachi and Schwan) and from Uttar Pradesh (Lucknow), and Assam (Dibrugarh). Doubtless sometimes overlooked in sportsmen's bags of Golden Plover. Affects muddy shores of jheels, wet pastures, and grassy maidans.

Extralimital. Breeds in Arctic Europe and Asia from Scandinavia to the Yenisey river, south to Latvia and W. Siberia. Winters chiefly in the Mediterranean countries, straggling widely.

GENERAL HABITS AND FOOD. As in 373.

VOICE AND CALLS. A mournful but not unpleasant musical disyllabic whistle *loo-ee* constantly repeated, chiefly on the wing. Said to be shriller than of Eastern Golden Plover.

BREEDING. Extralimital. Similar to 373.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.; for details of plumage phases and morphology (also bionomics), Witherby, 1940, 4: 364-9.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	188-192	22-25	38-41	60-76 mm.
♀♀	180-191	21-25	—	—
				(Witherby)

COLOURS OF BARE PARTS. Iris brown. Bill, legs, and feet black.

373. Eastern Golden Plover. *Pluvialis dominica fulva* (Gmelin)

Charadrius fulvus Gmelin, 1789, Syst. Nat., 1(2): 687 (Tahiti)

Baker, FBI No. 2120, Vol. 6: 178

Plate 38, fig. 7 and Plate 44, fig. 7

LOCAL NAMES. *Chhōla bātān* (Hindi); *Sona bātān* (Bengal); *Olyiyā, Rana watanā* (Sinhala); *Kōtān* (Tamil); *Manal kōzhi* (Malayalam); *Nong-gāng* (Manipuri).

SIZE. Grey Partridge —; length c. 24 cm. (9½ in.).

FIELD CHARACTERS. A typical plover with the thick rounded head and short pigeon-like bill, swollen at base.

Winter (non-breeding). Above, mottled brown, white, and golden yellow. Below, whitish, the breast mottled with brown, grey, and yellow.

224

CHARADRIIFORMES

MIGRATION. No ringing data. Little known beyond that the vanguard already arrives in the first half of August at places as distant from one another as Assam, Ceylon, and the Nicobar islands; mostly young birds of the year accompanied by a few adults in remnants of the breeding plumage. The species is well established over most of its winter range by mid-September, though Ludlow found it still on migration passage on the marshy flats of the Tsangpo river in SE. Tibet and around Lhasa at the end of September (*Ibis* 1944: 386; 1950: 43), and Scully in the Nepal Valley in September-October (SF 1880, 8: 351). Thus autumn migration is apparently a long-drawn process. Return emigration commences by mid-April, but small numbers in partial summer dress commonly linger on till end May or later — a party of 4 in full breeding plumage observed in the Bombay neighbourhood on 17 July (Sálim Ali). Odd birds in non-breeding plumage stay behind all year. Known to be one of the world's longest distance non-stop migrants, flying continuously over more than 3200 km. of the open ocean between the Aleutian islands and Hawaii in an estimated period of 35 hours under favourable weather conditions.

GENERAL HABITS. Gregarious. Usually in flocks of 20 to 50 by itself or in association with other waders. Larger close-packed flocks of several hundred strong not uncommon in eastern India, especially in autumn and spring. Excessively wary and difficult to approach, a feeding flock usually posting sentries at its periphery who give the alarm long before the birds can be approached within gunshot. The flock rises *en masse* almost simultaneously, flying fairly low and at great speed, turning, twisting, and banking in the air in regimented unison: On touching down after a flight the bird suddenly closes its wings and comes to a dead stop, assuming an erect stance. Though so extremely cunning and wide awake on the ground the birds are curiously simple when on the wing. When driven by beaters will often fly past or over an unconcealed gunner with little suspicion till bitter experience has proved their folly. They are good eating and rank high as sporting birds.

FOOD. Grasshoppers, beetles and other insects, tiny molluscs, crustaceans, and worms. Possibly berries and seeds of marsh plants as on its breeding grounds.

VOICE AND CALLS. The only calls commonly heard in winter are a clear single whistle *teeh*, or a high-pitched disyllabic *tee-ee* or *tee-tew*, much richer than the Greenshank's.

BREEDING. Extralimital. Similar to 373.

MUSEUM DIAGNOSIS. Axillaries greyish brown as against pure white in *P. apricaria*. For description of plumage see Baker, loc. cit.; for details of plumage phases and morphology (also bionomics), Witherby, 1940, 4: 374-6.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	165-174	21-27	39-46	59-64 mm.
♀♀	158-175	22-26	—	—
		(from feathers)		(Witherby)

Weight 28 ♂ & ♀ (winter) 86-118 (av. 103) gm. — BNHS.

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet slaty grey

PLOVERS

225

Genus CHARADRIUS Linnaeus

haradrius Linnaeus, 1758, Syst. Nat., ed. 10, 1: 150. Type, by tautonymy, *radrius hiaticula* Linnaeus
irrepidesmus Bonaparte, 1856, Compt. Rend. Acad. Sci. Paris 43: 417. Type, by tautonymy, *Charadrius pyrrhoroax* 'Temminck' = Gould = *Charadrius cirrepeidesmus* glar = *Charadrius atrifrons* Wagler
rugopolis Bonaparte, 1856, Compt. Rend. Acad. Sci. Paris 43: 417. Type, by tautonymy, *Charadrius nigrifrons* Cuvier = *Charadrius leucopolis* Wagler = *Charadrius inatus* Vieillot

Elsey Mathews, 1913, Bds. Austr. 3: 125, 135. Type, by original designation, *radrius melanops* Vieillot, nec *Elsey* Grandidier, 1867

Elugornis Mathews, 1914, Austr. Av. Rec. 2: 87. New name for *Elsey* Mathews, occupied

Eupoda J. F. Brandt, 1845, in Tchibatchev's Voy. Sci. Altai Orient.: 444. Type, by monotypy, *Charadrius asiaticus* Pallas

Characters as for the Family. For references see p. 205.

Cf. Nielsen, B. P., 1971, *Ornis Scand.* 2: 137-42 (Relationships of Asiatic Plovers).

Key to the Species

	Page
A white band behind neck.....	1
No white band behind neck.....	2
1 Breast band incomplete.....	a
Breast band complete.....	b
a Cap reddish brown.....	<i>C. alexandrinus</i> (breeding male) 235
Cap greyish brown.....	<i>C. alexandrinus</i> 235
b Scapulars chestnut-red.....	<i>C. melanops</i> (ad.) 227
Scapulars paler with some chestnut distributed over wing-coverts.....	<i>C. melanops</i> (imm.) 227
Neither of these.....	I
I Outer tail-feathers about 12 mm. shorter than inner.....	<i>C. placidus</i> 237
Outer tail-feathers equal to or only slightly shorter than inner.....	a ¹
a ¹ White at base of outer web of innermost primaries.....	<i>C. hiaticula</i> 230
No white at base.....	<i>C. dubius</i> 231
2 Upper breast chestnut.....	c
Upper breast white, buffy, or ringed with complete or incomplete band.....	d
c Lores white.....	<i>C. asiaticus</i> (breeding male) 228
Lores black.....	II
II Bill long (above 20 mm.).....	<i>C. leschenaultii</i> (breeding male) 226
Bill short (less than 20 mm.).....	<i>C. mongolus</i> (breeding male) 238
d Rump and tail concolorous.....	<i>C. asiaticus</i> 228
Rump whitish, tail dark.....	III
III Bill long (above 20 mm.).....	<i>C. leschenaultii</i> 226
Bill short (below 20 mm.).....	<i>C. mongolus</i> 238

PLOVERS

227

N. Baluchistan (Quetta, Chagai), Nepal, Rajasthan (Jodhpur, Sambhar Lake). Some non-breeding birds stay back all summer. Affects sandy sea beaches between the tidemarks, mud flats, salt pans, and estuaries.

Extralimital. Breeds on the Kirghiz Steppes and in NW. Mongolia, putatively across Asia from Transcaspiya to Korea, south to Iran and possibly to the Red Sea. Winters on the coasts of southern Asia south of Turkestan and Korea, to S. Africa, India, Burma, Thailand, Malaysia and Australia. (For details of range see Vaurie, C., 1965, *Bds. Pal. Fauna* 2: 381.)

MIGRATION. No ringing data. Arrives on the coasts of W. Pakistan and NW. India in early August, largely in worn breeding dress; departs chiefly in April-May (some as late as June) when most adults are again in freshly moulted partial or complete breeding dress, and very fat. A few non-breeding individuals remain in the winter quarters throughout the year without any trace of breeding plumage or migratory fat.

GENERAL HABITS. A truly maritime species. Gregarious; in small parties or large flocks usually in association with Lesser Sand Plovers, dunlins, and other waders. Behaviour typical of the family and very like the commoner Lesser Sand Plover (384), q.v.

FOOD. Small crabs, marine worms, insects. Among the last the beetle *Sphenoptera aenea* (Buprestidae) has been identified.

VOICE AND CALLS. Very silent in winter. Except for a low *trrrt* when flying off, nothing recorded.

BREEDING. Extralimital. Apparently similar to Lesser Sand Plover.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit. In non-breeding and immature plumage could be confused with *Charadrius hiaticula* (378), but its longer tarsus (dusky greenish or orange-yellow) and longer bill will distinguish it at all times.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
20 ♂♀	134-150	24-27	35-38	48-58 mm.
		(from feathers)		(Ticehurst, SA)

Weight 8 ♂♀ (winter) 65-84 gm. — BNHS.

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet dusky greenish (sometimes almost sage-green) to olive-slate colour.

375. Australian Blackfronted Plover. *Charadrius melanops* Vieillot

Charadrius melanops Vieillot, 1818, Nouv. Dict. Hist. Nat. 27: 139

('Terres Australes' = New South Wales *apud* Mathews)

Omitted in Baker

SIZE. Lesser Sand Plover (384) —; length c. 16-17 cm. (6-6½ in.).

FIELD CHARACTERS. The distinctive black and white patterning on the head, very different from the Ring Plover group, and prominent maroon-chestnut scapulars should be diagnostic. Sexes alike. (For description of plumage see Museum Diagnosis, below.)

STATUS, DISTRIBUTION AND HABITAT. Vagrant. A single specimen collected by Dr T. C. Jerdon at Pulicat Lake near Madras in June (i.e. during the austral winter). Breeds in Australia and Tasmania where it frequents muddy river banks and shores of lakes and inlets.

226

CHARADRIIFORMES

374. Large Sand Plover. *Charadrius leschenaultii* Lesson

Charadrius Leschenaultii Lesson, 1826, Dict. Sci. Nat., ed. Levrault, 42: 36

(Pondicherry, India)

Baker, FBI No. 2118, Vol. 6: 175

Plate 40, fig. 6

LOCAL NAMES. None recorded.

SIZE. Grey Partridge —; length c. 22 cm. (8½ in.).

FIELD CHARACTERS. Winter (non-breeding). *Above*, forehead and supercilia fulvous-white, with a broad brown band from lores under eye to ear-coverts. Rest of upperparts ashy brown. *Below* white, with a pale brown band across breast generally broken in the middle.

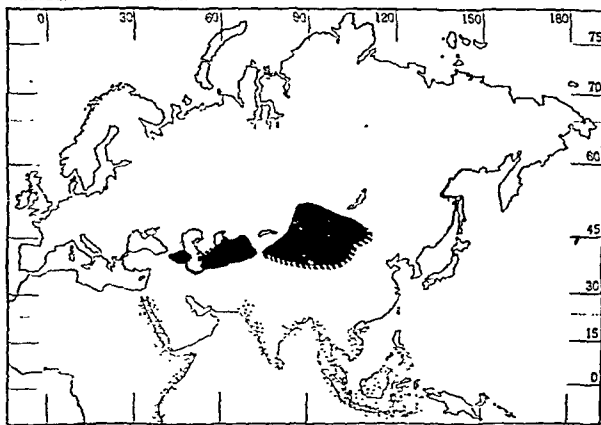
In flight a narrow whitish bar on the pointed wings, and white-tipped tail-feathers noticeable.

Summer (breeding). *Above*, crown, hindneck and sides of neck rufous; no pale supercilia; forehead black with a white spot on each side; a black patch below eye thinning to ear-coverts. *Below* white, with a broad rufous band across upper breast continuous with sides of neck. Female. Black on head replaced with blackish speckling. Chestnut parts very pale.

Sexes alike in winter.

Young (immature). Like adult in winter plumage, but with faint buff edges to the upperparts and pale edges to wing-coverts.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor to the seaboard of West Pakistan (Makran, Sind), India (Gujarat, Maharashtra, Kerala,

Charadrius leschenaultii

■ Breeding range ■ Winter

Madras, Andhra, Orissa, W. Bengal), and East Pakistan. Also Ceylon, Maldiva, Andaman, and Nicobar islands. Except perhaps in W. Pakistan, less abundant than Lesser Sand Plover (384) with which it is usually associated. Rare inland, and apparently only on migration passage: recorded in

228

CHARADRIIFORMES

MUSEUM DIAGNOSIS. *Above*. Crown brown; forehead and a stripe commencing at eye and passing over ear-coverts round hindneck black. A conspicuous white stripe over eyes continuing round hindneck separating the black band from crown. Back and wings (tertiaries) brown; scapulars maroon-chestnut; greater coverts white-tipped forming an obscure band across wing; primaries black. Middle pair of tail-feathers brown at base black at tip: next three pairs white at base passing into blackish brown and largely white-tipped. Remaining rectrices entirely white. *Below*, a broad black band across breast, starting from the black ear-coverts, encroaching somewhat towards abdomen in its middle. Throat, abdomen, and under tail-coverts white. (After Gould, *Birds of Australia*.)

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
		(from feathers)		
♂♂	110-112	15-17	23-25	53 mm.
♀♀	c. 109	—	—	—
				(SDR)

COLOURS OF BARE PARTS. Iris dark brown; eyelids bright red. Legs and feet pale fleshy to orange-flesh.

CHARADRIUS ASIATICUS Pallas

Key to the Subspecies

- Smaller; wing under 152 mm.; axillaries white.....*C. a. asiaticus*
 Larger; wing over 152 mm.; axillaries light brown.....*C. a. nerodius*

376. Caspian Sand Plover. *Charadrius asiaticus asiaticus* Pallas

Charadrius asiaticus Pallas, 1773, Reise Russ. Reichs 2: 715

(Salt Lakes of the South Tartar steppes)

Baker, FBI No. 2104, Vol. 6: 158

Plate 40, fig. 7

LOCAL NAMES. None recorded.

SIZE. Grey Quail ±; length c. 19 cm. (7½ in.).

FIELD CHARACTERS. Winter (non-breeding). Difficult to tell from Lesser Sand Plover (384) of the same size, but when together should be noticeable as somewhat higher on the legs. *Above*, forehead, supercilia, lores, and cheeks buffy white. A brown patch behind eye to ear-coverts. Back and upperparts brown. Tail-feathers brown, darker near end and tipped white. *Below*, chin and throat buffy white continuing from cheeks; foreneck and breast brown; rest of underparts white. Underwing mixed brown and white; axillaries pure white. Sexes alike.

Summer (breeding). Foreneck and upper breast chestnut, separated from white lower breast and abdomen by a black band.

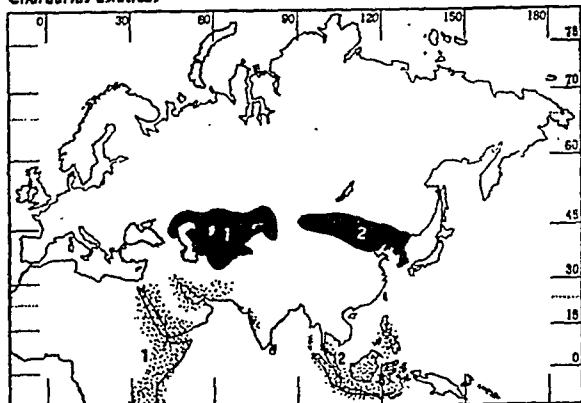
Young (immature). Upperparts narrowly scalloped with dull rufous.

STATUS, DISTRIBUTION AND HABITAT. Vagrant. A single specimen shot near Ratnagiri on the west coast in c. 1880, another in Ceylon in February 1951, and a pair in the Maldiva Is. in November 1958 constitute the only authentic records for our area. Sight-recorded in Ceylon (Norris, C. E., 1964, *Loris* 10: 119). Possibly less rare but overlooked. Affects sea coast and mudflats, but said to prefer grassy plains inland.

PLOVERS

229

Charadrius asiaticus



■ Breeding range ▨ Winter
1 *C. a. asiaticus* (376).
2 *C. a. veredus* (377).

Extralimital. Breeds from the lower Volga in SE. Russia to Dzungaria south to E. Iran and the Tian Shans. Migrates through Iran, Arabia and eastern Africa; winters chiefly in S. Africa — Peters.

GENERAL HABITS AND FOOD. Unrecorded in India; presumably as of the Lesser Sand Plover.

VOICE AND CALLS. 'A plaintive treble whistle' (Baker). 'A whistling ku-wit' (Meinertzhagen).

MUSEUM DIAGNOSIS. Distinguished from Lesser Sand Plover (384) by its longer tarsus. Shafts of all primaries usually white. For details of plumages see Baker, loc. cit.; for plumage phases and morphology (also bionomics), Witherby, 1940, 4: 381-3.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	141-155	19-23	37-41	49-60 mm.
♀♀	140-150	20-23	—	—
				(Witherby)

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet dusky olive.

377. **Eastern Sand Plover.** *Charadrius asiaticus veredus* Gould

Charadrius veredus Gould, 1848, Proc. Zool. Soc. London: 38
(Northern Australia)

Baker, FBI No. 2105, Vol. 6: 159

LOCAL NAMES. None recorded.

SIZE. Grey Quail +; length c. 24 cm. (9½ in.).

PLOVERS

231

line above black forecrown-band, and orange-yellow (v. dusky-olive or greenish yellow) legs; in flight by presence of a narrow white wing-bar (lacking in 380). Sexes alike.

Young (immature) doubtfully possible to tell in the field from young 380.

STATUS, DISTRIBUTION AND HABITAT. Straggler or very rare winter visitor; possibly sometimes confused by observers with Little Ringed Plover, and in immature plumage with Lesser Sand Plover. So far recorded with specimens only from Gilgit (1881, SF 9: 359), Sultanpur near Delhi (1879, SF 8: 197), and Maldiv Islands (1958, JBNHS 60: 571). Authentically sight-recorded: Karachi harbour (C. B. Ticchurst, *Ibis* 1923: 655), Jaffna Peninsula, Ceylon (G. M. Henry, 1944, *Loris* 3: 132).

Extralimital. 'Breeds on the Arctic tundras of northern Scandinavia, Finland, N. Russia and N. Siberia to the Chuckchi Peninsula. Winters chiefly along the coasts and islands of the NE. Mediterranean and the coasts of E. Africa . . . — Peters.

GENERAL HABITS, FOOD, VOICE AND CALLS. Not recorded in India. Elsewhere noted by SA as a full, liquid *tootit* (disyllabic), lower pitched than the (monosyllabic) *phiu* or *pheoo* of Little Ringed Plover (379, 380).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for description of plumage phases, morphology (also bionomics) of the nominate race and of *C. h. tundras* (which is decidedly darker and also slightly smaller), Witherby, 1940, 4: 347-53.

Black pectoral band much broader, legs and bill coarser, and feet larger than in *Charadrius dubius*. For other distinguishing characters of *hiaticula* from *C. dubius*, *C. mongolus* and allied plovers see A. O. Hume, 1879, SF 8: 197-201.

MEASUREMENTS of breeding birds from Siberia and N. Norway:

	Wing	Bill	Tarsus	Tail
♂♂	122-132	13-15	24-27	55-61 mm.
♀♀	125-129	13-15	—	—
		(from feathers)		(Witherby)

Weight 1 ♂ 42 gm. — BNHS.

COLOURS OF BARE PARTS. Iris brown; eyelids yellow. Bill orange-yellow, black at tip. Legs and feet orange-yellow.

CHARADRIUS DUBIUS Scopoli

Key to the Subspecies

Smaller; wing 102 to 114 mm. *C. d. jerdoni*
Larger; wing 115 to 121 mm. *C. d. curonicus*

379. **European Little Ringed Plover.** *Charadrius dubius curonicus* Gmelin
Charadrius curonicus Gmelin, 1789, Syst. Nat. 1(2): 692 (Kurland)

380. **Indian Little Ringed Plover.** *Charadrius dubius jerdoni* (Legge)
Aegialitis jerdoni Legge, 1880, Proc. Zool. Soc. London: 39 (Ceylon and middle India). New name for *Aegialitis minuta* Jerdon, nec *Charadrius minutus* Pallas
Baker, FBI Nos. 2114, 2115, Vol. 6: 171
Plate 40, fig. 3 and Plate 41, fig. 2

LOCAL NAMES. *Zerra*, *Mitrad* (Hindi); *Jiria* (Bengal); *Kola kaffi* (Kashmiri); *Bytu ulanka*, *Ricca* (Telugu); *Punchi olbjaya* (Sinhala); *Sinna kittān* (Tamil); *Motira Mēchi* (Malayalam).

CHARADRIIFORMES

230

FIELD CHARACTERS. Very like Caspian Sand Plover (376) but larger.

Winter (non-breeding). Above, supercilia less distinct; hindneck paler than crown or back. Sexes alike. In flight the light brown underwing and axillaries are suggestive clues.

Summer (breeding). Above, whole head and neck white excepting a brown nape patch; a brown band from behind eye over ear-coverts to nape. Below, throat white; foreneck rufous (connected with brown nape-patch), turning to chestnut on upper breast and sides of breast. A black band separating chestnut breast from white of rest of underparts.

Young (immature) have the upperparts scalloped with rufous. Below, brown feathers of breast with dark centres.

STATUS, DISTRIBUTION AND HABITAT. Vagrant. A single example (in winter plumage) collected in the Andamans in May 1872. No other record within our limits.

Extralimital. Breeds in Mongolia and N. China. Migrates through China and Japan and winters in the Sunda Islands, Celebes, Moluccas, and Australia — Peters.

GENERAL HABITS AND FOOD. As of Caspian and Lesser and Large Sand Plovers.

VOICE AND CALLS. 'When disturbed utters a sharp whistling note' (Cayley, Australia).

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. In winter plumage distinguishable from *Charadrius mongolus atrifrons* (384) by larger size and longer tarsus; from *C. leschenaultii* (same size) by colour of shafts of the primaries. In *C. a. veredus* whole shaft of first primary (as.), white; a portion of second primary usually white but occasionally second primary all brown like the rest; in *leschenaultii* whole shaft of first primary and all but the tips and bases of the others are white. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	153-167	22-24	c. 44-46	59-64 mm. (Baker)

COLOURS OF BARE PARTS. Iris hazel. 'Bill olive-brown. Legs pale brownish flesh colour; feet washed with grey, blackish on joints' (Swinhoe).

378. **Eastern Ringed Plover.** *Charadrius hiaticula tundras* (Lowe)

Aegialitis hiaticula tundras Lowe, 1915, Bull. Brit. Orn. Cl. 36: 7

(Valley of the Yenesei)

Baker, FBI No. 2112, Vol. 6: 168

Plate 40, fig. 2 and Plate 41, fig. 1

LOCAL NAMES. None recorded.

SIZE. Grey Quail ±; length c. 19 cm. (7½ in.).

FIELD CHARACTERS. Very like Little Ringed Plover (380), q.v. — also with a double collar on hindneck (the upper white, the lower black), black pectoral band, and bold black-and-white head markings. Distinguished from it at rest chiefly by somewhat larger size, absence of the thin white

232

CHARADRIIFORMES

SIZE. Lesser Sand Plover ±; length c. 17 cm. (6½ in.).

FIELD CHARACTERS. A typical little plover with thick round black-and-white patterned head, bare yellowish legs and short pigeon-like bill. Above,



forehead white; forecrown black, separated from the sandy brown crown by a thin white line running back over eyes and ear-coverts. A black band from lores enclosing yellow-rimmed eye and ear-coverts. A double collar on hindneck (the upper white, the lower black) separating crown from sandy brown upperparts. Below, chin, throat and foreneck white narrowing on sides of neck into the white collar; black nuchal collar continuing down into a pectoral band across upper breast. Rest of underparts white. Sexes alike.

Absence of white wing-bar (in flight), and yellowish v. brownish grey legs distinguish it from Kentish Plover (381, 382) in comparable plumage.

Young (immature). No clear-cut black and white markings on head or breast, these being replaced by brown. The black pectoral band when first assumed has whitish fringes.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Status of the races uncertain since their separation rests solely on slightly larger wing in *curonicus*; impossible to discriminate the two without specimens in hand, therefore they are both combined here.

C. d. curonicus. Breeds for certain in West Pakistan (Quetta Valley, N.W.F. Province (?)) and Kashmir to c. 1500 metres and possibly higher elevations (Ladakh ?). Winter visitor and/or on migration passage (August/September to April/May) over practically our entire area as far east as the Naga and Mishmi Hills and including Andaman Is. and Ceylon. Recorded (presumably this subspecies) on passage in Chitral (April) and Kohat (February to mid May), as well as breeding abundantly in the Kurram Valley from May onwards (Perreau), and about Thal (Rattray). Double passage migrant, October and April, in Punjab Salt Range (Waite).

Extralimital. 'The greater part of Europe and N. Asia from lat. 62°N. in Sweden, 67°N. in Finland, the White Sea, lat. 60°N. in Asia, south to NW. Africa, Egypt, Kashmir, N. China and N. Japan; Island of Madeira. Winters in Africa south of the Sahara, Arabia, India, S. China, the Malay Archipelago and Papuan Islands' (Peters).

C. d. jerdoni. Resident throughout the subcontinent from the Himalayan foothills to Kanyakumari, and from Sind to Assam. Nepal; Ceylon. Moves about locally with water conditions.

Extralimital. 'Burma, Thailand, Malay Peninsula, Indochina, New Guinea, Bismarck Archipelago, apparently also the Greater and Lesser Sunda Islands' (Peters).

Affects shingly banks of rivers, streams and tanks, wet grazing grounds, the seashore between tidemarks, and tidal mudflats and estuaries.

GENERAL HABITS. Keeps in pairs or small scattered feeding parties and flocks of 6 to 12 or more, either by itself or mixed with other small waders.

PLOVERS

233

Runs about with rapid mincing steps, head partly drawn into the shoulders, in short zigzag spurts punctuated by pauses to pick up some titbit with the peculiar steep 'hinged to knee-joint' forward tilt of the body characteristic of the family. Has a clever technique of stampeding tiny insects and crustaceans lying doggo in unevennesses of the ground by drumming or tapping with the toes of one foot in a rapid vibratory motion. Success of this manoeuvre evident from the frequency of the darting forward 'dips' to snatch the fleeing refugees, immediately resulting. In its native environment its colour pattern is astonishingly disruptive, making the bird quite invisible even at close range unless it moves. Though scattered over a wide area when feeding the birds will rise more or less simultaneously on alarm and fly off in a compact agile flock turning and twisting in the air in regimented unison, their white undersides flashing in the sun as they bank and wheel. The flight, attained by rapid strokes of the pointed wings, is swift but seldom more than a few metres above ground.

FOOD. Insects (weevils, beetles, dipterous larvae), worms, tiny crabs, etc. Among stomach contents the following insects have been identified: *Chrotonotus* sp. (Acrididae), *Hypera variabilis* (Curculionidae), *Scleron denticolle* (Tenebrionidae), *Chrysopa* larvae (Hemeroptera).

VOICE AND CALLS. A short rather plaintive single whistle *phiu* or *phewo* constantly uttered in flight; noticeably higher pitched and thinner-sounding than the full liquid double-noted *toot* of Ringed Plover (378).

BREEDING. *Season.* *C. d. curonius* in Kashmir, April-May. *C. d. jerdoni* in continental and peninsular India chiefly March to May; in South India, December to June, chiefly March, April and May; in Ceylon, June and July, occasionally August. *Nest,* a shallow unlined depression or scrape on a shingle bank or islet in a stream, or in a dry gravelly river-bed; usually in the open, sometimes near a bush or boulder. *Eggs,* 4, of the typical peg-top shape of plovers' eggs — broad at one end, abruptly pointed at the other. Variable in coloration from buffish stone to greenish grey with hieroglyphic-like squiggles and scrawls and spots of dark brown and phantom purplish markings. Average size of 100 European eggs of *curonius* 29.8 × 22.1 mm. (Jourdain); of 8 taken in Kashmir 28.9 × 21.5 mm. (Osmaston); of 60 *jerdoni* 27.5 × 20.7 mm. (Baker). Both sexes share in incubation and tending the chicks, brooding them against rain and performing 'broken-wing' distraction displays to lead off suspicious intruders. Incubation period c. 22 days.

The nuptial display is a remarkable performance described by two independent observers with the following sequences:

1. A pair feeding. Male flattens body horizontally, partially fluffs out feathers on sides of breast, lowers head (neck telescoped into shoulders and with bill pointing at female), scuttles up to her. She moves away in the same manner, leading him on. After a few metres female halts. Male comes up and with bill almost 'digging her in the ribs' rapidly vibrates his fanned-out tail up and down, at the same time prancing quickly from one foot to the other. After about 5 seconds of this hops on to female's back, she still with body horizontal and legs upright. Stands with unflexed legs on female's back and repeats the shivering for over 10 seconds. Female now tilts forward raising her posterior and quick copulation takes place. Male slips off female's

PLOVERS

235

381. Kentish Plover. *Charadrius alexandrinus alexandrinus* Linnaeus

Charadrius alexandrinus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 150

(Egypt, ex Hasselquist)

Baker, FBI No. 2106, Vol. 6: 161

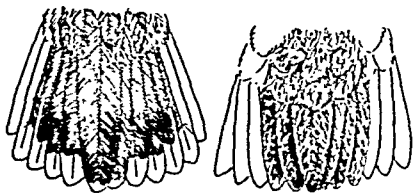
Plate 40, fig. 4 and Plate 41, fig. 3

LOCAL NAMES. Unspecific and general. *Sinna kōtān* (Tamil); *Manal kōchi* (Malayalam).

SIZE. Grey Quail —; Lesser Sand Plover ±. Length c. 17 cm. (6½ in.).

FIELD CHARACTERS. Winter (non-breeding). ♂ ♀ very similar to immature Little Ringed Plover, and not easily distinguished from it. But blackish v. yellowish legs, narrower brownish stripe through eye, white forehead continued unbroken as supercilium, and a small dark patch on each side of upper breast v. a complete pectoral band, are leading pointers.

Summer (breeding). Male: Crown bright rufous, and head markings more contrasty. White collar on hindneck not separated from back by a black band as in Little Ringed Plover. Female more or less as in winter, but when freshly moulted has edges of feathers of the crown and breast-patches rufescent.



C. hiaticula

C. alexandrinus

In flight a narrow white wing-bar and more prominent white sides of tail readily distinguish it from Little Ringed Plover at all times.

Young (immature). Like female but with the upperparts narrowly scalloped with sandy buff.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Breeds, as so far proved, in West Pakistan (Baluchistan, Sind), northern India (N. Bihar — Darbhanga dist.), Gujarat — Bhavnagar, Porbunder, Kharaghoda (race presumed). Doubtless also elsewhere and more widely. Winter visitor to the rest of India (recorded as rare in Assam [N. Cachar] and Manipur), Nepal terai, Ceylon, Maldives and Laccadive islands. Affects the sea coast (mostly); also shingly river banks inland.

Status of this race and the next uncertain as winter sightings racially inseparable, and breeding records outside W. Pakistan not authenticated by skins.

Extralimital. Breeds on the Canary, Madeira, Azores, and Cape Verde Islands, south coast of England and the greater part of Europe and C. Asia from Sweden and Latvia east to Korea, south to the northern Sahara, Egypt, Arabia, and Sind. Migrates in winter to tropical and southern Africa, India, S. China, Japan, Formosa and the Sunda Islands (Peters).

234

CHARADRIIFORMES

back and moves off some distance in same 'furtive' manner, and resumes feeding (Sálim Ali).

2. A female feeding. Male comes flying over with rapidly beating wings, calling excitedly *sweet-you, sweet-you, sweet-you*. Lands nearby, fluffs out side feathers of breast, runs towards her pointing his bill as if to chase her off. She trots away and halts at a short distance, he follows at a crouching run. When a few centimetres away he straightens out of his crouch, draws himself to his full height rapidly goose-stepping the intervening distance, stiffly raising one leg in front of him then the other in 'a curious, comical, preposterously cock-of-the-walk performance'. The rapidly goose-stepping legs look from the side like a pair of scissors snipping away at speed. On his close approach female crouches slightly while he advances waving his legs in the air. Finally male jumps on female's back and stands ('perhaps 20 seconds') literally treading her, his feet working strenuously. After quick copulation runs off, breast feathers again fluffed out, and expanded tail twitching (Loke Wan Tho).

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.; for details of plumage phases and morphology (also bionomics) of *curonius*, Witherby, 1940, 4: 356-9. *C. d. jerdoni* differs from it only in being slightly smaller, but size difference in the two races clinal. However, subspecies *jerdoni* (tropical) differs considerably from *curonius* (palaeartic) in its moult pattern. The latter has a juvenal-like winter plumage whereas *jerdoni* lacks a winter plumage (Stresemann, in *efst.*). All examples with wing over 114 mm., especially non-breeding birds collected in the plains in winter, probably referable to *curonius*.

Chick (in down). *C. d. jerdoni*. 'Forehead, carpus, edge of ulna and collar of hindneck white; circle round crown from eye to eye and above white collar, black; lines on thighs and forearm, tail, black; rest of upperparts grizzled black, white and ginger points' (Ticehurst).

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
<i>C. d. curonius</i>				
♂ ♂	111-119	12-14	22-25	50-60 mm.
♀ ♀	112-120	12-14	—	—
		(from feathers)		(Witherby)
<i>C. d. jerdoni</i>				
♂ ♂	107-115	15-17	24-26	54-62 mm.
♀ ♀	105-117	16-17	23-26	53-64 mm.
		(from skull)		(SA, HW, BB)

Weight *C. d. curonius* 20 ♂ ♀ 28-39 (av. 31.8) gm.

C. d. jerdoni 20 ♂ ♀ 21-33 (av. 27.9) gm. — BNHS.

COLOURS OF BARE PARTS. Iris brown; naked ring round eye (eyelids) yellow, becoming greatly swollen in breeding season. Bill horny black, yellow at base of lower mandible. Legs and feet dusky greenish yellow; claws horny black.

MISCELLANEOUS. Longevity (ring record) 8 years (Ring, 1962, 33: 149).

CHARADRIUS ALEXANDRINUS Linnaeus

Key to the Subspecies

Smaller; wing 93 to 107 mm.	<i>C. a. seeshahii</i>
Larger; wing 106 to 118 mm.	<i>C. a. alexandrinus</i>

CHARADRIIFORMES

236

MIGRATION. No ringing data. Common at Bannu (NW. Pakistan) in spring and autumn (Whitehead & Magrath). Arrives in Quetta district (Baluchistan) early April, leaves in September (Ticehurst). Spring passage migrant in Delhi, chiefly end April and first half May (Frome).

GENERAL HABITS. Very similar to the Little Ringed Plover (379, 380), with immatures of which it may easily be confused. Parties and flocks, often mixed with other waders. Runs about with neck drawn into the shoulders as typical of the smaller plovers.

FOOD. Small crabs, sandhoppers and other insects.

VOICE AND CALLS. A soft *trr* uttered when flying off; 'a sweet trill in butterfly-like display flight' (Baker). A shrill double alarm note 'too-it, too-it, itup, itup' (Witherby).

BREEDING. *Season* in Baluchistan (Quetta dist.), Sind and Gujarat March to July chiefly May and June. *Nest,* a slight depression in sand sometimes lined with fragments of shells, in a dry river-bed, or on the seashore above high-tide mark or on mounds of windblown sand collected at the base of salt-plants like *Suaeda* or among runners of *Ipomoea biloba*. *Eggs* normally 3, occasionally 2, exceptionally 4; pyriform, pale to dark sandy brown sometimes tinged greenish; stippled and blotched with blackish brown often mixed with or largely replaced by twisted hair lines and scrawls. The eggs often lie in the scrape half buried in windblown sand with only the broad ends showing as rounded studs or domes. Average size of 100 extralimital eggs 32.5 × 23.5 mm. (Jourdain). Indian eggs agree with this (Baker). Both sexes incubate; period 15-17 days (Naumann). Both parents tend the young and indulge in 'broken-wing' distraction displays to draw off intruders from the vicinity of nest and chicks. A case of egg predation by the Great Stone Plover (*Esacus m. recurvirostris*, 437) has been reported (Dharmakumarsinhji).

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.; for details of plumage phases and morphology (also bionomics), Witherby, 1940, 4: 350-3.

In winter plumage may be distinguished from the very similar non-breeding and immature *Charadrius dubius* as follows:

<i>C. alexandrinus</i>	<i>C. dubius</i>
1. Three outer pairs of rectrices all white	1. Only the outermost pair all white; 2nd and 3rd pairs partly brown
2. Shafts of all primaries white	2. Shaft of first primary only white
3. Brown pectoral band widely broken	3. Pectoral band unbroken
4. Legs blackish	4. Legs yellowish

Chick (in down). 'Forehead and carpus white; black line on forearm and behind each eye; white hind collar; crown and rest of upper parts mottled black and buffish white; underparts white' (Ticehurst).

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
		(from feathers)		
12 European ♂ ♂	109-118	14-15	25.5-29	43-45 mm.
12 European ♀ ♀	106-117	14-15	—	—
		(one 16)		(Witherby)
		(from skull)		
8 Indian ♂ ♂	105-111	19-22	26-29	46-47 mm.
8 Indian ♀ ♀	105-114	18-21	27-28	43-49 mm.
				(CBT, HW, SA)

Weight 22 ♂ ♀ (winter) 27-41 (av. 35.6) gm. — BNHS.

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet plumbeous grey or blackish.

382. Ceylon Kentish Plover. *Charadrius alexandrinus seebohmi* Hartert & Jackson

Charadrius alexandrinus seebohmi Hartert & Jackson, 1915, Ibis: 529. New name for *Charadrius cantianus minutus* Seebohm (Aripo, N. Ceylon), *nee* *Charadrius minutus* Pallas *Leucopoliis alexandrinus* Legge Whistler & Kinnear, 1937, J. Bom. nat. Hist. Soc. 39: 251 (Hambantotta, SE. Coast, Ceylon) Baker, FBI No. 2107, Vol. 6: 162

LOCAL NAMES. *Punchi oléyja* (Sinhala); *Uppu kotthi* (Madura dist., Madras).

SIZE. As 381; length c. 17 cm. (6½ in.).

FIELD CHARACTERS. As of the nominate race (381), q.v. Slightly smaller and lacking the bright rufous cap in the breeding season. In winter the two races indistinguishable.

STATUS, DISTRIBUTION and HABITAT. Resident. Common. Ceylon (low-country Dry zone) and southern peninsular India, how far north not known. Affects the seashore and tidal mudflats, and margins of large tanks inland.

GENERAL HABITS, FOOD, VOICE and CALLS. As of the nominate race (381).

BREEDING. Season in Ceylon May to August; occasionally as early as February in the Jaffna Peninsula (Phillips). In Madras (Cuddalore 11°43'N., 79°46'E.) April and July/August, possibly throughout the period. Rev. Axel Krebs, who found both eggs and chicks there, categorically noted the absence of the rufous cap in breeding birds as is diagnostic of the race *seebohmi* (JBNHS, 1956, 53: 703). Site, nest and eggs as in the nominate race, the last smaller. Average size of 40 eggs 29.9 × 22.0 mm. (Baker).

MUSEUM DIAGNOSIS. Differs from 381 in its smaller size and in the fact that it does not assume the distinctive breeding plumage with the bright rufous cap.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
5 Ceylon ♂♂	103-104	18-20	25-27	43-46 mm.
3 Ceylon ♀♀	96-104	17-20	25-28	39-43 mm.
		(from skull)		(HW)

Weight 20 ♂♀ (winter) 20-40 (av. 30.4) gm. — BNHS. (Pt Calimere)

1 ♂ 29 gm. — SDR (Ceylon).

COLOURS OF BARE PARTS. As in 381.

383. Longbilled Ringed Plover. *Charadrius placidus* J. E. Gray

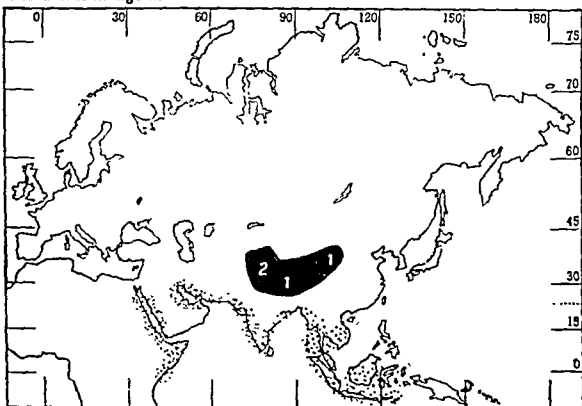
Charadrius placidus J. E. Gray, 1863, Cat. etc. Mamm. Bds. Nepal and Tibet... Brit. Mus., ed. 2: 70 (Nepal) Baker, FBI No. 2116, Vol. 6: 172 Plate 40, fig. 1

LOCAL NAMES. None recorded.

SIZE. Grey Quail +; Large Sand Plover ±. Length c. 23 cm. (c. 8½ in.).

FIELD CHARACTERS. Very similar to the Ringed and Little Ringed Plovers (378, 380) — also with black bill and yellow legs — and doubtfully distinguishable from them. But larger size and much longer bill are suggestive clues. (For differentiation in the hand see Museum Diagnosis.)

Charadrius mongolus



■ Breeding range ▨ Winter 1 *C. m. atrifrons* (384).
2 *C. m. pamirensis* (RE).

Pakistan round the entire Peninsula to W. Bengal and E. Pakistan. Also the coasts on Ceylon, Andaman and Nicobar, and Maldivian islands. Recorded inland south of the Himalayas sparingly and irregularly, chiefly on migration passage (stragglers?) in N. Bihar, Nepal, Assam, Manipur, Rajasthan. A few odd birds in non-breeding dress remain behind on the sea coast throughout the year. Affects seashores, and tidal mudflats and estuaries in winter; stony, sandy plains in the vicinity of high elevation lakes, streams, and bogs in summer.

EXTRALIMITAL. Breeds on the Kirghiz Steppes (probably also in other parts of southern Siberia and Turkestan), and Tibet. Migrates south in winter to Persia, eastward to Malay Peninsula and Greater Sunda Is. Also Red Sea coasts, E. Africa south to the Zambesi, and islands of the Indian Ocean.

MIGRATION. No ringing data. Arrivals on the sea coasts begin early August; the birds becoming fairly abundant by early September. In Ceylon arrives during September and October and leaves in April and May (Phillips). Spring emigration evidently commences about early May when some individuals already in partial breeding plumage with accumulation of migration fat and enlarged gonads. Exodous gradual and not in a body; by end of May most birds have gone. From paucity of inland records it is evident that migration from sea coast to Tibetan uplands normally performed in a single hop non-stop.

GENERAL HABITS. Gregarious. Keeps in scattered flocks — sometimes very large — often mixed with Large Sand Plovers, dunlins, stints and other waders, dotted about on tidal mudflats or the shiny wet sand left by

STATUS, DISTRIBUTION and HABITAT. Winter visitor. Rare but evidently regular in eastern and upper Assam. Has been obtained also in Nepal, N. Bihar, the duars of Bengal and Bhutan, and in East Pakistan. Affects shingle banks of large rivers.

EXTRALIMITAL. 'Breeds in Ussuriland, Manchuria, Korea, N. China and N. Japan. Winters south to China, N. India, Burma and Annam [central Viet Nam]' — Peters. Possibly breeds along the Tsangpo river in SE. Tibet (Ludlow).

GENERAL HABITS, FOOD, VOICE and CALLS. Very little specifically recorded. Usually solitary. Coloration remarkably obliterative on the shingle banks it frequents, rendering the bird liable to be overlooked.

BREEDING. Extralimital. In general similar to the Ringed Plovers.

MUSEUM DIAGNOSIS. Shaft of first primary brown, paler and yellowish towards tip but never white as in Ringed Plover. Forehead wholly white; the black on the lores and cheeks replaced by brown or blackish brown.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	139-152	18-20	c. 31-34	76-78 mm. (Baker)

COLOURS OF BARE PARTS. Iris brown; rim of eyelid yellow. Bill black, base of lower mandible yellowish. Legs and feet light yellowish (La Touche).

384. Pamirs Lesser Sand Plover. *Charadrius mongolus atrifrons* Wagler

Charadrius atrifrons Wagler, 1829, Isis von Oken, col. 650 (Bengal).

Baker, FBI No. 2117, Vol. 6: 174

Plate 40, fig. 5 and Plate 41, fig. 4

LOCAL NAMES. *Oléyja* (Sinhala); *Kūtūn*, (Tamil); *Manal kōzhi* (Malayalam).

SIZE. Grey Quail; length c. 19 cm. (7½ in.).

FIELD CHARACTERS. A typical little plover with thick round head, bare greenish grey legs, and short pigeon-like black bill.

WINTER (non-breeding). *Above*, forehead fulvous or tawny. Ear-coverts brownish, conspicuous as a dark patch behind eye on white sides of head. White collar on hindneck very faint or absent. Upperparts sandy greyish brown. *Below*, white.

SUMMER (breeding), as sometimes seen just before emigration. *Above*, forehead and sides of head black; crown and hindneck rust coloured or pale chestnut. Rest of upperparts sandy brown. *Below*, upper breast and flanks pale chestnut, separated from glistening white throat by a blackish half collar. Sexes alike.

YOUNG (immature) has pale fringes (scalloping) to the feathers of the upperparts.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Within our limits breeds in the Tibetan plateau facies of the High Himalayas between c. 3900 and 5500 m. elevation in Ladakh, Lahul, and Sikkim. Abundant winter visitor — perhaps the commonest wader — to the seaboard from Makran and Sind in W.

the receding tide. The birds run about in short spurts with quick mincing steps, neck pulled into the shoulders, dipping forward obliquely now and again to pick up some titbit. They bunch up on high ground to rest when the tide is in, and scatter again as it recedes, often feeding till well past sunset. When resting the bird stands inert on one leg, the other remaining tucked even while repelling a neighbour, hopscoching up to him comically with bill threateningly levelled.

When just arrived from their breeding grounds much territorial rivalry is still in evidence resulting in frequent but innocuous skirmishes. Two birds will run parallel to each other in an almost furtive posture — bills horizontal and necks telescoped — as if patrolling an imaginary boundary. Of a sudden one will turn upon the other, rush at him with open wings, and jump clean over him. To vary the tactics the patrolling birds will sometimes pretend to ignore each other's proximity, making as if to sheer off. Suddenly they will whip round and rush at each other to repeat the clinch.

On disturbance the scattered flock rises almost simultaneously, the birds closing up and flying swiftly in well-drilled unison, turning, twisting and zigzagging on the wing all together, their white undersides flashing from time to time as they bank and wheel. Has been observed preparing to roost for the night (?) crouching in scattered hoof-prints in dry sand above high-water mark, looking in the gathering dusk like little stones strewn over an extensive area of beach (SA).

FOOD. Chiefly small crabs (including *Ocyropsis* sp.), sandhoppers and marine worms. Hole of last approached by bird stealthily lifting and gently putting down each foot. Often both feet planted squarely on the ground the bird leaning back and tugging at the worm till its tail almost touches the ground!

VOICE and CALLS. Very silent in winter: only a low *trr* or *twip* when flying off. In courtship chase on breeding grounds a peculiar hard *tk-tatrr-tatrr* sometimes varied to *tit-tit-trr-trr* of the same quality of sound as the 'stone-on-ice' call of the Indian Nightjar (*Caprimulgus asiaticus*). This uttered also in the nature of a 'war-cry' when chasing off a territorial rival or intruder. Alarm note a chatter of two syllables, *corrup*, not unlike the croak of a frog (Whistler).

BREEDING. Season in Ladakh (Tso Kar, Tso Moriri and Pangkong lakes), Lahul and Spiti (Chandra lake) — c. 3900 to 5500 m. — chiefly early June to mid July. Nest, an unlined scrape or saucer-like depression on dry stony or shingly ground about the margin of a lake or bog. Eggs normally 3, pyriform, glossless pale green to dark biscuit colour or khaki, stippled fairly evenly all over with reddish brown (colour of dried blood). Average size of 12 eggs 36.7 × 26.3 mm. (B. B. Osmaston).

Pre-nuptial chase of female as well as territorial defence consists of the bird flying close above the ground on rapidly vibrating wings uttering its peculiar 'war-cry'. Both birds partake in incubation and care of the young, commonly giving the broken-wing distraction display to lead off intruders from nest (particularly when eggs hard set) and chicks. Incubation period unknown.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Bill shorter than middle toe without claw.

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 241

Chick (in down). "Upperparts deeper buff than in *alexandrinus* [381], mottled with black on crown; wings and whole of back, tips of wings and collar of neck grey-buff; narrow, short black lines on lores, behind eyes and on the ear-coverts. Underparts white, greyish buff at the sides; legs and feet plumbeous" (Ticehurst).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
34 ♂ ♀	122-132 (one 118)	16-19	32-35	44-49 mm. (CBT, HW, SA)

There is no difference between the sexes.

Weight 8 ♂ ♀ (autumn) 39-50 gm. (aver. 43.75)—SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet fleshy grey-yellowish- or olive-slate colour.

Subfamily SCOLOPACINAE: Curlews, Sandpipers, Snipe, Woodcock

Key to the Genera

	Page
A Tibia entirely feathered.....	<i>Scolopax</i> 292
B Tibia partially feathered.....	<i>Capella</i> 278
C Tibia unfeathered.....	1
I Toes partially webbed.....	a
Toes divided.....	b
a Bill long; over 65 mm.....	I
Bill moderate to short; under 65 mm.....	II
I Bill curved down.....	<i>Numenius</i> 241
Bill straight or slightly curved up.....	a ¹
a ¹ Bill slightly curved up.....	<i>Limosa</i> 248
Bill straight, flattened and pitted towards tip.....	<i>Limodromus</i> 276
II No white on secondary coverts or upper tail-coverts.....	<i>Philomachus</i> 318
White on upper tail-coverts, or secondary coverts tipped with white.....	<i>Tringa</i> 254
b Inner webs of outer primaries speckled.....	<i>Tryngites</i> 317
Inner webs of outer primaries not speckled.....	III
III End of bill spoon-shaped.....	<i>Euryrhynchus</i> 312
Bill sharply pointed; profile of lower mandible generally inclined upward.....	<i>Arenaria</i> 273
Bill generally same width beyond base to slightly decurved tip; occasionally widened towards middle.....	<i>Limicola</i> 314
Bill generally depressed in width towards middle, expanded slightly towards tip.....	<i>Calidris</i> 295

Genus NUMENIUS Brisson

Numenius Brisson, 1760, Orn. 1: 48; 5: 311. Type, by tautonymy, *Numenius* Brisson = *Scolopax arguta* Linnaeus

Bill very long, slender, and curved downwards over the greater part of its length; tip of upper mandible blunt and projecting beyond the lower. Nostril linear placed in a groove which extends over about three-quarters length of the bill. Legs moderately long; tarsus reticulated except on the lower half in front, where transversely

242 CHARADRIIFORMES

scutellated. Hind toe of moderate size; middle toe much longer than the others; toes webbed at base; claws dilated. Wing long and pointed: first primary (as.) longest; inner secondaries very long. Sexes alike.

The genus contains the curlews and whimbrels which have an almost worldwide distribution.

Key to the Species

	Page
A Crown streaked; tarsus 75 mm. or more.....	<i>N. arguta</i> 245
B Crown brown with a pale median stripe; tarsus decidedly less than 75 mm.....	<i>N. phaeopus</i> 242

NUMENIUS PHAEOPUS (Linnaeus)

Key to the Subspecies

General colour paler; dark bars and streaks less heavy.....	<i>N. p. phaeopus</i>
General colour darker; dark bars and streaks broader and more numerous.....	<i>N. p. variegatus</i>

385. Whimbrel. *Numenius phaeopus phaeopus* (Linnaeus)

Scolopax Phaeopus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 146 (in Europa = Sweden) Baker, FBI No. 2135, Vol. 6: 203

Plate 39, fig. 9 and Plate 42, fig. 7

LOCAL NAMES. *Chhōtā gōmgh*, *Chhōtā gūlindā* (Hindi, Bengal); *Chhōtā gūnyār* (Bihar); *Tetti kokku* (Malayalam); *Māhā waturā* (Sinhala); *Kuthirai mālai kōttān* (Tamil); *Bulithumbi*, *Bulithunga*, *Orana* (Maldives).

SIZE. Country hen; length c. 43 cm. (17 in.).

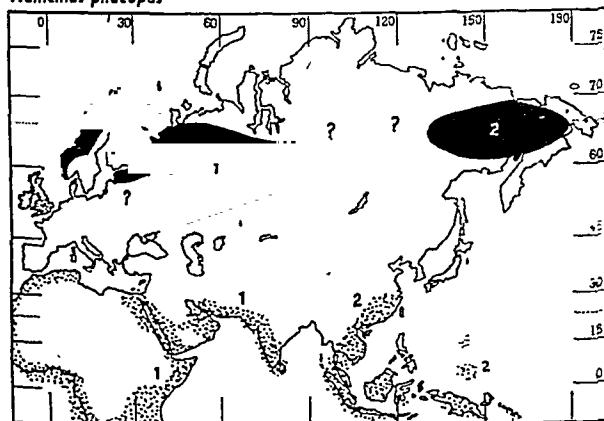
FIELD CHARACTERS. A smaller edition of the more familiar Curlew (387), also with long downcurved bill. Distinguished by its blackish crown with white 'centre parting' and long white superciliary stripes on either side.

Above, forehead and crown dark brown with a white median band; long supercilia from base of bill, and sides of head whitish. A dark brown band from lores through eye to ear-coverts. Upperparts sandy brown with whitish spots; lower back and rump white; upper tail-coverts barred brown and whitish. Tail ashy brown barred with blackish. Below, chin, throat, and abdomen white; rest of underparts sullied white narrowly streaked with blackish on foreneck and breast, and barred on flanks. Sexes alike.

Young (immature) has the mantle scalloped with pinkish buff or buff, and rump suffused with same. Lower back, rump, and upper tail-coverts white finely scalloped with brown.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor to West Pakistan (Baluchistan, Sind—chiefly passage migrant), and western India in Gujarat (chiefly Kutch and Saurashtra) and sparingly along the entire seaboard south to Kerala, Ceylon, and the Andaman, Nicobar, Laccadive and Maldivé Is. Also up the east coast to Bengal and E. Pakistan, but the winter distributions of this race and *variegatus* (386) not yet properly worked out though both occur in the Ganges delta. Stray individuals regularly seen throughout the year especially in the Kutch area, but no evidence of breeding as yet. Affects the sea coast, tidal mangroves, creeks and mudflats. Occasionally at inland jheels during migration passage. Recorded and/or collected thus in Baluchistan (Sibi), Kashmir (Hokarsar), Uttar Pradesh

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 243

Numenius phaeopus

1 *N. p. phaeopus* (385).
2 *N. p. variegatus* (386).

(Lucknow Division), Nepal, Bihar (Darbhanga), Madhya Pradesh (Sehore) and also up in the Western Ghats.

Extralimital. Breeds in northern Scandinavia, Lapland, Finland, northern Russia and W. Siberia to Tobolsk and the upper Irtysh. Winters throughout Africa, Madagascar, Arabia, NW. India and islands in the western Indian Ocean. Burma (Smythies).

MIGRATION. No ringing data. Recorded on autumn passage in Iraq, July-August to end September. In West Pakistan (Makran (?) and Sind coasts) first arrivals early August continuing to mid September; then in smaller numbers also along the west coast of the Peninsula. By early October main body has moved on leaving only small lots of wintering birds on Sind coast. Females believed to comprise the vanguard of southern migrants in autumn, the males following later with young birds of the year. This proposition needs testing. Return (spring) passage, possibly partly from our area, noted at Enzeli (Bandar-e-Pahlavi) on the southwestern shore of the Caspian Sea in Iran, from second week of April to early May. Unravelling of movements in India complicated by the considerable numbers, presumably of non-breeding birds, which overwinter within our limits.

GENERAL HABITS. Very similar to Curlew (387), but more gregarious. Often met with in parties or flocks of 5 to 15 in winter; larger flocks on first arrival, e.g. in Sind. Partial to tidal mudflats and mangrove-lined creeks, running about and feeding on the squelchy ooze at low tide. The slender curved bill is admirably adapted for probing into the oblique burrows of fiddler crabs (*Uca* spp.). The bird inserts it into a hole and drags out the inmate by its large 'arm'. A smart sideways jerk detaches the arm which remains in the bill as the crab tries to escape. The bird

244 CHARADRIIFORMES

promptly drops the arm and seizes and swallows the crab. The cool, matter-of-fact way in which this operation is performed as the bird trots from hole to hole is amusing to watch. At high tide when the mudflat is submerged, it often perches on the tops of the mangrove bushes waiting for the ebb.

When flying to and from alternative feeding-grounds among the creeks with the changing of the tides the birds can be readily decoyed over an ambush by an imitation of their calls, and afford good sport with the gun. They are swift on the wing, wary and difficult to circumvent, and excellent for the table—all the qualities that most appeal to the sportsman.

FOOD. Chiefly molluscs and crustaceans. Stomachs of specimens usually crammed with remains of snails and crabs, of which the fiddlers *Uca* spp. often form a considerable proportion. Other species identified are *Thalassidroma crenata* (Latreille) and *Sesarma longipes* Krauss.

VOICE AND CALLS. The only call heard in winter is a musical quick-repeated titting whistle *tetti-tetti-tetti-tet* of 7-9 syllables chiefly uttered on the wing, quite diagnostic even when the birds are passing over at night unseen. Bubbling, musical breeding call or song uttered in curlew-like aerial display flight closely resembles the Curlew's, but is more prolonged and trilling.

BREEDING. Extralimital. Season, May-June. Nest, a shallow circular grass-lined depression in marshland. Eggs, 3 or 4, pear-shaped olive-green, blotched and spotted with brown. After the recent unexpected finding of the Avocet breeding in the Great Rann of Kutch, the breeding of this species, as frequently alleged, becomes less improbable; the birds are fairly numerous in the Gulf of Kutch area during June, July, and August as in other months.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for plumage phases and morphology (also bionomics), Witherby, 1940, 4: 172-6. C. B. Ticehurst remarks that Sind birds are more spotted on the lower back and rump than European examples, but less so than *variegatus* (386).

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♂	232-250	76-86	50-61	87-99 mm.
♀ ♀	243-265	80-90	—	—
		(from feathers)		(Witherby)

Weight 10 ♂ ♀ (autumn/winter) 255-400 (av. 329.3) gm. — BNHS.

COLOURS OF BARE PARTS. Iris hazel to dark brown. Bill dark horny brown, fleshy pink at base of lower mandible. Legs and feet greenish grey.

Smaller size of male noteworthy. Correlated with this would seem the assertion that he takes the major share in incubation and tending the young.

386. Eastern Whimbrel. *Numenius phaeopus variegatus* (Scopoli)

Tentulus variegatus Scopoli, 1786, Del. Flor. et Faun. Insubr., fasc. 2: 92 (No locality = Luzon, ex Sonnerat)

Baker, FBI No. 2136, Vol. 6: 204

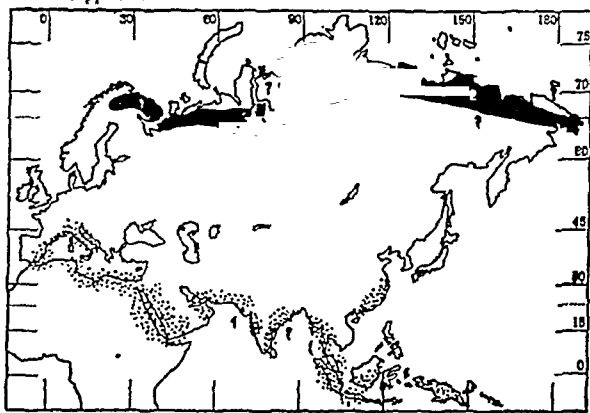
LOCAL NAMES. As for 385.

SIZE. Same as 385; country hen. Length c. 43 cm. (17 in.).

FIELD CHARACTERS. As of 385, q.v. Indistinguishable from it except in the hand; see Museum Diagnosis.

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 253

Limosa lapponica



■ Breeding range ■ Winter
 1 *L. l. lapponica* (391).
 2 *L. l. baueri* (RE).

Extralimital. 'Breeds locally in N. Europe and N. Asia from N. Scandinavia east probably to the Taimyr Peninsula. Winters south to the coasts of tropical Africa (Senegambia and Somaliland), Makran Coast, Persian Gulf, and NW. India' (Peters).

MIGRATION. No ringing data. One of the earliest migratory waders to arrive on the Makran, Sind, and Kutch coasts. August-September (earliest dates 22 July, 5 August). Then many still in worn breeding dress which is moulted soon after arrival in winter quarters. By first week April many, and by last week April most, have again donned breeding dress and the majority have left, a few lingering on till first half May. Small numbers in grey non-breeding plumage remain behind throughout the year.

GENERAL HABITS. Not significantly different from Blacktailed Godwit's except that it keeps mainly on the sea coast and is seldom met at fresh waters inland. Often in large flocks mixed with Blacktailed Godwits, dunlins, oystercatchers, and other waders.

FOOD. As of 389 — molluscs, marine worms, insects.

VOICE AND CALLS. In winter only a pleasant low whistle or 'low piping note' (Hume), uttered singly or rapidly repeated while taking off or landing. Alarm call (chiefly when nesting) a bisyllabic *te-tén, te-tén*, or *chiliu, chiliu, chiliu*.

BREEDING. Extralimital. Season, June-July. Nest a slight depression on a grassy hummock around a bog or in open grassland — same as Whimbrel. Eggs 3 or 4, greyish green with umber brown spots; indistinguishable from Whimbrel's.

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 255

392. Spotted or Dusky Redshank. *Tringa erythropus* (Pallas)

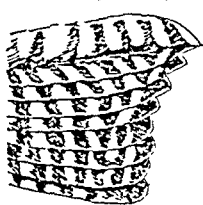
Scolopax erythropus Pallas, 1764, in Vroeg's Cat., Adumbr.: 6 (Holland)
 Baker, FBI No. 2149, Vol. 6: 223
 Plate 44, fig. 9

LOCAL NAMES. Bātān, Gatni, Sūrma (Hindi); Yerra kal ulanka (Tamil); Ngāhoibi (Manipur).

SIZE. Grey Partridge ±; length c. 33 cm. (13 in.).

FIELD CHARACTERS. A medium-sized greyish brown-and-white wader with longish orange-red legs and slender straight bill.

Winter (non-breeding). Above, narrow forehead, crown, hindneck and back ashy brown; lores darker brown; prominent white scarilia from base of bill. Lower back, rump, and upper tail-coverts white, the last barred with black. Wings mottled and barred with white. Tail ashy brown, barred with white on edges.



A



B

Secondaries, x c. 1
 A. *T. erythropus* B. *T. lotanus*

Below, white, indistinctly spotted and mottled with brown on neck and upper breast; flanks tinged with dusky, and barred. Sexes alike. In fresh winter plumage distinctively grey-brown, profusely spotted and barred with white. Stands somewhat taller than the Common Redshank (393) but most readily distinguished from it in flight by absence of broad white bar along trailing edge (secondaries) of wing.

Summer (breeding). Overall sooty black more or less narrowly scalloped and spotted with white. Lower back and rump white; tail barred with broader black and narrower white bars. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor. West Pakistan (common in Sind; reportedly only on autumn and spring passage in Baluchistan); all India; Nepal (vagrant);

Ceylon (rare vagrant). Everywhere less common than Redshank (393, 391). Recorded from Punjab, Kashmir, Delhi, Uttar Pradesh, Bihar, W. Bengal, Manipur, Orissa, Rajasthan, Madhya Pradesh, Gujarat, Maharashtra, Mysore, Madras. Doubtless occurs also in Assam and elsewhere within our limits. So far not recorded in the Andaman and Nicobars.

Affects jheels and tanks inland, as well as tidal creeks and estuaries.

Extralimital. 'Breeds in Scandinavia north of the Arctic Circle, N. Russia south to Moscow, Kazan, and Orenburg, and in N. Asia east to Kamchatka. Winters south to Africa, India, Burma, China, Japan and the Malay States' (Peters). Borneo (Smythies).

MIGRATION. No ringing data. Arrives in Sind as early as mid August, in N. India c. mid September. Mostly gone by end April when many birds are in partial or full breeding plumage. A few linger into early May (last date 8 May, Allahabad).

CHARADRIIFORMES

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit., but as Ticehurst points out (JBNS 34: 486) female's breeding dress when assumed is complete though rather different from male's, being much browner. For details of plumages and morphology (also bionomics) see Witherby, 1940, 4: 155-60.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	202-216	72-83	46-51	67-77 mm.
♀♀	211-227	95-106	—	—
	(from feathers)			(Witherby)

Weight 20 ♂♀ (autumn/winter) 162-277 (av. 220.5) gm. — BNHS.

COLOURS OF BARE PARTS. Iris brown. Bill pinkish flesh colour, horny brown or blackish on terminal half. Legs and feet greenish grey to almost black.

Genus *TRINGA* Linnaeus

Tringa Linnaeus, 1758, Syst. Nat., ed. 10, 1: 148. Type, by tautonymy, *Tringa ochropus* (emend. of *ocrophus*) Linnaeus

Totanus Bechstein, 1803, Orn. Taschenb. Deutschl. 2: 282. Type, by tautonymy,

Totanus maculatus Bechstein = *Scolopax totanus* Linnaeus

Actitis Illiger, 1811, Prodr.: 262. Type, by subsequent designation, *Tringa hypoleucos* Linnaeus

Glottis Koch, 1816, Syst. Zool.: 42, 304. Type, by monotypy, *Scolopax nebularia* Gunnerus

Xenus Kaup, 1829, Skizz. Entw.-Gesch. Eur. Thierw.: 115. Type, by monotypy, *Scolopax cinerea* Gtldenstädt

A predominantly Palaearctic composite genus of Sandpipers, Redshanks, Green-shanks and Avocet-Sandpiper, previously split up into discrete genera on characters now considered unwarrantable.

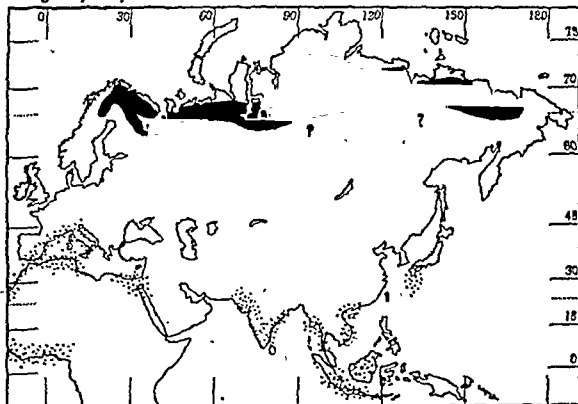
For particulars see Thomson, A. L., 1964. Article 'Sandpiper' in Thomson, A. L. (ed.), *New Dict. Birds*, London & New York.

Key to the Species

	Page
A Upper tail-coverts not white.....	1
B Upper tail-coverts white or barred.....	2
1 Bill curved upward.....	<i>T. terre</i> 269
Bill not curved upward.....	<i>T. hypoleucos</i> 271
2 Outer web of secondaries white barred with grey.....	<i>T. erythropus</i> 255
Outer web of secondaries nearly uniform white.....	<i>T. totanus</i> 257
Outer web of secondaries not as above.....	a
a Bill 48 mm. or above.....	I
Bill less than 48 mm.....	II
I Tarsus over 50 mm.....	<i>T. nebularia</i> 261
Tarsus under 50 mm.....	<i>T. guttifer</i> 263
II Axillaries uniform white.....	<i>T. stagnatilis</i> 259
Axillaries white barred with fuscous.....	<i>T. glareola</i> 265
Axillaries blackish, narrowly barred with white....	<i>T. ochropus</i> 263

CHARADRIIFORMES

Tringa erythropus



■ Breeding range ■ Winter

GENERAL HABITS. As in 393, but oftener seen feeding in fairly deep open water. A compact flock will swim energetically back and forth with bills and heads fully immersed, the birds freely up-ending like ducks to reach the bottom mud.

FOOD. As in 393. One with 'gullet full of small fish' (Ingilis).

VOICE AND CALLS. A shrill piping *tiu-it* or *tiu-tiu-tiu* uttered when taking off, or in flight; very similar to Common Redshank's and easily confusable with it except after sufficient experience of both.

BREEDING. Extralimital. Season June-July. Nest, a scantily lined depression in a grass tussock in a bog. Eggs, normally 4, olive-brown blotched with umber-brown.

MUSEUM DIAGNOSIS. Distinguished from Redshank (393) by the outer secondaries being barred brown and white c. all white. Also by white back and rump, barred tail-coverts, and longer bill and legs. For description of plumage see Baker, loc. cit.; for details of plumages and morphology (also bionomics), Witherby, 1940, 4: 332-5.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
		(from feathers)		
♂♂	158-168	53-59	53-59	60-68 mm.
♀♀	166-177	57-64	—	—
				(Witherby)

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 257

Weight 13 ♂ ♀ (winter) 108-187 (av. 146.9) — BNHS.

COLOURS OF BARE PARTS. Iris brown. Bill blackish brown, orange-salmon at base of lower mandible. Legs and feet orange-red; claws blackish brown.

The Eastern Redshank, *Tringa totanus eurhinus* (Oberholser) is no longer separated from the Common Redshank.

393, 394. Common Redshank. *Tringa totanus totanus* (Linnaeus)

Scolopax Totanus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 145 (in Europa = Sweden)
Totanus totanus eurhinus Oberholser, 1900, Proc. U.S. Nat. Mus. 22: 207
(Tso Moriri Lake, 15,000 ft, Ladakh)

Tringa totanus terrignotae R. & A. Meinertzhagen, 1926, Bull. Brit. Orn. Cl. 46: 85
(Koko Nor)

Baker, FBI Nos. 2147, 2148, Vol. 6: 221, 222

Plate 43, fig. 1 and Plate 44, fig. 12

LOCAL NAMES. *Chhōtā bātān* (Hindi); *Māli kōtān*, *Segapū kāl ūllān* (Tamil); *Māhā totanū* (Sinhala); *Ngāhoibi* (Manipur).

SIZE. Grey Partridge ±; length c. 28 cm. (11 in.).

FIELD CHARACTERS. A large-sized sandpiper.

Winter (non-breeding). Above, greyish brown with white lower back and rump. Tail white, barred with brown. Below, white, finely streaked with brown on breast. Bare slender orange-red legs and straight slender orange-red and black bill. Sexes alike.

In flight the white rump, a broad white border to trailing edge of wing (secondaries), and long slender red legs projecting behind are leading pointers. Combined effect of legs of large feeding flock — a red patch moving about on the sands (Armstrong).

Summer (breeding) — as sometimes seen before emigration — upperparts somewhat streaked and spotted with black and fulvous. Below, more

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 259

regularly than Dusky Redshank. Sometimes feeds in salt pans in concentrated brine. When alarmed or suspicious bobs head and posterior violently up and down in the seesaw action typical of sandpipers.

FOOD. Molluscs, crustaceans, worms, aquatic insects and larvae. A considerable quantity of coarse sand and grit usually found in stomachs.

VOICE AND CALLS. In winter quarters only a shrill, piping *tiuee-tiuee-tiuee* or *tiu-tiu-tiu* uttered chiefly while taking off or on the wing. Easily confused with almost identical calls of Greenshank (396), from which distinguished only with practice, by its somewhat higher pitch. In breeding season male has beautiful nuptial song of strung-out quick-repeated trilling notes delivered as he circles at speed in dipping flight over the nesting ground, the white tail fully expanded and white rump fluffed out and flaunted prominently.

BREEDING. Breeds in the Tibetan Plateau facies at c. 4000 to 5000 m. elevation, of Ladakh and Kashmir (Tsokar, Tso Moriri, Pangong lakes, Rupshu, Shushal, etc.) and Sikkim (?). Season, May to July. Nest, a grass-lined deepish depression usually concealed in a grass tussock in a swamp. Eggs, normally 4, pale stone colour to bright reddish buff, speckled and spotted with purplish brown or blackish, chiefly at the broad end. Elongated pyriform in shape and remarkably large for the size of the bird. Average of 8 Kashmir eggs 46.1 × 31.8 mm. (Osmaston); of 60 Asiatic-taken eggs 44.3 × 30.4 mm. (Baker). Both sexes partake in incubation and tending the young, resorting to 'broken-wing' distraction tactics to lead off intruders. Incubation period 23-25 days (Witherby). For courtship display see under Voice etc. (above); further details in Witherby, 1940, 4: 324-9 under race *britannica*.

MUSEUM DIAGNOSIS. Somewhat larger than nominate *totanus*. In winter paler, more grey less brown above; whiter below. In breeding plumage upperparts paler than in nominate *totanus* but edges of feathers more rufous. Below, throat usually purer white and less streaked; streaking and spotting on rest of underparts also showing a tendency to be more reduced (Vaurie).

MEASUREMENTS. Vaurie (1965) gives for 20 ♂♂ of this race: Wing 152-165 (av. 157.5); bill from skull 48-53 (av. 50.2) mm.

Indian collected birds measure:

	Wing	Bill	Tarsus	Tail
4 ♂♂	158-161	45-51	49-51	63-72 mm.
2 ♀♀	162-165	51-54	—	67 mm.
	(from skull)			(SA)

Weight 12 ♂ ♀ (winter) 107-127 (av. 116.9) gm. — BNHS.

COLOURS OF BARE PARTS. Iris brown. Bill black, orange-reddish on basal third. Legs and feet orange; claws black.

395. Marsh Sandpiper or Little Greenshank. *Tringa stagnatilis* (Bechstein)

Totanus stagnatilis Bechstein, 1803, Orn. Taschenb. Deutschl. 2: 292, pl. 29 (Germany)
Baker, FBI No. 2144, Vol. 6: 216
Plate 43, fig. 2

LOCAL NAMES. *Chhōtā gātra*, *Bīlā mākhān* (Bengal).

SIZE. Grey Partridge —; slenderer and lankier. Length c. 25 cm. (10 in.).

258

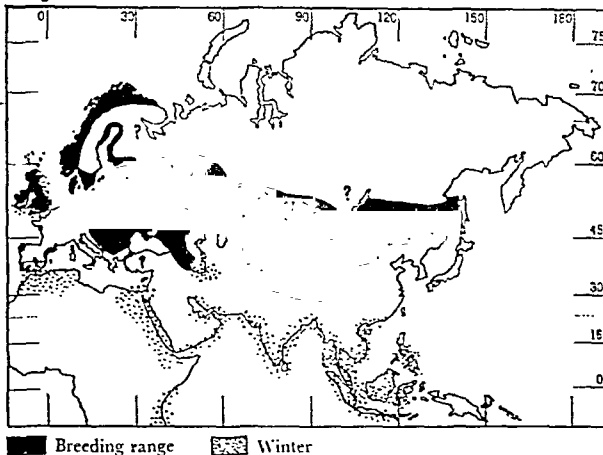
CHARADRIIFORMES

heavily streaked with brown on upper breast than in winter; crescent-shaped dark spots, like broken bars, on lower breast.

Young (immature). Above, more rufous, the fulvous spots on the scapulars etc. more pronounced. Below, more banded with black on flanks.

STATUS, DISTRIBUTION AND HABITAT. Breeds in Kashmir and Ladakh, between c. 3300 and 5200 m. alt.; winter visitor to both Pakistans, all India,

Tringa totanus



Nepal, Sikkim, Ceylon, Andaman, Nicobar and Maldive Is. Affects river banks and jheel margins inland; tidal creeks, salt pans and estuaries on the seaboard.

EXTRALIMITAL. Breeds from Scandinavia to W. Siberia and in C. and E. Asia (probably from the Altai) east to Transbaikalia and W. Kansu. Winters in India, Ceylon, Burma, Malay States, S. China, Philippines, Sunda Is., and Celebes. (Peters).

MIGRATION. Himalayan-breeding winter visitors to the Peninsula vastly augmented by influx from extralimital areas between August-September and end March to early May. An example ringed in Bharatpur, Rajasthan (27°13'N., 77°32'E.) on 6.x.1965 recovered in Altai, near Blagoveshchenka (52°50'N., 79°53'E.), U.S.S.R., in spring 1966. Vast concentrations of Redshanks together with thousands upon thousands of Ruff and Reeve and assorted small waders assemble on the squelchy mud and shallows at the mouth of Banas river, Little Rann of Kutch (Gujarat), prior to emigration, presenting a truly astonishing spectacle.

GENERAL HABITS. Keeps solitary, in small parties and large flocks, often in association with other small waders. Runs about on the muddy edges picking up tibbits, sometimes wading into shallow water and feeding with the bill and head completely immersed. Swims on occasion, but much less

260

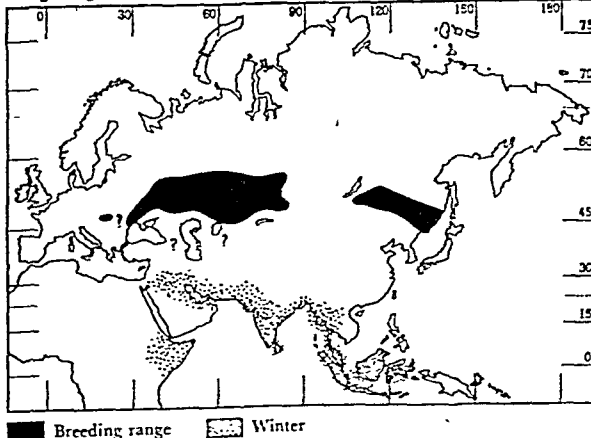
CHARADRIIFORMES

FIELD CHARACTERS. Perhaps the daintiest and most beautiful of our sandpipers. In winter plumage, both at rest and in flight (no wing-bar), a perfect miniature of Greenshank (396) even to the slight upcurve in bill. Above, greyish brown with forehead, supercilium, sides of head, lower back and rump pure white. Tail narrowly barred brownish. Below, pure white; sides of breast more or less marked with brown. Fine almost straight black bill; very slender greenish legs. Sexes alike.

Summer (breeding). Above, sandy grey, the feathers dark-centred forming angular spots on back and 'herring-bone' pattern on inner secondaries. Below, white; foreneck and upper breast spotted with brown; flanks irregularly barred.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor. Not uncommon, but numerically perhaps the least of the commoner sandpipers. All India, both Pakistans, Ceylon. Not yet specifically recorded from the Andamans. A

Tringa stagnatilis



sight record from Nepal (GD 1968). Affects swampy edges of freshwater ponds and jheels, inundated paddyfields, etc.; to a lesser extent brackish lagoons and tidal mudflats.

EXTRALIMITAL. 'Breeds in SE. Europe, C. and S. Russia and across middle Asia south of lat. 56° at least as far east as Transbaikalia, south to Turkistan and N. Mongolia. Migrates in winter to Africa, Arabia, India, Burma, Indo-chinese countries, Sunda Is. and the Moluccas to Australia' (Peters).

MIGRATION. Begins to arrive in N. India about mid August; mostly gone again by end April or early May, a few non-breeding birds loitering throughout the summer months. Two Marsh Sandpipers ringed at Point Calimere, Madras (c. 10°N., 79°E.) on 12.xi.1962 were recovered in the Novosibirsk Region, U.S.S.R. between 54°-55°N. and 76°-77°E., at a

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 261

straight-line map distance of c. 5100 km.—one on 4.v.1963, the other almost exactly four years later (8.v.1967); from the dates of recovery, presumably on their breeding grounds.

GENERAL HABITS. Keeps in parties or small flocks in company with other sandpipers running about on marshy ground, probing the soft mud with its bill for food, pivoting in semicircles methodically from side to side and prospecting in a transect as it were rather than at random. Frequently wades into shallow water feeding with head and bill completely submerged.

FOOD. Small molluscs, crustaceans, insects and worms.

VOICE AND CALLS. Rather silent. A shrill piping *che-weep, che-weep* uttered as the bird rises and makes off.

BREEDING. Extralimital. More or less as in Redshank (394).

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.; for details of structure etc. (also bionomics), Witherby, 1940, 4: 341-3.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	132-139	37-40	47-52	53-58 mm.
♀♀	133-143	40-50	—	— (Witherby)

Weight 40 ♂♀ (autumn) 48-73 gm. (aver. 60.7)—SA.

COLOURS OF BARE PARTS. Iris brown. Bill dark horny brown to blackish, paler and greenish at base of lower mandible. Legs and feet dull sage-green, olive-green or bluish-green.

396. Greenshank. *Tringa nebularia* (Gunnerus)

Scelopax nebularia Gunnerus, 1767, in Leem, Beskr. Finn. Lapper: 251

(District of Trondhjem, Norway)

Baker, FBI No. 2150, Vol. 6: 225

Plate 43, fig. 3 and Plate 44, fig. 10

LOCAL NAMES. *Tāntāndā*, *Timtimā* (Hindi); *Gūtra* (Bengal); *Peria kōttān* (Tamil); *Māhā wēwā* (Sinhala); *Pachakkālī* (Malayalam); *Timblā* (Marathi for all sandpipers).

SIZE. Grey Partridge +; length c. 36 cm. (14 in.).

FIELD CHARACTERS. The largest of our sandpipers.

Winter (non-breeding). Above, dark greyish brown, with white forehead, lower back, rump, and tail; the last with faint, almost invisible barring. Below white, greyish on foreneck and sides of head. Sexes alike.

Summer (breeding). Above, darker and richer coloured, the feathers of back and scapulars with broad black centres. Head and neck whitish streaked with brown. Below, white; foreneck and sides of breast spotted with dark brown.

Distinguished from Marsh Sandpiper by larger size; from Redshank by absence of white wing-bar (in flight), olive-green v. red legs, and by the slender bill being slightly upcurved.

STATUS, DISTRIBUTION and HABITAT. Winter visitor. All India, both Pakistans, Nepal, Ceylon, Andaman, Nicobar, and Maldivé Is. Affects river banks and mudspits, margins of puddles, tanks and jheels, as well as tidal creeks, mudflats, coastal lagoons and salt pans

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 263

flying in wide circles at top speed high up above the nesting ground (D. Nethersole-Thompson).

BREEDING. Extralimital. In general similar to Redshank (394).

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.; for details of plumage phases and morphology (also bionomics), Witherby, 1940, 4: 335-40.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	184-194	50-56	55-61	68-80 mm.
♀♀	184-200	53-59	—	— (Witherby)

Weight 15 ♂♀ (autumn/winter) 143-212 (av. 159) gm. — BNHS.

COLOURS OF BARE PARTS. Iris brown. Bill dark horny brown or greenish brown, blacker at tip. Legs and feet yellowish green or olive-green.

(For an admirable biography of the species see D. Nethersole-Thompson, 1952, *The Greenshank*. New Naturalist Monographs (M 5), Collins, London.)

397. Green Sandpiper. *Tringa ochropus* Linnaeus

Tringa Ochropus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 149 (in Europa = Sweden)

[Name emended to *ochropus*]

Baker, FBI No. 2143, Vol. 6: 215

Plate 43, fig. 6 and Plate 44, fig. 8

LOCAL NAMES. *Nēlla ulanka* (Telugu); *Kāta kokku* (Malayalam), *Timblā* (Marathi — all sandpipers); *Leeli tūwāri* (Gujarati).

SIZE. Grey Quail +; length c. 24 cm. (9½ in.).

FIELD CHARACTERS. A medium-sized sandpiper.

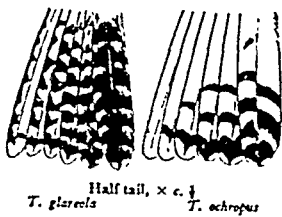
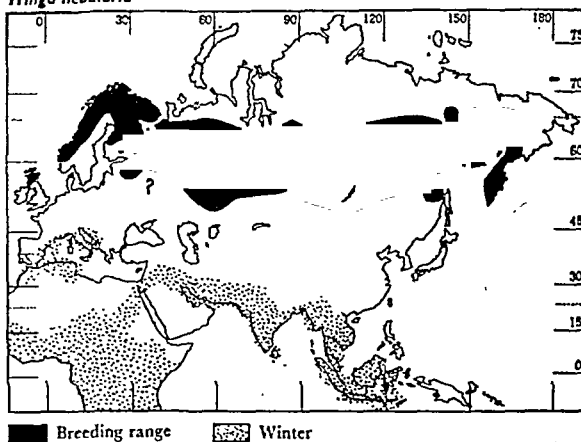
Winter (non-breeding). Above. Head and neck ashy brown; rest of upperparts dark brown glossed with bronze-green. Rump and tail more or less pure white, the latter faintly barred with blackish. Below, white, finely streaked with brown on throat, breast, and flanks. Sexes alike.

In flight the very dark upperparts contrasting sharply with the white rump, tail and lower plumage, no wing-bars, and blackish underside of wings are pointers to its identity, confirmed by its shrill flushing notes (see under Voice).

Summer (breeding). Above, crown and hindneck with white edges to the feathers; sides of face boldly streaked with brown. Upperparts lightly spotted with whitish. Below, brown streaks on foreneck and upper breast very broad and distinct.

Young (immature) has upperparts narrowly scalloped with bronze. Tail narrowly barred, and with a broader terminal band.

STATUS, DISTRIBUTION and HABITAT. Winter visitor. All India (including Assam and Manipur), both Pakistans, Nepal, Sikkim, Bhutan, Ceylon, Andaman Is., Nicobars (?). Affects jheels, village tanks, puddles, streams

*Tringa nebularia*

Extralimital. Breeds in N. Europe south to Leningrad, Kazan and across N. Asia to Kamchatka south to about 55°N. Winters in the Mediterranean countries, Africa and eastward through SE. Asia to Australia and New Zealand.

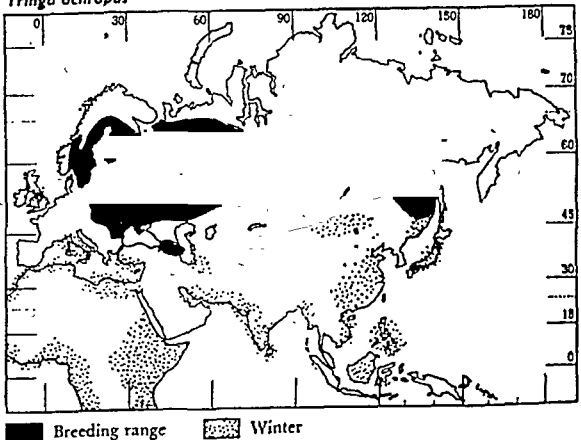
MIGRATION. Like most waders arrives in the second half of August and is mostly gone by end April or early May. A few non-breeding birds stay behind all the year. By mid March moult into summer dress begins; by mid April most birds have acquired considerable migration fat. A bird ringed in Bharatpur (Rajasthan) 24. x. 1966 recovered in Arkhangelsk region, near Vozhgora, USSR, 64°35'N., 48°25'E. on 10.vi.1968 — c. 4800 km. NNW.

GENERAL HABITS. Mostly met with as a solitary bird or in small parties of 3 to 5; rarely in flocks of more than 15 or 20 except when migrating. Frequently associated with Redshanks. Often wades in water up to the belly and feeds with head and neck fully submerged. Has frequently been observed feeding in quite shallow water with neck stretched out in front and merely the bill immersed, the bird moving forward at a run, as if pushing a lawnmower — not zigzagging or sweeping from side to side. Cf. 395.

When alarmed or suspicious, bobs or 'pumps' head violently up and down and also tail end of body.

FOOD. Molluscs, crustaceans, insects, worms and tadpoles. A frog recorded in the crop of a specimen, seemingly far too big for the narrow bill and gullet.

VOICE AND CALLS. In winter only a shrill piping *tiue-tiue-tiue* or *tiu-tiu-tiu* when flushed and going off; very similar to, and easily confused with, calls of the Redshank but somewhat lower in pitch. In breeding season has a remarkably beautiful continuous song delivered while the singer is

Tringa ochropus

Extralimital. Breeds in northern Europe and Asia, north to the Arctic Circle (locally to c. 68°N.), south to Transcaspiya, Turkestan, NW. Mongolia and the Amur river. (For details see Vaurie, 1965, 2: 414.) Winters in the British Isles, Mediterranean region, Africa south to Angola and Kenya, and southern Asia, Hainan, Taiwan and the Philippines. Burma, Borneo (Smythies).

MIGRATION. Abundant on passage at Kohat and through Kurram Valley (NW. Pakistan) from end August till November, and again in April-May (Whitehead, 1909, *Ibis*: 275). Earliest arrivals in Sind end July; more in August and September when many pass through Lower Sind. Return passage early April; most gone by end of that month 'noticeably earlier than most other species' (Ticehurst, 1924, *Ibis*: 122-3).

Gilgit: Very common in migration mid August to end September, and again beginning of April to mid May (Scully, 1882, SF 10: 141). Nepal Valley: earliest date 17 August, latest date 17 April. Large numbers on passage. On 16 September during afternoon over 20 parties observed, mostly of 3 birds each, all calling and flying steadily in same direction; on 21 September again numbers flying past (Desirée Proude, 1949, JBNHS 48: 718). Gujarat: Earliest 13 August latest 17 April (SA). Bombay environs: Earliest 5 August, latest 9 May. Ceylon: Arrives end August and September, leaves towards end April and in May (Phillips, 1952, Checklist: 38). Odd non-breeding birds stay behind throughout the year.

A bird ringed in the environs of Kazan, U.S.S.R. (c. 56°N., 49°E.), presumably on its breeding grounds, in June 1929 was recovered in

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 265

September 1933 in Kottayam district, Kerala (c. 9°N, 76°E.)—a straight-line map distance of c. 5600 km. (c. 3500 miles).

GENERAL HABITS. Typical of the sandpipers, but is less gregarious than most species. Keeps singly or in twos and threes, and seldom in voluntary association with other species; small flocks of usually not more than 15 or 20 even on migration. Runs about and feeds at edge of water, sometimes wading into the shallows, probing into the soft mud with its bill. When perturbed, bobs violently up and down before taking wing, this almost invariably accompanied by the distinctive flushing notes.

FOOD. Molluscs, crustaceans, aquatic insects, worms. Mosquito larvae (Husain & Bhalla).

VOICE AND CALLS. A shrill piping *ti-tui* or *tuwe-tuwe-tuwe* as it flushes and is flying off. A beautiful nuptial song in the breeding season.

BREEDING. Extralimital and peculiar. As a rule lays its 3 or 4 eggs in the deserted nests of thrushes and other birds fairly high up in trees; only rarely on the ground like most other sandpipers, e.g. Redshank.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.; for details of plumages and morphology (also bionomics), Witherby, 1940, 4: 310-14.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	136-148	33-35	32-34	52-61 mm.
♀♀	142-153	33-36	—	—
	(from feathers)	(from feathers)	(from feathers)	(Witherby)

Weight 20 ♂♀ (autumn/winter) 59-87 (av. 74.5) gm. — BNHS.

COLOURS OF BARE PARTS. Iris brown. Bill dull greenish, black at tip. Legs and feet dull greenish brown or olive-green.

398. Wood or Spotted Sandpiper. *Tringa glareola* Linnaeus

Tringa glareola Linnaeus, 1758, Syst. Nat., ed. 10, 1: 149 (in Europa = Sweden) Baker, FBI No. 2146, Vol. 6: 219

Plate 43, fig. 5 and Plate 44, fig. 11

LOCAL NAMES. *Chūpla*, *Chobāha*, *Titāri* (Hindi); *Bālu bātān* (Bengal); *Chinna ulanka* (Telugu); *Kāta kokku* (Malayalam); *Sili watunā* (Sinhala); *Kōttān*, *Vājā ūllān* (Tamil).

SIZE. Grey Quail ±; length c. 21 cm. (8½ in.).

FIELD CHARACTERS. A small snipe-like, rather gregarious wader.

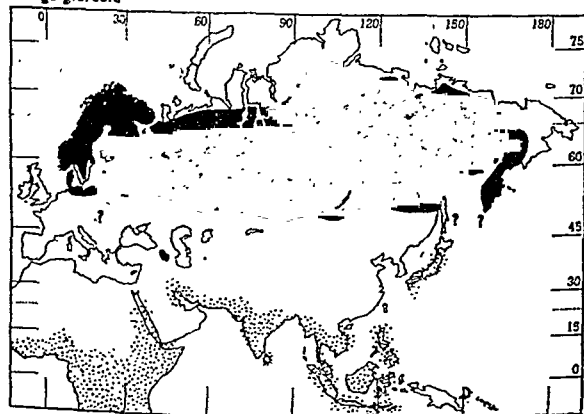
Winter (non-breeding). Above, greyish brown and sepia-brown indistinctly spotted and marked with white. A whitish supercilium. Lower



× c. 1

back, rump and tail white, the last barred with blackish. Below, breast pale dusky; rest of underparts white. Sexes alike.

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 267

Tringa glareola

■ Breeding range ■ Winter

6200 km. From the recovery date presumably the bird was on its breeding grounds.

GENERAL HABITS. More gregarious than most sandpipers, e.g. Green and Common. Often seen in flocks of 20 to 30 birds, and much larger ones on migration. Occasionally also solitary or in small parties. When feeding, sometimes wades into water up to the belly giving the impression of swimming, and probes the bottom mud with head and neck completely immersed. When newly arrived on migration, and again just prior to departure late in the season, territorial rivalry apparent. One bird suddenly rushes at a neighbour and leaps at him with open wings as if to strike with imaginary spurs, the other usually ducking to avoid the onslaught. In one case observed, the attacker leapt viciously on the head and neck of his adversary and pinned him down in the water in a seemingly deliberate attempt to drown him.

When wounded and trying to evade capture has been seen to dive for a few seconds quite 'professionally'. Its predilection for snipe marshes and confusingly snipe-like flight-silhouette sometimes bring it to grief at the hands of tyro snipe-shooters.

FOOD. Tiny molluscs, crustaceans, insects, worms. 'Small fish about 2 cm.' (SA).

VOICE AND CALLS. A sharp quick-repeated *chip, chip, chip*, etc. (at c. 2-3 chips per second) from the ground, usually by individual birds, not together. A shrill *pee-pee-pee* by several birds in disorderly chorus as a flock flushes and flies away. The latter call 'similar to that of Green Sandpiper but more metallic' (A. E. Jones).

BREEDING. Extralimital. In general like Redshank and other sandpipers. Female does most of the active courting (Malcolm Macdonald, 1947,

In flight sepia-brown upperparts, with conspicuous white rump, barred brown-and-white tail, and no wing-bar, together with characteristic flushing notes are diagnostic clues.

Summer (breeding). Plumage much brighter; markings above and below better defined giving a distinctly spotted appearance.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor. Common and widespread: all India (including Assam and Manipur), both Pakistans, Nepal, Ceylon, Andaman, (Nicobar ?) and Maldivian islands. Affects squelchy margins of wheels, wet paddyfields, seepage marshes round irrigation tanks—chiefly lowlands but also up to at least 2000 m. altitude. Also mudflats along tidal creeks on the seaboard.

Extralimital. Breeds in N. Europe and N. Asia east to the Amur river, Kamchatka and northern Kurile islands. (For details see Vaurie, 1965, 2: 415.) Winters throughout Africa, and SE. Asia; Japan, Philippines, Malay Archipelago to Australia.

MIGRATION. Begins to arrive in the northern districts in early August; fair numbers in by end August or early September. Spring (outward) passage end March and April, trickling on till mid May. The same in Ceylon. Apparently overwintering of this species in India unusual and unrecorded. Among the extralimital recoveries (to January 1968) of Spotted Sandpipers ringed in India, the following are suggestive of the general provenance of our wintering populations.

Ringed at	on	Recovered at	on
Manjhaur, Monghyr district, N. Bihar (c. 25°N, 86°E.)	17.iii.64	Nuya, Mukhtuya dist., Yakutian, U.S.S.R. (c. 60°30'N, 116°10'E.)	16.v.64
do.	4.xii.64	30 km. S. of Yakutsk, Yakutian, U.S.S.R. (c. 62°N, 129°40'E.)	25.v.65
Salt Lakes, near Calcutta (c. 22°35'N, 88°21'E.)	26.iii.65	Srednyaya, Olekma Tungiro-Olekminsk dist., Chita region, U.S.S.R. (c. 55°15'N, 120°E.)	25.v.65
do.	2.iv.65	Almaznyi, near Mirnyi, Yakutian, U.S.S.R. (c. 62°30'N, 113°50'E.)	25.v.65
Bharatpur, Rajasthan (c. 27°13'N, 77°32'E.)	9.x.65	Near Ushakovo, Tyumen region, U.S.S.R. (57°49'N, 68°4'E.)	5.v.67

All the above recovered at straight-line map distances of between 4500 and 5200 km.

Since then, many more recoveries of Spotted Sandpipers ringed in Bharatpur, Bihar and Bengal have been reported from the same general area in NE. Siberia. The most noteworthy of these is of one ringed near Calcutta on 6.iv. 1967 and recovered 48 days later (on 24.v.1967) near Susuman (68°48'N, 148°12'E.) in the Magadan Region of the USSR — at a map distance of c.

The Birds of Brewery Creek, p. 141). This is probably true of many other sandpipers as well, and correlated with the larger size of their females.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.; for details of plumages and morphology (also bionomics), Witherby, 1941, 4: 305-9.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
		(from feathers)		
♂♂	120-128	25-29	34-38	44-52 mm.
♀♀	125-130	25-31	—	—
				(Witherby)

Weight 50 ♂♀ (autumn and winter) 36-66 gm. (aver. 52.8)—SA.

COLOURS OF BARE PARTS. Iris brown. Bill blackish brown, olive at base. Legs and feet pale sage-green or olive-green; claws brown.

399. Spotted Greenshank or Armstrong's Sandpiper. *Tringa guttifer* (Nordmann)

Totanus guttifer Nordmann, 1835, in Erman's Reise, Naturh. Atlas: 17 (Okhotsk) Baker, FBI No. 2151, Vol. 6: 226 Plate 43, fig. 4

LOCAL NAMES. Unrecorded.

SIZE. Grey Partridge ±; slightly smaller than Greenshank. Length c. 33 cm. (13 in.).

FIELD CHARACTERS. Difficult to distinguish from Greenshank (396) especially as it occurs mingled with it and with Redshanks and liable to be overlooked. Wing like Greenshank's—without white bar, stouter bill (also slightly upcurved) noticeably longer than tarsus, and yellow legs, are points to look for.

Winter (non-breeding). Above, forehead, supercilium, and sides of head white. Sides of face, and hindneck, streaked with brown. Rest of upperparts ashy brown. Lower back and rump white, faintly barred with brown on upper tail-coverts. Tail ashy and white. Primaries black. Below, white.

Summer (breeding). Above, blackish brown with a few white spots on scapulars. Below, scattered dark spots on foreneck and breast. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Rare winter visitor to Assam and East Pakistan. Possibly overlooked and may be actually less rare than apparent. Affects grassy meadows near streams, sand- and mudflats in the larger rivers and near the sea.

Extralimital. Breeds on Sakhalin Island and probably in E. Siberia. Winters in Ussuriland, Japan, Korea, Malaya, Burma. (For details see Vaurie, 1965, 2: 414.)

MIGRATION. No data.

GENERAL HABITS. Very little specifically known; apparently similar to Greenshank (396).

FOOD. Stomachs of Indian-shot specimens contained small mudfish, crustacea, mollusca and insect larvae (Baker).

VOICE AND CALLS. A sharp whistling note as they rose (Baker).

BREEDING. Extralimital and little known.

MUSEUM DIAGNOSIS. Bill slightly upcurved as in Greenshank but stouter and appreciably longer than tarsus. Web between 2nd and 3rd toes well developed as in Redshank. For description of plumage see Baker, loc. cit.

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 269

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂	178	50-57 (from feathers)	45-47	62-67 mm. (Baker)
♀	174-181			

Tarsus 41-42 mm.; middle toe with claw 35 mm. (Hartert).

COLOURS OF BARE PARTS. Iris dark brown. Bill dusky; yellow near base, black at tip. Legs and feet dull ochreous yellow or greenish ochreous (Armstrong).

400. Terek Sandpiper or Avocet-Sandpiper. *Tringa terek* (Latham)
Scolopax cinerea G\u00fcldenst\u00e4dt, 1774, Novi Comm. Sci. Petropol. 19: 437, pl. 19, pre-occupied in genus *Tringa* by *Tringa cinerea* Br\u00fcnnich, 1764 (Shores of the Caspian Sea about the mouth of the Terek river)

Scolopax terek Latham, 1790, Index Orn. 2: 724, new name for *Scolopax cinerea* Baker, FBI No. 2141, Vol. 6: 212

Plate 43, fig. 7 and Plate 44, fig. 14

LOCAL NAMES. None recorded.

SIZE. Grey Quail +; length c. 24 cm. (9 1/2 in.).

FIELD CHARACTERS. Unmistakable by its long, slender upcurved bill and rather short orange-yellow legs. In flight pale ashy brown rump and white trailing edge of dark wings conspicuous.

Winter (non-breeding). Above, greyish brown with conspicuous white forehead and supercilia. Below, white. Sexes alike.

Summer (breeding). Above, with bold black streaks on mantle forming a prominent V-shaped mark (scapulars). Below, sides of head and neck, and breast, distinctly striated with brown.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor to the entire seaboard from W. Pakistan (Makran, Sind) and western India from Kutch and Saurashtra south to the tip of the Peninsula and up the east coast to W. Bengal and East Pakistan; Ceylon (northwest coasts); Andaman Is. Affects the seashore, mangrove swamps, tidal creeks and mudflats, and coastal lagoons. Rarely at inland fresh water and that chiefly on migration and near the seacoast, but ascends the larger rivers in the Sunderbans, Bangladesh.

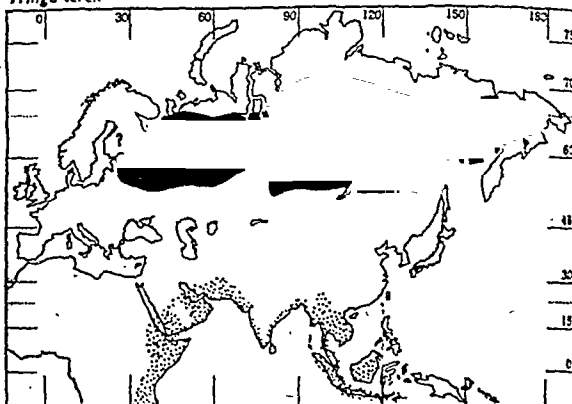
Extralimital. Breeds in N. Russia to Siberia (north locally to lat. c. 70°N.) east to Kolyma river, south from southern Urals to Lake Baikal and beyond. (For details see Vaurie, 1965, 2: 418-19.) Winters in E. Africa, Madagascar, Mauritius, India, Burma, Malay Archipelago, Australia, and Tasmania.

MIGRATION. No ringing data. Like many other waders begins to arrive on the Makran, Sind, Kutch and Saurashtra coasts in early August. Is fairly spread out by September south to Ceylon and east to Orissa. (Chittagong?). Birds in April in partial summer plumage and very fat; exodus well advanced by end April; nearly all gone by mid May, but staybacks commonly observed June-August (Pt Calimere). Apparently migrates mainly along the littoral. Once taken on autumn passage in Bharatpur and once observed in Delhi (JBNS 65:781-2); otherwise not reported from far inland in India or Pakistan.

GENERAL HABITS. Keeps in parties and small flocks of up to 10 or 15 birds running about actively and feeding on the seashore between the tide-

CHARADRIIFORMES

Tringa terek



■ Breeding range ■ Winter

marks or on the mudbanks of tidal creeks, scattered amongst dunlins, sand plovers and other maritime waders. When feeding probes with its bill deep into the squelchy ooze almost to the eyes so that the base of the lower mandible and chin usually become bare of feathers due to the constant attrition. Often a morsel is shaken in water and carefully washed before being swallowed. At high water the birds bunch up on a raised sandspit or rock on the seashore resting on one leg, or settle on the bushes in mangrove swamps until the receding tide exposes the feeding ground. Whether the peculiar upturned shape of the bill has any special adaptive significance remains to be studied.

FOOD. Tiny molluscs, crustaceans and insects.

VOICE AND CALLS. In winter only a subdued twittering or trilling especially as a flock rises.

BREEDING. Extralimital. Season late May and June. Nest a grass-lined depression in ground moss in willow scrub. Eggs, 4, very like those of Marsh Sandpiper (395), yellowish grey or buff blotched with sepia.

MUSEUM DIAGNOSIS. Bill slender, upcurved, nearly twice as long as tarsus. Both mandibles grooved. Nostril in upper groove close to base of bill. Hind toe and claw well developed; anterior toes webbed; middle claw dilated but not pectinated. Wing pointed: 1st primary (as.) longest; second nearly as long. For description of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂	126-141	43-49	25-28	47-56 mm.
♀	127-140	44-52	—	—

(from feathers)

(Witherby)

Weight 17 ♂ ♀ (June-Aug., staybacks) 45-65 (av. 53) gm.; 20 ♂ ♀ (winter) 50-72 (av. 58.1) gm. — BNHS.

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 271

COLOURS OF BARE PARTS. Iris brown. Bill black or dark brown, yellowish or orange at base. Legs and feet dull yellow to bright orange-yellow.

401. Common Sandpiper. *Tringa hypoleucos* Linnaeus

Tringa hypoleucos Linnaeus, 1758, Syst. Nat., ed. 10, 1: 149 (in Europa = Sweden)

Baker, FBI No. 2145, Vol. 6: 217

Plate 43, fig. 9 and Plate 44, fig. 13

LOCAL NAMES. *Potte ulanka* (Telugu); *K\u00f6t\u00e1n* (Tamil); *S\u00edli watu\u00f4* (Sinhala); *Nerik\u00e1ta* (Malayalam); *S\u00e4m\u00e4ng\u00e1 tuta\u00f4ri* (Gujarati); *Findon* (Maldive Is.).

SIZE. Grey Quail; length c. 21 cm. (8 in.).

FIELD CHARACTERS. A small-sized sandpiper with a vertical white stripe between wing-shoulder and dusky breast-band. A narrow white wing-bar, conspicuous in the peculiar rapid, stiffly vibrating jerky flight low over water, and the shrill piping *tee-tee-tee* are diagnostic pointers.

Winter (non-breeding). Above, sides of head and neck ashy brown, streaked darker. A broad pale rather indistinct supercilium. Upperparts olive-brown. Rump and tail brown with only the outer tail-feathers white. Below white with a broad diffuse dusky band across breast. Sexes alike.

Summer (breeding). Above, darker, less olive, with broader dark shaft-strips and cross-barring. Below, foreneck and breast boldly striated with brown.

STATUS, DISTRIBUTION AND HABITAT. Breeds in Kashmir, Ladakh and Garhwal to at least 3200 m. altitude, perhaps higher. Possibly also in N. Baluchistan.

Winter visitor to all India (including Assam, NEFA, Nagaland, Manipur), both Pakistans, Nepal, Sikkim, Ceylon, Andaman, Nicobar, Maldiva and Laccadive Is. Up to c. 2100 m. (Nilgiris). Affects inland waters — streams, tanks, ditches, puddles — as well as rocky seashores, harbours and docks, coastal lagoons, tidal creeks and mangroves.

Extralimital. Breeds throughout Europe and Asia south of the tundra, south to N. Spain, N. Italy, S. Russia, Iran, Mongolia, Manchuria, Japan. Winters in Africa, India, Ceylon, SE. Asia north to S. China, Taiwan, the Philippines, Malay Archipelago to Australia.

MIGRATION. No ringing data. Apparently migrates along the coast. Very few definite records of overland migration in India, but see above. Once of a flock at a pool of fresh water in the desert a couple of miles inland from the coast near Karachi, apparently just arrived. Arrives near Karachi between middle and end August. Leaves late in the season; a few flocks still present between middle and end May (Ticehurst, 1924, *Ibis*: 111) and at end June in Pt Calimere.

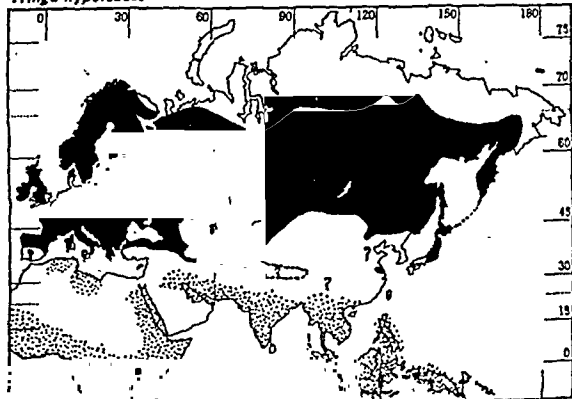
GENERAL HABITS. Usually keeps solitary or in scattered twos and threes running about at the water's edge, picking up tibbits cast up by the wavelets



Tail, x c. 1

CHARADRIIFORMES

Tringa hypoleucos



■ Palearctic breeding range ■ Winter

and ripples; wags its tail end incessantly and jerks its head, or bobs, vehemently from time to time, particularly when agitated. Hardly ever collects in flocks, but numbers (40-50 or more) sometimes bunch up together on rocks on the seashore at high tide while waiting for the ebb to resume feeding. The way a bird follows a receding wave to pick up any morsels it may expose, and hastily withdraws to avoid being engulfed by the oncoming next, is amusing to watch. In keeping with the harder ground it normally frequents, does not probe into the mud for food but picks it up from the surface, like the Grey Wagtail with which it is very commonly associated on inland streams and trickles. The jerky 'vibrating' flight (see Field Characters) is typical. When wounded has been observed to dive and swim hither and thither with quick wing-strokes two feet below the surface, diving again immediately on rising to the top (Butler, JBNS 13: 148).

Much rivalry for feeding territories noticeable among first arrivals. Two birds will run parallel to each other casting malicious sidelong glances. One will abruptly spring at his rival, the assailed one drooping his wing on that side and screwing round his expanded tail in anticipation, and as if to

GURLEWS, SANDPIPERS, SNIPE, WOODCOCK 273

ward off the attack. These assaults, repeated in turn by either belligerent, are mostly formalized and innocuous.

FOOD. Tiny molluscs, crustaceans, and insects.

VOICE AND CALLS. A characteristic shrill flushing note *lee-lee-lee*. A pretty, long-drawn trilling or piping nuptial song *wee-it, wee-it, or kiti-wee-it, kiti-wee-it* repeated several times. This is frequently heard when the bird is resting and completely at its ease, just prior to emigration and also till shortly after return to winter quarters. It is delivered from the ground, from a rock or mangrove bush, or during the male's elaborate aerial courtship display. The latter consists of flying around in circles at top speed above the nesting area, the bird often soaring to a considerable height and descending on quivering wings.

BREEDING. Season in Kashmir, Ladakh, Garhwal, etc. principally May-June. Nest, a hollow in the ground lined with dead leaves and dry grass under the concealing shelter of a bush or boulder. Placed on a tamarisk- or other scrub-covered shingle islet amid a rushing Himalayan stream. Eggs, 4, rather glossy pyriform ovals, creamy buff, blotched and speckled with reddish brown, and with phantom marks of lavender or pinkish grey. Average size of 120 Indian-taken eggs 35.6×26.2 mm. (Baker). Both sexes take part in incubation and tending the young. Period 22-23 days; longer than in domestic hen! Eggs disproportionately large and heavy for size of bird. According to Heinroth combined weight of full clutch (4 eggs), laid at 24-hour intervals, is $48-52$ gm., exceeding the normal weight of the layer.

MUSEUM DIAGNOSIS. For description of plumage (including chick in down) see Baker, loc. cit.; for details of plumage phases and morphology (also bionomics), Witherby, 1940, 4: 297-302.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	106-114	23-25	22-24	50-59 mm.
♀♀	111-119	24-26	—	—

(from feathers)

(Witherby)

Weight 8 ♂ ♀ (autumn/winter) 38-50 (av. 44) gm. — BNHS.

COLOURS OF BARE PARTS. Iris dark brown. Bill horny brown, greyer or greenish at base of lower mandible; mouth pale flesh grey. Legs and feet greenish grey or greyish sage-green; claws dusky.

Genus ARENARIA Brisson

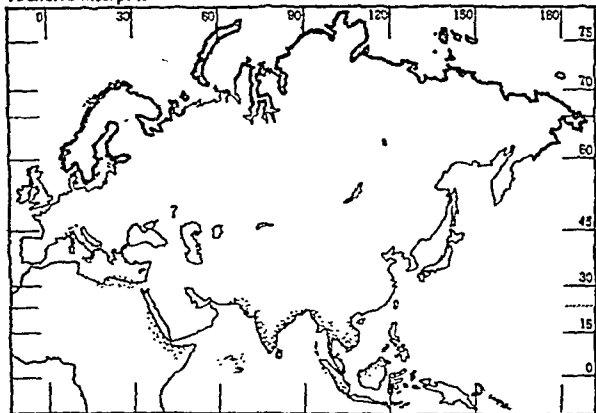
Arenaria Brisson, 1760, Orn. 1: 48; 5: 132. Type, by tautonymy,

Arenaria Brisson = *Tringa interpres* Linnaeus

Bill distinctive, conical and pointed with the culmen nearly straight and lower mandible inclined upward. Nostril linear, situated in a groove which extends nearly half way down upper mandible from base. Wing long and pointed: first primary (as.) longest. Tarsus short, reticulated behind, scutellated in front. Hind toe well developed. No web between the anterior toes.

Genus Holarctic, the Palearctic race of one species migratory to India.

GURLEWS, SANDPIPERS, SNIPE, WOODCOCK 275

Arenaria interpres

■ Breeding range ■ Winter

rocky beach. Runs actively in plover-like spurts on the sand, shingle and sheet rock, turning over algae or poking with its bill under stones and seashells at the tide's edge in search of food. Scuttles up the beach to avoid each incoming wave, following it closely as it recedes to seize any washed-up morsels, and withdrawing hurriedly again before the next one.

In the Laccadives has been repeatedly observed swimming out buoyantly (like Phalarope) — in spite of completely unwebbed feet — to just beyond the breakers on the outside of the atolls, never in the still lagoons. The birds rose off the water quite easily and settled on the sea again after short flights (Hume, SF 4: 464). What they were after is not mentioned, but is worthy of investigation since it may represent an unrecorded method of feeding.

FOOD. Molluscs, crustaceans, sandhoppers, and marine worms. Sand crabs (*Oxydora*) with carapace up to c. 5 cm. across recorded elsewhere; also berries of *Scaevola* (Child, 1960, Atoll Res. Bull. 74: 26).

VOICE AND CALLS. The only note heard in its winter quarters is a metallic twitter as a flock flushes.

BREEDING. Extralimital. Season, mid-May to July. Nest, a grass-lined ground hollow on Arctic islands. Eggs, normally 4.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.; for details of plumage phases and morphology (also bionomics), Witherby, 1940, 4: 223-7.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	147-157	20-24	23-26	c. 55-62 mm.
♀♀	146-162	c. 21-25	—	—

(from feathers)

(Witherby)

Weight 25 ♂ ♀ (autumn/winter) 58-95 (av. 75) gm. — BNHS.

274

CHARADRIIFORMES

402. Turnstone. *Arenaria interpres interpres* (Linnaeus)

Tringa interpres Linnaeus, 1758, Syst. Nat., ed. 10, 1: 148

(Europe and North America = Gotland, Sweden)

Baker, FBI No. 2101, Vol. 6: 154

Plate 43, fig. 8 and Plate 44, fig. 6

LOCAL NAMES. *Tirakkata* (Malayalam); *Ratafy* (Maldives); *Olijiya* (Sinhala); *Kittin* (Tamil).

SIZE. Grey Quail ±; length c. 22 cm. (8½ in.).

FIELD CHARACTERS. A medium-sized dark brown-and-white wader distinguished by its glistening white chin and throat, straight conical black bill and orange-red legs. Sexes alike.



Winter (non-breeding). Above, dark brown and white. Lower back, rump, and tail-coverts white, the last with a dark brown cross-bar. Tail dark brown tipped with whitish and with the outermost pair of feathers white. Below, foreneck and sides of breast brown. Rest of underparts including chin and throat pure white.

Summer (breeding). Above, head white streaked with black on crown. A black band from forehead to eye and to a black patch below eye. Rest of upperparts largely black and deep rufous. Below, foreneck and sides of breast, and a partial collar on sides of neck, black. Rest of underparts white.

In flight the middling size, black-and-white plumage (with white back and dark pectoral band), pointed wings with a white wing-bar and white shoulder-patch, and bright-coloured legs, are diagnostic pointers.

Birds in mottled black-and-white and chestnut intermediate plumage phases common.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor to the entire seaboard of India and both Pakistans, Ceylon, Andaman, Nicobar, Maldives, and Laccadive islands. Affects rocky sea coasts; very rarely fresh waters.

Exceptional vagrant inland; solitaires or twos and threes (on migration?) recorded once each from Lucknow (U.P.), Patna (Bihar), Sambhar Lake and Bharatpur (Rajasthan) and Manipur in the last 95 years.

Extralimital. Breeds on arctic coasts and tundras from Scandinavia eastward across Siberia, locally to Alaska to c. lat. 76°N. Winters *inter alia* on the coasts of southern Asia — India, Burma, Malay Peninsula and Archipelago. (For details see Vaurie, 1965, 2: 391.)

MIGRATION. No ringing data. Apparently migrates along the coast. Very few definite records of overland migration in India, but see above. Once of a flock at a pool of fresh water in the desert a couple of miles inland from the coast near Karachi, apparently just arrived. Arrives near Karachi between middle and end August. Leaves late in the season; a few flocks still present between middle and end May (Ticehurst, 1924, *Ibis*, 111) and at end June in Pt Calimere.

GENERAL HABITS. Predominantly maritime. Usually keep in small parties either by themselves or dotted about among feeding sand plovers on the

276

CHARADRIIFORMES

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet orange-red; claws black.

MISCELLANEOUS. Longevity (from ringing data) 19 years. Ring, 1962, 33: 149.

Genus LIMNODROMUS Wied

Limnodromus Wied, 1833, Beitr. Naturg. Brasil, 4, Abth. 2: 716. Type, by monotypy,

Scolopax noveboracensis Gmelin = *Scolopax grisea* Gmelin

Paruscolopax Blyth, 1859, Jour. Asiat. Soc. Bengal 28(1): 280. Type, by monotypy,

Macrorhamphus semipalmatus 'Jerdon' = Blyth

Cf. Rand, A. L., 1950, *Condor* 52: 228-31.

Bill like snipe (*Cepello*), very long, straight and slender, swollen towards the tip where it is pitted. Both mandibles grooved at the sides, upper mandible also above, towards tip. Nostrils near base. Wing long and pointed: first primary (as.) longest, 2nd subequal. Tarsus shorter than bill, scutellated in front reticulated behind. Hind toe well developed; anterior toes webbed near base, the web between outer and middle toe the larger. Winter plumage grey-brown, summer plumage rufous as in Godwit (*Limosa*).

The genus contains two species one of which is a rare migrant to India.

403. Snipebilled Godwit or Asian Dowitcher. *Limnodromus semipalmatus* (Blyth)

Macrorhamphus semipalmatus 'Jerdon' = Blyth, 1848, Jour. Asiat. Soc. Bengal 17(1).

252 (Madras)

Micropalama tuckersmithi [sic] Verreaux, 1860, Rev. Ung. de Zool., May-June: 206, pl. 14 (Dauria)

Baker, FBI No. 2140, Vol. 6: 210

Plate 39, fig. 12 and Plate 42, fig. 2

LOCAL NAMES. None recorded.

SIZE. Grey Partridge ±; length c. 34 cm. (13½ in.).

FIELD CHARACTERS. A rare, large-sized wader similar to Godwit but with a conspicuously slenderer, longer bill, somewhat swollen towards tip.

Winter (non-breeding). Above, forehead and lores dark brown; a broad white supercilium; crown and mantle dark greyish brown, back dark brown, both scalloped with whitish. Inner primaries and secondaries broadly bordered with white. Rump and upper tail-coverts white with irregular arrow-shaped brown bars. Rectrices barred brown and white. Below, sides of head, chin, throat, foreneck, and upper breast white streaked with pale brown forming wavy vertical bands. Flanks and under tail-coverts irregularly spotted and barred with brown. Sexes alike.

Summer (breeding). Above, head, neck and upperparts bright rufous, the mantle feathers with black centres. Below, uniform rufous.

STATUS, DISTRIBUTION AND HABITAT. Rare vagrant (?). Has been obtained at long intervals since first described by Jerdon from Madras in 1848, in W. Bengal (Calcutta), Assam (Dibrugarh, Shillong), Orissa (Chilka lake) and Tamil Nadu (Pt Calimere). Mostly on the sea coast and muddy banks of estuaries of large rivers, but has also been taken at c. 1500 m. in the Khasi

Genus GALLINAGO Brisson

Gallinago Brisson, 1760, Orn. 5: 298-310. Type, by tautonymy, *Scolopax gallinago* Linnaeus
Gallinago Koch, 1816, Syst. Baier. Zool. 1: 312. Type, by tautonymy, *Gallinago media* Koch = *Scolopax gallinago* Linnaeus
Lymnecryptes Kaup, 1829, Skizz. Entw. Gesch. Eur. Thierw.: 118. Type, by monotypy, *Scolopax gallinula* Linnaeus = *Scolopax minima* Brünnich
Copella Frenzel, 1801, Vog. u. Eyer Wittenberg: 58. Type, by monotypy, *Scolopax coelestis* Frenzel = *Scolopax gallinago* Linnaeus
Cf. Wetmore, A., 1958, *Ibis* 100: 125-7.

Bill as in Woodcock long, straight, slender, rather soft and swollen at tip, finely pitted and provided with sensory nerves. Differs from the Woodcock genus (*Scolopax*) in having a denser, harder plumage with a different colour pattern on the head and scapulars — longitudinal streaks instead of transverse bars on the former, and streaks instead of blotches on the latter. Lower part of tibia bare instead of feathered throughout. Wing longer in proportion and less rounded. Tail more or less fan-shaped but feathers varying in number from 14 or 16 in Common Snipe to 26 in Pintail, and in shape from short attenuated pins to normal rectrices with broad vanes.

Contains a great number of species, many of which are cosmopolitan. Seven species occur in India in winter.

Key to the Species

	Page
A Crown with no median pale band; tail-feathers pointed.....	<i>G. minima</i> 290
B Crown with longitudinal stripes and median pale band; tail-feathers rounded.....	
1 Wing exceeding 150 mm.; borders of scapulars white.....	<i>G. solitaria</i> 278
Wing under 150 mm.; borders of scapulars buff or rufous.....	a
a Distance between tip of shortest secondary and that of longest primary not exceeding 55 mm.....	<i>G. nemoricola</i> 280
Distance between tip of shortest secondary and that of longest primary exceeding 55 mm.....	I
I Outer tail-feathers narrow and stiff and under 7.5 mm. broad.....	a ¹
Outer tail-feathers not narrow or stiff.....	b ¹
a ¹ Tail-feathers 26 in number, the eight outer on each side less than 5 mm. broad.....	<i>G. stenura</i> 282
Tail-feathers 20, the six outer on each side less than 7.5 mm. broad.....	<i>G. megala</i> 284
b ¹ Three outer pairs of tail-feathers marked with dusky spots and bars.....	<i>G. gallinago</i> 287
Three outer pairs of tail-feathers pure white.....	<i>G. media</i> 286

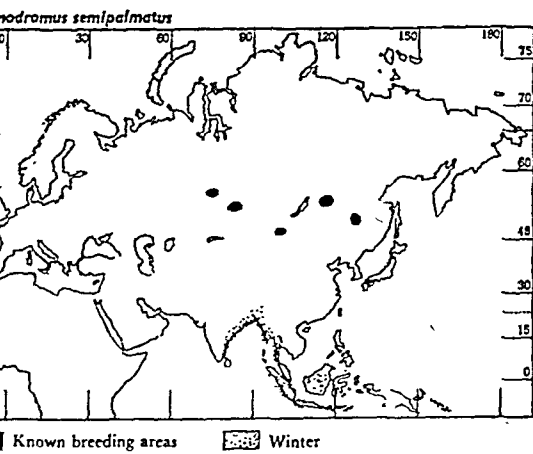
404. Eastern Solitary Snipe. *Gallinago solitaria solitaria* Hodgson

Gallinago solitaria Hodgson, 1831, Gleanings in Science 3: 238 (Nepal)

Baker, FBI No. 2169, Vol. 6: 257

Plate 28, fig. 10

LOCAL NAMES. *Bān chāhā* (Hindi); *Bhārka* (Nepal); *Simpoo* (Khasi); *Daodidap gophu* (Cachar); *Boner kocha* (Assamese); *Chet laobi* = 'calls chet', presumably for all snipe (Manipur).



Hills, Assam. Perhaps less rare than published records suggest, but uncritically overlooked among Godwits (*Limosa*). Thus recently (1966) found to be not uncommon in winter on Chilka lake, Orissa.

Extralimital. Breeds in W. Siberia in the valley of the Irtysh near Tara and in the Ob valley in the Barnaul region; in Transbaikalia (Arghun Valley) and in NW. and C. Mongolia. Complete breeding range not known. On migration and in winter to China, Japan, N. India, Burma, and the Indochinese countries. Borneo (Smythies).

MIGRATION. No data. The specimens obtained near Shillong, c. 1500 metres elevation, in early September and late April were presumably on passage.

GENERAL HABITS, FOOD, VOICE and CALLS. Apparently similar to the Godwits (389, 391) but no precise data.

BREEDING. Extralimital. Poorly known.

MUSEUM DIAGNOSIS. See under genus; for details of plumage, Baker loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	160-172	77-87	48-54	61-67 mm. (Baker)
♀♀	163-177			

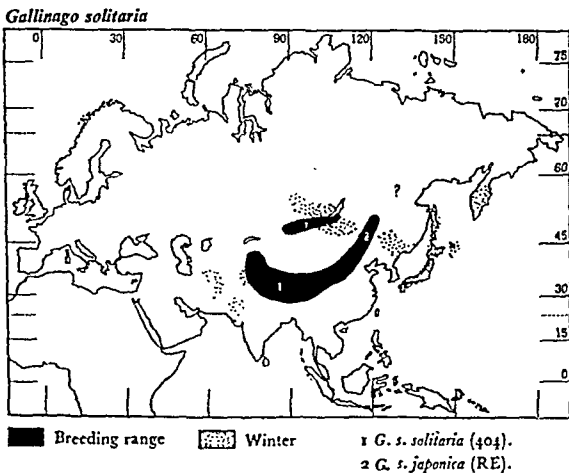
6 ♂♀ recently ringed at Chilka lake gave Wing (in flesh) 177-181 mm.; weight 127-147 gm. (SA).

COLOURS OF BARE PARTS. Iris dark brown. Bill black, paler and plumbeous at base. Legs and feet dark plumbeous or brownish black.

SIZE. Grey Quail +; larger than Fantail Snipe. Length (including bill) c. 31 cm. (12 in.).

FIELD CHARACTERS. A typical, concealingly coloured marsh bird — variegated brown, black, rufous, fulvous, and white — with a straight slender bill about 7 cm. (3 in.) long. Difficult to tell from other snipe (unless in the hand), but large size, paler coloration, solitary habit, and mountain habitat suggestive. See Key and Museum Diagnosis. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Found in summer throughout the Himalayas, between c. 2800 and 4600 m. elevation. Nowhere common but probably breeding locally: Ladakh, Kashmir and through Himachal Pradesh, Kumaon, Garhwal, Nepal, Sikkim, Bhutan to extreme NE. Assam; descending to lower levels and foothills in winter. Recorded in winter as rare visitor or erratic vagrant in the Assam hills south of Brahmaputra river, Manipur, northern W. Bengal, Banaras (U.P.), Chilka lake (Orissa). An old record



from Wynaad (Kerala-Mysore) is doubted by Whistler. Recorded also in West Pakistan (north Baluchistan Hills — Quetta etc., and Chitral) and E. Pakistan (Dinajpur, Rangpur, Chittagong Hill Tracts). Affects sprawling boggy mountain streams, often half frozen, interspersed with spongy grass hummocks and rhododendron, berberis and such-like scrub. Also wet scrub-bordered paddy stubbles among the hills (Assam).

Extralimital. 'Breeds in central Asia at high elevations from Tarbagatai, the Sayan and Khangai Mtns. south to the Tian Shans and Himalayas, east to Koko Nor and Upper Burma. Chiefly resident but descending to lower levels in winter' (Peters).

MIGRATION. No data.

GENERAL HABITS. Terrestrial; solitary; swamp-dwelling, usually at high elevations in the Himalayas. Two or three widely separated individuals occasionally flushed on the same bog. Flight somewhat slower and heavier than Common Snipe's but with the same zigzag twists and turns. Seldom flies far before resettling, even after being fired at.

FOOD. Worms, grubs, minute snails, etc.

VOICE and CALLS. A characteristic *scoop* or *pench*, uttered as the bird flushes; very like the Common Snipe's but deeper and harsher. No other calls recorded.

BREEDING. Extralimital and curiously little known. No authentic record of nest and eggs within our limits, but 'doubtless breeds' in the Puga Valley in Rupshu (Ladakh) vide Ludlow (JBNHS 27: 146).

MUSEUM DIAGNOSIS. Coloration paler than *nemoricola* (405); bill appreciably longer and less stout. Wing exceeds 150 mm.; outer edges of scapulars broadly white; middle upper tail-coverts unbarred pale olive-brown.

For description of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	153-169	67-77	c. 28-38	55-63 mm.

Depth of bill at base 8-9 mm. (Baker)

Weight 5-8 oz. (c. 142-227 gm.). — Hume.

COLOURS OF BARE PARTS. Iris brown. Bill olive-brown, blackish on terminal third of upper mandible and half of lower. Legs and feet olive; claws horny brown.

405. Wood Snipe. *Gallinago nemoricola* Hodgson

Gallinago nemoricola 'Ej.' = Hodgson, 1836, Proc. Zool. Soc. London: 8 (Nepal)

Baker, FBI No. 2168, Vol. 6: 255

LOCAL NAMES. *Chāhā* (Hindi, for all snipe); *Bān chāhā* (Bengali); *Kāttu allān* (Tamil — Madurai).

SIZE. Grey Quail +; length (including bill) c. 31 cm. (12 in.).

FIELD CHARACTERS. Above, dark brown, concealingly patterned with black, rufous, and buff streaks. Below, breast fulvous barred with brown; rest of underparts, including abdomen, white closely barred with brown. Sexes alike.

Can usually be distinguished from the commoner Pintail and Fantail snipes (406, 409) by larger size, much darker coloration and comparatively slow flight with bill pointing downwards; also by its more wooded and hilly habitat.

STATUS, DISTRIBUTION and HABITAT. Throughout the Himalayas from Dalhousie in Himachal Pradesh (c. 76°E.) east through Nepal, Sikkim, and Bhutan to extreme NE. Assam. Rare west of Indus river; once at Mardan in Peshawar district, c. 72°E. (Barton, JBNHS 14: 606). In summer between c. 1300 and 3700 metres and possibly higher. A specimen taken in SE. Tibet on September 1 at c. 4300 m. (Ludlow, 1944, *Ibis*: 387). Below c. 1200 m. in the Himalayas status uncertain; may be resident in parts.

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 281

In winter at lower elevations in the Himalayas, and visitor to the peninsular and south Indian hill ranges: recorded in northern W. Bengal, Manipur, Orissa, Madhya Pradesh, Andhra, Maharashtra, Mysore, Madras, and Kerala; apparently occurring regularly in small numbers. Rare vagrant in Ceylon. Doubtless also occurs in Chittagong Hill Tracts, E. Pakistan. Affects swampy patches, pools and puddles amidst tall grass and scrub in hilly country — cover too thick for Common Snipe.

Extralimital. Eastward through Burma to the southern Shan States.

MIGRATION. No data.

GENERAL HABITS. An essentially montane species. Keeps singly, but two or three not infrequently flushed close to one another in swampy patches under waist-high grass and scrub. Flight slow and wavering, reminiscent of both Painted Snipe and Woodcock — well described as 'owlish' or 'bat-like' — also like the latter with bill pointing downwards. Flops into cover again like a rail after fifty or a hundred metres. Far easier shooting than Pintail or Fantail Snipe, but its smaller numbers, irregularly scattered over far-flung pockets of appropriate habitat, makes sizeable bags impossible.

FOOD. Worms, small aquatic insects and grubs. Tiny hard black seeds, probably accidentally taken, and gravel have been found in stomachs (Hume & Marshall).

VOICE AND CALLS. Often flushes silently; occasionally with a low croaking note like *tek-tek*. This together with the other field characters (above) should help to establish its identity.

BREEDING. Strangely enough no first-hand authentic record of nest and eggs available. Baker's Khasi egg collector brought him a single egg with skin of a female snared on the nest. They were taken on 11 June¹ 1908 in pine forest between 1700 and 1850 metres altitude. The egg is described as very like Common Snipe's but more grey-brown in tint. No further information in the last 60 odd years!

MUSEUM DIAGNOSIS. The barring on the underparts extending down to abdomen together with its general duskiness gives the bird a 'woodcocky' appearance. Distinguished from Woodcock by the longitudinal stripes on head (*contra* bold transverse bars) and attenuated outer tail-feathers. Buff borders to scapulars and large size differentiate it from Pintail and other snipes with attenuated outer rectrices. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	133-141	61-67	c. 30-36	63-74 mm.
	(Baker)			
	Depth of bill at base c. 12-13 mm.			

Weight c. 5-7 oz. (c. 142-198 gm.). — Various authors.

COLOURS OF BARE PARTS. Iris dark brown. Bill horny brown tinged green, darker at tip, yellowish on basal two-thirds of lower mandible. Legs and feet dark plumbeous green.

¹ The Fauna gives the date as 16 June.

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 283

paddyfields with puddles here and there, scrub-dotted grazing grounds, and even lantana-covered hollows.

Extralimital. Breeds in E. Siberia west to the Yenisey, north to c. lat. 67°, south to E. Turkistan (?), N. Tibet, the upper Hoang-ho, Amurland, and Sakhalin. Winters in India, [Burma], Indochinese countries, S. China, Hainan, Formosa, the Greater Sunda Is., and Timor (Peters).

MIGRATION. No ringing data. First birds of the season normally begin to arrive about end August or early September, not only in the north (Assam, Bengal, Sind) but simultaneously also elsewhere in the Peninsula to the south, and in the Andamans and Ceylon. The majority have departed again by early April, a few lingering on into May. Arrival in different localities depends on phenological conditions, extralimital as well as local, subject to variation from year to year. Therefore the map of approximate dates of arrival given by Baker, 1921 (*Game Birds of India, Burma and Ceylon* 2: 97) must be taken only as diagrammatic.

GENERAL HABITS. Usually flushed singly; also in wisps of 3 and 4 in patches where food is plentiful, and in larger wisps, even flocks, early in the season when the birds have just arrived, and again preparatory to emigration. Can seldom be spotted as it crouches on the ground due to its astonishingly obliterative coloration. When disturbed rises abruptly, often from almost under foot, uttering the harsh characteristic note — *scope* or *pench* — and goes off at a tremendous pace in a series of angular zigzags. It is this lightning zigzag flight that provides the element of sport to snipe shooting, and disappointing bags to mediocre shots! Feeds in the squelchy mud, chiefly in the morning and evening and through the night. Is less active during the heat of the day, retiring into shade under grass tussocks or bushes bordering its feeding marsh — sometimes among thickets on higher ground well away. Very active on cool windy days. On such will often flush while still out of gunshot, mount high in the air and circle widely overhead flying at great speed with its peculiar angular rolling movements, calling from time to time, and soon drop or shoot down to earth again close to where it rose. Like all snipes, feeds by probing with its slender bill into soft mud. Under-ground prey located by means of the sensitized flexible tip which opens like forceps to seize the quarry.

FOOD. Chiefly worms, larvae and tiny molluscs.

VOICE AND CALLS. A harsh nasal *scope* or *pench* uttered as it flushes; also in flight every second or so in the initial spurt and with longer pauses when well under way. This call closely resembles the sucking sound of a sodden shoe, which is so deceptively alerting when walking up snipe on marshy ground!

BREEDING. Chiefly extralimital. Exceptional cases of breeding recorded in Assam and E. Pakistan three or four times (N. Cachar, Sylhet-Cachar border, Barail Range, Silchar) presumed by Baker to be of pricked birds disabled from migrating. Reports need confirmation. Nest and eggs similar to those of Fantail Snipe (409), q.v.

MUSEUM DIAGNOSIS. Tail-feathers 26 or 28, of which 8 or 9 outer ones on each side much attenuated and stiff ('pins'). Under wing-coverts and axillaries much more heavily and darkly barred than in *Gallinago gallinago* (409). For details of plumage see Baker, loc. cit.

406. Pintail Snipe. *Gallinago stenura* Bonaparte

Scelopax stenura Kuhl = Bonaparte, 1830, Ann. Stor. Nat. Bologna 4: 335 (Sunda Islands)

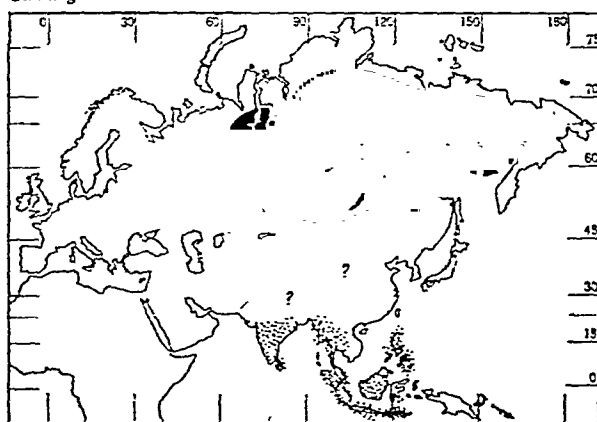
Baker, FBI No. 2173, Vol. 6: 263
Plate 41, fig. 15

LOCAL NAMES. Same as for Common or Fantail Snipe (409); *Kedakhocha* (Bengal).

SIZE. Grey Quail +; length (including bill) c. 27 cm. (10½ in.).

FIELD CHARACTERS. As of Fantail Snipe (409), q.v. Slightly darker, and heavier on the wing with a less zigzag flight, and often frequenting drier ground. But field identification difficult and unreliable except perhaps by very experienced snipe shooters. A consistent peculiarity observed while ringing snipe for migration study is that the Pintail nearly always 'squeals' when handled, whereas the Fantail hardly ever does so. Sexes alike; female slightly larger. See Key and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor to both Pakistans and all India, Nepal (Valley and (?) terai), Sikkim and Bhutan duars, Ceylon, Andaman, Nicobar and Maldivic islands; plains level to c. 2500 m. About equally abundant with Fantail Snipe in the eastern areas, viz. Assam, Bengal, East Pakistan, but overwhelmingly more so in South India, Andaman Is. and Ceylon. In the western and northwestern parts of the subcontinent the Fantail is relatively more numerous. Affects marshy

Gallinago stenura

■ Breeding range ····· Winter

edges of jheels, wet paddy stubbles (inland as well as those under tidal influence), seepage marshes from dammed reservoirs in the foothills, and the like, sharing these with Fantail Snipe. But oftener frequents harder ground than Fantail — damp rather than marshy, e.g. harvested

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	125-134	57-61	29-31	c. 54-68 mm. (Baker)
♀♀	130-138	59-64		

Baker's tail measurements are erroneous. Specimens in the Bombay Natural History Society's collection, and others collected recently, give ♂ ♀ tarsus 32-36 (5 measured), tail 45-52 mm. (13 measured).

Weight c. 3 to 4½ oz. (c. 85-134 gm.). Average of 472 birds (♂ ♀) in South India 4 oz. (c. 113 gm.). — Stoney. 12 ♂ ♀ (winter, Bihar) 89-123 (av. 99.9) gm. — BNHS.

COLOURS OF BARE PARTS. Iris brown. Bill horny brown, pale greenish on gonyx and base of lower mandible. Legs and feet greyish green; claws dark brown.

MISCELLANEOUS. Statistics of relative abundance of Pintail and Fantail Snipe in the erstwhile Madras Presidency collected by Mr R. F. Stoney from shooting tables for 37 seasons (1898-9 to 1934-5) confirm the overwhelming preponderance of the Pintail in South India. During this entire period 15 330 Pintails were shot against 2312 Fantails. During the 10 seasons 1925-5 to 1934-5 3644 Pintails were shot at Cannanore, Malabar (now Kerala), against 856 Fantails (Phythian-Adams), while during 12 seasons (1923-4 to 1934-5) 526 Pintails were shot on the Nilgiri Plateau against only a single Fantail by the same sportsman.

Several instances of partial to almost complete albinism have been recorded in this as well as Fantail Snipe in India.

407. Swinhoe's Snipe. *Gallinago megala* Swinhoe

Gallinago megala Swinhoe, 1861, Ibis: 343 (Between Takoo and Peking, China)
Baker, FBI No. 2174, Vol. 6: 264

LOCAL NAMES. Same as for Common or Fantail Snipe (409).

SIZE. Grey Quail +; length (including bill) c. 29 cm. (c. 11 in.).

FIELD CHARACTERS. Indistinguishable from Pintail Snipe (406) except in the hand, for which see Key and Museum Diagnosis. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. A comparatively uncommon but regular winter visitor between September and March: recorded from Assam, Manipur, W. Bengal, Madras, Mysore, Kerala, Ceylon, Maldivic and Andaman Is., Bombay (JBNHS 67: 108). Possibly less rare than assumed, due to lack of careful vetting of bags of Pintail among which very liable to be overlooked. Affects the same habitats as Pintail.

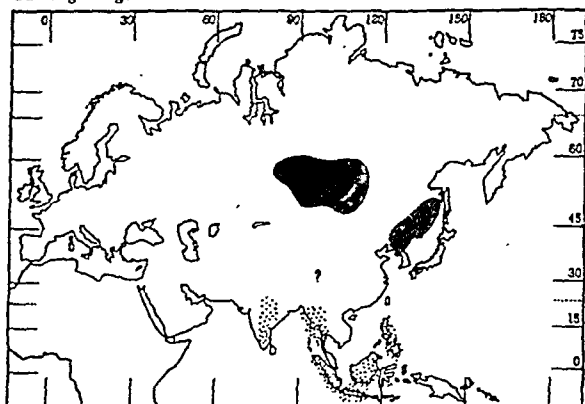
Extralimital. Breeds in east-central Asia from southwestern Transbaikalia to Amurland, south to N. Mongolia, the upper Hwang ho and Usuri; Sakhalin (?). Migrates through E. China and Japan; winters in Burma, the Philippines, Borneo, Celebes, the Moluccas and N. Australia (Peters). For details see Vaurie, C., 1965, 2: 433. Recorded as very abundant in ricefields in the Philippines 'at certain seasons'.

MIGRATION. No data. Eastern and southern India apparently lie on the extreme western fringe of its winter range.

GENERAL HABITS, FOOD, VOICE AND CALLS. Nothing recorded as different from Pintail Snipe.

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 285

Gallinago megala



■ Breeding range ▨ Winter

BREEDING. Extralimital. (For a good account of its aerial nuptial display and song in N. Mongolia, see Kozlova, E. V., 1932, *Ibis*: 580.)

MUSEUM DIAGNOSIS. Coloration above and below (including white centre of abdomen) confusingly similar to Pintail Snipe (406). Most easily differentiated by its tail of 20 feathers of which only the central 6 are broad (of normal shape), the rest on either side attenuated. See also Key to the Species. Another good diagnostic character, especially when tail in moult or damaged, is length of bastard wing.

Bastard wing always over 19 mm.....*G. megala*

Bastard wing always under 19 mm.....*G. stenura*

Some superficial characters, suggested by an experienced snipe-shooter (R. J. Clough) to assist picking out at a glance suspected Swinhoe's Snipe from among a bag of Pintails for more critical examination are:

1. 'Definitely' larger size
2. Longer legs
3. Longer and slenderer bill, with the white knob at tip of upper mandible less pronounced.

MEASUREMENTS

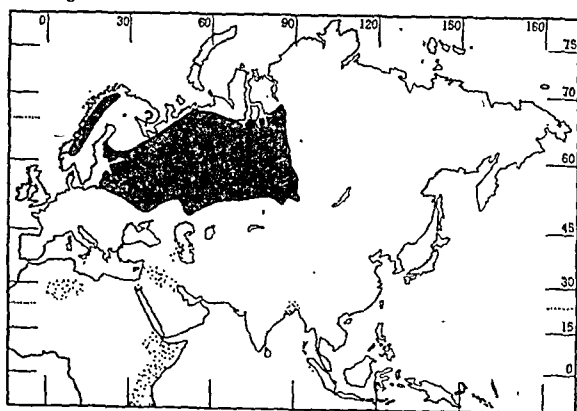
	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	128-139	59-74	♂ 32-34	52-57 mm.
				(Baker)
♂ ♂	147-150	61-65	32.5-35	55-62 mm.
♀ ♀	142-151	64-72	33-35 (once 37, once 38)	

(La Touche)

COLOURS OF BARE PARTS. 'Iris dark umber-brown; bill light yellowish brown for the basal two-thirds, yellower on the base of the upper mandible, blackish brown

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 287

Gallinago media



■ Breeding range ▨ Winter

GENERAL HABITS, FOOD, VOICE AND CALLS. Nothing observed in India as different from Fantail or Pintail Snipe. Elsewhere reported as more crepuscular, and occasionally uttering a low guttural croak on flushing.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Key to the Species. For details of plumage Baker, loc. cit.; for plumage phases and morphology (also bionomics), Witherby, 1940, 4: 193-7.

MEASUREMENTS —

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	140-150	57-63	33-37	51-59 mm.
♀ ♀	139-149	64-69	—	(Witherby)

COLOURS OF BARE PARTS. Iris dark brown. Bill brown or horny brown. Legs and feet dusky plumbeous or greenish plumbeous (Baker).

409. Common or Fantail Snipe. *Gallinago gallinago gallinago* (Linnaeus)

Scelopax Gallinago Linnaeus, 1758, Syst. Nat., ed. 10, 1: 147 (in Europa = Sweden)
Scelopax (Gallinago) gallinago raddei Buturlin, 1912, Psovaia i Ruzheinaia Okhota, author's reprints, p. 54 (East Siberia)

Baker, FBI No. 2170, Vol. 6: 259
Plate 41, fig. 13 and Plate 43, fig. 11

LOCAL NAMES. *Chhā* (Hindi); *Chegga*, *KadaUchoa* (Bengal); *Khocha sorāi*, *Chhā sorāi*, *Chergga* (Assam); *Bhādrā* (Nepal); *Chiklaobi* (Manipur); *Afor uddā*, *Uddā kīrī*, *Chiklaobi*

CHARADRIIFORMES

on the apical third; feet light yellowish grey with blackish brown claws' (Swinhoe). 'Iris chestnut. Legs and feet bluish plumbeous' (Venning).

MISCELLANEOUS. In South India where both this species and Pintail occur together, Lt-Col. E. G. Phythian-Adams found Swinhoe's Snipe proportionately less common in Mysore than in Malabar (Kerala). His bag record for 14 years (up to 1939) showed

Mysore: 1973 Pintail to 3 Swinhoe's, i.e. 1 to 658

Malabar: 5321 Pintail to 19 Swinhoe's, i.e. 1 to 280

408. Great Snipe. *Gallinago media* (Latham)

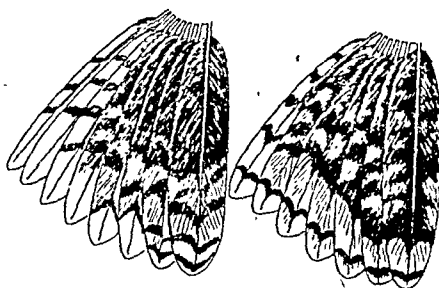
Scelopax media Latham, 1787, Gen. Syn., Suppl.: 292

(England; based on Gen. Syn. 3(1): 133, no. 4)

Baker, FBI No. 2172, Vol. 6: 261

SIZE. Fantail Snipe +; length c. 28 cm. (c. 11 in.).

FIELD CHARACTERS. Slightly more robust in build, darker, and more heavily barred below than Fantail Snipe, but doubtfully distinguishable from it at rest. In flight — which is slower, less zigzag, and usually unaccom-



Half tail, x c. 1
G. media *G. gallinago*

panied by the characteristic flushing note *pench* — the large amount of white in the tail (outside feathers) is at once striking. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Rare vagrant. Has so far only been obtained in southern India (Bangalore, Nilgiris, Arkonam, Madras). Also in Ceylon and Andaman Is. All September-March.

Extralimital. 'Breeds in N. Europe and W. Asia from N. Norway, S. Finland, the White Sea and the lower Yenisey, south to Denmark, E. Prussia, Poland, Bessarabia, Kirghiz Steppes and the Altai. Migrates through S. Europe and SW. Asia; winters in Africa south of the Sahara, mainly in the east' (Peters). For details see Vaurie, C., 1965, 2: 432.

MIGRATION. No data.

CHARADRIIFORMES

Korā kūthi (Tamil); *Muku pardi* (Telugu); *Keswatuwā* (Sinhala); *Dao didap* (Cachar); *Voh ti alin* (Kuki); *Ti inrui* (Naga); *Lik pokhi* (Sind); *Chuntan kata* (Malayalam); *Garkhod* (Gujarati); *Pān lawa* (Marathi). Commonly understood as 'ishnāp' or 'ishnāf'.

SIZE. Grey Quail +; length (including bill) c. 27 cm. (10½ in.).

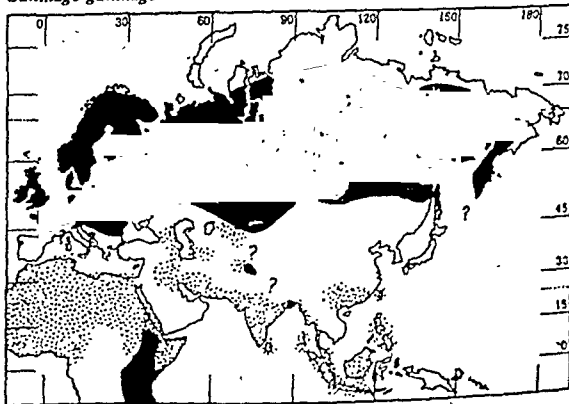
FIELD CHARACTERS. A brown obliteratively patterned marsh-haunting bird with straight slender bill about 6 cm. (2½ in.) long, difficult to observe when squatting motionless on the ground. Renowned for its habit of rising suddenly when disturbed, with a hoarse *scape* or *pench* note, and flying off in lightning zigzags. Above, dark brown, heavily streaked with black, rufous, and buff; below, whitish. Impossible to distinguish from Pintail Snipe (406) by non-experts unless in the hand, but usually frequents more squelchy ground. See Key and Museum Diagnosis. Sexes alike.

Young (immature) like adult but sometimes recognizable by whitish fringes to mantle feathers and wing-coverts.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Partly resident in the Himalayas (Kashmir, Garhwal, etc.); chiefly a common and abundant winter visitor to the entire subcontinent including both Pakistans and Nepal (Valley and ?) terai). Also Ceylon, Andaman and Maldivé islands. Relatively

Gallinago gallinago



■ Palearctic and African breeding range ▨ Winter

much less numerous than Pintail Snipe in southern India; more so in the western and northwestern parts, and in W. Pakistan. Affects swampy edges of jheels, seepage marshes from dammed reservoirs, squelchy harvested paddyfields, etc. — on the whole softer ground than preferred by Pintail. Occasionally seen on bare edges of exposed village ponds in proximity of women washing and cattle watering!

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 289

Extralimital. 'Breeds in Europe and Asia from Scandinavia to eastern Siberia, north to lat. 66°30' to 70°, south to the British Isles, Pyrenees, the Alps, [erstwhile] Balkan States, Caucasus, Kirghiz Steppes, the Pamirs, Himalayas, Transbaikalia, the Amur River, Hokkaido and the Kurile Is. Winters in the southern parts of its breeding range, Mediterranean region, Egypt, E. Africa south to Kenya; Persia, India, Indochinese countries, S. China, Japan, and the Greater Sunda Is.' (Peters).

MIGRATION. No ringing data. On spring emigration passes through the Kurram Valley (NW. Pakistan) from the last week of January till mid April (Whitehead). See remarks under Pintail which are generally applicable also to this species. The migration routes and approximate arrival dates shown on the map in Baker, 1921 (*Game Birds* 2: 63) are largely diagrammatic and must not be taken too literally.

GENERAL HABITS, FOOD, VOICE AND CALLS. As of Pintail Snipe (406), q.v. The harsh nasal flushing note of the two species — *scape* or *pénch* — are indistinguishable to the normal ear.

BREEDING. *Season* in the Kashmir Valley, Garhwal, and elsewhere in the Himalayas at elevations between c. 1600 and 4500 m., from late April to about mid June. *Nest*, a scanty concave pad of grass and weed stems, etc., c. 10 cm. across, concealed among arching grasses or thick herbage in a spongy or semi-floating bog. *Eggs*, normally 4 — occasionally 3, rarely 5 — greyish stone to olive-grey or yellowish brown in ground colour, irregularly blotched and speckled all over with dark brown, more densely at the broad end. They have secondary markings of grey, sienna, or pale purplish brown. Shape variable from broad to longish pyriform, and size absurdly large for the bird. Average of 60 Indian eggs 38.3 × 28.5 mm (Baker). Both sexes believed to share in incubation; period recorded as 19–20 days. The bird is a close sitter, often permitting the observer's hand to approach within a few centimetres before leaving the nest, then usually flying off in a semi-circle at top speed. In nuptial display male mounts rapidly on fluttering wings to height of 50 to 100 metres, flies about in rambling zigzags and wide circles at top speed uttering *chip-per*, *chip-per*, etc., punctuated by steep nose-dives with wings pulled in and tail fully fanned out. The outermost rectrix on either side sticks out widely separated from its neighbour and vibrates rapidly with the through rush of air, producing the peculiar loud drumming or bleating sound which gives the bird one of its popular German names meaning 'goat of the sky'. Each flight lasts for five minutes or more, and covers an extensive area of the breeding marsh in wide circles at a furious tempo. Thereafter the performer drops or shoots to the ground at a steep angle with wings pulled in, fluttering to break the fall just before alighting.

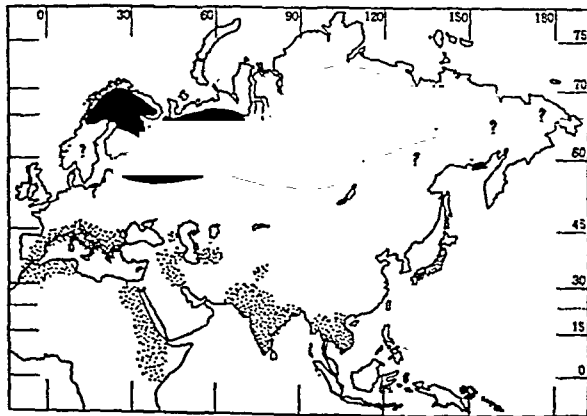
MUSEUM DIAGNOSIS. See Key to the Species; for details of plumage, Baker, loc. cit.; for description of plumage phases and morphology (also bionomics), Witherby, 1940, 4: 197–203.

Chick (in down). 'Down of upper plumage rufous-buff; a band across the forehead yellow-buff; crown freckled with black and with two broad bands of black on either side of the crown; a line through the eye and another on the cheek black; dorsal, median, and lateral lines black, the down white-speckled at the tips; wings broadly marked with black and a black patch on the side of the breast and on the flanks; lower parts rufous-buff' (Baker).

* See Appendix

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 291

Gallinago minima



■ Breeding range ▨ Winter

Extralimital. 'Breeds in N. Europe and Asia from N. Norway east to the Kolyma Delta (apparently nowhere north of 70°), south to Denmark, E. Prussia, Baltic States, central Russia, and the forest steppe of Minusinsk; southward limit in W. and E. Siberia not known. Winters in W. Europe, Mediterranean region, Egypt, Iraq, Persia, India, Burma; casually to Nigeria and Kenya' (Peters). For further details see Vaurie, C., 1965, 2: 436.

MIGRATION. No ringing data. In Baluchistan and Sind in autumn 'it is much later in arriving [than Fantail or Pintail Snipe] and the end of the first week in October would seem to be the earliest date' (Ticehurst). In northern Baluchistan it is particularly common on spring (outward) passage, Meinertzhagen having seen more than 100 birds in a day. It passes through the Kurram Valley (NW. Pakistan) in varying numbers, less than Fantail, from the last week in January till the middle of April (Whitehead).

GENERAL HABITS. Similar to Fantail and Pintail Snipe, but almost invariably flushed singly and not in wisps as the others often are. Is reluctant to leave cover; rises silently, without the characteristic *scape* or *pénch*, only when almost trodden on, dropping into the reeds again after a short flight unlike the Fantail's zigzagging to a height and then shooting down steeply to the ground. Somewhat slower flight and less abrupt twists and turns afford easier shots to the sportsman.

FOOD. Mainly worms, tiny molluscs, insects and their larvae. Also seeds of marsh plants.

VOICE AND CALLS. Not recorded in India. Display-note in breeding season (presumably vocal) likened to the distant cantering of a horse on hard hollow ground.

290

CHARADRIIFORMES

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	128–138	60–71.5	29–33	53–61 mm.
♀♀	130–140	64–73	—	—
				(Witherby)
50 ♂♀	Wing 121–141 mm. (av. 133.7);	weight 73–106 gm. (av. 81.3)		
9 ♂♀	Tail 54–64 mm. (av. 57.7)			

(SA)

COLOURS OF BARE PARTS. Iris dark brown. Bill yellowish horny or olive-yellow on basal half, dark horny brown to blackish on terminal half. Legs and feet dull olive-green, more yellow in breeding season.

MISCELLANEOUS. Four cases of complete or partial albinism have been recorded in the *Journal of the Bombay Natural History Society*. Longevity (from ringing records) 7 years (Ring, 1962, 33: 149).

410. Jack Snipe. *Gallinago minima* (Brünnich)

Scolopax Minima Brünnich, 1764, Orn. Boreal: 49 (E. Christiansø, Denmark)

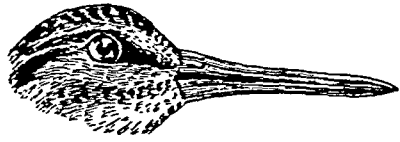
Baker, FBI No. 2175, Vol. 6: 265

Plate 43, fig. 10

LOCAL NAMES. *Chhōta chhōla* (Hindi); *Chhōta bhārkā* (Nepal); *Ullān* (Tamil); *Dō Lāgān* (Bihari mirshikars).

SIZE. Fantail Snipe —; Grey Quail ±; length (including bill) c. 21 cm. (8½ in.).

FIELD CHARACTERS. Similar to Fantail Snipe but considerably smaller with relatively shorter and stouter bill and much metallic green and purple sheen in the streaked dark brown upper plumage. Tail rather wedge-shaped,



× c. 1

uniformly dark, lacking Fantail's whitish tips to outer rectrices; crown without the central stripe of other snipes. Sexes alike. Flushes silently and has rather sluggish flight without the abrupt zigzags.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor in much smaller numbers than Fantail and Pintail Snipe, irregularly throughout the Indian Union, both Pakistans, Nepal. Occasional in Ceylon and Andaman Is. Affects the swampy marginal zone around jheels, seepage marshes, and waterlogged harvested paddyfields — as with Fantail Snipe more squelchy ground than normally frequented by Pintail.

292

CHARADRIIFORMES

BREEDING. Extralimital; in general as in the Fantail (409).

MUSEUM DIAGNOSIS. Tail of 12 feathers, more or less uniformly dark brown with rufescent-buff borders. Central pair pointed and projecting slightly beyond the others, as e.g. in the Little Stint (416). No median pale coronal stripe. Plumage of back and scapulars with an iridescent purple and green gloss. Gape more or less in line with the bases of the upper and lower mandibles. Culmen somewhat swollen at base. For details of plumage see Baker, loc. cit.; for description of plumage phases and morphology (also bionomics), Witherby, 1940, 4: 205–9.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	108–117	39–41	23–25	46–51 mm.
♀♀	107–115	40–43	—	—
				(Witherby)

Weight 40 ♂♀ (autumn/winter) 39–55 (av. 46.5) gm. — BNHS.

COLOURS OF BARE PARTS. Iris dark brown. Bill almost black at tip, paling posteriorly to horny brown; olive, greenish horny, or flesh coloured at base and gape. Legs and feet pale olive-green, often tinged with yellowish or grey.

MISCELLANEOUS. An indication of the relative scarcity of the Jack Snipe in South India is provided by the game records maintained by the late Mr R. F. Stoney for 37 seasons — from 1898 to 1935. Of the total number of snipe shot during this period 13,530 were Pintails, 2312 Fantails, and only 126 Jacks.

Genus *SCOLOPAX* Linnaeus

Scolopax Linnaeus, 1758, Syst. Nat., ed. 10, 1: 145. Type, by tautonymy, *Scolopax rusticola* Linnaeus (*Scolopax prebinomial* specific name in synonymy)

Bill long, slender, rather soft and swollen at tip; both mandibles grooved. Nostril linear, at base of upper mandible. Gape forward of base of culmen. Wings long: first primary (as.) longest. Tail-feathers 12; short and soft. Legs short; tibia fully feathered.

The genus contains a single species represented in India by the nominate race.

411. Woodcock. *Scolopax rusticola rusticola* Linnaeus

Scolopax Rusticola Linnaeus, 1758, Syst. Nat., ed. 10, 1: 146

(Europe, restricted type locality, Sweden)

Scolopax indicus Hodgson, 1837, Jour. Asiat. Soc. Bengal 6: 490 (Nepal)

Scolopax rusticola ultimis Koels, 1954, Contrib. Inst. Regional Exploration No. 1: 31 (Sanganu, Lushai Hills)

Cf. Hartert, E., 1921, Vog. pal. Fauna 2: 1651–4

Baker, FBI No. 2167, Vol. 6: 252

Plate 41, fig. 14 and Plate 43, fig. 13

LOCAL NAMES. *Sintetār*, *Tutetār* (Hindi); *Sin kēlā* = 'hill, or spring fowl' (Kumaon and Nepal); *Chinjarele* (Chambas); *Doodidap gedra* (Cachar); *Sin-pochhlaz* (Khasi); *Sēbel kēdrūt* (Manipur); *Wileiti chāla* (Chittagong); *Bur-pel*, *Dakha* (Chitral); *Chetā* (Drosh); *Chētrūt* (Gulgi); *Zār kēchi* (Kashmir).

SIZE. Partridge —; length (including bill) c. 36 cm. (14 in.).

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 293

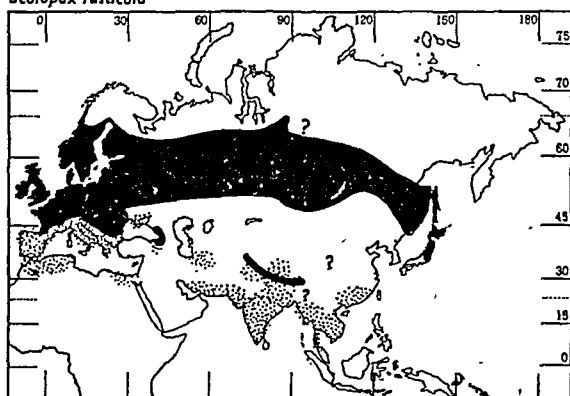
FIELD CHARACTERS. An outsized snipe, camouflagingly mottled brown, black, and whitish with the characteristic long slender straight bill—soft and swollen at tip—and comparatively short legs. *Above*, brownish grey blotched and barred with black, rufous, and buff. Hindcrown, nape and rump cross-barred black and rufous. *Below*, chin white; rest of underparts brownish white cross-barred with dark brown. Sexes alike.

In the owl-like flapping flight the bill is carried pointing downwards. When banking in the air the tail is fanned out giving the tubby body with its short curving scimitar-like wings a blunt-ended look.

For immature bird and downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Breeds throughout the Himalayas between c. 2000 and 3800 metres—in NW. Pakistan, Kashmir, Garhwal, Kumaon, and Bhutan. Evidently also in Nepal, Sikkim, and NEFA whence as yet no actual nests reported. In winter descends to lower elevations in the Himalayas and also migrates south to the Assam hills, Nagaland, Manipur, and across the Peninsula to the Nilgiri, Palni, and associated hill ranges,

Sceloporus rusticola



■ Breeding range ■ Winter

and the moist southern strip of the Western Ghats in Kerala and Mysore. Occasional winter visitor to Ceylon in the central hill zone (c. 2000 m.). Affects swampy glades with dense scrubby undergrowth in rhododendron, fir and mixed forest in the Himalayas; dank ravines in sholas and evergreen forest, and cardamom and coffee plantations with sprawling swampy streams in South India. The clearing away of forests for potato and tea cultivation in the last forty years has progressively reduced its abundance in many of its best-known former habitats in the Nilgiris and Assam hills.

Extratropical. Breeds in the British Isles, Scandinavia (north to lat. 70°), Russia (north to lat. 66°) and across Asia (north to lat. 62°–64°), south to

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 295

take-off and has to be assisted by beating the earth with the wing-tips for a metre or so before getting clear. In flight the body is weighted down at rear to an angle of about 45 degrees. In the case observed by Col. Bates the chicks were transported one by one downhill to a distance of some 30 metres.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.; for details of plumage phases and morphology (also bionomics), Witherby, 1940, 4: 184–93.

Young (immature). Feathers of the mantle with more or less exposed brown bases and marked with buff and cinnamon-buff. Upper tail-coverts more barred, and lacking buff tips. Bars on underparts narrower and paler.

Chick (in down). From base of bill to eye, over and behind it, a narrow dark brown line; from centre of base of bill to centre of crown a dark brown line; between the two lines, creamy yellow; rest of crown pale chestnut; side of head variegated chestnut and creamy yellow, as are the wings and rest of upperparts, showing a broken spinal black streak; underparts creamy yellow, tinged with ferruginous on throat and thighs (Ticehurst).

A curious feature of the Woodcock is its abnormally high and backwardly placed eyes, virtually at the back of its head. The exact function of this adaptation needs study.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	186–205	68–79	34–38	71–82 mm.
♀♀	184–208	67–80	—	—
	(one 172)	(from feathers)		(Witherby)

Baker gives ♂♀ Wing 183–219 mm.; weight 7–16 oz. (c. 198–454 gm.). Weight 1 ♀ 335 gm.—BB.

COLOURS OF BARE PARTS. Iris deep brown. Bill horny brown darker at tip, paler, tinged with purple, at base of lower mandible. Legs and feet greenish grey or olive-brown; claws horny brown.

Genus CALIDRIS Merrem

Calidris Anonymous = Merrem, 1804, Allg. Lit. Zeitung 2 (168): col. 542. Type, by tautonymy, *Tringa calidris* Gmelin = *Tringa canutus* Linnaeus

Erolia Vieillot, 1816, Analyse: 55. Type, by monotypy, *Erolia variegata* Vieillot = *Sceloporus testaceus* Pallas

Oreocetes Billberg, 1828, Syn. Faun. Scand. 1(2): 132. Type, by monotypy, *Charadrius calidris* Linnaeus = *Trypa alba* Pallas

Cf. Bis 1949: 509.

Delacour, J., 1951, L'Oiseau, 21: 6.

Bill slender varying a good deal in length, either straight or slightly downcurved; both mandibles grooved. Nostrils linear, placed in a groove at base of upper mandible. Hind toe present in most species; anterior toes unwebbed. Wing long and pointed: first primary (al.) longest. Tail nearly square with the central feathers pointed and projecting slightly beyond the others.

Genus cosmopolitan; represented in India only by Palearctic migrants in winter.

Key to the Species

	Page
A Upper tail-coverts white or white barred with dark brown; sharply contrasting with back	1
B Upper tail-coverts grey, dark brown, or similar to back	2
1 Bill long and decurved	<i>C. testacea</i>

294 CHARADRIIFORMES

the Pyrenees, Alps, northern-Balkan States, Kashmir, the Himalayas, Ussuri, and Japan. Winters in the southern part of its range, the Mediterranean region, Egypt, India, Ceylon, S. China, and Japan. Resident on Madeira, the Canary Is., and the Azores (Peters).

MIGRATION (in India). No ringing data. Commences to arrive in the Nilgiris and other S. Indian hills during October; numbers at peak in December-January; mostly gone again by end of March. From striking paucity of records in Peninsular India, probably journey from Himalayas performed in a single non-stop flight. The sporadic records of odd birds, obviously on passage, are from Karachi (W. Pakistan), Bhuj, Mt Abu (Gujarat), Thana near Bombay (Maharashtra), Agra, Muzaffarnagar, Sitapur, Mainpuri, Kanpur (Uttar Pradesh), Golconda (?) and Eastern Ghats [Salabam, Padera] (Andhra), and Madras City. Indications suggest that the birds reach their southern winter quarters mainly by the Eastern Ghats route.

GENERAL HABITS snipe-like. Usually solitary or in separated pairs. Largely crepuscular and nocturnal, lying up in shady cover during daytime, seldom stirring after sunrise or before dusk unless driven. Feeds by probing into soft wet earth with its sensitive-tipped bill, the bird's presence in a glade being revealed by the honeycombed patches left in the ground. Flight rather sluggish and wavering, reminiscent of Painted Snipe, but with unexpected sudden jerks and zigzags this side and that, and swift turns and twists to avoid tree-trunks in its wooded habitat, the bird dropping down abruptly into cover 'as if it had flown against a wall'. Thus, in spite of its large size, the sportsman finds it less difficult to miss the target than would appear possible!

In the breeding season the male (?) performs his characteristic aerial display known as 'roding' at dusk and dawn. This consists of flapping slowly in a high arc back and forth across an open glade or flying round and round over it in wide circles to the accompaniment of a 'loud wailing cry' (B. B. Osmaston) or a deep croak, and sometimes a shrill bat-like squeak, at intervals.

FOOD. Chiefly worms and grubs; occasionally some seeds and shoots.

VOICE and CALLS. Besides the notes uttered while roding, Osmaston has described 'a continuous sort of grating, purring noise' made by a female he disturbed off the nest. 'A strange croaking like a nutcracker's' while occupied in shifting downy chicks from one spot to another (Bates).

BREEDING. Season in the Himalayas, April to July. Nest, a depression in the ground lined with dry leaves, etc., well concealed amongst bracken, dwarf rhododendron or other undergrowth, preferably near a wooded stream. Eggs, 4, pale clay colour to deep buff, boldly blotched with pale reddish brown and grey. Average size of 55 Indian eggs 44.5 × 33.3 mm. (Baker). Fide Witherby incubation and tending of young by female alone; period of incubation 20–21 (22) days. A peculiar habit of Woodcock, also recorded elsewhere in its range and reliably observed and authenticated in the Himalayas (more recently by R. S. P. Bates, JBNHS 43: 69), is its transporting its downy chicks to a place of safety when danger threatens. This is accomplished by carrying them pressed between the parent's thighs and breast and dangling below. With legs thus occupied, parent finds considerable difficulty in

296 CHARADRIIFORMES

	Page
Bill straight	a
a Bill 39 mm. or above	<i>C. tenuirostris</i> 297
Bill below 39 mm.	<i>C. canuta</i> 296
2 Hind toe absent	<i>C. alba</i> 298
Hind toe present	b
b Culmen 21 mm. or above	I 307
Culmen below 21 mm.	II 308
I Wing 122 mm. or above	<i>C. acuminata</i> 307
Wing below 122 mm.	<i>C. alpina</i> 308
II Shaft of first primary white, others brown	a ¹
All shafts of primaries more or less white	b ¹
a ¹ Tail-feathers all brown	<i>C. subminuta</i> 305
Outer tail-feathers white	<i>C. temminckii</i> 303
b ¹ Some rufous colour in plumage	a ²
No trace of rufous in plumage	b ²
a ² Chin, throat and upper breast uniformly chestnut	<i>C. ruficollis</i> (summer) 300
Chin and throat white, breast streaked with chestnut	<i>C. minuta</i> (summer) 301
b ² Wing and tail longer (c. 92–104 mm.; 39–48 mm.); bill and tarsus shorter (c. 16–18 mm.; 18–20 mm.)	<i>C. ruficollis</i> (winter) 300
Wing and tail shorter (c. 91–98 mm.; 38–43 mm.); bill and tarsus longer (c. 17–19 mm.; 20–21 mm.)	<i>C. minuta</i> (winter) 301

412. Knot. *Calidris canuta canuta* (Linnaeus)

Tringa canutus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 149 (in Europa = Sweden) Baker, FBI 2161a, Vol. 8: 698

Plate 40, fig. 13 and Plate 41, fig. 10

LOCAL NAMES. None recorded.

SIZE. Grey Quail 4; length c. 25 cm. (10 in.).

FIELD CHARACTERS. Rather like Dunlin (420) in winter—scaly (or scalloped) ashy grey above, white below—but larger and stockier, with straight relatively shorter bill and legs. In flight, larger size than Dunlin, pale rump (v. black-centred) and tail, and pale wing-bar are suggestive pointers. In its normal range characterized by keeping in densely packed flocks.

Summer. Above, strongly mottled chestnut and black; below, bright rufous.

STATUS, DISTRIBUTION and HABITAT. Rare vagrant in winter. Obtained within our limits only once in Baluchistan (Khushdil Khan Lake—26 March) by Col. R. Meinertzhagen, presumably on passage, and once in Ceylon (Mannar, 15.xii.1928)—Wait, 1931: 365. Tamil Nadu (Pt Calimere) 2 specimens—JBNHS 67: 282. Normally prefers extensive coastal mudflats and estuaries and is rare inland.

Extratropical. Breeds in Spitzbergen and on the Taimyr Peninsula. Winters in Africa (Peters).

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 297

GENERAL HABITS, FOOD, VOICE and CALLS. One of the maritime waders. Nothing recorded in our area. For an account see Witherby, 1940, 4: 228-31. **BREEDING.** Extralimital.

MUSEUM DIAGNOSIS. Similar to Eastern Knot (413) but with a much smaller bill. Upper tail-coverts white strongly barred with blackish; spots on underparts larger and less well defined.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	162-171	30-34	27-5-31	50-5-66-5 mm.
♀♀	164-174	31-5-38-5	—	—

(Witherby)

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet olive-green.

413. Eastern Knot. *Calidris tenuirostris* (Horsfield)

Totanus tenuirostris Horsfield, 1821, Trans. Linn. Soc. London 13(1): 192 (Java) Baker, FBI 2162, Vol. 6: 243

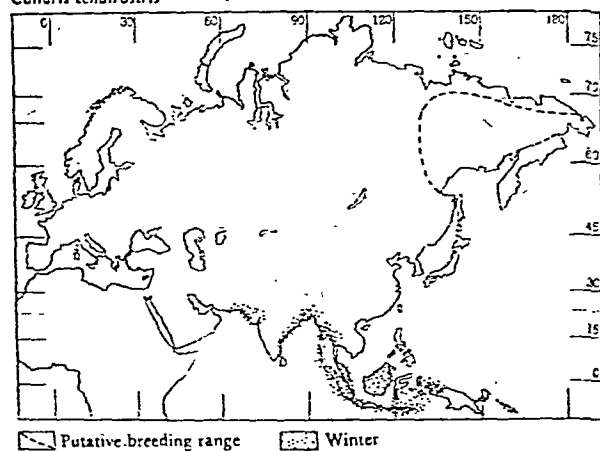
Plate 40, fig. 12 and Plate 41, fig. 11

LOCAL NAMES. None recorded.

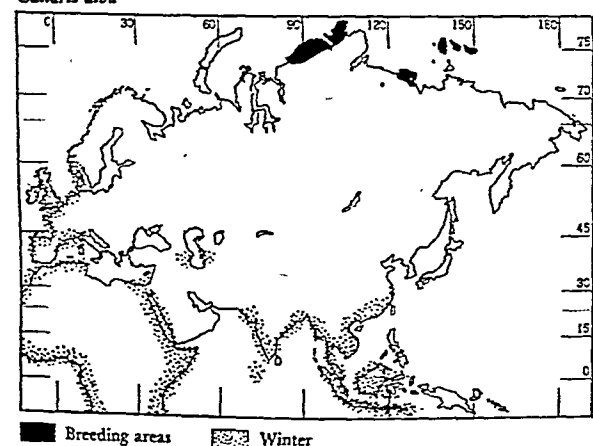
SIZE. Grey Partridge —; length c. 29 cm. (11½ in.).

FIELD CHARACTERS. A stocky shore bird, usually seen in flocks feeding in company with stints and other small waders amongst which it stands out conspicuously by its size. On the wing, in the distance, confusion possible with Bartailed Godwit with which it also often associates.

Adult. Winter. Above, light brownish grey, boldly streaked with black. Lower back, rump and upper tail-coverts dark brown scalloped with

Calidris tenuirostris

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 299

Calidris alba

mandel and Orissa coasts. Large numbers ('flocks of more than a thousand') between August and February along the seacoast and flooded sand flats in the southern part of Rameswaram I. (Biddulph, JBNHS 40: 234). Regular winter visitor in small flocks to Ceylon (Phillips), and occurs also in the Laccadive and Maldiva Is.

Extralimital. A Holarctic species. In the Palaearctic Region breeds on Spitzbergen and the arctic coasts and islands of Siberia from the Taimyr Peninsula to the mouth of the Lena river. In the Old World winters in the British Isles, the North Sea, India, Malay Archipelago, China, Japan, and Australia. South to S. Africa; and Madagascar.

MIGRATION. No ringing data. Either migrates along the coasts or is capable of immense non-stop transcontinental flights, as has never been recorded inland in our area.

GENERAL HABITS. Feeds in mixed flocks with Dunlins, Curlew-Sandpipers, and other small waders on tidal mudflats or strung out along the edge of the surf on sandy shores. Recognized among the miscellaneous crowd by its whitish coloration and ceaseless activity, running swiftly on a blur of twinkling legs after each receding wave to pick up any titbits it may cast ashore, and hurriedly retreating before the oncoming next. Continues to run back and forth and feed thus when most of its associates are resting at high tide in wait for the ebb. The flocks fly in regimented unison, flashing white from time to time as they bank and wheel.

FOOD. Tiny crustaceans, molluscs and other small animals washed up on the seashore.

VOICE and CALLS. A shrill liquid *wick-wick* when flushed, and occasionally in flight. No other notes recorded in its winter quarters in India.

BREEDING. Extralimital; on arctic tundra.

298

CHARADRIIFORMES

white, much more broadly on the last, making the feathers sometimes almost all white. *Below*, white; foreneck and upper breast streaked or spotted with dark brown. Sexes alike.

Summer. Above, blackish brown scalloped with white; boldly spotted with chestnut on scapulars. Tail-coverts (upper and lower) white, spotted and barred with dark brown. *Below*, densely spotted with blackish brown and without any rufous.

STATUS, DISTRIBUTION and HABITAT. Winter visitor, not abundant but not rare on the Makran, Sind, Kutch and Kathiawar coasts. Also recorded from Assam (Dibrugarh, Cachar), Calcutta, Madras, Andaman and Laccadive Is.; not Ceylon. Possibly occurs in Bangladesh as it does in Burma. Affects tidal mudflats and creeks on the sea coast. In inland localities probably on migration.

Extralimital. Breeding range not properly known; believed to be chiefly NE. Siberia. Actual breeding records from mountains near lower Kolyma river and in Anadyrland and Koryakland. (For details see Vaurie, C., 1965, 2: 403.) On migration in China and Japan. Winters chiefly in the Malay Archipelago, Moluccas, and Australia.

GENERAL HABITS, FOOD, VOICE and CALLS. Nothing recorded as different from other shore waders.

BREEDING. Extralimital and little known.

MUSEUM DIAGNOSIS. See Key; for details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	165-185	39-47	34-38	63-69 mm.

(Baker)

Weight 9 ♂♀ (winter) 112-147 (av. 133.2) gm. — BNHS.

COLOURS OF BARE PARTS. Iris dark brown. Bill dusky black. Legs and feet greenish dusky (Armstrong).

414. Sanderling. *Calidris alba* (Pallas)

Tyrna (alba) Pallas, 1764, in Vroeg's Cat. Adumbr.: 7 (Coast of the North Sea)

Baker, FBI No. 2153, Vol. 6: 231

Plate 40, fig. 19 and Plate 41, fig. 5

LOCAL NAMES. None recorded.

SIZE. Grey Quail —; length c. 19 cm. (7½ in.).

FIELD CHARACTERS. A plump little shore bird, slightly larger than Dunlin (420), with slender *straight* bill. Most readily recognized in winter among other small coastal waders by its overall pale (almost whitish) coloration and blackish shoulder-patch; also by its extreme activity, chasing waves back and forth on the seashore for washed-up food. Identified in flight by whitish plumage and the very conspicuous white wing-bar.

Summer. Above, chestnut mottled with black; below, pure white. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Winter visitor. Abundant on the coastline of W. Pakistan (Makran, Sind). Less common than Little Stint and Dunlin on the western seaboard of India; rare on Kerala coast. On the eastern side tolerably abundant around Pt Calimere and along the Coro-

300

CHARADRIIFORMES

MUSEUM DIAGNOSIS. Hind toe absent. For description of plumage see Baker, loc. cit.; for details of plumage phases and morphology (also bionomics), Witherby 1940, 4: 276-81.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	117-130	24-27	22-26	46-55 mm.
♀♀	120-130	23-29	—	—

(from feathers)

(Witherby)

Examples collected in Sind by C. B. Ticehurst measured:

	Wing	Bill (from skull)
4 ♂♂	121-128	25-5-26 mm.
9 ♀♀	125-129.5	25-29.5 mm.

Weight 4 ♂♀ 37-42 gm. — BNHS.

COLOURS OF BARE PARTS. Iris brown. Bill, legs, and feet black.

415. Eastern Little Stint. *Calidris ruficollis* (Pallas)

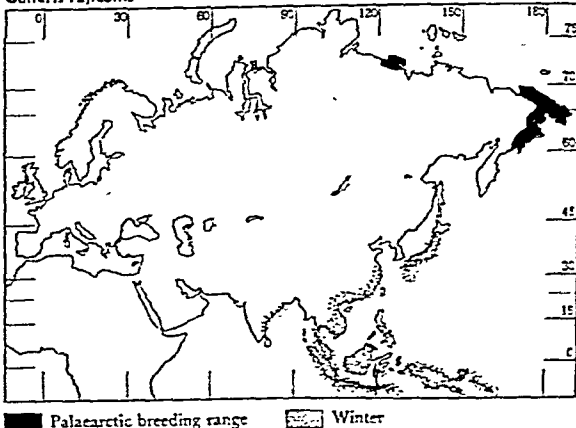
Tyrna ruficollis Pallas, 1776, Reise Russ. Reichs 3: 700 ('circa lacus salcos Dauriae campestris' = Kulussutai, southern Transbaikalia, *fide* Ridgway, 1919, Bull. U.S. Nat. Mus. no. 50, pt. 8: 292)

Baker, FBI No. 2156, Vol. 6: 236

LOCAL NAME. *Chhota pānlorā* (Hindi).

SIZE. Grey Quail —; length c. 16 cm. (6¼ in.).

FIELD CHARACTERS. Indistinguishable in winter from Little Stint (416), *q.v.* Slightly larger, and with a shorter, stouter, and blacker tarsus.

Calidris ruficollis

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 305

34; 487) that it is a purely freshwater species differing in this respect from Little Stint which affects both fresh and salt water. When flushed, shoots straight up in the air rather like snipe, with a different note to Little Stint's.

FOOD. Same as 416 — chiefly tiny molluscs, crustaceans, worms, and insects.

VOICE and CALLS. Flushing note a high-pitched trilling twitter appreciably different from the *wit-wit-wit* of Little Stint. A beautiful trilling song in butterfly-like hovering flight on its arctic breeding grounds.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.; for details of plumage phases and morphology (also bionomics), Witherby, 1940, 4: 251-5.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	90-100	16-18	16-18	38-49 mm.
♀♀	92-103	16-20	—	—
				(Witherby)

3 ♀♀ collected in Gujarat give
(from skull)
98-105 21-24 19-20 46-52 mm.
50 ♂♀ (N. Bihar — December) Wing 90-104 mm. (aver. 95.8); weight 15-25 gm. (aver. 19.0). (SA)

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet olive-green or yellowish olive.

418. Longtoed Stint. *Calidris subminata* (Middendorff)

Tringa subminata Middendorff, 1853, Reise Nord. und Ost. Siberien 2, Th. 2: 222, pl. 19, f. 6 (Western slopes of the Stanovoi Mountains and mouth of the Uda)
Baker, FBI No. 2157, Vol. 6: 236
Plate 40, fig. 10

LOCAL NAMES. None recorded.

SIZE. Same as Little Stint: House Sparrow +; length c. 15 cm. (6 in.).

FIELD CHARACTERS. A diminutive wader, very like Little Stint (416), also with outer tail-feathers greyish brown (v. white in Temminck's) and not distinguishable from it with certainty unless in the hand (see Museum Diagnosis). In winter very dark almost black crown and much darker mottlings on the back are usually suggestive pointers. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Winter visitor. Specimens collected in Nepal, Assam, Bangladesh, Bihar, Andaman Is., Ceylon and Maldivic Is. Probably regular and less uncommon than supposed, but overlooked due to difficulty in field discrimination from Little Stint. Around 1878 Hume found the two to be brought in about equal number to the Calcutta bird market. However, of birds caught recently in N. Bihar for ringing, the proportion was 34 Little Stints: 109 Temminck's: 2 Longtoed (P. V. George, JBNHS 62: 302).

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 307

419. Asian Pectoral or Sharptailed Sandpiper. *Calidris acuminata* (Horsfield)

Totanus acuminatus Horsfield, 1821, Trans. Linn. Soc. London 13(1): 192 (Java)
Baker, FBI No. 2159, Vol. 6: 239
Plate 40, fig. 11

LOCAL NAMES. None recorded.

SIZE. Grey Quail ±; length c. 22 cm. (8½ in.).

FIELD CHARACTERS. Resembles Little Stint and Dunlin but is somewhat larger. In winter chin, throat, and abdomen white; foreneck and breast pale brownish grey with small dark streaks or spots. On a good view, in flight, the pointed white-edged tail-feathers should be suggestive.

Summer plumage much darker; upper breast tinged with rufous; dark spots on breast broader, often taking the form of angulate bars, extending to the flanks. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Rare vagrant in winter. Recorded by Col. A. E. Ward in 1907 as 'a very rare visitor' to Kashmir (JBNHS 17: 946) but not found there since. J. Biddulph shot a specimen in Gilgit on 1 August, 1880 (SF 10: 276) and W. W. A. Phillips one in Ceylon more recently — 18 September 1955 (SZ 28(2): 183). These are the only records within our limits. It is possible that some are lost for want of critical examination.

Extralimital. 'Breeds on the Chukchi Peninsula [NE. Siberia]. Migrates through E. Asia; winters in the eastern part of the Malay Archipelago, New Guinea, Australia, and some of the S. Pacific islands' (Peters).

GENERAL HABITS, FOOD, VOICE and CALLS. The Gilgit specimen was flying about with a number of Ruff (*Philomachus pugnax*). The Ceylon example was feeding with Curlew-Sandpipers (*Calidris testacea*), Wood and Marsh Sandpipers (*Tringa glareola* and *T. stagnatilis*), Terek Sandpipers (*T. terek*) and Broadbilled Sandpipers (*Limicola falcinellus*) in shallow water in the bed of a coastal lagoon.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. In the hand the best point of distinction is the tail-feathers, all of which are pointed or acuminate in this species, whereas in the rather similar Dunlin (420) only the central ones are pointed. The latter, moreover, has a slightly downcurved bill. For description of plumage see Baker, loc. cit.; for details of plumage phases and morphology (also bionomics), Witherby, 1940, 4: 263-5.

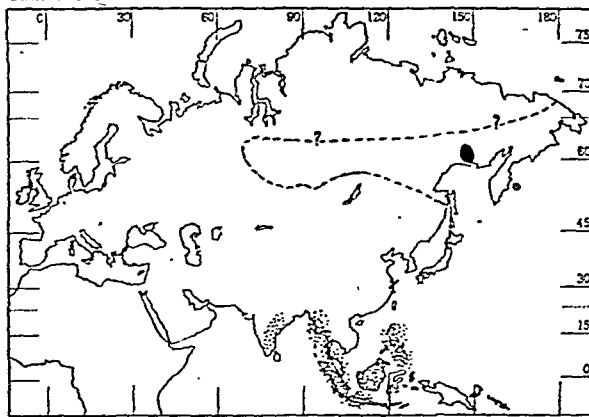
MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	127-139	23-27	27-31	45-58 mm.
♀♀	124-133	23-29	—	—
				(Witherby)

The Ceylon specimen (♀) measured
124 25 29 50 mm.
Middle toe with claw 28 mm. (Phillips)
COLOURS OF BARE PARTS. Iris dark brown. Bill black, base below brownish. Feet (ad.) dull greenish-grey, (juv.) dirty greyish ochraceous (Witherby).
'Iris dark brown; eyelids greyish white; bill dark greenish lead with the lower mandible lighter towards the base; legs and feet bright green with a yellowish tinge' (Phillips).

306 CHARADRIIFORMES

Calidris subminata



■ Breeding areas ▨ Imperfectly known and putative breeding range
▨ Winter

Extralimital. 'Breeds in E. Siberia south to Kamchatka and on the Commander and Kurile Is., perhaps also on Sakhalin. Migrates through China and Japan and winters in E. India, Burma, Malay Peninsula, Sunda Is., and the Philippines' (Peters).

MIGRATION. No ringing or other specific data.

GENERAL HABITS, FOOD, VOICE and CALLS. Keeps in mixed flocks with Little and Temminck's Stints on inland marshes as well as tidal mudflats. Nothing recorded as different from the other stints.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Upperparts darker than in *C. minuta* in winter due to the dark centres of the feathers covering a larger area; tail-feathers darker brown; a well-defined grey-streaked pectoral gorget. Toes noticeably longer and slenderer: middle toe 22-25 mm. (c. under 20 mm. in the other two stints). Middle toe with claw longer than tarsus (c. more or less equal); hind toe longer — 5 to 6 mm. c. 3 to 4 mm. For description of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	87-95	17-19	c. 20-21	34-36 mm. (Baker)

Weight 17 ♂♀ (autumn/winter) 16-23 (av. 19.9) gm. — BNHS.

COLOURS OF BARE PARTS. 'Iris brown. Bill olive-brown to blackish, paler at the base of the lower mandible. Legs and feet pale olive-yellow to pale brown' (Baker).

308 CHARADRIIFORMES

420, 421. Dunlin. *Calidris alpina alpina* (Linnaeus)

Tringa alpina Linnaeus, 1758, Syst. Nat., ed. 10, 1: 149 (Lapland)
Erolia alpina centralis Buturlin, 1932, Alauda (2), 4: 265 (Yakutsk, eastern Siberia)
Baker, FBI No. 2161, Vol. 6: 241
Plate 40, fig. 14 and Plate 41, fig. 6

LOCAL NAMES. Not recorded.

SIZE. Grey Quail —; length c. 19 cm. (7½ in.).

FIELD CHARACTERS. Essentially maritime. In winter confusingly like Curlew-Sandpiper (422) but with the bill slightly less downcurved near the end: above, greyish brown with a good deal of fine dark mottling; below, white, with a diffuse greyish-streaked band across breast. Sexes alike.

In flight the whitish wing-bar, as in Curlew-Sandpiper, conspicuous; differentiated from it with certainty only by the blackish (contra white) upper

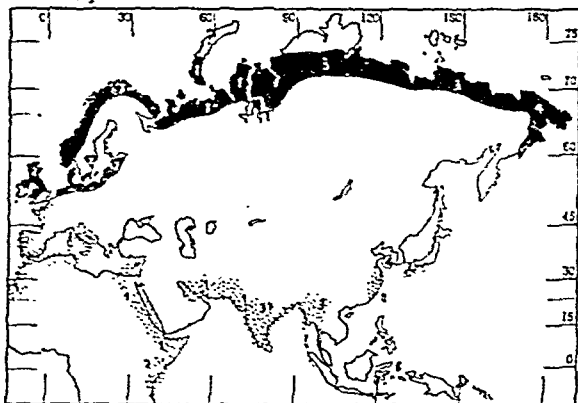


tail-coverts. At rest among a mixed flock of small waders, characteristic rounded or 'hunched-up' profile suggestive of Dunlin.

Summer plumage diagnostic: above, chiefly black, boldly scalloped with bright deep rufous or chestnut; below, white, with centre of breast and abdomen black. Remnants of this plumage frequently seen among the earlier immigrants in autumn; fresh summer plumage donned partially or fully before departure in April and May.

STATUS, DISTRIBUTION and HABITAT. Common and abundant winter visitor to the seaboard of West Pakistan (Makran and Sind coasts) and NW. India (Kutch, Saurashtra — Gujarat). Sparsely inland, as occasional winter visitor or passage migrant, throughout northern and peninsular India from Kashmir to Kerala, and east to Assam; also both Pakistans, and Nepal. Uncommon east of Bihar, and a straggler south of central coastal Maharashtra and the Deccan. Not recorded in Ceylon or Andaman Is. though specimens have been collected in the Maldives where it is 'probably a regular winter visitor in small numbers' (Phillips, JBNHS 60: 575). Affects the seashore, tidal mudflats and creeks, river banks, flooded fields, etc. in association with other waders.

CURLEWS, SANDPIPERS, SNIFE, WOODCOCK 309

Calidris alpina

■ Breeding range ■ Winter 1 *C. a. alpina* (420).
2 *C. a. schinzii* (RE). 3 *C. a. centralis* (421). 4 *C. a. sakhalina* (RE).

Extralimital. 'Breeds in Iceland, the Faeroes, and in Europe and Asia from N. Scandinavia to the Yamal Peninsula; Kolguev and Vaigach Is., northern Nova Zemlya and Spitzbergen; southern breeding limits south to Pskov, the upper Volga and the lower Ob. Winters in the Mediterranean region, NE. Africa and SW. Asia' (Peters).

MIGRATION. No ringing data. Adults in worn breeding dress arrive in W. Pakistan (Karachi harbour) [also on the Gujarat coast] in the first days of August; young birds later. The majority depart in the second or third week of May (latest 5 June). Odd birds overwinter, unlike most waders, in summer dress (Ticehurst, *Riv* 1924: 111).

GENERAL HABITS. Keeps in flocks, often mixed with Curlew-Sandpipers, stints, sand plovers and other small waders. The birds scatter to feed on the seashore or mudflats at low tide, running about and probing with their bills into the soft mud. On alarm the flock rises more or less simultaneously and flies off in packed formation — the different species sometimes breaking up into smaller bands of their own — turning, twisting and banking in the air at great speed, their white underwings flashing in the distance from time to time. At high water the feverish activity slackens; the birds bunch-up on dry ground waiting for the ebb to resume feeding.

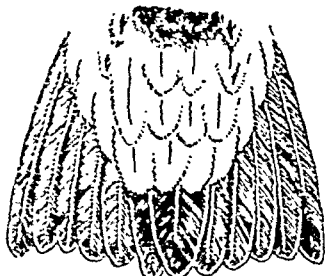
FOOD. Molluscs, crustaceans, worms, sandhoppers, chironomid larvae and other insects; occasionally some seeds. A large quantity of gritty sand commonly found in stomachs, together with brownish mucous-like matter.

VOICE AND CALLS. Ordinary call in winter a prolonged rather shrill *tut-tut* or *tee-tee-tee* especially when taking wing. A soft purring sound produced by a flock while feeding or alighting has been described. In breeding

* See Appendix

CURLEWS, SANDPIPERS, SNIFE, WOODCOCK 311

good deal of fine dark mottling; below, white, with the breast streaked and washed with brown. When at rest or feeding in a mixed flock with Dunlin its slightly larger size, longer legs, and similarly downcurved but somewhat slenderer bill are suggestive pointers. In flight differentiated from Dunlin with certainty only by its *white* (contra blackish) upper tail-coverts.



Tail, x c. 1

Summer plumage completely different from Dunlin's and diagnostic: mainly chestnut and rich rufous, above and below. As in Dunlin remnants of this plumage commonly seen among the earlier immigrants in autumn. Most birds have moulted back into the chestnut dress before departure for the breeding grounds in spring.

STATUS, DISTRIBUTION AND HABITAT. Common winter visitor to the entire seaboard of West Pakistan and India. Doubtless also in East Pakistan since it occurs in the Sunderbans of W. Bengal. Also Ceylon, the Maldives, Andaman, and Nicobar Is. In small numbers inland — as winter visitor and/or passage migrant. Not recorded in Nepal. Affects the seashore, tidal mudflats and creeks, salt-pans, squelchy paddyfields and marshes, etc. in association with other waders.

Extralimital. 'Breeds in N. Asia at the mouth of the Yenisey, in W. Taimyr, Cape Bolshoi Baranov and on the New Siberian Is. On migration occurs throughout Europe and Asia; winters in Africa, Madagascar, India, Burma, Malay Archipelago, and Australia' (Peters).

MIGRATION. No ringing data. Adults in worn breeding dress, often still in pairs, arrive on the Makran, Sind, and Gujarat coasts as early as the last days of July or first week in August; juveniles (according to Ticehurst) in the first days of September. Most birds have departed by end April; many in full breeding dress linger on till c. mid May accumulating enormous quantities of body fat; yet others (in non-breeding plumage) overwinter on our shores.

GENERAL HABITS AND FOOD. Similar to Dunlin, q.v. Keeps in large flocks often of several hundred strong, usually mixed with stints, dunlins, sand plovers, and other waders.

VOICE AND CALLS. Not authentically recorded in India, the fact of its keeping in mixed flocks making it difficult to isolate the calls of the various

* See Appendix

CHARADRIIFORMES

season male delivers a rich trilling song in fluttering switchback flight, or from an exposed perch, over or near the nesting place.

BREEDING. Extralimital. Season, June-July. Nest, a neat cup at base of grass tussock on damp ground, near water. Eggs, 4.

MUSEUM DIAGNOSIS. See Key. For description of plumage Baker, loc. cit.; for details of structure (and bionomics) Witherby 1940, 4: 232-40.

MOUL. 'Spring moult begins early in April, and by the third week is well on; it involves most of the body feathers, not the wings and as a rule not the tail. As in most waders the males are always in advance of the females' (Ticehurst).

MEASUREMENTS of birds collected in our area in winter:

	Wing	Bill (from feathers)	Tarsus	Tail
Sind 22 ♂♂	112-121	29-36	24-27	— mm.
18 ♀♀	116-123	34-39	25-27	— mm.
		(from skull)		(Ticehurst)
Gujarat 2 ♀♀	120-124	40-41	26-28	47-53 mm. (SA)

Weight 20 ♂♀ (autumn/winter) 34-57 (av. 44.1) gm. — BNHS.

COLOURS OF BARE PARTS. Iris hazel or dark brown. Bill, legs, and feet black.

It is possible that some of the dunlins wintering in eastern India may belong to the race *Calidris alpina centralis* Butorlin (421), described as having more white on the outer webs of the inner primaries. However, *centralis* is an intermediate (clinal) form between the nominate western race *alpina* and the somewhat larger eastern *C. a. sakhalina* (Vieillot). In winter plumage *sakhalina* itself is doubtfully separable from *alpina* though the reduction in its breast streaking is evidently discernible and the outer webs of the inner primaries are somewhat more broadly bordered with white on an average. *C. a. sakhalina* breeds in NE. Siberia and it is likely that the birds wintering in Assam, E. Pakistan, and Bengal belong to that race, or approaching it ('*centralis*'), though in winter plumage allocation with certainty is impossible.

Hartert (Vög. pal. Fauna: 1577) gives the measurements of *sakhalina* as:

Wing ♂♂ 177-123, rarely 125, mostly 119-121 mm.; ♀♀ 120-126, exceptionally up to 130 mm. Bill (from feathers) ♂♂ 31.3-35.8; ♀♀ 34-42 mm. Tarsus ♂♂ 25-27.5; ♀♀ 25-28 (29) mm.

422. Curlew-Sandpiper. *Calidris testacea* (Pallas)

Scolopax testacea Pallas, 1764, in Vroeg's Cat. Adumbr.: 5 (Holland)
Baker, FBI No. 2160, Vol. 6: 240

Plate 40, fig. 15 and Plate 41, fig. 7

LOCAL NAMES. None recorded.

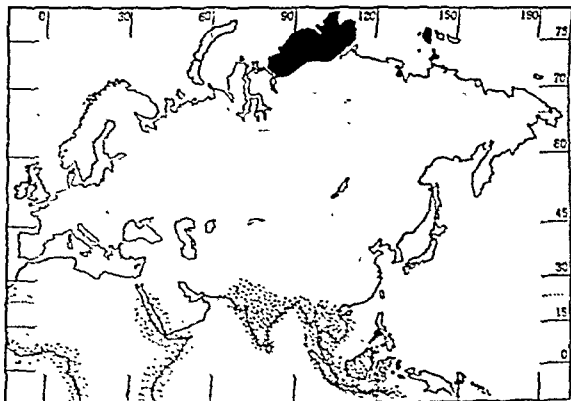
SIZE. Dunlin \pm ; length c. 20 cm. (8 in.).

FIELD CHARACTERS. An essentially maritime species. In winter very like Dunlin (420) and easily confused with it: above, greyish brown with a



x c. 1

CHARADRIIFORMES

Calidris testacea

■ Breeding range ■ Winter

species. According to Baker 'in winter it has a twittering call as well as a rather shrill single note'.

BREEDING. Extralimital. More or less similar to Dunlin.

MUSEUM DIAGNOSIS. Somewhat larger size (cf. Measurements) and white upper tail-coverts distinguish it from the very similar Dunlin in winter. The breeding plumages of the two are diagnostic (see Field Characters); for detailed description see Baker, loc. cit., and Witherby, 1940, 4: 242-4.

MOUL. In adults, moult of body feathers from the worn breeding plumage commences about the first week in August. Spring moult takes place in March and April and by mid April is well advanced. Most birds have acquired full summer dress by the third week of April (Ticehurst).

MEASUREMENTS of birds collected in our area in winter:

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	124-137	37-44	28-31	43-52 mm.
♀♀	130-134	41-45	30-32	47-52 mm. (CBT, HW, SA)

Weight 20 ♂♀ (winter) 36-53 (av. 45.5) gm. — BNHS.

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet greyish plumbeous to black.

Genus EURYNORHYNCHUS Nilson

Euryrhynchus Nilson, 1821, Orn. Svecica 2: 29. Type, by monotypy, *Euryrhynchus griseus* Nilson = *Platyleia pygmaea* Linnaeus

Genus unique and readily distinguished from all others by the remarkable shape of the bill which terminates in a flat quadrilateral disc or spatula, bluntly angulate at each side and at the end. Basal portion of bill depressed throughout with bright

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 313

and breadth about equal. Nostrils small and placed quite at the base. Other characters as in *Calidris*, q.v.

Contains a single eastern Palearctic species.

423. Spoonbilled Sandpiper. *Eurynorhynchus pygmaeus* (Linnaeus)

Platalia pygmaea Linnaeus, 1758, Syst. Nat., ed. 10, 1: 140

(in Surinami = eastern Asia)

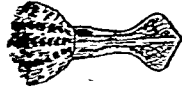
Baker, FBI No. 2154, Vol. 6: 232

Plate 40, fig. 18

LOCAL NAMES. None recorded.

SIZE. Little Stint ±; length c. 17 cm. (6½ in.).

FIELD CHARACTERS. A small stint-like wader with a unique spatula-shaped bill. Winter plumage largely white, with dark-shafted pale greyish brown upperparts (including crown). Rump and upper tail-coverts dark brown in the middle, white at the sides. Middle rectrices dark brown, outer rectrices paler, with white edges and shaft-stripes.

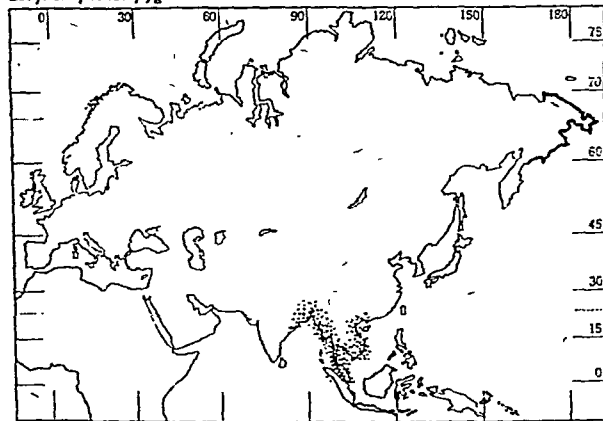


x c. 1

Summer (breeding). Above, blackish, the feathers fringed with rufous. Below, foreneck and breast deep ferruginous spotted with dark brown; rest white.

STATUS, DISTRIBUTION AND HABITAT. Very rare winter visitor to West Bengal, Assam, and East Pakistan. Up till Jerdon's time, c. 1864, it had only been recorded at the mouths of the Ganges [Sunderbans] and on the coast of Chittagong. Hume only found a single example brought to the Calcutta bird market in the course of his frequent visits there over several years (c. 1877). Since then Baker records two obtained in the Sibsagar district

Eurynorhynchus pygmaeus



■ Breeding range □ Winter

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 315

424. Broadbilled Sandpiper. *Limicola falcinellus falcinellus* (Pontoppidan)

Scolopax Falcinellus Pontoppidan, 1763, Dansk. Atlas 1: 623, pl. 25 (No locality, Sialandia ex Orn. Boreal.: 49 = Denmark)

Baker, FBI No. 2163, Vol. 6: 245

Plate 40, fig. 16

LOCAL NAMES. None recorded.

SIZE. Grey Quail ±; length c. 17 cm. (6½ in.).

FIELD CHARACTERS. Very like Dunlin (420) and Curlew-Sandpiper (422) with similar slightly downcurved bill, and confusable with both. In winter above, dark-mottled greyish brown; below, white, sparsely streaked on breast. Rump, upper tail-coverts and middle rectrices brown as in Dunlin from which doubtfully distinguishable in flight. At rest the long whitish supercilium (not meeting across forehead), and blackish patch on wing-shoulder are suggestive pointers. On a fairly close view the somewhat smaller size, shorter legs and more marked spotting of the cheeks and breast help further to distinguish it from Dunlin.

In summer (breeding plumage) a smaller but passable replica in coloration and pattern of the Jack Snipe (410), q.v. This dress donned before departure in May, the birds then looking nearly black on the ground and unmistakable even at a distance.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor to the seaboard of both Pakistans, India, Ceylon, Andaman, and Nicobar Is. Common on the Makran and Sind coasts. Perhaps commoner than the records suggest owing to ambiguity in field identification. Recorded less commonly from inland localities in Baluchistan, Delhi, Bihar, and elsewhere — presumably on passage. Affects the coastline, tidal mudflats, muddy creeks and brackish lagoons, and sandbanks in large rivers.

Extralimital. 'Breeds in Norway, Sweden, Lapland, Finland, N. Russia and Siberia east to the Yenisey and perhaps further, exact northern and southern limits not known, but not extending into the tundra; breeds also in Orenburg (Ilek River), in Turgai (upper Irgiz) and in the forest steppe of Minusinsk. Winters south to the Mediterranean, Black, Caspian, and Red Seas, Persian Gulf and western India' (Peters).

MIGRATION. No ringing data. According to C. B. Ticehurst (*Ibis* 1924: 116) adults in worn breeding dress arrive on the Sind coast in the last days of July, their numbers increasing in the first week of August. At first they are usually in pairs, the female still showing remains of incubation patches. Immature birds arrive about a month later, in the last week of August or the first in September, and join up with flocks of other waders. In early May most birds have donned breeding dress, segregated out in pure flocks, and become very fat. By the third week of May most have emigrated, leaving a few non-breeding birds behind to overwinter. On the Coromandel coast the influx is heaviest Sept./Oct.

GENERAL HABITS. Not appreciably different from other sandpipers and stints. An impression that needs confirming is that this species obtains its

¹ The races are inseparable in winter plumage, and the visitors to coastal W. Bengal and E. Pakistan may belong to the eastern race, *sibirica* (425). Specimens taken in Ceylon have however, been confirmed as of the nominate race.

of Assam by a Mr Edens, and one by himself in the Meghna Sunderbans (E. Pakistan). No specimens appear to have been taken within our limits during the last 50 years or so, but one sight-recorded in Sri Lanka (Bundala), Jan. 1978 (CBCN, Feb. 1978: 7). It is rare also in Burma in winter, but apparently less infrequent.

Extralimital. 'Coast of NE. Siberia, west to Vankarem Bay on the north coast of the Chukotski Peninsula and south to southern Koryakland (to Korfa Bay, 166°E. long.). Migrates through the Kuriles, Sakhalin, Japan, Korea, and along the coast of China to winter from S. China to Hainan and the Indochinese countries, and rarely to Assam and Bengal; has wandered to NW. Alaska' (Vaurie).

GENERAL HABITS, FOOD, VOICE AND CALLS. Has been found individually or very sparsely in large mixed flocks of stints and other small waders amongst which it tends to get overlooked. Runs about and feeds with them, and like them, on tidal mudflats etc. The stomach of the specimen shot by Baker contained minute red crabs 'The only note it uttered was a shrill wheel, wheel as it rose.'

[For a very full account of the morphology, bionomics, and breeding biology of the Spoonbilled Sandpiper in NE. Siberia see Portenko, A. L., 1957, *Journal für Ornithologie*, 98(4): 454-66.]

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See under Genus; for details of plumage Baker, loc. cit.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus
14 ♂♂ ad.	95.3-102.4 (av. 98.9)	19.6-22.3 (av. 21.2)	20.1-21.8 mm. (av. 20.9)
9 ♀♀ ad.	95.5-103.5 (av. 99.9)	21.7-24 (av. 22.8)	20.4-22.4 mm. (av. 21.6)
Breadth of 'spoon':	13 ♂♂ ad. 8 ♀♀ ad.	10.1-11.2 10.7-11.6	(av. 10.7) mm. (av. 11.1) mm. (Portenko)

Tail: 3 ♂♂ 37-39 mm. (Hartert).

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs, and feet black.

Genus LIMICOLA Koch

Limicola Koch, 1816, Syst. baier. Zool.: 316. Type, by monotypy, *Numenius pygmaeus* Bechstein (not of Latham) = *Scolopax falcinellus* Pontoppidan

Differs from *Calidris* in its bill, which is soft and flexible (with hard tip), slightly downcurved near end, swollen at base and depressed and broad. Nostrils small, placed in a groove near base. Tail short and nearly square, the central rectrices a little longer and pointed. Wing long and pointed, with first primary (as.) longest. Tarsus and toes as in *Calidris*; hind toe well developed.

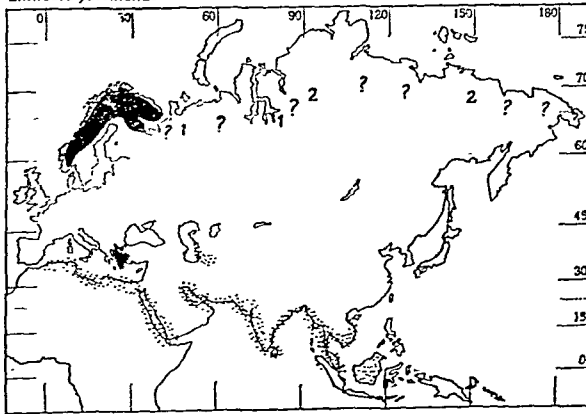
The genus contains a single Palearctic species.

LIMICOLA FALCINELLUS (Pontoppidan)

Key to the Subspecies

- Upperparts less brightly coloured rufous in breeding plumage..... *L. f. falcinellus*
- Upperparts more brightly coloured rufous in breeding plumage..... *L. f. sibirica*

Limicola falcinellus



■ Breeding range □ Winter 1 *L. f. falcinellus* (424).
2 *L. f. sibirica* (425).

food by 'picking' from the surface like Common Sandpiper, and not by probing its bill into the soft mud like Dunlin or Snipe.

FOOD. Molluscs, worms, tiny gastropods, and insects; also a small quantity of seeds.

VOICE AND CALLS. A twittering flushing note, similar to Temminck's Stint's, is the only call recorded in winter. On its breeding grounds a harsh trill also rather similar to that of Temminck's Stint.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for description of plumage phases and morphology (also bionomics), Witherby, 1910, 4: 290-3. Molt from worn breeding dress into winter plumage (body moult) begins on arrival in winter quarters about first week in August; in immature birds (of the year) about a month later. Towards end February moult into breeding plumage again commences; it is well advanced by early April, and nearly complete by the end of that month. Exodus starts in early May; by the third week most birds have departed (Ticehurst).

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	101-113	30-36	20-23	35-42 mm.

Weight 25 ♂♂ (autumn/winter) 26-40 (av. 32.25) gm. — BNHS.

COLOURS OF BARE PARTS. Iris dark brown. Bill horny black or brown, strongly tinged with olive-green. Legs very dark lead (ad.); dark yellowish olive (juv.).

CURLEWS; SANDPIPERS, SNIPE, WOODCOCK 317

425. **Eastern Broadbilled Sandpiper.** *Limicola falcinellus sibirica* Dresser
Limicola sibirica Dresser, 1876, Proc. Zool. Soc. London: 674 (Siberia and China)
Baker, FBI No. 2164, Vol. 6: 246

LOCAL NAMES. None recorded.
SIZE. Same as 424; c. 17 cm. (6½ in.).
FIELD CHARACTERS. In winter plumage indistinguishable from 424, q.v. Summer (breeding). More rufous and spotted and streaked than 424. See Museum Diagnosis.
STATUS, DISTRIBUTION and HABITAT. Winter visitor to the seaboard of W. Bengal and East Pakistan as it is commonly in Burma. Owing to difficulty of identifying the races in winter plumage, the range of *sibirica* within our area is somewhat obscure.

Extralimital. 'Breeding range unknown but presumably N. Siberia east of the Yenisey. Winters from Formosa (rarely) and SE. China (a few), and Hainan, south to the Indochinese countries, coast of eastern India, and Sundas to Australia' (Vaurie).
GENERAL HABITS, FOOD, VOICE and CALLS. Same as 424.
BREEDING: Extralimital.

MUSEUM DIAGNOSIS. In summer plumage differs from nominate race (424) in having the upperparts much more rufous, each feather boldly spotted and streaked with bright rufous.

MEASUREMENTS and COLOURS OF BARE PARTS. Same as 424.

Genus TRYNGITES Cabanis

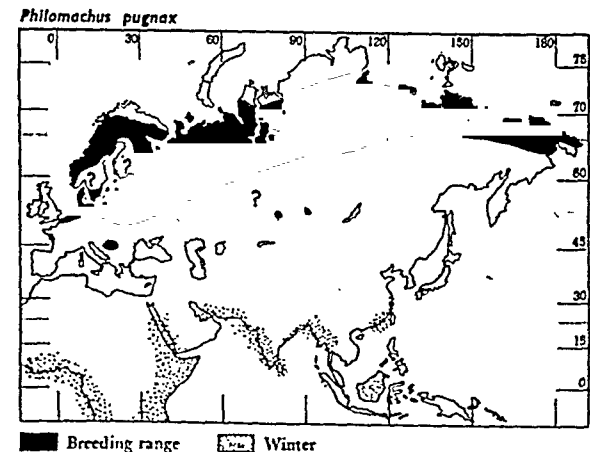
Tryngites Cabanis, 1856 (1857), Jour. f. Orn. 4: 418. Type, by original designation, *Tringa rufescens* Vieillot = *Tringa subruficollis* Vieillot
Very close to *Calidris*. Easily recognized by small black spots on inner webs of primaries. Bill much longer than tarsus, straight, hard, not flexible. Sides of tail not emarginated; middle rectrices much longer than rest. Male larger than female. Summer and winter plumages more or less alike.
Contains a single Palaearctic species.

425a. **Buffbreasted Sandpiper.** *Tryngites subruficollis* (Vieillot)
Tringa subruficollis Vieillot, 1819, Nouv. Dict. Hist. Nat. 34: 465 (Paraguay)
Not in Baker, FBI

SIZE. Common Sandpiper ±; length ♀ c. 18 cm., ♂ c. 20 cm. (7-8 in.).
FIELD CHARACTERS. Stockier than Common Sandpiper with shorter bill and noticeably rounded head. Above, blackish with the feathers prominently bordered with buff ('scalloped') like Ruff in winter plumage. Rump uniformly dark-coloured without contrasting pattern. Below, buff, including throat and sides of face. Sexes alike.
Frequents upland fields (dry open ground) as well as scashores.
STATUS, DISTRIBUTION and HABITAT. Accidental vagrant. A solitary specimen collected in Ceylon at Kalametiya Lagoon on 5.iii.1960 (*Loris* 8(5): 330-1); another sight-recorded Trincomalee, Nov. 1974 (CBCN).
Extralimital. 'Breeds on the arctic coast of N. America from Alaska to Mackenzie. Migrates chiefly through the interior of N. and S. America

CURLEWS, SANDPIPERS, SNIPE, WOODCOCK 319

confused with Redshanks in distance. In flight a narrow white wing-bar, the dark rump and tail with a white patch on either side at its base, are suggestive pointers.
In summer plumage, Ruff (♂) extremely variable with much black, white, purple, chestnut, and buff in plumage, and with a peculiar erectile shield-like ruff and ear-tufts of stiff, curled feathers. Face bare, covered with small fleshy papillae of bright yellow or pale pink. Remnants of breeding plumage occasionally seen on arrival in India. Reeve (♀) as in winter, but blacker above, and sometimes with black linear spots or broken bars on pale fulvous breast — reminiscent of pattern in bustard-quail.
STATUS, DISTRIBUTION and HABITAT. Winter visitor to both Pakistans and all India including Kashmir, Nepal, Assam and Manipur. Also Ceylon and Maldives Is. In some areas (e.g. Nepal) merely an autumn and/or spring passage migrant, in others (e.g. Sind) partly winter visitor and partly passage migrant. Curiously not recorded from the Andaman and Nicobar Is.



Affects tidal mudflats and estuaries, and inundation marshes, and squelchy or wet paddy stubbles and fallows inland.
Extralimital. 'Breeds in N. Europe and Asia from Nordkapp east across the tundra to the Kolyma (including Kolguev and Vaigach Is.) south to eastern England (formerly), Belgium, Bavaria, Hungary, steppes of S. Russia and W. Siberia (north of lat. 50°N.), Minusinsk, and the upper Amur. Winters in Africa south to Cape Province, India, Assam, and Burma, rarely to China' (Peters). Has occurred casually on the eastern Atlantic islands, N. America, and the Lesser Antilles. For greater details of distribution see Vaurie, 1965, 2: 405-6.

318 CHARADRIIFORMES

and winters in some part of southern Argentina, but winter concentration area not known' (Peters). Occasionally wanders into the Palaearctic Region.
MUSEUM DIAGNOSIS. Distinguished by pink-buff underparts and by inner webs of primaries and secondaries being freckled with black, and short, slender bill. For description of structure, plumage phases, etc. see Witherby, 1940, 4: 287-90.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	129-138	20-23	29-33	54-60 mm.
♀♀	124-129	18-21	—	—

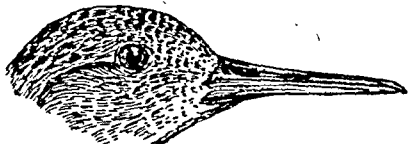
(Witherby)
COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet dull orange.

Genus PHILOMACHUS Merrem

Philomachus Anonymous = Merrem, 1804, Allg. Lit. Zeitung 2(168): col. 342
Type, by monotypy, *Tringa pugnax* Linnaeus
Bill moderately long, straight, flexible; both mandibles grooved over the greater part of their length. Nostrils linear placed in the groove close to base of upper mandible. Wing long and pointed; first primary (as.) longest; inner secondaries lengthened. Tail rather short and rounded; tail-coverts very long. Tarsus longer than bill from gape, with transverse shields in front and behind. Hind toe moderate; outer and middle toe connected by a web; web between inner and middle toe obsolete.
Male promiscuously polygynous (?) and considerably larger than female. In breeding season he assumes a ruff of long feathers extending from nape down each side of neck and showing extraordinary variation in colour, transforming his appearance completely.
The genus contains a single Palaearctic species.

426. **Ruff.** *Philomachus pugnax* (Linnaeus)
Tringa Pugnax Linnaeus, 1758, Syst. Nat., ed. 10, 1: 148
(in Europa minus boreali = Southern Sweden)
Baker, FBI No. 2152, Vol. 6: 228
Plate 43, fig. 12 and Plate 44, fig. 15

LOCAL NAMES. *Gehwala*, *Bāghdd* (Hindi); *Gowala* (Bengal).
SIZE. ♂ (Ruff) c. Grey Partridge, ♀ (Reeve) Grey Quail +; length ♂ c. 31 cm. (12 in.), ♀ c. 25 cm. (10 in.).
FIELD CHARACTERS. In winter plumage a rather dumpy greyish brown wader with bold blackish scaly-patterned upperparts and relatively short sandpiper-like bill. Red-legged birds on the ground liable to be



Winter, x c. 1

320 CHARADRIIFORMES

MIGRATION. Arrives in West Pakistan (Sind) and NW. India (Kutch, Saurashtra, Rajasthan) in first week August (some as early as the last days of July), but autumn passage in bulk most general in September. Return migration commences in the last days of February and early March, the males going in advance of the females. By mid April the majority have departed, but odd birds linger on till May. Recoveries of ruffs ringed in the Bharatpur area of Rajasthan (c. 27°N., 77°E.) soon after the mass arrivals in autumn (September/October) indicate an interesting trend of dispersal in the succeeding winter months. The movement hence is evidently in an ESE. direction, through Uttar Pradesh, Bihar and W. Bengal to East Pakistan, our farthest recovery in that direction being from Jessore district (c. 23°N., 89°30'E.) — about 1250 km. distant from the place of ringing. All recoveries in spring (March/April) have been in a NW. to N. direction in West Pakistan and beyond, the extralimital ones being in the territories of the U.S.S.R. between c. 60° and 90° E. long. Our northernmost record so far is from the neighbourhood of Norilsk (c. 69°20'N., 88°13'E.) in the Krasnoyarsk region of W. Siberia — a straight-line map distance of some 5000 km. This bird was recovered on 8 June when presumably on its breeding grounds.
GENERAL HABITS. Gregarious; often in company with other waders in parties of 5 to 8 or flocks up to 25 individuals or so. Enormous concentrations of many thousands commonly collect in favourite feeding localities (e.g. the inundated fallows in Bharatpur, Rajasthan) on their first arrival in NW. India and before dispersing in smaller bands over the country. The expansive mudflats at the mouth of the Banas river in the Little Rann of Kutch is the scene of similar colossal aggregations prior to the northward migration in March. The tens of thousands of Ruff that gather here, along with densely crowded 'acres' of other waders, present a spectacle that is truly phenomenal. Jostling flocks feed energetically in wet grass fields or inundated stubbles, picking up grass and weed seeds from the dry surface or probing for food in the squelchy mud with the bill thrust in up to the forehead and chin, sometimes with the head completely submerged. The birds 'hedge-hop' from field to field in close-packed rabbies; when pitching, the body axis is tilted to the vertical and the wings flapped rapidly in a vibratory action to check momentum. Largely a nocturnal feeder, flocks flying regularly to their feeding grounds around sunset. Flight strong and swift, with regular rapid wing-beats.
FOOD. Molluscs, crustaceans, insects, worms, and large quantities sometimes almost exclusively — of vegetable matter: grass- and weed seeds, berries, wild and cultivated rice, etc.
VOICE and CALLS. Very silent. A low *chuck-chuck* or plaintive *tu-wit* occasionally emitted on flushing.
BREEDING. Extralimital. Ruff renowned for its fantastic sparring tournaments or courtship displays. A number of males in variegated ornamental plumages assemble at selected dry spots in marshes known as 'leks' or 'hills', each occupying an adjacent 'territory' of half a square metre or so. The neighbours posture threateningly with ruff and ear-tufts erected, legs flexed, head lowered and bill pointing to the ground, and lunge and tilt and leap up and down in the air and at one another. Physiologically mature

• See Appendix

PHALAROPE

321

reeves visit the 'hills' from time to time and apparently mate promiscuously with the ruff of their choice. He takes no part in the nesting chores.

MUSEUM DIAGNOSIS. See under Genus. For details of plumage phases etc. see Witherby, 1940, 4: 284-6.

Moult. In keeping with its other unusual features, the moult pattern is also unique. Between two breeding cycles the male renews his body feathers not twice, as is normal with limicolines, but three times — twice on its breeding grounds and once in the winter quarters. He emigrates in this second non-breeding plumage (pre-nuptial) to his breeding grounds, moulting quickly into the ornamental nuptial dress after arrival there. This nuptial dress is worn for about two months only.

(For details of moults see Kozłowa, E., 1956, *Zool. Jour.* 35: 1908-10 — Russian, and Stresemann, E. & V., 1965, *L'Oiseau*, 35 (Special No.): 125-9 — German.)

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	173-190	30-36	46-50	78-89 mm.
♀♀	150-166	29-31	41-44	64-70 mm.
	(from feathers)			(Baker)
	Wing		Weight	
			(early autumn)	
50 ♂♂	181-194 mm. (av. 186.9)		127-179 gm. (av. 150.9)	
50 ♀♀	149-163 mm. (av. 156.1)		81-118 gm. (av. 93.25)	
	No overlap in the sexes.		(SA)	

COLOURS OF BARE PARTS. Winter. Iris brown. Bill dark brown; particoloured in some individuals — orange or salmon near base. Legs exceedingly variable: olive, pinkish olive, yellowish olive, orange-olive, greyish olive, olive-plumbeous, greenish orange, bright orange, dull salmon-pink, or salmon.

Adults of both sexes *mostly* (but not invariably) have orange legs in autumn (September/October), but leg coloration by itself is no criterion of age. Moulting of the primaries at that period, however, is an infallible indication of adulthood. Young birds (i.e. those hatched in the same year) never have orange legs in September/October and they arrive in their Indian winter quarters with freshly moulted wing-quills — in reality carrying their first generation of flight feathers which still look fresh at the time.

MISCELLANEOUS. Ranked as a semi-sporting bird and excellent for the table. Longevity: longest period between ringing and recovery of an individual in India 8 years 9½ months.

Subfamily PHALAROPINAE: Phalaropes

Genus PHALAROPUS Brisson

Phalaropus Brisson, 1760, Orn. 1: 50; 6: 12. Type, by tautonymy,

Phalaropus Brisson = *Tringa fulicaria* Linnaeus

Lobipes Cuvier, 1817 (1816), Règne Anim. 1: 495. Type, by original designation

Tringa hyperborea Linnaeus = *Tringa lobata* Linnaeus

Anterior toes bordered throughout by a web divided into lobes very much as in coots and grebes. Similar to *Calidris* in other respects except that the female is much bigger and more brightly coloured than the male and is the dominant sex partner as in Jacanas and Painted Snipe. Wings long and pointed: first primary (as.) longest. Tail of moderate length and nearly square. Tarsus scutellated all

PHALAROPE

323

Male less brightly coloured than female with crown streaked like back (contra black in ♀), and with much white on throat and breast.

STATUS, DISTRIBUTION AND HABITAT. Accidental waif. Since the single specimen obtained by Blyth in the Calcutta market on 11.v.1846, there is no other record within our limits.

Extralimital. 'Breeds locally on the arctic coasts and islands of the Holarctic region. . . Winters at sea off the west coast of Africa and coast of Chile' (Peters). For details of range see Vaurie, 1965, 2: 441-2.

HABITS, FOOD, etc. as in 428.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Short, broad, flattened bill distinguishes it from Rednecked Phalarope (428). For description of plumage phases etc. see Witherby, 1940, 4: 216-18.

428. Rednecked Phalarope. *Phalaropus lobatus* (Linnaeus)

Tringa lobata [sic] Linnaeus, 1758, Syst. Nat., ed. 10, 1: 148

(in America septentrionali = Hudson Bay)

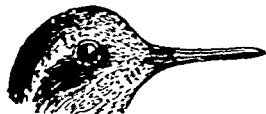
Baker, FBI No. 2166, Vol. 6: 249

Plate 40, fig. 17 and Plate 41, fig. 12

LOCAL NAMES. None recorded.

SIZE. Grey Quail ±; length ♀ c. 19 cm. (7½ in.), ♂ smaller.

FIELD CHARACTERS. Like 427 a delicate sandpiper-like bird habitually seen swimming about buoyantly on ponds, lagoons, and the open sea. In winter chiefly grey above, white below, with a blackish eye-patch — rather reminiscent of Sanderling. Doubtfully separable from 427 except by those familiar with both species. May be distinguished from it by slightly smaller size, darker grey more streaked upperparts, more prominent white wing-bar in flight, and — on a good view through glasses — by the finer black bill, and blackish (not yellowish)



x c. 1

legs. Sexes alike in coloration; male smaller.

In contrast with stints and other small waders with which it feeds and flies, its characteristic habit of alighting on water (fresh and salt) and swimming on the surface instead of landing on squelchy mud and running about or wading is quite diagnostic.

In summer plumage (not normally seen in India) upperparts blackish grey with sides of neck and foreneck rich rufous. Male duller, and with the rufous broken across foreneck by a dark slaty area.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor. Common offshore along the coastline of W. Pakistan (Makran, Sind), less so in NW. India (Kutch, Saurashtra), and in small numbers and patchily (regular or sporadic?) more or less off the entire coastline of peninsular India to East Pakistan. Ceylon (sporadic). Recorded from a few inland localities on spring and/or autumn passage: thus from Chitral (Drosh), Baluchistan (Quetta, Fort

322

CHARADRIIFORMES

round; a hind toe present. Bill slender, short and straight. Nostrils placed in a well-defined groove near base of bill.

Genus Holarctic with two species recorded in our area in winter.

Key to the Species

Bill flat; broader than tarsus and broader than high. *P. fulicarius*
Bill slender and subcylindrical; anteriorly narrower than the tarsus
..... *P. lobatus*

427. Grey Phalarope. *Phalaropus fulicarius* (Linnaeus)

Tringa Fulicaria Linnaeus, 1758, Syst. Nat., ed. 10, 1: 148

(in America = Hudson Bay)

Phalaropus fulicarius jerdoni Iredale, 1921, Bull. Brit. Orn. Cl. 42: 8

(Liefde Bay, Spitzbergen)

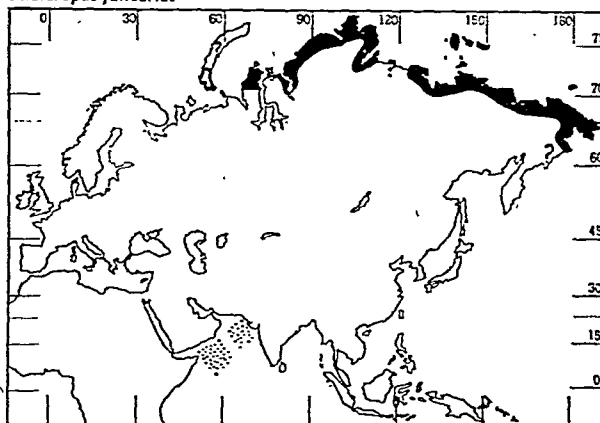
Baker, FBI No. 2165, Vol. 6: 248

LOCAL NAMES. None recorded.

SIZE. Grey Quail ±, length ♀ c. 20 cm. (8 in.), ♂ smaller.

FIELD CHARACTERS. Winter. A dainty sandpiper-like bird habitually seen swimming buoyantly on water, fresh as well as salt, often far out at sea. The unstriped grey and white plumage with a prominent dark patch from in front of eye to ear-coverts, thicker chiefly yellow bill, and yellow legs, help to distinguish it from Rednecked Phalarope (428) in winter. Sexes alike in winter plumage.

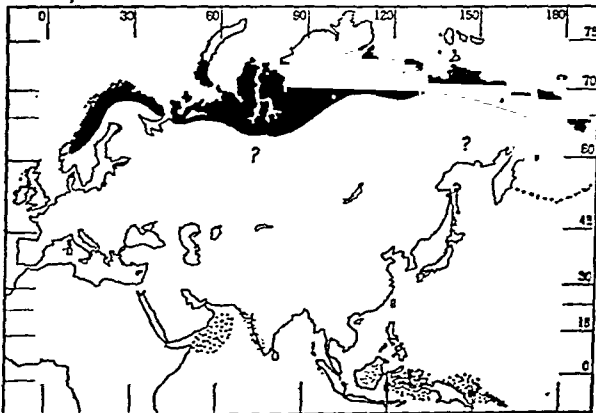
Summer plumage (unlikely to be seen in India): above, dark brown streaked or scalloped with chestnut-buff. Sides of face white. Below, chestnut.

Phalaropus fulicarius

■ Palearctic breeding range ▨ Winter

324

CHARADRIIFORMES

Phalaropus lobatus

■ Palearctic breeding range ▨ Winter

Munro), Sind, Delhi, Rajasthan (Bharatpur), Bihar (Patna), Karnataka (Bangalore) and Kutch (near Bhuj). Most abundant though rather patchy off the Sind and Makran coasts, sometimes within a few miles of land but more often well out to sea at 10 to 40 or more miles from the coastline. Affects shallow water in the Arabian Sea, the 200-fathom line apparently being its limit (Ticehurst). Frequents shallow jheels and ponds inland.

Extralimital. Breeds in Iceland, Spitzbergen, Faroes, Scandinavia, N. Russia and across northern Asia; also in extreme N. America (Alaska etc.). Winters at sea in the northwestern Indian Ocean, off the coasts of Peru and West Africa, between New Guinea and the Bismarck Archipelago, and in the Banda Sea. For greater details of range see Vaurie, 1965, 2: 442-3.

MIGRATION. No ringing data. Observed on passage in Makran and Sind, chiefly autumn: earliest September 2, latest May 20 (Ticehurst); Chitral September 14 (Fulton); Fort Munro, Sulaiman Hills, Baluchistan, September 25 (Waite). Latest inland dates late May in two successive years, 1948 and 1949, Kutch (Himmattinji), and June 1 Delhi (H. G. Alexander), all in partial summer plumage.

GENERAL HABITS. Ticehurst (Ibis 1924: 126) has given an excellent account of its habits in winter. Chiefly pelagic. Keeps in flocks of 20 to a hundred or more offshore. Extremely wild and unapproachable at sea, rising and scudding over the surface to re-settle at some distance even while the observer's boat is 200 yards away. In contrast, absurdly tame on inland waters (as also on its breeding grounds), parties feeding unconcernedly within a few metres of an observer. The birds keep to pools and shallow jheels, swimming about buoyantly like corks, spinning round and round to pick up food particles from the surface, making swift little darts here and

PAINTED SNIPE

325

there, head bobbing like a moorhen, or threading their way in single file through the more thinly scattered rushes. Flight swift and agile, in close-knit flocks, very like stints.

FOOD. Chiefly plankton, insects and larvae. Also small crustaceans, molluscs and worms.

VOICE AND CALLS. Not recorded in winter.

BREEDING. Extralimital. Courtship by female; incubation and raising family entirely by male.

MUSEUM DIAGNOSIS. See Key; for description of plumage Baker, loc. cit.; for details of plumage phases and morphology (also bionomics), Witherby, 1940, 4: 218-22.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	106-110	20-24	19-21	43-47 mm.
♀♀	112-118	20-25	—	—
	(from feathers)			(Witherby)

Weight 20 ♂ ♀ (autumn/winter) 20-38 (av. 27.6) gm. — BNHS.

COLOURS OF BARE PARTS. Iris dark brown. Bill dark horny brown, orange at base. Legs and feet dull brown or fleshy brown.

Tibia pale orange; tarsus and feet black except lobes of web between inner and middle toe which are bright orange (D'Abreu).

Family ROSTRATULIDAE: Painted Snipe

Genus ROSTRATULA Vieillot

Rostratula Vieillot, 1816, Analyse: 56. Type, by monotypy, *Béassins de Madagascar*, Buffon = *Rallus benghalensis* Linnaeus

Bill slender and long but shorter than in most species of true snipe of the genus *Cepella* (p. 278), and not pitted at the end; tip slightly swollen and bent down; both mandibles grooved at the base. Nostrils at base of upper mandible. Tarsi strong, of moderate length. Tibia partly naked; toes long. Wings short, broad, rather lax: 1st and 2nd primaries (as.) longest and subequal. Tail of 14 feathers. Female larger and brighter coloured than male.

Represented by one resident species in our area.

429. Painted Snipe. *Rostratula benghalensis benghalensis* (Linnaeus)

Rallus benghalensis Linnaeus, 1758, Syst. Nat., ed. 10, 1: 153 (Asia)

Baker, FBI No. 2033, Vol. 6: 45

Plate 38, fig. 8 and Plate 41, fig. 16

LOCAL NAMES. *Rājchāhā* (Hindi); *Ohāri* (Nepal, Bihar); *Baggerji* (Bengal); *Pān lānā* (Gujarat, Maharashtra); *Ayle ulān* (Tamil, Madras); *Ullān kūniri* (Tamil, Ceylon); *Kālikāta* (Malayalam); *Rāja wātunā*, *Ulu kēnātunā* (Sinhala); *Kāngdrūk* (Manipur); *Doodidap gajao* (Cachar, Assam).

SIZE. Grey Quail +; length c. 25 cm. (10 in.).

FIELD CHARACTERS. A typical skulking rail with long, slender, straight snipe-like bill, slightly downcurved at tip.

Female. Above, chiefly metallic olive- or bronze-green with buff and blackish streaks and markings. Whitish 'spectacles' with a white patch

PAINTED SNIPE

327

spersed with deepish pools and soft muddy patches, and rather thick shrubby vegetation, in preference to squelchy paddyfields.

Extralimital. 'Africa south of the Sahara to Cape Province; Egypt; Madagascar; S. Asia from Asia Minor through Persia to S. and E. China, and Japan, south to Arabia, Sind, all India [including Burma], Ceylon, Malay Peninsula, and Cambodia; Philippines, Borneo, Sumatra, and Java' (Peters).

MIGRATION. Apart from local movements dependent on drought and flood conditions, some translimital migration would seem to be indicated by the puzzling, oft-quoted statement of Wollaston (if correct) that Painted Snipe¹ were among the Temminck's Stints, Pintail Snipe, and several other species of migrating birds seen at 17,000 ft. (c. 5200 m.) in September by the first Mount Everest expedition (*Ibis* 1922: 497; and Younghusband, Sir F., 1926, *The Epic of Mount Everest*: 154). No other evidence.

GENERAL HABITS. Largely crepuscular; much more active in the early mornings and evenings, and during night, than in daytime. Keeps singly or in small wisps and is reluctant to leave cover unless pressed. Flight slow and rail-like — legs dangling below for some distance then tucked under tail and trailing behind — the bird soon pitching into the reeds again. Strong and swift on its legs and usually runs a good distance through the undergrowth upon alighting, soon working its way back to where originally disturbed. Wounded birds swim effectively to evade capture, and also to cross narrow deep channels in the course of their feeding. Feeds by probing into squelchy mud as well as by a side-to-side scything movement of the bill in shallow water — reminiscent of the Spoonbill. Wags hindpart of body like sandpiper when feeding, which it sometimes does in exposed puddles far from cover.

FOOD. Molluscs, crustaceans, insects, worms, and vegetable matter — weed-seeds, paddy grains, etc.

VOICE AND CALLS. Female (ready-to-breed?) utters a rather metallic long-drawn oot, like the sound of blowing into a large-mouthed bottle. The calls begin around sunset and continue intermittently through the night, especially if moonlit; sometimes also in daytime in cloudy overcast weather. Repeated at the rate of 1 per second (or 3 in 2 seconds) in runs of 20 to 80 or so, with a break of a few minutes between each run. Single calls (not runs) also uttered by female in a 'roding' type of flight (cf. Woodcock) 3 or 4 metres above the marsh. Male has a squacky note, but whether this given in response to female's calls, or how occasioned, not known.

BREEDING. Female polyandrous and pugnacious as in Bustard-Quail (318, q.v.), and the dominant sex partner. She battles with rival females for the possession of successive husbands, and once secured and eggs laid leaves to him the onus of incubating them and raising the chicks. Meanwhile she sets out to make fresh conquests. No precise data available, but female believed to lay several clutches successively.

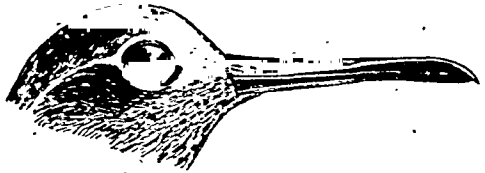
Season. Practically throughout the year, varying locally; chiefly July to September in India; November to April in Ceylon. *Nest*, a pad of grass or

¹ F. Ludlow suggests, with good reason, that this (or these) may possibly have been Wood Snipe (*Cepella leucorhynchos*) and not Painted Snipe, since the flight of the two species is very similar.

326

CHARADRIIFORMES

behind eye, and white bands over shoulders to sides of breast (reminiscent of the straps of a rucksack) distinctive. Below, chin, throat, and upper breast chestnut; lower breast blackish. Rest of underparts white. Easily differentiated from male in flight. Outside breeding period the sexes more or less alike and difficult to distinguish.



♀, x c. 1

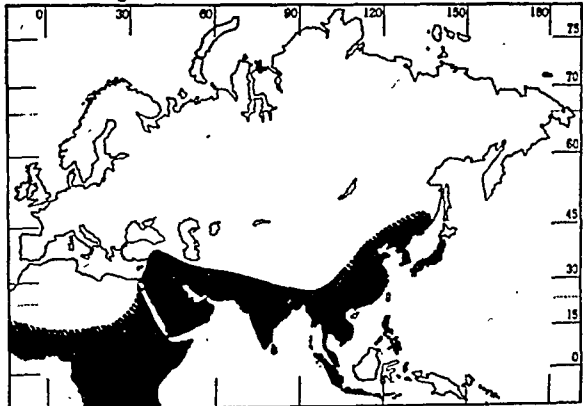
Male less showy than female and lacking the chestnut and black on neck and breast.

Young (immature) ♂ ♀. Very similar to adult male but with throat entirely white; lower throat and foreneck washed with brown, with some dusky streaks (Sharpe).

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident throughout the Indian Union and both Pakistans; locally to c. 1800 m. in the Himalayas. Also Ceylon in all zones and up to c. 1300 m. in the hills of Uva Province. Not observed in Nepal and in Andaman and Nicobar Is. Affects marshes inter-

Rostratula benghalensis



■ Distributional range

328

CHARADRIIFORMES

rushes (built by male) with a slight depression in the centre. Placed on the ground in a grass tussock on the edge of a marsh, or on bunds separating inundated paddyfields. Eggs, normally 4 — sometimes 3 — yellowish in ground colour, boldly and heavily blotched with blackish brown. Average size of 100 eggs 35.9 x 25.5 mm. (Baker). Incubation period unknown.

MUSEUM DIAGNOSIS. See under Genus (above); for description of plumage, Baker, loc. cit.

Chick (in down). 'Dull grey or buff-grey, with broad coronal and eye-streaks of rich brown; centre of back rich rufous with broad bands of black on either side and lateral bands of purplish brown from the wings to the thighs' (Baker).

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	115-136	41-47	40-45	36-45 mm.
	(mostly over 124)			
♀♀	130-146	45-50	—	—
				(Baker)

Weight 23 ♂ ♀ (autumn) 106-151 gm. (aver. 125.9) — SA.

COLOURS OF BARE PARTS. Iris olive-brown to dark brown. Bill pale to dark fleshy brown or horny brown, greenish at base; more fleshy pink in breeding. Legs and feet yellowish to olive-green, sometimes tinged with brown or plumbeous.

Family RECURVIROSTRIDAE: Stilts, Avocets, Ibisbills

Key to the Genera

	Page
A Bill straight	<i>Himantopus</i> 328
B Bill curved upward	<i>Recurvirostra</i> 332
C Bill curved downward	<i>Ibidorhyncha</i> 334

Genus HIMANTOPUS Brisson

Himantopus Brisson, 1760, Orn. 1: 46; 5: 33. Type, by tautonymy,

Himantopus Brisson = *Charadrius himantopus* Linnaeus

Characterized by the enormous length of the legs. Both tibia and tarsus very to the former bare for over three-quarters of its length; tarsus reticulated throughout. No hind toe; outer toe joined to middle toe by a broad web, middle toe to inner a narrower one. Bill long, straight, and slender, the dertrum not swollen. Nostril long slits placed in the base of a groove running about half the length of upper mandible. Wing long and pointed: first primary (as.) longest. Tail short and even.

The genus ranges over the temperate and tropical areas of the Old and N worlds; represented within our limits by one species.

HIMANTOPUS HIMANTOPUS (Linnaeus)

Key to the Subspecies

Crown and nape black (ad. ♂♂, summer) or black variously mixed with white, or black concealed or subdued (ad. ♂♂ winter, and ad. ♀♀ summer and winter). Upperparts blackish, glossed metallic green (♂♂ summer and winter) or upperparts hair brown (♀♀ summer and winter). Breast suffused with mouse grey (juvenals)....*H. h. himantopus* Crown and nape whitish or merely sullied by dark bases of feathers showing through (♂♂ and ♀♀, summer).....*H. h. ceylonensis*

¹ Winter plumage not examined by us but presumably similar.

STILTS, AVOGETS, IBISBILLS

329

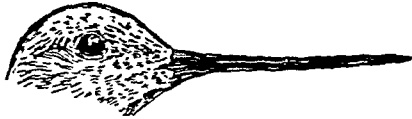
430. Indian Blackwinged Stilt. *Himantopus himantopus himantopus* (Linnaeus)

Charadrius Himantopus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 151 (Southern Europe)
Baker, FBI No. 2130, Vol. 6: 193
Plate 39, fig. 8 and Plate 42, fig. 8

LOCAL NAMES. *Gāz pān*, *Tinghār* (Hindi); *Sārgān* or *Sārgān* (Bihari mirshikān); *Lāl gān*, *Lāl thēngi*, *Lām gōra* (Bengal); *Gūding* (Sind); *Pārilāl kāl tūllān* (Tamil).

SIZE. Grey Partridge ±, with bare slender legs c. 25 cm. (10 in.) long.

FIELD CHARACTERS. A lanky pied black and white marsh bird with straight slender black bill, pointed black wings, and enormously long, thin reddish legs which trail behind comically in flight, making its identity unmistakable even in the distance.



x c. 3

Male (adult). Mantle and wings glossy metallic black; rest of plumage above and below largely glistening white. A few black spots on head, and pale grey-brown in tail. Undersurface of wings black.

Female (adult) has black portions of male replaced by brown, and the white head and hindneck sullied with brownish grey. Summer and winter plumages differ in details.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident—breeding in suitable localities, migrating locally under stress of water conditions—throughout the Indian Union, both Pakistans and Nepal. Normally to c. 1500 m. in Kashmir Valley (uncommon); one at c. 3600 m. (Vishan Sar, July—on migration?). Not in Andamans or Nicobars. Observed once in the Maldives where race and status unknown but presumed a vagrant (Phillips). Ceylon has an endemic race (431). Affects marshes both freshwater and tidal, jheels, village tanks, irrigation reservoirs, lagoons, salt-pans, etc. Sometimes inundated ploughed fields, but hardly ever the seashore.

EXTRALIMITAL. 'Breeds locally in the Mediterranean region; about the mouth on the Danube; steppes of S. Russia; S. Asia east to China and S. Arabia, India, Ceylon [now race *ceylonensis*], and the Malay States; Egypt; Africa south of the Sahara; Madagascar. Migratory only in the northern part of its range' (Peters).

MIGRATION. Birds ringed in Bharatpur in autumn and winter recovered in NW. Pakistan and N. Afghanistan in spring (late April) clearly indicate extralimital seasonal movement. Recorded by Ticehurst as mainly winter visitor (locally abundant) in Sind, appearing in the Karachi neighbourhood early in August, its numbers increasing during the month but soon dwindling again.

STILTS, AVOGETS, IBISBILLS

331

flapping their wings and jumping about in a frenzied manner. Incubating birds not shy, permitting close approach before leaving nest, and thereupon demonstrating noisily about the intruder, flying high in the air and hovering with loud incessant calls.

MUSEUM DIAGNOSIS. For description of the various plumage phases, structure, etc. see Witherby, 1940, 4: 406-8.

CHICK (in down). 'Head and upperparts mottled pale buff and black; black spinal line; black line from base of bill to eye, and on ulna. Round eye and whole of underparts pale buff' (Ticehurst).

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	240-253	60-69	c. 115-145	80-90 mm.
♀♀	222-240	54-69	—	—
	(from feathers)		(Baker, Witherby)	
13 ♂♀	Wing 202-249 (aver. 231.7); weight (autumn) 163-208 gm. (aver. 196.2)		— SA.	
Weight 20 ♂♀	(autumn/winter, ad. & imm.) 112-223 (av. 177.1) gm. — BNHS.			

COLOURS OF BARE PARTS. Iris bright red. Bill black. Legs and feet crimson; claws black.

431. Ceylon Blackwinged Stilt. *Himantopus himantopus ceylonensis* Whistler

Himantopus himantopus ceylonensis Whistler, 1944, Spolia Zeylanica 23(3, 4): 277 (Kalawewa, Ceylon)
Not in Baker, FBI

LOCAL NAMES. *Kelapu-kirālā* (Sinhala); *Pavala kālī* (Tamil).

SIZE. As 430.

FIELD CHARACTERS. As of 430, q.v.

STATUS, DISTRIBUTION AND HABITAT. Race peculiar to Ceylon. Plentiful round large tanks and lagoons throughout the low-country Dry zone (Phillips).

GENERAL HABITS. Not different from the Indian race. (Cf. also Henry, G. M., 1955, *A Guide to the Birds of Ceylon*: 292-3.)

BREEDING. Season, May, June, and July; occasional nests in April and August (Phillips). Nest and eggs similar to 430.

MUSEUM DIAGNOSIS. No distinct breeding plumage as in male of the nominate form. Brown back of female darker than in Indian birds. 'The males differ from the typical form which has the crown and nape black in breeding plumage in having those parts white merely sullied by the dark bases of the feathers showing through. The females have the brown back darker than in European birds' [nominate] (Whistler, H., loc. cit.).

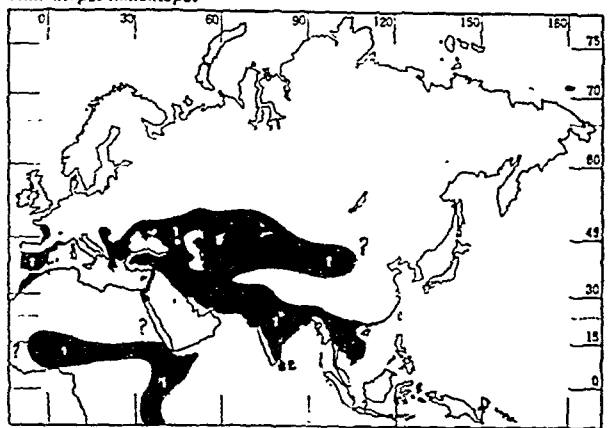
MEASUREMENTS

	Wing	Bill	Tarsus	Tail
		(from skull)		
4 ♂♂	233-249	62-74	110-124	73-85 mm.
3 ♀♀	230-234	64.5-70	107-120	73-80.5 mm.
				(Whistler)

COLOURS OF BARE PARTS. As in 430.

330

CHARADRIIFORMES

Himantopus himantopus

Distributional range

- 1 *H. h. himantopus* (430).
2 *H. h. ceylonensis* (431).

GENERAL HABITS. Gregarious—usually by itself, occasionally with Godwits and other waders—in small parties or fair-sized flocks and larger congregations of a hundred or more. Often wades into deepish water almost to the belly, walking with an awkward high-stepping gait lifting each foot clear of the surface behind and putting it forward with deliberation. The long stilt-like legs enable it to tap food supplies normally out of reach of most other waders. While feeding, head often completely submerged. Flight feeble and flapping, the black undersides of the pointed wings and the absurdly long trailing legs giving it a singular silhouette.

FOOD. Molluscs, worms, aquatic insects, and small seeds of sedges and marsh plants.

VOICE AND CALLS. A shrill piping *kip, kip*, usually in flight. When agitated, a squeaky *chek-chek-chek* etc. reminiscent of a Moorhen, with the timbre of the Redwattled Lapwing's calls. This uttered noisily while wheeling and demonstrating above the intruder.

BREEDING. Season, principally between April and August. Nest, a hollow depression in the ground on the dry margin of a jheel or on an islet, or a raised platform of *kānkār* (pebbles) in a shallow salt-pan—lined with vegetable scum off the water, grass, or similar material. Sometimes nests in colonies maybe of several score pairs. Eggs, normally 4, sometimes 3, exceptionally 5, light drab in colour densely blotched with black. In size, the longish peg-top shape and general appearance, they are replicas of Redwattled Lapwing's (366). Average size of 100 Indian eggs 44×31 mm. (Baker). Both sexes incubate; incubation period undetermined, believed to be 25-26 days. When nests approached the birds protest loudly,

332

CHARADRIIFORMES

Genus RECURVIROSTRA Linnaeus

Recurvirostra Linnaeus, 1758, Syst. Nat., ed. 10, 1: 151. Type, by monotypy.

Recurvirostra acrosetta Linnaeus

Bill very long, slender, flexible, tapering and curved upwards towards the end; both mandibles flattened or depressed. Nostrils slit-like, placed near base of upper mandible in an ill-defined groove extending for less than half length of bill. Wings long and pointed: 1st primary (as.) longest. Tarsus and bare tibia long; tarsus reticulated. Hind toe small, furnished with a claw; anterior toes deeply webbed, but webs notched in the middle.

Represented by one species in our area.

432. Avocet. *Recurvirostra acrosetta* Linnaeus

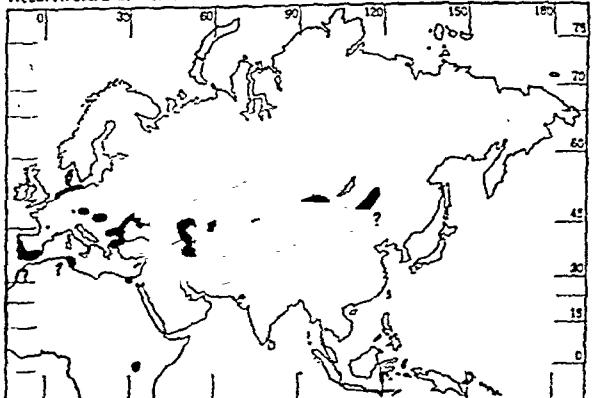
Recurvirostra Acrosetta Linnaeus, 1758, Syst. Nat., ed. 10, 1: 151
(in Europa australiore = Italy)
Baker, FBI No. 2131, Vol. 6: 195
Plate 39, fig. 6 and Plate 42, fig. 10

LOCAL NAME. *Kūyā chāhā* (Hindi); *Kūni āchichān* (Tamil).

SIZE. Grey Partridge ±; more leggy. Length c. 46 cm. (18 in.).

FIELD CHARACTERS. An elegant black-and-snowy white (pied) marsh bird unmistakable with any other by its unique slender black upcurved bill and longish bare blue legs. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Breeding regularly or sporadically (?) in N. Baluchistan and Kutch. Mainly winter visitor: fairly common in West Pakistan (Baluchistan, Sind) and NW. India (Banaskantha, Kutch,

Recurvirostra acrosetta

Breeding range

STILTS, AVOCETS, IBISBILLS

333

Saurashtra). Less common, sporadic and/or occasional, in Nepal and Kashmir and over the rest of the Indian Union including coastal Maharashtra, Punjab, Delhi, U.P., Bihar, Orissa, Assam and Manipur. Recorded on Rameswaram I. and at Point Calimere (Madras State); not in Kerala, Andaman and Nicobar Is. or the Maldives. Rare straggler to Ceylon, observed in February and July. Affects jheels and swamps, lagoon shores, tidal creeks and mudflats, and the sea coast.

Extralimital. Breeds locally from Holland eastward through the region of the Black and Caspian Seas, Kirghiz Steppes, the upper Yenisey and Transbaikalia, south to the Mediterranean countries, Persia, Turkistan and N. China; breeds also in various parts of tropical and southern Africa, possibly in Madagascar. Migrates from the northern part of its breeding range to Africa, India, and S. China (Peters).

Migration. No ringing data. Earliest date at Karachi 28 August; latest 24 May (Ticehurst). Owing to its dual status, observations on movements ambiguous.

GENERAL HABITS. Keeps in pairs and small parties — sometimes flocks of a hundred or more. The birds run about and feed on squelchy mudflats or by wading in shallow water. The curious upturned bill is directed obliquely against the ground — like a hockey stick held in play — the curved part skimming the surface. It is then moved back and forth in a rotary sweeping motion churning up the bottom mud along with minute organisms which are collected in the mandibles. Sometimes feeds in deeper water, its webbed feet being well adapted for swimming, and frequently up-ends like a duck to reach the bottom.

FOOD. Tiny molluscs, crustaceans and insects.

VOICE AND CALLS. A clear loud, rather high-pitched *kleeit* uttered several times in succession, usually on the wing. When agitated by proximity of observer to nest, a continuous screaming *kleeit-kleeit-kleeit* (at the rate of c. 3 per second), of the timbre of Stone Curlew's (*Burhinus*) calls, while wheeling overhead.

BREEDING. Nesting within Indian limits, in the Great Rann of Kutch — discovered for the first time in April 1945 (Salim Ali, JBNHS 45: 420-1). The colony consisted of over a thousand birds. More than 150 nests counted within an area of c. 2 hectares, and numerous others scattered far and wide. On April 21 most nests contained full clutches, some incomplete. Only two downy chicks observed and perhaps several overlooked, but general hatching had not yet commenced. Owing to remoteness of the area and difficulty of access, it remains undetermined whether the breeding in the Rann is regular or sporadic. *Nest*, in some cases a bed of *kankar* (mud-pellets), but mostly a mere shallow scrape or unevenness in the hard sun-baked ground. Eggs, 4, some shade of olive-brown, boldly blotched with blackish; in shape and coloration very close to eggs of both Redwattled Lapwing and Stilt. Average size of 16 Kutch eggs 49.25 × 35.0 mm. (SA). Incubation by both sexes; period recorded elsewhere as 22-24 days. On an observer's approach the birds left their nests and started running about here and there, crouching low, raising their wings vertically back to back, and giving the 'broken-wing' diversionary display. Over 30 birds occasionally thus engaged at the same time.

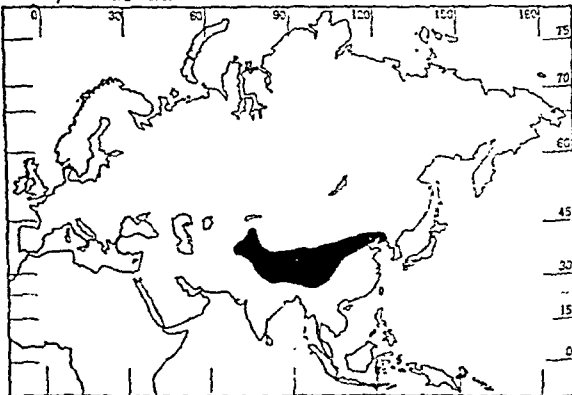
STILTS, AVOCETS, IBISBILLS

335

blackish cross-bars, broad near tips of outer rectrices. A partially concealed white wing-patch. *Below*, sides of head, neck, and upper breast bluish grey. A broad black gorget separated from upper breast by a narrow white band. Rest of lower plumage white. Sexes alike.

In flight, which resembles the Stone Curlew's, the neck and long curved bill are stretched out in front, and the posterior end of the bird looks rather truncated. White wing-patches and black breast-band very prominent.

STATUS, DISTRIBUTION AND HABITAT. Resident in the Himalayas between c. 1700 and 4400 m. from Gilgit, Ladakh and Kashmir, through Garhwal, Kumaon, Nepal, Sikkim and Bhutan to extreme eastern NEFA (Luhit

Ibidorhyncha struthersii

Distributional range

Frontier Division). In winter, while some birds continue to remain at high elevations a great many descend into the foothills of northern W. Bengal and eastern Assam north of the Brahmaputra, being found on the Teesta and most other east-Himalayan rivers where they debouch into the plains. Affects shingle banks and islets in fast-flowing Himalayan streams.

Extralimital. 'High plateaus of central Asia from W. Turkistan to Chihili south to Kashmir, the Himalayas and northern Assam' (Peters).

GENERAL HABITS. Keeps in pairs or small parties of 6 to 8 birds on shingle banks or islets in comparatively placid stretches of fast-flowing glacier streams. Sometimes feeds in short grass by a river, running a few steps, stopping abruptly and tilting forward like a plover. Has characteristic habit of wading breast deep and ducking whole head and neck under water, thrusting its long bill under the submerged pebbles for food. When feeding among water-worn boulders, curves its bill around the front of the stone, sometimes inserting it from one side. Bill eminently adapted; curved in

334

CHARADRIIFORMES

Nearest previous breeding record from N. Baluchistan (small numbers Khushdil Khan lake) where full clutches found on June 10 and 17 in different years (Ticehurst, JBNHS 32: 82).

MUSEUM DIAGNOSIS. See under Genus; for description of chick in down, plumage phases and structure, etc. Witherby, 1940, 4: 412-13.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	220-235	84-91	c. 84-90	86-90 mm. (Harter)

No appreciable size difference between the sexes.

COLOURS OF BARE PARTS. Iris reddish brown or red. Bill black. Legs and feet pale bluish grey.

Family IBIDORHYNCHIDAE: Ibisbills

Genus IBIDORHYNCHA Vigors¹

Ibidorhyncha Vigors, 1832 (1830-31), Proc. Zool. Soc. London: 174

Type, by monotypy, *Ibidorhyncha struthersii* Vigors

Bill long, hard, slender, and curved down over nearly half its length. Nostril linear, placed at base of bill in a groove which extends over more than half length of bill. Tarsus comparatively short; reticulated throughout. No hind toe; outer and middle toes connected by a deeply indented small web; web between middle and inner toes obsolete. Wing very square: first 3 primaries (as.) subequal; inner secondaries almost as long.

433. Ibisbill. *Ibidorhyncha struthersii* Vigors

Ibidorhyncha Struthersii Vigors, 1832 (1830-31), Proc. Zool. Soc. London: 174 (Himalayas)

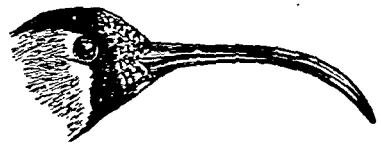
Baker, FBI No. 2132, Vol. 6: 196

Plate 39, fig. 16 and Plate 42, fig. 3

LOCAL NAME. Puggah (Hill Min).

SIZE. Grey Partridge +; length c. 41 cm. (16 in.).

FIELD CHARACTERS. A greyish brown sandpiper-like bird with black facial mask and breast-band, and long downcurved red bill. *Above*, anterior face (including throat) black. Rest of upperparts largely ashy grey-brown; rump feathers with basal black markings. Tail ashy grey with narrow wavy



× c. 1/4

¹ The familial relationships of this genus are uncertain, see Verheyen, R., 1958, Inst. roy. Sci. nat. Belg. 34(18): 1-31.

336

CHARADRIIFORMES

such a way that it fits neatly round the boulders when the bird is probing for food (Hingston). The rounded profile and grey-brown coloration of the Ibisbill's back obliterate it in an astonishing way in its native habitat of smooth water-worn stones. When alarmed or inquisitive it bobs or 'pumps' its head and neck jerkily up and down and slowly wags the tail end, very like a Greenshank. Usually shy, flying off from an observer at long range, but has a curious habit of doubling back after some distance to fly overhead. Flight reminiscent of Stone Curlew.

FOOD. Insects, molluscs, crustaceans, worms, and small fish (?).

VOICE AND CALLS. A loud, ringing single note or 'whistle' quickly repeated: *tee-ti-ti-ti-ti-tee* of distinctly sandpiper quality, uttered in flight. 'When disturbed emits a rather shrill mournful cry, something resembling that of a Greenshank' (B. B. Osmaston). A pretty trilling song by the male (?) from a distance prior to relieving his mate at the nest has been recorded by SA — like something between the nuptial song of the Spotted Sandpiper (*Tringa glareola*) and of the Curlew (*Numenius arquata*). This is responded to by the incubating partner with loud *lilee* notes. Relief announces his progress towards nest by a frequent sandpiper-like *tit-tit* but of a different timbre.

BREEDING. An early nester. *Season*, end March (even before ground clear of snow) to mid May; exceptionally into early June. *Nest*, a shallow depression on the raised portion or ridge of a shingly islet in a glacier stream amongst grey water-worn pebbles; usually unlined, occasionally with a tamped-down bed of tiny pebbles. Incubating bird merges into the rounded stones in a miraculous way becoming completely invisible when still. Eggs, 4, large for the bird, fine-textured broad ovals, drab grey or greenish grey in ground colour, spotted and speckled with dark brown, chiefly towards the large end. Average size of 52 eggs 51.0 × 36.9 mm. (Baker). Incubation by both sexes; period undetermined. Observations by SA at a nest in Sikkim revealed that not only the pair but three birds were clearly interested in it, suggesting the need for a proper investigation of the bird's breeding biology.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down) 24 hrs. old. 'Head covered with white down with black hair-like tips; hindneck greyish white; back densely covered with white down, tinged with fawn and minutely freckled with black; hinder quarters similarly marked but more strongly washed with rufous; an indistinct line of black and rufous feathers from the angle of the mouth through the eye; underparts silky white. Bill black; feet fleshy with plumbeous patches on the joints; iris dusky brown. Culmen 16 mm.; tarsus 24 mm.' (Ludlow).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	230-245	68-80	c. 47-49	113-120 mm. (Baker)

Weight 1 ♂ 295 gm. (BB), 2 ♀♀ 271, 318 gm. (Diesselhorst).

COLOURS OF BARE PARTS. Iris crimson. Bill dull reddish brown to scarlet-red. Legs and feet pinkish grey ('non-breeding and young') to blood red ('breeding adults' — Baker). 'Livid and greenish grey' (breeding) — B. T. Phillips.

CRAB PLOVER

337

Family DROMADIDAE: Crab Plovers

Genus DROMAS Paykull

Dromas Paykull, 1805, Kongl. Vet.-Acad. Nya Handl. 26: 182. Type, by monotypy, *Dromas Ardeola* Paykull

Bill longer than head, strong, smooth and compressed; culmen curved. Nostril placed in a small depression at base of bill; no groove; angle of lower mandible prominent and close to base. Wings long and pointed: 1st primary (as.) longest. Tail very slightly graduated; almost square. Half tibia bare; tarsi long, shielded in front and behind; toes long, the 3rd and 4th joined by a broad web, the 2nd and 3rd by a small one; middle claw broad and pectinate, or notched, on the inner dilation. Feathers of interscapular region much lengthened and covering the lower back.

434. Crab Plover. *Dromas ardeola* Paykull

Dromas Ardeola Paykull, 1805, Kongl. Vet.-Acad. Nya Handl. 26: 182, 188, pl. 8 (India)

Baker, FBI No. 2057, Vol. 6: 94

Plate 39, fig. 7 and Plate 42, fig. 9

LOCAL NAMES. *Eshanga*, *Teyrasa* (Maldives Is.); *Cummernelmoo* (Car Nicobar).

SIZE. Grey Partridge +; length c. 41 cm. (16 in.).

FIELD CHARACTERS. A rather dumpy piebald maritime wader. In flight the overall white plumage with black back and wing quills, a small but striking black patch around eye, and particularly the rather heavy black



× c. 1/4

tern-like bill simplify its differentiation from other pied waders, e.g. Avocet, Stilt, Oystercatcher. Sexes alike.

Young (immature) has the crown and neck pale grey, the former streaked with dark brown; back, scapulars and tail brownish grey.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor in small numbers, locally and sporadically, to the sea coasts of W. Pakistan (Makran, Sind) and peninsular India, northern Ceylon (resident ?), Andaman, Nicobar, Maldives, and Laccadive islands. [E. Pakistan?] Affects tidal mudflats and estuaries, lagoon shores, coral reefs exposed at low tide, etc.

Extralimital. 'Northern and western shores of the Indian Ocean, Red Sea and the Persian Gulf, south to Natal and east to India; islands in the Red Sea; Laccadive and Andaman Is., Comoro Is., Aldabra and Madagascar' (Peters).

GENERAL HABITS. Essentially maritime; gregarious. Keeps in small parties and large flocks — of up to 60 or 70 birds recorded from the Andamans. Sometimes solos. Usually very shy. Largely crepuscular, feeding like plovers, running about with mincing steps, stopping abruptly and tilting forward at an oblique angle to pick up food. Very close in general behaviour

APPENDIX

339

BREEDING. As 257.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Paler than *asiatica* (255) and with no trace of reddish wash on upperparts. Pale streak markings on mantle prominent, but not as bold as in *pusjabi* (256). Chin and throat dark chocolate-brown (contra chestnut in nominate *asiatica*).

MEASUREMENTS AND COLOURS OF RARE PARTS. As in 255.

p. 89. Obtained in Myitkyina dist., Burma (Hpungang Pass, 27°30' N., 96°48' E., c. 3050 m.) September 1969 (U Tun Yin in *epist.*) — thus the first record east of 93°.

p. 90. MISCELLANEOUS. The stiff primary and tail quills are highly prized for making the vanes of arrows in Bhutan where archery is the national sport.

p. 129, line 4. Sri Lanka, 1 record (CBCN, Feb. 1978).

p. 148. In the second edition of Ripley's *Synopsis of the Birds of India and Pakistan* the order of Nos. 327-339 is: 329, 330, 327, 328, 333, 331, 332, 334, 339, 340, 335/336, 337, 338.

p. 181. For further recovery data see JBNHS 65: 784-93, 66: 174-82, 630-31, 68: 267-9.

p. 185. The male American Finfoot, *Heliornis fulica*, is reported to carry newly hatched chicks in pleated skin pockets under wings (10th Annual, 1971, *Living Birds*, Cornell Lab. Ornith.).

p. 198. Following recent taxonomic revisions in the Order Charadriiformes, the second edition of Ripley's *Synopsis of the Birds of India and Pakistan* places the families Rostratulidae, Recurvirostridae, Ibisididae, Dromadidae, Burhinidae and Glareolidae before Charadriidae.

p. 289. A bird ringed in Bharatpur (27°14' N., 77°28' E.) 29.i.1969, recovered in Alma Ata region (45°53' N., 74°50' E.) 4.x.1969. Another ringed in the same locality 7.iii.1970, recovered in Kemero region (53°37' N., 87°20' E.) 30.viii.1970 — both in Kazakh SSR.

p. 302. A bird ringed in Bharatpur (27°14' N., 77°28' E.) 3.xi.1967, recovered in Yakutian ASSR (68°14' N., 145°21' E.) June 1970 — c. 6250 km. NE.

p. 309. A bird ringed in Kutch (23°14' N., 68°45' E.) 13.xii.1970, recovered in Kazakh SSR (53°55' N., 69°17' E.) 19.x.1972 — c. 3500 km. N.

p. 311. A bird ringed at Point Calimere, Tamil Nadu (10°18' N., 79°52' E.) 25.iv.1970, recovered in Kazakh SSR (43°36' N., 77°03' E.) 17.ix.1971 — c. 3700 km. N.

p. 320. Aberrant migration once recorded. A bird ringed in East Africa (Lake Nakuru, Kenya, 0°26' S., 36°06' E.) 12.iv.1969, recovered near Meerut, U.P. (29°00' N., 77°42' E.) 16.ii.1973. *The Ring*, Vol. 7, No. 79/1974 — 2.

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338

CHARADRIIFORMES

to Stone Curlew. Flight reminiscent of Bronzewing *Jaçana* (*Metopidius indicus*) with legs trailing behind.

FOOD. Chiefly crabs. One examined by Hume in the Andamans had fed entirely on the species *Gonodactyla chiragra*.

VOICE AND CALLS. According to Baker 'it is said to have a low rather musical call'. Shrill notes *chuk-chuk-chuk-chuk* uttered in the vicinity of the nest-holes. A continuous *chuk-chuk* kept up at night (Cheeseman).

BREEDING. Extralimital as far as known, but may turn up in NW. Ceylon as reported by Parker in 1881 (SF 9: 482), not since confirmed. Season in the Persian Gulf islands May-June. Nests colonially 'rabbit-warren' fashion in holes in sandbanks on coral reefs, apparently made by crabs and enlarged to suit. Burrows 15-20 cm. in diameter, a metre or more deep, ending in an enlarged egg-chamber. Egg — invariably a singleton — pure white and quite unlike the egg of any other Charadriine bird. It is enormous in size, being quite as large as the egg of *Exacus recurvirostris* (437), a bird double the weight of the Crab Plover. Average size of 30 eggs 65.4 × 45.9 mm. (Baker). Share of the sexes in the domestic chores, and period of incubation, undetermined. Curiously enough although the bird lays only a single large egg, it has two lateral brood patches like other waders which normally lay 3 or 4.

MUSEUM DIAGNOSIS. See under Genus; for details of plumage, Baker, loc. cit. Chick (in down). 'Entirely covered with long, very pale smoky grey down, darker on forehead and round eyes. Legs slate grey. The character of the down is more Larine than Limicoline, and lacks the mottling and lines which the latter nearly always show' (Ticehurst). 'Keel on gonyx well developed' (Meinertzhagen). Downy chicks, unlike those of other Charadriines, are helpless and cannot run or even walk for the first few days.

MEASUREMENTS

	Wing	Bill (from feathers)	Bill (from skull)	Tarsus	Tail
♂♂	202-225	55-61	60-70	88-100	64-76 mm.
♀♀	201-216	54-56	62-66		(Baker, Whistler)

Weight 6 ♂♀ (autumn/winter) 230-300 (av. 265.1) gm. — BNHS.

COLOURS OF RARE PARTS. Iris brown. Bill black. Legs and feet greyish white to pale glaucous blue.

APPENDIX

p. 48. 257a. **Tamil Nadu Jungle Bush Quail.** *Pardicula asiatica vellori* Abdulali & Reuben

Pardicula asiatica vellori Abdulali & Reuben, 1964, Jour. Bom. nat. Hist. Soc. 64(3): 690 (Vellore, North Arcot district, Tamil Nadu)

LOCAL NAMES. None recorded.

SIZE AND FIELD CHARACTERS. As of 255, q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION AND HABITAT. Resident. North Arcot district, Tamil Nadu, probably extending to Shimoga (Karnataka) and Palkonda Hills (northeastern Andhra Pradesh) — apparently intergrading with 255 — and presumably south through Tamil Nadu except for the range of *vidali*. Plains and hills up to c. 1500 m. — dry scrub-and-bush country.

GENERAL HABITS, FOOD, VOICE AND CALLS. As of 255.

340

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Order CHARADRIIFORMES (cont.)¹

Family BURHINIDAE: Stone Curlews, Thick-knees

For morphology and other details see Stresemann, E., 1927-34, *Aves*: 775; Baker, E. C. S., 1929, *FBI* 6: 76 (Oedienemidae); Van Tyne, J., & Berger, A. J., 1959: 445; Pittman, C. R. S., 1964, Article 'Thickknee' in Thomson, A. L. (ed.), *New Dict. Birds*, London and New York.

Key to the Genera

Page

- Bill much longer than head and compressed laterally.....*Esacus* 4
- Bill not longer than head and not compressed.....*Burhinus* 1

Genus BURHINUS Illiger

Burhinus Illiger, 1811, *Prodromus*: 250. Type, by monotypy, *Charadrius magnirostris* Latham

Bill shorter than head, stout, straight, broader at base than high. Nostrils elongate, placed in a shallow groove. Forehead high; eyes very large. Wing long and pointed: 2nd primary (as.) longest. Tail of 12 slightly graduated feathers. No hind toe; nail of middle toe broad and dilated on the inner side.

BURHINUS OEDICNEMUS (Linnaeus)

Key to the Subspecies

- Larger, wing c. 228 - 244 mm.; paler and less buff.....*B. o. harterti*
- Smaller, wing c. 203 - 222 mm.; darker and more buff.....*B. o. indicus*

435. Persian Stone Curlew, *Burhinus oedienemus harterti* Vaurie

Burhinus oedienemus harterti Vaurie, 1963, *Amer. Mus. Novit.*, No. 2131:2 (Kafir Kala, northern Khorasan, eastern Iran)

Cf. Abdulali, H., 1970, *JBNHS* 67: 288
Baker, *FBI* No. 2048, Vol. 6: 79

LOCAL NAMES. *Kārwānāḥ*, *Bārsiri* (Hindi).

SIZE. Grey Partridge +; length c. 41 cm. (16 in.).

FIELD CHARACTERS. As in the Indian race (436), q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident, with some local movements: West Pakistan (Baluchistan, Sind, W. Punjab) and NW. India south through Rajasthan and N. Gujarat to Kutch, the population there intergrading with 436. Affects open semi-desert and stony scrub country, dry river- and tank beds with babool groves and tamarisk jungle, etc.

EXTRALIMITAL. Northern Africa from Morocco to Egypt, south to the Tademmat Plateau, Tuareg Mts and Faiyum; Crete, Cyprus; southern Palestine south to Sinai; desert of Kara Kum, and Afghanistan southward to the Persian Gulf, Baluchistan, and the Indian Desert (after Peters).

¹ *Synopsis*, 2nd edition, following recent revisions in this Order (Charadriiformes) by Jehl, J. R., 1968, *Mem. San Diego Soc. Nat. Hist.* 3: 1-53, places the families Burhinidae and Glareolidae along with Rostratulidae, Ibisorhynchidae and Dromadidae before Charadriidae.

STONE CURLEWS, THICK-KNEES

— even rambling jungly gardens in urban areas, e.g. New Delhi. In Madhya Pradesh often found in the same facies as Painted Spurfowl (*Gallopodiceps lunulata*).

EXTRALIMITAL. Burma, south-west and central Thailand, and Cambodia.

GENERAL HABITS. Terrestrial, cursorial, largely crepuscular and nocturnal. Usually seen in pairs or small parties of 5 or 6; in winter sometimes loose gatherings, or flocks, of up to 50 or more. Sedentary and parochial, inhabiting the same grove or patch of scrub jungle day after day, but subject to erratic local movements in winter. Sluggish during daytime, spending the hot hours under a shady grove or in shrubbery, lying low and flushed only by a dog or beaters, or when almost trodden on. The birds then fly a short distance low over the ground, running to hide themselves upon alighting. When suspicious or alarmed they scuttle off with quick pattering steps, slinking furtively — neck retracted, head ducked — occasionally squatting and 'freezing' with neck pressed flat on the ground, the large unblinking eye surreptitiously following the intruder's movements. In this posture the bird's plumage gives it perfect camouflage even at close range, magically transforming it into a pat of desiccated cowdung! Flight strong, with action reminiscent of both plover and bustard. Emerges into open clearings at dusk to feed, and is partial to roads through forest. Runs ahead of an approaching car, taking short flights in the beam of the headlights and momentarily re-alighting to be instantly disturbed again. In the darkness the peculiar flickering or vibrating wing-tips and the white markings on the wings proclaim its identity.

FOOD. Insects, worms, slugs, small reptiles, mice (?), along with which is usually swallowed a quantity of grit; occasionally some seeds. Among stomach contents the following insects have been identified: *Chrologonus* sp., *Himatium* sp., carabid and tenebrionid beetles, *Camponotus compressus* ants, and the mole-cricket *Gryllotalpa africana* (Mason & Lefroy, 1912).

VOICE AND CALLS. A series of sharp, clear, quick-repeated whistling screams pick-pick-pick-pick, often ending up with pick-wick, pick-wick, pick-wick, etc. somewhat slower in tempo with accent on second syllable. Timbre of call reminiscent of curlew. Mostly heard at dusk and dawn; frequently throughout moonlit nights. The birds are particularly noisy during the breeding season, often engaging in uneven duets or trios from different quarters. Also a single whistling scream, slowly repeated.

BREEDING. Season, February to August, chiefly March and April. In Ceylon April to September, chiefly June and July. Nest, a shallow unfilled scrape on stony ground at the base of a bush, grass-tusssock, clod of earth, or stone, in a dry shingly river bed, mango orchard or waste land. Eggs, normally 2 — exceptionally 3 — pale stone-colour or buff, blotched and smudged with blackish brown, sometimes strongly tinged with purplish or reddish, and with secondary grey markings. Variations occur. The shape varies from broad to long oval, generally quite obtuse at the smaller end, rarely rather pointed. Average size of 68 eggs 47.6 × 34.7 mm. (Baker). Incubation by both sexes but chiefly by female. When one bird is sitting, the other usually keeps guard in the proximity of the nest. Downy chicks as cryptically coloured as the eggs, less active than in most other plovers during the first few days; squatting doggo on approach of an intruder and

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the Indian race (436). BREEDING. Season, nest, and eggs as in the Indian race. Eggs have been taken round Karachi and elsewhere in Sind, and near Dera Ismail Khan in the former N.W.F. Province (W. Pakistan). — Average size of 15 eggs 48.7 × 36.6 mm. (Baker).

MUSEUM DIAGNOSIS. The race *harterti* is paler and, on an average, larger than *indicus* of peninsular India and Ceylon (Vaurie, loc. cit.). Birds from our arid north-western portions (Sind, Rajasthan, N. Gujarat, Kutch) are intermediate, but closer to *indicus* in all respects.

MEASUREMENTS. Five examples from Gujarat measure:

	Wing	Bill (from skull)	Tarsus	Tail
4 ♂♂	223-227	44-46	82-88	115-116 mm.
1 ♀	217	46	81	107 mm. (SA)

COLOURS OF BARE PARTS. As in 436.

436. Indian Stone Curlew. *Burhinus oedienemus indicus* (Salvadori)

Oedienemus indicus Salvadori, 1865, *Atti Soc. Ital. Sci. Nat. Milano* 8: 381 (India)
Burhinus oedienemus mayri Koelz, 1939, *Proc. Biol. Soc. Wash.* 52: 82 (Londa, Bombay)
Baker, *FBI* No. 2047, Vol. 6: 77

Plate 39, fig. 14 and Plate 42, fig. 11.

LOCAL NAMES. *Kārwānāḥ*, *Bārsiri* (Hindi); *Lambi* (falconers); *Kharma*, *Chhāḥ* *shilabāḥ* (Bengal); *Kalleḍu* (Telugu); *Kānāl masāl* (= jungle hare), *Kannāḍi āl* *kāṭti* (Tamil); *Vāyālkānnāḍ* (Malayalam); *Gōlu kiralāḍ*, *Gōlu kiralā* (Sinhala); *Musal* *kinandi* (Tamil, Ceylon).

SIZE. Grey Partridge +; length c. 41 cm. (16 in.).

FIELD CHARACTERS. A dark-streaked sandy brown plover-like cursorial bird with thick head, long bare yellowish 'thick-kneed' legs, and huge yellow 'goggle' eyes. At rest a broad buffy bar on the closed wings, and in flight two narrow white bars and a conspicuous white patch in the dark wings are suggestive pointers. Sexes alike.

Young (immature). Paler than adult, more marked with buff and with the streaks on the underparts narrower. White wing markings less distinct.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, with some local movements. All India (including Assam and Manipur), both Pakistans, Nepal, Ceylon — plains and up to c. 1000 m. in the Himalayas and peninsular hills; low-country Dry zone in Ceylon. Restricted to deciduous biotope. Affects stony hillsides and hummocks with sparse dhāk (*Butea*) and thorn scrub, light forest, dry riverain tracts and tank beds with babool and tamarisk jungle, mango topes and orchards, and groves of trees around villages

vanishing miraculously into the background. Brooded and tended by both parents.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. The race *indicus* is darker and, on an average, smaller than *harterti* of the arid portions of NW. India and W. Pakistan.

Chick (in down). Forehead, crown, back and wings sandy grey speckled with black; centre of crown with two longitudinal black lines; a broad black band behind eye round the nape; cheeks, chin, sides of head and underparts buffy white, more buff on breast and with a black patch on its upper portion; two broad black lines along each side of ridge of back; two lateral black bars from base of wings to tail-tuft. 'Iris brown; bill and legs dusky pink' (Ingilis).

MEASUREMENTS. Specimens from peninsular India and Ceylon give

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂♂	205-220	41-46	81-85	105-108 mm.
6 ♀♀	197-217	43-46	76-85	91-108 mm. (SA, HW)

COLOURS OF BARE PARTS. Iris yellow; eyelid yellow. Bill: base yellow, remainder black. Legs and feet greenish yellow.

MISCELLANEOUS. An observation recorded by a competent naturalist (Macdonald, A. St. J., 1950, *JBNHS* 49: 556) suggests that not only does the Stone Curlew lose its scent during the breeding season, like many other ground-nesting birds, as a protection against predators that follow their nose, but on the other hand may actually develop an obnoxious scent or taste to deter its enemies further. This observer ate a breeding Stone Curlew — excellent fare in other seasons — which his trained dog had failed to nose out and retrieve, and found it to taste 'like a pigeon boiled in quinine'! This poses an interesting problem for experimentation.

The aboriginal Murias of Bastar district (M.P.) have discovered that a Stone Curlew will not cross a mound or ridge of wood ashes though it will readily cross one of earth. They snare the bird by throwing a low ridge of ashes across the bird's accustomed path and thus diverting it along to a gap in which a horse-hair noose has been set (Kirkpatrick, K. M., 1954, *JBNHS* 52: 299).

Genus ESACUS Lesson

Esacus Lesson, 1831, *Traité d'Orn.*, livr. 7: 547. Type, by monotypy, *Oedienemus recurvirostris* Cuvier

Orthorhamphus Salvadori, 1874, *Ucc. Borneo*, in *Ann. Mus. Civ. Genova* 5: 312. Type, by monotypy, *Oedienemus magnirostris* Vieillot

Distinguished from *Burhinus* by its much more massive bill, which is compressed and nearly twice the length of the middle toe without claw.

ESACUS MAGNIROSTRIS (Vieillot)

Key to the Subspecies

- Culmen curving strongly upwards.....*E. m. recurvirostris*
- Culmen straight or almost so.....*E. m. magnirostris*

STONE CURLEWS, THICK-KNEES

5

437. Great Stone Plover. *Esacus magnirostris recurvirostris* (Cuvier)

Oedicnemus recurvirostris Cuvier, 1829, Règne Anim., ed. 2, 1: 500, note 2
(No locality = Nepal, *cf.* Baker)
Baker, FBI No. 2049, Vol. 6: 80
Plate 39, fig. 15 and Plate 42, fig. 12

LOCAL NAMES. *Bāda kārūnāk* (Hindi); *Abi* (falcons); *Gānga tilāi* = Ganges lapwing, *Bāda shilabātān* (Bengal); *Baligura* (Miris of plains, Assam).

SIZE. Domestic hen; length c. 51 cm. (20 in.).

FIELD CHARACTERS. A leggy thick-headed, massive-billed plover — a larger edition of the Stone Curlew but more or less uniform greyish sandy above, white below. The distinctly upturned-looking black and yellow bill, enormous yellowish 'goggle' eyes, with white spectacle-marking



× c. 1

around them and two blackish bands above and below, are leading pointers, as is also a blackish lateral band near shoulder of closed wing. Sexes alike. In flight the peculiar arched profile of the back and a round white patch flashing on the black wing-quills are additional clues. Distant flight silhouette strikingly duck-like.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Mainly resident but with some local migratory (?) movements — all India (including Assam and Manipur), both Pakistans, Nepal, Ceylon (low-country Dry zone). Essentially riverain, affecting rocky beds of the larger rivers and their barren environs in deciduous biotope; occasionally sea beaches, tidal estuaries and salt-pans.

Extralimital. Burma, central Vietnam (Annam), and Hainan Island.

LOCAL MIGRATION? Regular seasonal appearances and disappearances as reported from certain areas unexplained and needing study. In Manipur appears regularly every year in August (earliest 29 July) and only stays until September, frequenting only particular grazing grounds and not others seemingly equally suitable. Never observed on 'return migration' (Higgins, 1934, JBNHS 37: 83). On Rameswaram Island (South India) present and fairly common except in certain months, with a marked influx during October to December (Biddulph, 1938, JBNHS 40: 250).

GENERAL HABITS. Like the Stone Curlew, also largely crepuscular and nocturnal, but distinctly not so shade-loving. Spends the day drowsing in the full glare of the sun on some baking hot sheet rock on a river bank or islet. Usually keeps in pairs or small parties of 4 to 5; occasionally loose flocks of up to 20 or so. Actions and behaviour very like 436. It is a fast

STONE CURLEWS, THICK-KNEES

7

Cinque, North Button, Little Button, etc. Not in the Nicobars. Affects muddy and sandy seashores.

Extralimital. 'The greater part of the Indo-Australasian region from the Andaman Is. and the coasts of the Malay Peninsula, Philippines, Borneo and Sumatra, east to the Bismarck Archipelago, New Guinea, Solomon Is., New Caledonia and Australia' (Peters).

GENERAL HABITS. Very little recorded in our limits. Evidently similar to the Indian race *recurvirostris* except that it is exclusively maritime. Keeps to reefs and sandy beaches in pairs or small parties, sometimes in association with Crab Plovers (*Dromas ardeola*).

FOOD. Crabs and shellfish.

VOICE AND CALLS. 'An eerie double syllable, unique and unmistakable' (Cairns). 'A mournful wee-loo harsh in tone' (Condon & McGill).

BREEDING. Season in the Andamans (Little Cocos, near Port Blair, Cinque I.), March and April — so far as known. Nest, a hollow scratched on the seashore just above high-water mark either in shingle or sand or among flotsam washed up by the tides. Eggs, 1 or 2, creamy white irregularly streaked, spotted and blotched with black or brownish black, with secondary markings of inky grey. Average size of 15 eggs 63.7 × 45.0 mm. (Baker). Share of the sexes and incubation period not recorded.

MUSEUM DIAGNOSIS. Bill differs from 437 in being much broader and deeper with the culmen almost straight instead of strongly upcurved. For description of plumage see Baker, loc. cit.; for fuller details Hume, 1874, SF 2: 291-2.

MEASUREMENTS

Wing	Bill (from feathers)	Tarsus
♂ ♀ 266-277	76-82	80-84 mm. (Baker)

'Average weight 2 lb. 4 oz.' (c. 1025 gm.) — Hume.

COLOURS OF BARE PARTS. Iris and orbital skin chrome yellow. Bill black, yellowish at extreme base. Legs and feet yellow, greenish yellow or greyish yellow; claws black.

Family GLAREOLIDAE: Coursers (Courier Plovers), Pratincoles.

For morphology and other details see Stresemann, E., 1927-34, *Aves*: 776; Baker, E. C. S., 1929, FBI 6: 84; Van Tyne, J., & Berger, A. J., 1959: 446; Pitman, C. R. S., 1964, Article 'Pratincole' in Thomson, A. L. (ed.), *New Dict. Birds*, London and New York.

Key to the Genera

Page

- Hind toe absent; tarsus equal to about one-third of wing or more *Cursorius* 7
A small hind toe present; tarsus equal to about one-fifth of wing *Glareola* 12

Genus CURSORIUS Latham

Cursorius Latham, 1790, Index Orn. 2: 751. Type, by subsequent designation, *Charadrius europaeus* Latham = *Charadrius cursor* Latham.
Macrotarsius 'Jerdon' = Blyth, 1848, Jour. As. Soc. Bengal 17: 254. Type, by monotypy, *Macrotarsius bitorquatus* 'Jerdon' = Blyth. Not *Macrotarsius* Lacépède,

CHARADRIIFORMES

6

runner and can swim creditably on occasion, riding the water high like a duck.

FOOD. Mainly crabs, the heavy bill being well adapted for prising up stones to procure them from underneath. Doubtless also eats frogs, molluscs, insects and other small animals lurking in such places. Has been observed to rob the nest of a Kentish Plover, swallowing the eggs entire (Dharmakumarsinhji, 1949, JBNHS 48: 809).

VOICE AND CALLS. 'A loud harsh single note; a low hiss when angry or frightened' (Baker). 'A loud creaking note not at all like the "curlew" call of the common Stone Plover' (Bets). 'Wild wailing cries *kree-kree-kree* *k're-k're-k're-k're*' (Phillips).

BREEDING. Season, February to June, chiefly to mid April; in Ceylon January to August, chiefly during April to July. Nest, a shallow scrape on an exposed sandbank in a river bed, unsheltered by bush or clod. Eggs frequently laid on bare sheet rock. More or less the same site is occupied year after year if undisturbed. Eggs, 2 — very like those of the Stone Curlew in shape, coloration and markings, only larger. Average size of 60 eggs 54.4 × 41.0 mm. (Baker). As in Stone Curlew, both sexes incubate and tend the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.

Chick (in down). 'Covered with close "furry" down. Narrow frontal band and line to eye, under eye and thence to occiput black; broken black lines on each side of spine, meeting at level of thighs and sending transverse bar to base of wings, black; short black line over thighs; rest of upperparts "pepper and salt" colour, finely dotted with black. Underparts white' (Ticehurst). For a more detailed description see Whistler, H., 1912, JBNHS 21: 1074.

MEASUREMENTS

Wing	Bill (from feathers)	Tarsus
♂ ♀ 252-273	74-87	c. 80-84 mm. (Baker)

Tail c. 112 mm. (SA). 'Average weight 1 lb. 12 oz.' (= c. 790 gm.) — Hume.

COLOURS OF BARE PARTS. Iris lemon yellow. Bill: sides at base including gape and base of lower mandible bright chrome yellow; entire culmen and rest of bill black. Legs and feet greenish grey; claws black.

438. Australian Stone Plover. *Esacus magnirostris magnirostris* (Vieillot)

Oedicnemus magnirostris Vieillot, 'Geoffroy St. Hilaire' = Vieillot, 1818, Nouv. Dict. Hist. Nat. 23: 231. (No locality = Australia, 1819, ex pl. G 39, f. 1, 28)
Baker, FBI No. 2050, Vol. 6: 81

LOCAL NAMES. None recorded.

SIZE. Domestic hen; length c. 57 cm. (22½ in.).

FIELD CHARACTERS. Larger than 437; readily distinguished from it by the comparatively enormous straighter bill and much more contrasty black and white markings on the head. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Andaman Islands: recorded on almost every island — Little Cocos, North Bolton, Niell, Sir Hugh Rose,

CHARADRIIFORMES

8

1799, 1800, 1801, or *Macrotarsus* Link, 1795. See also *Macrotarsus bitorquatus* Blyth, 1849, Jour. As. Soc. Bengal 18: 260.

Rhinoptilus Strickland, 1852 (1850), Proc. Zool. Soc. London: 220. New name for *Macrotarsus* (sic) of Blyth, preoccupied by *Macrotarsus* Lacépède, in error (Blyth, tom. cit. supra, spelt his name *Macrotarsius*). Type, by subsequent designation, *Cursorius chalcopterus*. (Sharpe, 1896, Cat. Bds. Brit. Mus. 24: 43, error, an invalid designation under Art. 30, Rule (f), International Rules of Zoological Nomenclature.)

Bill rather long, slender, and slightly arched. Tarsus and bare tibia slender, shielded in front and behind. No hind toe; anterior toes short, middle toe longer than the lateral ones with its claw expanded internally or slightly pectinated. Wings long and pointed. Tail short and almost even.

Key to the Species

	Page
A Bill straight; breast with two transverse bands <i>C. bitorquatus</i>	11
B Bill rather long, narrow and slightly curved downward; no pectoral bands 1	
1 Crown rufous in front, grey behind (adult); or, if lacking, breast cream coloured (imm.) <i>C. cursor</i>	8
Crown chestnut throughout with small black nuchal spot (adult); or, if lacking, breast dull rufous (imm.) <i>C. coromandelicus</i>	9

439. Creamcoloured or Desert Courser. *Cursorius cursor cursor* (Latham)

Charadrius Cursor Latham, 1787, Gen. Syn. Bds., Suppl. 1: 293 (Kent)
Baker, FBI No. 2051, Vol. 6: 85

Plate 38, fig. 1 and Plate 41, fig. 17

LOCAL NAMES. *Askalo* (Brahui, Baluchistan); *Chāina bori* (Kutch).

SIZE. Grey Partridge —; length c. 23 cm. (9 in.).

FIELD CHARACTERS. A sandy buff lapwing-like cursorial bird of semi-desert country with longish bare white legs and slender, slightly arching black bill. The rufous and ashy grey crown with a broad black and white stripe from behind eye to nape, and black edging to the closed wings (primaries) are leading pointers. Sexes alike.

On the ground, colour scheme and general effect remarkably like an enlarged edition of the Desert Lark (*Alaemon alaudipes*) which shares its barren habitat. In flight, the black lining of the narrow pointed wings is a striking feature.

Young (immature). Paler duller sandy with the upperparts wavyly barred with blackish brown. No rufous or grey in the crown.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor (August to April) to the arid portions of W. Pakistan (Baluchistan, Sind, Punjab), and NW. India — Rajasthan (SE. to about Ajmer) and Gujarat (Banāskāntha, Kutch, Saurashtra). Affects semi-desert and desert country — sunbaked *pāts* with sparse *Salvola* and *Suaeda* bushes, or dotted with *Capparis* and hummocks of wind-blown sand. Also sandy fallow fields on the desert edge.

Extralimital. 'Breeds in N. Africa from Morocco to the Red Sea, Palestine eastward through Mesopotamia (Iraq) to S. and W. Persia, perhaps farther. In winter occurring as far S. as Lake Chad and Somaliland and extending to NW. India. Occasional in Europe north to the British Isles and Germany' (Peters).

MIGRATION. No ringing or other precise data.
GENERAL HABITS. Similar to Indian Courser (440), q.v., with which it sometimes associates where their habitats overlap. Keeps in loose scattered parties of 6 to 10 birds, occasionally up to 30 or more. Flight and wing action closely resembles pratincoles'.

FOOD. Chiefly insects — caterpillars, beetles, ants, locusts, etc.
VOICE AND CALLS. Very silent. Occasionally a low clucking note on the wing somewhat like that of the Common Sandpiper.

BREEDING. Extralimital, but some suggestive circumstantial evidence of nesting, sporadically (?) in Bahawalpur and Kutch.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.

MEASUREMENTS			
Wing	Bill (from skull)	Tarsus	Tail
4 ♂♂ 160-171	50-52	52-60	63-68 mm.
4 ♀♀ 162-166	29-33	55-57	64-66 mm. (SA)

Hartert (Vög. Pal. Fauna 2: 1524) gives as follows:
♂♂ 153-166 30-32.5 56-60 61-64 mm.
(mostly 158-164)

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet creamy white or fleshy white.

440. Indian Courser. *Cursorius coromandelicus* (Gmelin)

Charadrius coromandelicus Gmelin, 1789, Syst. Nat., 1 (2): 692 (Coromandel Coast) Baker, FBI No. 2052, Vol. 6: 85
Plate 38, fig. 2 and Plate 41, fig. 18

LOCAL NAMES. Nibri (Hindi); Thirath (Mirahikars, Bihar); Terā chikurā (Telugu); Wili kirāla (Sinhala); Al katti (Tamil, Ceylon); Vili ālāppin (Malayalam).
SIZE. Grey Partridge — ; length c. 26 cm. (10 in.).

FIELD CHARACTERS. A sandy brown lapwing-like cursorial bird with chestnut and black underparts, slender slightly arching black bill, and long bare china-white legs. The rich rufous crown with a conspicuous double black and white stripe through and above eye to nape are diagnostic. Sexes alike. In flight reminiscent of pratincole, the dark undersides of the narrow pointed wings heightening the resemblance.



× 1/2

Young (immature). Above, dull buff irregularly barred with blackish brown. A small pale supercilium but no black stripe

No size difference between the sexes, but birds from Ceylon clinally somewhat smaller than from peninsular India.

COLOURS OF BARE PARTS. Iris dark brown or hazel. Bill black. Legs and feet china-white or ivory white.

441. Jerdon's or Doublebanded Courser. *Cursorius bitorquatus* (Blyth)

Macrotarsius bitorquatus 'Jerdon' = Blyth, 1848, Jour. As. Soc. Bengal 17: 254 (Eastern Ghats of the peninsula of India)
Baker, FBI No. 2053, Vol. 6: 88
Plate 38, fig. 3

LOCAL NAMES. Adiri ālā-kitti = 'Jungle empty-purse' (Telugu) recorded by Jerdon, enigmatical and not locally current or understood!

SIZE. More or less same as Indian Courser (440); length c. 27 cm. (10½ in.).

FIELD CHARACTERS. An obvious close relation of the Indian Courser. Above: Crown and hindneck dark brown with broad whitish supercilia from lores looping round nape; rest of upper plumage pinkish sandy brown. Below: chin and throat whitish; foreneck rufous, separated from brown breast by a white band; a second white band across lower breast; rest of underparts whitish. Tail white and black. A white wing-bar prominent in flight. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Present status unknown; ostensibly extinct. Believed by Jerdon (c. 1864) to be a permanent resident apparently with an extremely limited range. Recorded rarely since first described in 1848 and only from the Penner and Godavari valleys in Andhra — Nellore, Cuddapah, Sironcha, Bhadrachalam, and Anantapur neighbourhoods. Last authentic record in 1900, since when thorough search by competent ornithologists has failed to rediscover it in the same localities or elsewhere. Unlike Indian Courser was found on rocky undulating ground with thin forest and scrub jungle, not in open waste land.

GENERAL HABITS, FOOD, VOICE AND CALLS. 'Was found in small parties, not very noisy, but occasionally uttering a plaintive cry' (Jerdon). Blanford met pairs twice and three birds together once (1857 and 1871) and describes the flight as more rapid than Indian Courser's.

BREEDING. A clutch of 2 eggs claimed to have been taken by an anonymous writer in the defunct Asias newspaper in 1895. They were described as bright yellow-stone, the ground colour almost obliterated by black scrawly blotch-and-spots; laid on the ground in thin scrub jungle. No authentic information available. Two males collected by Blanford on 5 and 8 March (1871) near Bhadrachalam showed no gonadal development.

MUSEUM DIAGNOSIS. Wing rather less pointed than in Indian Courser; 2nd and 3rd primaries (as) longest and subequal. Bill smaller, straight and rather broader at base than in 440. For description of plumage see Baker, loc. cit.

MEASUREMENTS			
Wing	Bill (from feathers)	Tarsus	Tail
♂♀ 161-168	18-19	68	64-65 mm. (Baker)

below it. Below, chin and abdomen white; breast dull rufous, more or less barred with blackish.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Common but rather patchily distributed everywhere; also partly nomadic and/or locally migratory (?) — W. Pakistan (Baluchistan, Sind, Punjab), all India (excepting Assam and Manipur), E. Pakistan, Nepal, etc. In Ceylon resident in the low-country Dry zone, chiefly around Jaffna Peninsula. Affects dry stony plains and Deccan plateau country — waste and fallow land with scattered scrub, ploughed fields, and village grazing grounds. Avoids areas of heavy rainfall as well as pure desert, but associates with Cream-coloured Courser (439) at the seam of its desert habitat.

LOCAL MOVEMENTS. No ringing or other precise data.

GENERAL HABITS. Terrestrial and cursorial. Keeps in pairs or scattered parties and small flocks in open country, where its coloration is astonishingly obliterative as long as the bird remains still. Runs about swiftly in short spurts dipping forward obliquely every now and again in characteristic plover style to pick some insect. When alarmed or suspicious the bird spurts forward a few metres, halting abruptly every little while to pull itself erect for a good look at the intruder before making the next spurt, and so on, quickly increasing the distance between itself and the object of its suspicion. If further pressed, rises with a peculiar note and flies fairly low along the ground for maybe fifty or a hundred metres, resuming its spurts immediately upon touching down. When thoroughly disturbed, rises higher in the air with deliberate rapid wing-strokes, then showing a considerable turn of speed. The narrow pointed dark-lined wings and flight silhouette are distinctly like a pratincole's.

FOOD. Chiefly insects — beetles and their larvae, grasshoppers, crickets, etc.

VOICE AND CALLS. Very silent. A low clucking note on flushing.

BREEDING. Season overall March to August, the most favoured months varying locally; in Ceylon mainly May. Nest, a shallow unlined scrape on the bare soil on arid fallow or waste land. Eggs, 2 or 3, pale yellowish stone-colour to rich yellow-buff, thickly spotted and blotched with black; with minor variations. They are smooth-surfaced, broad blunt ovals. Incubation and tending of chicks largely by female, but male also assists. Period of incubation undetermined. Unlike lapwings, the parents do not demonstrate when nest approached or chicks handled. Both eggs and downy chicks remarkably camouflaged, merging perfectly into their surroundings and becoming completely lost even at a couple of metres' distance the instant the observer takes his eyes off them.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.

Chick (in down). 'Whole head, wings and upperparts mottled ginger, creamy white and black with no definite pattern. Underparts creamy white, pectoral region ginger; legs greyish' (Ticehurst).

MEASUREMENTS			
Wing	Bill (from skull)	Tarsus	Tail
♂♀ 143-163	23-30	49-57	45-64 mm. (SA, HW)

COLOURS OF BARE PARTS. Iris umber brown. Bill blackish at tip of both mandibles, pale yellow at gape and base as far as nostrils. Legs and feet pale yellowish white with a fleshy tinge; soles flesh-coloured; claws horny (Blanford).

Genus GLAREOLA Brisson

Glareola Brisson, 1760, Orn. 1: 48; 5: 141. Type, by tautonymy, *Glareola* Brisson = *Hirundo pratincola* Linnaeus

Bill short, wide and rather high at base; culmen curved; gape very large. Wing long and narrow: first primary (as.) longest; closed wings reaching to tip of or beyond tail. Tarsus short, scutellated in front and behind; hind toe well developed and raised above the anterior toes at base; lateral toes short; outer and middle toes united by a small web. Claws long, that of middle toe pectinated on inner margin.

Key to the Species

	Page
Tail deeply forked; wing exceeding 170 mm.....	<i>G. pratincola</i> 12
Tail nearly even; wing under 170 mm.....	<i>G. lactea</i> 15

GLAREOLA PRATINCOLA (Linnaeus)

Key to the Subspecies

Outer tail-feathers exceeding central tail-feathers by about 50 mm.....	<i>G. p. pratincola</i>
Outer tail-feathers exceeding central tail-feathers by 25 mm. or less.....	<i>G. p. maldivorum</i>

442. Collared Pratincole or Swallow-Plover. *Glareola pratincola* (Linnaeus)

Hirundo Pratincola Linnaeus, 1766, Syst. Nat., ed. 12, 1: 345 (Shores of southern Europe and in Austria; restricted type locality, Austria, BOU Committee)
Baker, FBI No. 2054, Vol. 6: 89
Plate 44, fig. 2

LOCAL NAMES. None recorded.

SIZE. Myna ±; slimmer. Length c. 23 cm. (9 in.).

FIELD CHARACTERS. A short-legged plover, shaped like a tern, with long narrow, pointed wings extending when closed to tip of deeply forked tail. Above, head and back olive-brown; lores black continued under eye as a narrow black band or gorget looping round throat patch. Upper tail-coverts white; tail black with white base. Below, chin and throat pale rufous-buff bounded by the black loop (reminiscent of Grey Partridge). Upper breast brown, passing downwards into rufous and then to white on abdomen and under tail-coverts. Narrow pointed wings, chestnut underwing lining, and black wing-quills conspicuous in flight. Sexes alike.

Young (immature). Above olive-brown stippled with fulvous and black. Below, no black gorget; breast mottled brown and rufous-white.

STATUS, DISTRIBUTION AND HABITAT. Breeds sparingly in W. Pakistan; straggles into India and Ceylon in winter. Specimens taken at Allahabad

¹Vaurie (1953) treats *G. pratincola* and *G. maldivorum* as full species.

COURSERS, PRATINCOLES

13

in the east, Ahmedabad, Ratnagiri, and Coimbatore in the south, and in Hambantota district (Southern Province), Ceylon. Possibly more common and regular than the records indicate, but undifferentiated from the resident *maldivarum* (443). Affects barren sun-scorched flood plains by rivers and tidal creeks, and grazing land bordering jheels, etc.

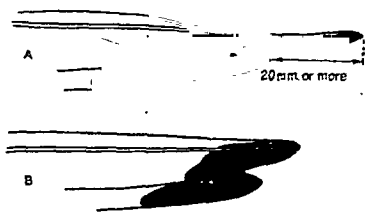
Extralimital. 'Breeds in the countries adjacent to and islands in the Mediterranean and Black Seas, eastward through Mesopotamia (Iraq) and S. Persia to NW. India; also from the Caspian Sea to Turkestan. Partly resident, but birds from the northern part of the breeding range winter in Africa north of the Sahara' (Peters).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the Indian race (443), q.v.

BREEDING. Breeds colonially in West Pakistan, in Baluchistan and Sind (Sonmiani in Las Bela, and Jungshahi, both within 100 km. of Karachi). *Season*, March, April, May. Nest and eggs as in 443. Average size of 40 eggs taken in W. Pakistan 30.5 × 23.4 mm. (Baker). Both sexes share incubation; period recorded elsewhere as about 18 days. When young are hatched, adult birds remarkably demonstrative, flying round very close to the intruder, constantly uttering their tern-like cry *chitti, chitti*, then settling at a few paces to do the well-known 'wounded' antics — lying with wings outspread and falling over on their sides (Ticehurst). C. R. S. Pitman describes the curious effect produced by one such colony of fluttering birds in mass distraction display as 'of a snake coiling about or a big lizard moving along'.

Downy chicks fed by regurgitation. They run very swiftly and are adept at hiding in hoof-prints, etc. and vanishing from sight.

MUSEUM DIAGNOSIS. Differs from *maldivarum* by shape and colour pattern of tail (see sketch): in *pratincola* outermost tail-feather over 20 mm. longer than the next; in *maldivarum* under 15 mm. See also Key to the Subspecies. Tips of secondaries



generally white; throat and lower breast less strongly suffused with rufous. For description of plumage see Baker, loc. cit.

Chick (in down). 'Head, wings and back grizzled dark brown and pale buff with median dark line down crown; underparts pale buff' (Ticehurst).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail	
				central	outer
♂♀	176-200	15-16	30-32	54-58	102-119 mm.

(Baker)

COLOURS OF BARE PARTS. As in 443.

COURSERS, PRATINCOLES

15

BREEDING. In addition to the known breeding localities (see Status) also said to breed in the Andamans (where normally a summer immigrant), but not yet proven. *Season*, overall April through June. *Nests*, colonial: a shallow scrape, or not even that, on hard sunbaked grassland or stubble fields preferably where recently burnt, where the eggs become remarkably invisible. Eggs sometimes laid in deepish hoof-prints of cattle. The same sites often used year after year. *Eggs*, 2 or 3, pale yellowish stone to rich yellow buff, densely spotted and blotched with black and with grey secondary markings. In coloration and shape very similar to eggs of Indian Courser (440) with the same range of variations. Average size of 60 eggs 30.8 × 23.9 mm. (Baker). Behaviour at nest, etc. not different from 442, q.v.

MUSEUM DIAGNOSIS. For distinguishing from 442 see Key to the Subspecies and remarks under that form.

Young (immature). For description, not in FBI, see Lapersonne, JBNHS 35: 686.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail	
				central	outer
♂♀	173-191	13-15	30-33	52-62	71-85 mm.

(Baker)

COLOURS OF BARE PARTS. Iris dark brown, bill black, reddish at gape brighter in breeding season. Legs and feet dusky black.

444. Small Indian Pratincole or Swallow-Plover. *Glareola lactea* Temminck

Glareola lactea Temminck, 1820, Man. d'Orn., ed. 2: 503 (Bengal)

Baker, FBI No. 2056, Vol. 6: 92

Plate 38, fig. 5 and Plate 44, fig. 4

LOCAL NAMES. *Utteran* (Sind); *Chhāṣṭā bābūibāṭān* (Bengal).

SIZE. Sparrow+; length c. 17 cm. (6½ in.).

FIELD CHARACTERS. A sandy grey fruiatile bird with pointed, swallow-like wings and slightly forked tail.

In overhead flight the whitish underparts, black wing lining (axillaries and coverts) contrasting with white bases of the quills, and black-tipped squarish white tail, are suggestive clues. In fading twilight, silhouette and actions in the air strongly reminiscent of pipistrelle bat.

Adult. Above pale sandy grey. Forehead brown; a band from eye to bill black. Tail-coverts and base of tail white, blackish towards end. Below, sooty brown tinged with rufous, becoming white from lower breast downwards. Sexes alike.

Young (immature). Feathers of upperparts obsoletely edged paler sandy or buff, producing a somewhat scaled effect. Throat and foreneck spotted with blackish.

STATUS, DISTRIBUTION AND HABITAT. Resident, nomadic (?), and local migrant. West Pakistan (westward limit Indus river), all India (including Kashmir and Assam), Nepal (terai and up to c. 750 m.), E. Pakistan, and

14

CHARADRIIFORMES

443. Large Indian Pratincole or Swallow-Plover. *Glareola pratincola maldivarum* J. R. Forster

Glareola (Pratincola) Maldivarum J. R. Forster, 1795, Faunula Indica, ed. 2: 11 (Open sea in the latitude of the Maldive Islands, ex Latham, Gen. Syn. 5: 224, vr. B)

Baker, FBI No. 2055, Vol. 6: 90

Plate 38, fig. 4 and Plate 44, fig. 3

LOCAL NAMES. *Bēḍā bābūibāṭān* (Bengal); *Abularg?* (Maldive Is.).

SIZE. Myna ±; slimmer. Length c. 24 cm. (9½ in.).

FIELD CHARACTERS. As for 442 but tail less deeply forked. Difference imperceptible except in the hand. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Not clear: variously resident, summer visitor, nomadic and/or locally (?) migratory. Known to breed in



× c. ½

W. Pakistan (Sind), Madhya Pradesh, near Delhi (JBNHS 65: 780), W. Bengal (near Calcutta—Biswas), Assam, E. Pakistan, and Ceylon, straggling erratically chiefly in winter more or less throughout India; E. Pakistan, Nepal, Ceylon, Andaman, Nicobar, Cocos and Maldive Is. Breeds in company with nominate *pratincola* at the seam or meeting ground of their breeding ranges in Sind, both forms being summer visitors

to the district from east and west respectively. 'The former (*pratincola*) does not breed eastwards of this district, nor the latter (*maldivarum*) west of it' (Ticehurst). Affects dried-up flood plains by large rivers, tidal mudflats and marshes, paddy stubbles in coastal areas, ploughed and fallow fields, open grazing grounds, etc.

Extralimital. 'Breeds from the upper Argun River in Transbaikalia, N.E. Mongolia and S. Manchuria, south to India, Ceylon, Burma, Siam, Indochina, and Hainan. On migration or in winter through the Malay Archipelago to Australia' (Peters).

GENERAL HABITS. Gregarious, and inclined to be somewhat crepuscular. Keeps in flocks of 30 or 40 — sometimes very large ones of several hundred. Most active in the mornings and evenings — also in cloudy overcast weather — flying about high up in the air like swallows, wheeling and twisting and in swift zigzags, hawking insects with their capacious gapes — occasionally descending to treetop height or even skimming over cultivated fields and grassland. To a lesser extent also feeds on the ground, running about like a courser. The birds are sluggish during daytime, spending the hot hours squatting or standing about in the scorching sun on some open sandbank in a river or on pasture land.

FOOD. Flying insects, principally moths (Heterocera), beetles (Coleoptera), bugs (Hemiptera) and winged termites (Termitidae). Also 'Water-boattmen' (Corixidae and Notonectidae) which must evidently fly high in sunshine. Baker noted 'a curious habit of scratching in the soil rather like a small game bird, both when feeding and when dusting'.

VOICE AND CALLS. Constantly utters a characteristic *kirri-kirri* in flight (Deignan). Cf. 442 under 'Breeding'.

16

CHARADRIIFORMES

Ceylon (low-country Dry zone). Affects large placid streams with sandbars, following the northern ones into the Himalayas up to c. 1800 metres. Also large jheels and coastal swamps (e.g. the Sunderbans, where reported to be extraordinarily common and abundant).

LOCAL MOVEMENTS. No ringing or other precise data. Found in many breeding localities only between April and August, disappearing thereafter.

GENERAL HABITS. Gregarious. More partial to water than its larger relatives. Keeps in flocks in the neighbourhood of large tanks and rivers — sometimes immense and of almost swarm proportions. Rather crepuscular, hawking into the dusk till almost quite dark. Winged insects captured high up in the air or scooped up from near the ground or water surface. After a bout of dashing and zigzagging to and fro the birds descend to settle on a sandbank in a scattered crowd, individuals darting about in spite to feed in the characteristic plover manner. From time to time the flock rises simultaneously as to a given signal, to resume hawking. Flight rather 'angular', very reminiscent of a pipistrelle's, with the same agile turning, twisting, abrupt stopping short and doubling in pursuit of prey. In the gloaming when pratincoles, swifts and the small insectivorous bats are all flying around together high up in the air as is common, indeed any one of them may casually be mistaken for the other.

FOOD. Insects, chiefly flying beetles (Coleoptera), bugs (Hemiptera) and termites (Neuroptera).

VOICE AND CALLS. Some notes reminiscent of the *tuck-tuck-tuck* calls of the House Gecko (*Hemidactylus*). 'Others [notes] made me feel I was listening to a greenfinch' (Lowther, from photographing hide). When disturbed at nest colony and flying about agitatedly overhead, *tiriri, tiriri, tiriri*, etc.

BREEDING. *Season*, in India overall February through April; in Ceylon March, April. Second layings later, even up till June if first clutches washed away by floods due to melting snows or unseasonable rain. *Nests* colonial, often several scores close to one another — shallow scrapes or none at all on exposed sandbanks in placid rivers, often down to the water's edge; frequently in company with terns and skimmers. *Eggs*, normal clutch 2 exceptionally 3. In eastern India *ride* Baker, 3 most usual, 2 exceptional; in Assam clutches of 4 normal. Ground colour of eggs mostly pale sandy buff or sandy grey with small spots and blotches of light grey-brown or reddish brown and secondary blotches of lavender or neutral tint. Minor variations common. Shape broad oval, very little compressed at smaller end. Average size of 200 eggs 25.9 × 20.5 mm. (Baker). Both sexes take part in incubation; period unrecorded. The eggs as well as downy chicks are admirably camouflaged and merge into their sandy environment in an astonishing way. Nesting birds, flying around and agitatedly diving at

SKUAS, JAEGER

17

intruder, have a curious habit of alighting, singly or several at a time, squatting in front of him, opening wings and shuffling as if settling on eggs or chicks. When further approached they scuttle away dragging one wing or beating it on the sand as if broken, again shuffling and making as if to settle on eggs a little further on, and repeating the broken-wing tactics when further approached, finally taking to the air at the water's edge and joining their companions overhead.

MUSEUM DIAGNOSIS. See Key to the Species; for description of plumage Baker, loc. cit.

Chick (in down). 'Whole of upperparts finely mottled greyish white, dusky, and pale buff; narrow black line behind eyes; underparts white' (Ticehurst).

MEASUREMENTS			
Wing	Bill	Tarsus	Tail
	(from feathers)		
♂ ♀ 142-160	9-10	20-21	50-57 mm. (Baker)

Weight 2 ♂ 37, 38 gm. (SA). 2 ♂ 40, 44 gm. (BB).
COLOURS OF BARE PARTS. Iris dark brown. Bill black, red at base and more yellow on gape. Legs and feet dark brown or plumbeous to black.

Family STERCORARIIDAE: Skuas, Jaegers

For morphology and other details see Stresemann, E., 1927-34, *Aves*: 777 (Subfamily Stercorariinae of Lariidae); Baker, E. C. S., 1929, FBI 6: 96; Van Tyne, J., & Berger, A. J., 1959: 449; Wynne-Edwards, V. C., 1964, Article 'Skua' in Thomson, A. L. (ed.), *New Dict. Birds*, London and New York.

Key to the Genera

	Page
Larger: culmen, 46-58 mm.; tarsus 64-79 mm.....	<i>Catharacta</i> 17
Smaller: culmen, 28-44 mm.; tarsus 39-55 mm.....	<i>Stercorarius</i> 20

Genus CATHARACTA Brünnich

Catharacta Brünnich, 1764, Orn. Boreal.: 32. Type, by subsequent designation, *Catharacta skua* Brünnich

Cf. Witherby, Handbook of British Birds, 1947, 5: 122; Ibis, 1956, 98: 161.
Contains large pelagic gull-like birds with webbed feet, of brown or squamated plumage, paler or darker in shade, resembling the immature plumage of certain gulls, and also some shearwaters (Procellariidae). Bill differs from gulls' in being broader at base with culmen greatly curved at tip which is bent over the lower mandible. Cere extends more than half culmen, the anterior lower portion overhanging the nostril (cf. shearwaters which have tubular nostrils). Lower mandible nearly straight, the angle being near the tip. Tarsi long and strong, scutellated in front reticulated behind; anterior toes long and fully webbed; hind toe small; claws small but curved and sharp. Wing long and pointed: 1st primary (as.) longest. Tail rounded with middle rectrices slightly elongated and projecting beyond the others.

Skuas are predatory on the eggs and chicks of terns, penguins, and other colonial-nesting sea birds. But they also live largely by piracy, attacking and chasing gulls and other birds savagely and with determination, forcing them to surrender their lawful prize and then deftly retrieving the spoils in mid-air. The birds breed in the

SKUAS, JAEGER

19

446. Brown or Great Skua. *Catharacta skua lonnbergi* Mathews

Catharacta antarctica lonnbergi Mathews, 1912, Nov. Zool. 18: 212 (New Zealand Seas)
Not in Baker, FBI
Plate 45, fig. 4

SIZE AND FIELD CHARACTERS. As of 445.
STATUS. One specimen taken in Kerala, September 1933, and another further up the west coast in Ratnagiri district, June 1957 (JBNHS 39: 577; 55: 356).

DISTRIBUTION. 'Breeds on west coast of South Island, New Zealand (Otago district), Stewart I., Chatham Is., thence south on the subantarctic islands to Macquarie I. Ranges to the seas off southern Australia' (Peters).

MUSEUM DIAGNOSIS. 'Largest of the skuas, the size character showing in every dimension, but particularly in the length and bulk of bill and tarsus. Prevailing "brown" in plumage, i.e. with a minimum of "chamois-colour" and of cinnamon, but subject to wide variation. Some specimens, even in fresh plumage, are very whitish both on mantle and ventral surface.'

MEASUREMENTS			
Breeding adults from S. Georgia:			
Wing	Bill	Tarsus	Tail
	(from feathers)		
6 ♂ 401-416 (407)	54.3-58.2 (56.5)	70.8-79.3 (75)	153.5-162.4 mm. (156.9)
8 ♀ 397-416 (407)	53.5-56.7 (55.5)	72.8-79 (75.3)	143.4-157 mm. (150.5)
11 ♂ ♀ Middle toe with claw 76.8-84 (78.7) mm.'			

(Murphy, 1936: 1024)
The Kerala specimen (BNHS No. 20108) measures: Wing 397; bill from cere, 32; tarsus 76; tail 134+ mm. (G. E. Watson).
COLOURS OF BARE PARTS. As in 445.

446a. South Polar Skua. *Catharacta skua maccormicki* (Saunders)

Stercorarius maccormicki Saunders, 1893, Bull. Brit. Orn. Cl. 3: 12 (Possession Island Victoria Land, lat. 71°14'S., long. 171°15'W.)
Catharacta maccormicki wilsoni Mathews, 1913, Bds. Austr. 2: 495 (Weddell Sea. Type from lat. 74°S., long. 22°W., off Coats' Land, fide Lowe & Kinnear, ante p. 123)
? *Catharacta maccormicki* Taka-Tsukasa, 1922, Tori 3 (12 & 13, unpagd) (Japanese Seas)
Not in Baker, FBI

SIZE AND FIELD CHARACTERS. As of 445.
STATUS. One specimen taken in Ceylon (Trincomalee) during the NE. monsoon between 1877 and 1885 (Whistler, H., 1944, SZ 23 (3, 4): 266); one on the west coast of India, 7 August 1964 near Udipi (c. 13°23' N., 74° 45' E.), Mysore state. The latter, of the dark phase, is of particular interest as it bore a band on its leg revealing its provenance. The bird was ringed on 5 March 1961 on the Antarctic Peninsula at c. 64°49'S., 62°51'W. by the U.S. Antarctic Research Programme Bird Banding Project.

18

CHARADRIIFORMES

Arctic and Antarctic zones and wander into temperate and tropical seas. (For seasonal movements see Allan Brooks, 1939, 'Migrations of the Skua Family', *Ibis*: 324-8.)

Found in Indian coastal waters merely as accidental waifs storm-tossed during heavy monsoon gales. Individual specimens are difficult to identify racially even in the museum, except with considerable experience and adequate comparative material. The following have occurred:

CATHARACTA SKUA Brünnich

Key to the Subspecies

	Page
A Smaller: wing c. 366-398; culmen 46-51; tarsus 64-70 mm.....	<i>C. s. antarctica</i> 18
B Larger: wing c. 397-416; culmen 53-58; tarsus 70-79 mm.....	<i>C. s. lonnbergi</i> 19
C Medium-sized: wing c. 390-410; culmen 47-52; tarsus 62-66 mm.....	<i>C. s. maccormicki</i> 19

445. Antarctic or Falkland Skua. *Catharacta skua antarctica* (Lesson)

Leistris antarcticus Lesson, 1831, *Traité d'Orn.*, livr. 8: 616 (Falkland Islands and New Zealand; restricted to the former by Mathews, 1912, Nov. Zool. 18: 212)
Not in Baker, FBI
Plate 45, fig. 1

SIZE. Domestic duck ±; length c. 53-61 cm. (21-24 in.).
FIELD CHARACTERS. A brown gull-like sea bird. (See under Family, above.)

STATUS. Five specimens taken in Ceylon, September-October, between 1875 and 1949. For particulars see Whistler, H., 1944, SZ 23 (3 & 4): 266; Phillips, W. W. A., 1953, 'A (1952) revised checklist of the birds of Ceylon': 46. Sight record, Maldives Is. — 'almost certainly Antarctic Skua' (Phillips, 1963, JBNHS 60: 576).

DISTRIBUTION. 'Breeds on the Falkland Is., on Gough and Inaccessible Is., and on Tristan da Cunha. Ranges to the coasts of southern Argentine and S. Africa' (Peters).

MUSEUM DIAGNOSIS. 'The smallest of the skuas, of highly variable plumage but most closely resembling the Brown Skuas (*C. s. lonnbergi*) of the pan-antarctic islands.'

MEASUREMENTS of breeding birds from the Falkland Is.:				
Wing	Bill	Tarsus	Mid toe with	Tail
	(from feathers)		claw	
10 ♂ 366-387 (av. 376.4)	46.5-50.3 (48.7)	64.3-70 (66.9)	72.2	139.6-154.5 mm. (145.8)
6 ♀ 378-398 (av. 384.6)	47-50.8 (48.9)	64.7-69.6 (68.2)	73.9	140-156.7 mm. (151.7)

COLOURS OF BARE PARTS. Iris brown; bill, legs and feet black or blackish.
(Murphy, 1936: 1020)

20

CHARADRIIFORMES

DISTRIBUTION. 'Breeds on the shores of Ross Sea and Weddell Sea. Ranging to the South Shetlands and north to the Japanese coast (?)' (Peters).

MUSEUM DIAGNOSIS. 'A medium-sized skua averaging slightly larger in most dimensions than *C. s. antarctica*, but with a relatively short tarsus. Notably smaller, except in wing-length, than *C. s. lonnbergi*. Generally much paler than other forms of the southern-hemisphere skuas in fresh plumage, and without cinnamon-red suffusion in the plumage. Ventral surface usually pale buffy brown; neck conspicuously streaked with yellow or "golden" hackles; white area at base of primary quills larger than in other forms.'

MEASUREMENTS			
Wing	Bill	Tarsus	Tail
	(from feathers)		
9 ♂ 390-410 (397.5)	47-51.8 (49.3)	62.4-65.5 (64.1)	140-152 mm. (147.4)

(Murphy, 1936: 1011)
The ringed specimen (sex?) measures: Wing 372+; bill from skull 57.5, from feathers 49; cere 28; tarsus 62; tail 143 mm. (G. E. Watson).
COLOURS OF BARE PARTS. As in 445.

Genus STERCORARIUS Brisson

Stercorarius Brisson, 1760, Orn. 1: 56; 6: 149, Type, by tautonymy, *Stercorarius* Brisson = *Larus parasiticus* Linnaeus
Differs from *Catharacta* mainly in the possession of more elongated central rectrices. Other characters and ecology as in that genus. Keeping the two genera discrete seems of doubtful utility, and is controversial.

Key to the Species

Bill higher than wide at base; wing usually more than 350 mm.; in adults, the middle pair of rectrices broad throughout, twisted	<i>S. pomarinus</i>
Bill not higher than wide at base; wing less than 345 mm.; in adults, the middle pair of rectrices straight.....	<i>S. parasiticus</i>

447. Pomatorhine Skua or Jaeger. *Stercorarius pomarinus* (Temminck)

Leistris pomarinus Temminck, 1815 (1814), Man. d'Orn.: 514 (Arctic regions of Europe)
Baker, FBI No. 2059, Vol. 6: 98
Plate 45, fig. 2

LOCAL NAMES. None recorded.
SIZE. Domestic duck —; length c. 53 cm. (21 in.).
FIELD CHARACTERS. A large pelagic gull-like bird almost wholly dark brown (dark phase), or brown above including top of head and face, yellowish white below with greyish brown under tail-coverts and usually a squamated greyish brown pectoral collar (pale phase). Sexes alike. Elongated, projecting, broad, blunt and peculiarly twisted central rectrices, and somewhat larger size, distinguish it from Parasitic Skua (448).

SKUAS, JAEGER

21

Young (immature). From almost uniform sooty- or blackish brown (*dark phase*) to variously mottled and barred rusty buff and dark brown on whitish underparts (*pale phase*). Central rectrices only slightly projecting.

STATUS. Accidental vagrant. A single specimen taken at Colombo in 1912 (Wait, W. E., 1931, *Manual of the Birds of Ceylon*: 395) is the only record for Indian waters. Two adults sighted, Bombay (Sinclair, J. C., 1976, JBNHS 73: 530).

DISTRIBUTION. Breeds on the Arctic coast and islands of Siberia, NW. Alaska, the Arctic Archipelago, etc. Winters (offshore) to western Africa, Mediterranean and Black Seas, Indian Ocean (rarely), Australia (rarely). For details see Peters, 1934, 2: 311.)

MUSEUM DIAGNOSIS. See Key.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Mid toe without claw	Tail
10 ♂♂	349-374 (361-9)	38-43.5 (40-4)	48-54 (52)	42-47 (44-6)	172-243 mm. (207-9)
9 ♀♀	351-370 (359-7)	38-44 (40-2)	50-55 (52-1)	42-48 (46-1)	128-205.5 mm. (181-2)

* COLOURS OF BARE PARTS. Iris dark brown. Legs and feet blackish, the upper portion of tarsus pale bluish (in life).

(Murphy, 1936: 1036).

448. Parasitic or Richardson's Skua or Jaeger. *Stercorarius parasiticus* (Linnaeus)

Larus parasiticus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 136 (Within the Tropic of Cancer of Europe, America, and Asia = coast of Sweden)
Baker, FBI No. 2058, Vol. 6: 96
Plate 45, fig. 5

LOCAL NAMES. None recorded.

SIZE. Domestic duck —; length c. 48 cm. (19 in.).

FIELD CHARACTERS. A pelagic gull-like bird, similar to 447 in both dark and pale phases but somewhat smaller. Distinguished from it by straight



Immature, x c. 2

and pointed projecting central rectrices *contra* broad, blunt and twisted. Sexes alike.

Young (immature). Very like 447.

GULLS, TERNS

23

Page

II Bill stout to moderate, culmen somewhat curved.....	<i>Gelochelidon</i>	42
Bill slender, culmen straight or nearly so.....a ¹		
a ¹ Entire plumage white.....	<i>Gygis</i>	73
Entire plumage not white.....	<i>Sterna</i>	47

Genus LARUS Linnaeus

Larus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 136. Type, by subsequent designation
Larus marinus Linnaeus

Cf. Stegmann, B., 1934, Jour. f. Orn., 82: 340-80.

Bill stout, compressed, and of moderate length; upper mandible longer than lower, curved and bent down over the tip. Nostrils oblong, placed some distance from the base. Wings long, exceeding the tail when closed. Tarsus moderate or rather short, scutellated in front. Hind toe small; anterior toes long and fully webbed.

Key to the Species

A Size small, wing below 230 mm.....	<i>L. minutus</i>	37
B Size medium, wing between 270 and 355 mm.....	I	
C Size large, wing above 390 mm.....	2	
1 Tail wholly white (adult, summer and winter).....	a	
Tail not wholly white (subadult).....	b	
a Three outer primaries wholly black.....	<i>L. hemprichii</i>	24
Three outer primaries not wholly black.....	I	
I Outer primaries white basally, black apically, mirrors usually present.....	<i>L. brunneicapillus</i>	31
Outer primaries white edged with black, no mirrors.....a ¹		
a ¹ Head white.....	<i>L. geris</i>	35
Head completely hooded brown (summer) or with half hood on occiput (winter).....	<i>L. ridibundus</i>	33
b Primaries wholly black.....	<i>L. hemprichii</i>	24
Primaries not wholly black.....	II	
II Outer primaries white basally, black apically, no mirrors.....	<i>L. brunneicapillus</i>	31
Outer primaries white edged with black, no mirrors.....b ¹		
b ¹ Head white.....	<i>L. geris</i>	35
Head white with dusky band across occiput or with brown hood mottled with white.....	<i>L. ridibundus</i>	33
2 Tail wholly white (adult, summer and winter).....	c	
Tail not wholly white (subadult).....	d	
c Bill banded with black.....	<i>L. ichthyurus</i>	29
Bill not banded with black.....	III	
III Primaries black broadly tipped white, conspicuous grey or white tongues, a mirror on the outer, frequently on the next inner primary.....	<i>L. argentatus</i>	26
Primaries black with white apical spots, tongues absent or diminished, a mirror on the outer, rarely on the next inner primary.....	<i>L. fuscus</i>	23
d Tail white with distinct black band.....	<i>L. ichthyurus</i>	29
Tail blotched, smudged, or with partial band.....	IV	

22

CHARADRIIFORMES

STATUS. Not very uncommon along the Makran coast (W. Pakistan) where Hume met with it at sea off Ormara, Gwadar, Pasni, etc. from middle to end February. Butler saw about a dozen between Pasni and Gwadar 13-17 May, and W. W. A. Phillips observed one — *presumably* this species — in the Arabian Sea at c. 24°47'N., 66°32'E. as late as early July (1946, JBNHS 46: 612). Five examples sighted, Bombay (Sinclair, J. C., 1976, JBNHS 73: 530).

Dr C. B. Ticehurst quotes an interesting observation on the parasitic habits of what was probably this skua recorded by a Portuguese mariner, one Pedro Taxeira, early in the year 1604 off the coast of Oman. He writes that he 'saw certain birds chasing others from natural enmity. The weaker soar upward to escape from the stronger, and in terror void the contents of their stomachs. The bird below hunting the others to this end or from natural spite as fast as this happens, opens his beak, catches the same droppings and eats them. I have it from natives that on this matter he subsists.'

DISTRIBUTION. Breeds on the Arctic coasts and islands of the Holarctic Region. (For details see Peters, 1934, 2: 311.)

MUSEUM DIAGNOSIS. See Key.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Mid toe without claw	Tail
16 ♂♂	301-340 (320)	28-35 (31-2)	39.5-45.5 (41-9)	33-37 (34-8)	164-5-235 mm. (188-9)
14 ♀♀	317-341 (323-7)	29-34.5 (31-8)	39-45 (42-1)	32-38 (35-9)	176-226 mm. (199-7)

* COLOURS OF BARE PARTS. Iris brown. Bill light horn colour, the terminal portion dusky or blackish. Legs and feet black.

(Murphy, 1936: 1037)

Family LARIDAE: Gulls, Terns

For morphology and other details see Stresemann, E., 1927-34, *Ardea*: 777 (Subfamilies Larinae and Sterninae of Laridae); Witherby *et al.*, 1941, 5: 1; Van Tyne, J. and Berger, A. J., 1959: 450; Thomson, A. L., 1964, *New Dict. Birds*, London and New York (Articles 'Gull' and 'Tern').

Family LARIDAE

Key to the Genera

	Page
A Both mandibles greatly compressed, the lower much longer than the upper.....	<i>Rynchops</i> 74
B Bill stout, compressed, and with the upper mandible longer than the lower, curved and bent down over the tip.....	<i>Larus</i> 23
C Bill straight or nearly so, generally slender and with pointed tip.....	I
1 Outermost tail-feather short.....	<i>Arenaria</i> 71
Outermost tail-feather long.....	a
a Tail short, generally equal to less than half length of wing.....	I
Tail long, generally equal to more than half length of wing.....	II
I Webs between toes deeply emarginate.....	<i>Chlidonias</i> 38
Webs between toes strongly developed.....	<i>Hydroprogne</i> 45

24

CHARADRIIFORMES

Page

IV Tail markings deep brownish black, white areas conspicuous.....	<i>L. fuscus</i>	28
Tail markings clove-brown, white areas diminished.....	<i>L. argentatus</i>	26

449. Sooty Gull. *Larus hemprichii* Bruch

Larus (*Adelarus*) *Hemprichii* 'Bp.' = Bruch, 1853, Jour. f. Orn. 1: 106 (Red Sea)

New name for *Larus crassirostris* Vigors, not of Vieillot

Baker, FBI No. 2063, Vol. 6: 104

Plate 45, fig. 7

LOCAL NAMES. None recorded.

SIZE. Domestic duck —; length c. 48 cm. (19 in.).

FIELD CHARACTERS. A medium-sized sea gull with brown head and breast, white collar, and greyish brown mantle. Sexes alike.

Adult (summer). Head, nape, and throat (the 'hood') sooty brown with a short white eyebrow. Separated from greyish brown mantle and grey breast by a prominent white collar. Wing-quills blackish brown, the inner ones tipped with white. Abdomen, tail-coverts and tail white.

In winter the white collar disappears and the head and foreneck are paler brown, much mottled and streaked with white.

Young (immature). Upperparts paler and squamated with whitish; tail brownish mottled with white, with a broad brown subterminal bar.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor to Makran and Sind coasts of West Pakistan. Common and abundant in Karachi Harbour and seaboard, withdrawing towards breeding ground in early June. Strangely enough never recorded from the Gujarat coast, but a single straggler observed at Bombay by Hume, January 1875 (1876, SF 4: 414).

Extralimital. 'Breeds on islands in the southern part of the Red Sea, on the coasts of the Gulf of Aden, and on Astola I. off coast of Persian Baluchistan [W. Pakistan]; ranges north in the Red Sea to about lat. 22°N., south on the coast of E. Africa to Zanzibar, along the Makran coast and east to Sind' (Peters).

GENERAL HABITS. Gregarious and exclusively maritime, never (?) found away from the sea coast; largely a scavenger. Frequents harbours, flying around ships at anchor for scraps and garbage, but chiefly attends on off-shore fishing boats to scavenge the fish offal cast overboard. Unlike Herring Gull does not frequent villages for this purpose. Picks up scraps floating on the water from the air or alights alongside to deal with them, riding buoyantly like a duck and taking off again effortlessly.

FOOD. Chiefly dead fish and offal. An important predator of terns' eggs and chicks in nesting colonies; also pirating on the birds in the manner of a skua.

VOICE AND CALLS. On breeding ground utters 'a peculiar mournful cry which is kept up throughout the breeding season' (E. A. Butler, 1877, SF 5: 296). For other calls see Fogden, op. cit. infra.

BREEDING. Colonial; sometimes individual. Only known locality within our area Astola or Astalu Island off the Makran coast (West Pakistan)

GULLS, TERNS

25

c. 40 km. ESE. of Pasni. Season, end June to end August. Nest, 'a slight depression with a few bents of grass and *Salvola* scrub situated at the side of and sheltered by a tuft of *Salvola*' (C. B. Ticehurst quoting Sir Percy Cox). Eggs, full clutch of 2 or 3: dull pale yellowish stone to pale purplish grey or pale brown, blotched and spotted with various shades of brown, grey, or inky purple. Average size of 24 eggs 56.8 × 40.9 mm. (Baker). Incubation period 'at least 25 days'. (For full details see M. P. L. Fogden, 1964, 'The Reproductive Behaviour and Taxonomy of Hemprich's Gull, *Larus hemprichii*'. *Ibis* 106: 299-320.)

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.

Chick (in down). Pale greyish fawn, very slightly mottled darker on upperparts and with a dull pink bill tipped with black — Fogden.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	320-348	43-48	50-58	139-159 mm. (Baker)
8 ♂ ♂	340-363	48-52 mm.		
3 ♀ ♀	330-337	43.5-48 mm.		

(Ticehurst)

COLOURS OF RARE PARTS. Adult. Iris brown. Eye rim red. Bill yellow-green, black at angle, red band, yellow tip. [Cape bright red — Fogden.] Legs and feet olive-green. Immature. Eye rim black. Bill greeny-grey, black at angle, reddish tip. Legs and feet grey' (Ticehurst).

LARUS ARGENTATUS — LARUS FUSCUS

There is some difference of opinion among authorities on the taxonomic status of the large Herring and Blackbacked gulls of the *argentatus-fuscus* complex. These are two very closely related 'species' differing mainly in the coloration of the mantle, which ranges from pale blue-grey in *Larus argentatus* to almost slaty black in *L. fuscus*. The differences between adjacent populations of the two are no more than would normally pass for geographical races of a single species were not the position complicated by the fact that their breeding ranges overlap in northwestern Europe. By some authorities they are nevertheless treated as races of a single species, the anomaly of sympatry being explained away by the putative status of the two as terminal links of a circumpolar chain of races ('species ring') that have come together again after prolonged isolation from each other during which they have developed reproductive isolation and now behave like true species. The apparent absence of interbreeding between the two species is shown by Paludan, 1951, to be untrue and not due to any genetic isolation but merely to a difference in the timing of their respective physiological readiness. On certain Danish islands where both the species breed — *argentatus* usually starting a fortnight earlier than *fuscus* — Paludan found a few mixed pairs of *argentatus* with *fuscus* freely interbreeding where the timing had been synchronous. However, in view of the fluidity of opinion among ornithologists these gulls are being treated here as two polymorphic species. Racial identification of individual Indian examples, especially immature, is difficult even

¹ Paludan, Knud, 1951, 'Contributions to the breeding biology of *Larus argentatus* and *Larus fuscus*'. Copenhagen (Ejnar Munksgaard).

GULLS, TERNS

27

horizontal carriage of body. Flocks roost at night on sheltered sandbars or rocks, the birds often flying considerable distances back and forth between their feeding and roosting places around dusk and dawn. Flight strong and buoyant with leisurely wing-beats interspersed with long periods of graceful, effortless sailing, gliding and soaring — up, down, or in circles — taking full advantage of air currents and eddies.

FOOD. Fish offal, and miscellaneous refuse; molluscs, crabs, insects. Robs eggs and chicks of terns and other colonial-nesting sea birds, and to some extent also lives by piracy like skuas.

VOICE AND CALLS. One of the commonest calls a loud raucous *kee-ow*, *kee-ow*, *kee-ow*, etc. reminiscent of the Fishing Eagle *Haliaeetus leucorhynchus*, resembling the creaking of the block tackle of a fishing boat lowering its sails, or of the uncoiled wooden water-lifting pulley of a village well.

BREEDING. Extralimital. Colonial; on sea-cliffs and coastal sand dunes.

MUSEUM DIAGNOSIS. One of the darkest forms of the Herring Gull. For description of plumage see Baker, loc. cit.; for details of plumage phases, bionomics, characters, etc. of the paler-mantled and pinkish-legged but otherwise very similar nominate race, Withersby, 1941, 5: 85-95.

For an exhaustive review of the forms of the larger gulls, including *Larus argentatus* and *L. fuscus*, Stegmann, B., 1934, Jour. f. Orn. 82 (3): 340-80.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	415-450	49-63	62-77	158-180 mm.

COLOURS OF RARE PARTS. Adult. Iris white to yellow; orbital ring bright vermillion. Bill bright yellow with a vermillion patch near tip of lower mandible. Legs and feet bright yellow (Baker).

MISCELLANEOUS. Two birds (of the nominate race) ringed as flying juveniles in 1909 and 1910 were recovered when almost 25 and 26 years old (*Der Vogelzug*, July 1935, p. 135). Since then a herring gull has been recovered 31 years 11 months after ringing as chick (*The Ring* 3: 147-52, 1962).

451. Pinklegged Herring Gull. *Larus argentatus mongolicus* Sushkin

Larus argentatus mongolicus Sushkin, 1925, Bds. Russian Altai etc.: 63
(Lake Uriugnoor [= Urga Nor], NW. Mongolia)

Baker, FBI No. 2066? (part), Vol. 6: 109

SIZE. Same as 450 = domestic duck ±; length c. 60 cm. (23 in.).

FIELD CHARACTERS. Not satisfactorily distinguishable from 450; mantle slightly paler grey; legs and feet usually pinkish.

Young (immature). As 450.

STATUS, DISTRIBUTION AND HABITAT. An eastern form 'wintering as far west as the coast of Bombay and West Pakistan (Sind). In passage may occur inland on large lakes. Birds previously referred to as *cachinnans* in Indian list probably belong to this race' (SDR).

26

CHARADRIIFORMES

in the museum, and impossible in the field. Published sight records in India are vitiated by ambiguity; therefore no more than the general status of the wintering forms is attempted here.

LARUS ARGENTATUS Pontoppidan

Key to the Subspecies

Mantle dark slaty grey, legs and feet yellow.....*L. a. heuglini*
Mantle paler, legs and feet pale fleshy pink or bluish.....*L. a. mongolicus*

450. Yellowlegged Herring Gull. *Larus argentatus heuglini* Bree

Larus Heuglini Bree, 1876, Bds. Eur., ed. 2, 5: 58 and pl. (New name for *Larus cachinnans* Pallas, not of Pallas, Heuglin, 1873, Orn. Nord-Ost. Afr. 2, Abth. 2, no. 892, part; type from Zeyla, Somaliland)

Larus affinis taimyrensis Buturlin, 1911, Orn. Mitt. 2: 149

(Western shores of the Gulf of Yennesei)

Baker, FBI No. 2065, Vol. 6: 107

Plate 45, fig. 8

LOCAL NAMES. Unrecorded.

SIZE. Domestic duck ±; length c. 60 cm. (23 in.).

FIELD CHARACTERS. A large, heavy gull. Adult (summer). Entire head, neck, underparts and tail snow white. Mantle slaty grey. In flight leading and trailing edges of wings white. Wing-quills chiefly black with small white 'mirror' near tip of wing. Legs and feet yellow; a bright red patch near tip of lower mandible.

In winter head and hindneck streaked with brown. Sexes alike.

Young (immature). Above, dark brown flecked with whitish; more buffy on the wings. Below, white mottled and streaked with pale brown. Tail brown, tipped with white. Legs and feet dull fleshy yellow.

STATUS, DISTRIBUTION AND HABITAT. Winters along the northern Indian Ocean coasts east to the Makran coast and south along the coast of West Pakistan and western India to Bombay, rarely to Kerala and Ceylon (SDR).¹ A pair (subspecies?) observed in Kathmandu Valley, Nepal, in November 1962 and one collected (Fleming, R. L., 1963, *Pavo* 1(2): 127). Doubtless on passage.

Affects the sea coast and harbours; inland lakes in Sind (and elsewhere?) 'only where there is a fishing industry' (Ticehurst).

Extralimital. 'Breeds in northern Siberia in the wooded and perhaps subalpine portions of the lower Yenisey, Taimyr Peninsula, and the Khatanga; non-breeders occur on the adjacent portions of the Arctic coast. Relict breeding colonies on the Baraba and Kirghiz Steppes. Winters in the southern part of the Red Sea, the north Somali coast, and in the Persian Gulf' (Peters). For fuller details see Vaurie, 1965, 2: 468-9.

GENERAL HABITS. Gregarious and largely maritime. A scavenger at seaports, harbours and fishing centres. Picks up scraps cast overboard from ships and fishing boats, and fish offal around coastal villages. Settles freely both on water and on the ground, swimming buoyantly or walking about with a

¹ But see Note, p. 25.

28

CHARADRIIFORMES

Extralimital. 'Breeds on the lakes of central Asia from southeastern Russian Altai and Dzungaria across NW. Mongolia to Lake Baikal. In winter on the coasts of China and Indochina' (Peters). See also Vaurie, 1965, 2: 472.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 450.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Unsatisfactory without adequate comparative material. See Key; also description Stegmann, B., 1934, Jour. f. Orn. 82 (3): 376-7.

MEASUREMENTS. 46 ♂ ♀ (27 ad., 19 imm.) Wing 435-480 mm. (av. 462); tarsus 63-75 mm. (Stegmann).

COLOURS OF RARE PARTS. As in 450 except legs and feet which are chiefly pale flesh colour or bluish, but sometimes yellow!

452. Lesser Blackbacked Gull. *Larus fuscus fuscus* Linnaeus

Larus fuscus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 136

(Europa, restricted type locality Sweden)

Baker, FBI No. 2065, Vol. 6: 107

Plate 45, fig. 9

LOCAL NAMES. Unrecorded.

SIZE. Same as 450 = domestic duck ±; length c. 60 cm. (23 in.).

FIELD CHARACTERS. Adult (summer). Head, neck, underparts, and tail pure white; mantle dark slaty grey, almost blackish. In flight the strongly contrasting narrow white leading and trailing edges of the dark wings, and white tips to the black primaries conspicuous. When seen together with *argentatus* difference in the mantle of the two species quite obvious. Legs yellow as in 450, but usually more orange. Sexes alike.

In winter head more heavily streaked with brown than in *argentatus*.

Young (immature). Mottled brown, indistinguishable with certainty from 450, q.v.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor (August-September to April-May) to the coast of West Pakistan (Makran, Sind) and western India south to Kerala; possibly also Ceylon and up the Coromandel coast whence reported. Records of large wintering gulls of the *argentatus-fuscus* group in India badly mixed up and ambiguous as to species. Position needs clearing up by careful collection of specimens. There are inland records (of either or both species?; on passage or wintering?) from Chitral, N. Baluchistan, Delhi, Cachar, Manipur, Madhya Pradesh, Orissa.

Extralimital. 'Breeds from N. Scandinavia eastward to the Murman coast and south to the Gulf of Bothnia, Gulf of Finland, Lake Ladoga and Lake Onega. Winters from the eastern Mediterranean, Red Sea and the Persian Gulf, south to Sierra Leone and the E. African lake region' (Peters). [India.]

GENERAL HABITS. Gregarious. Chiefly a scavenger in seaports, fishing centres and coastal villages, competing with kites and other gulls for scraps and garbage floating on the water, scooping them off the surface in flight or alighting on the water beside them. Often also wades into the surf at the tide's edge to seize a crab or pick up miscellaneous jetam. Occasionally piratical like skuas.

GULLS, TERNS

29

FOOD. Dead fish and offal, scraps and garbage, crabs, marine molluscs and worms, etc. On its breeding grounds highly destructive to eggs and chicks of the smaller gulls and terns and other colonial-nesting sea birds.

VOICE and CALLS. Very similar to the raucous *kee-ow, kee-ow* of the Herring Gull, but deeper and louder. Rather rarely heard in its winter quarters.

BREEDING. Extralimital. For a very good account see Paludan, Knud, 1951, 'Contributions to the breeding biology of *Larus argentatus* and *L. fuscus*'. Copenhagen (Ejnar Munksgaard).

MUSEUM DIAGNOSIS. See Key. For description of plumage see Baker, loc. cit.; Witherby, 1941, 5: 97.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	420-450	50-55	59-66	145-160 mm.
♀♀	405-420	46-49	—	—
		(from skull)		(Witherby)
2 ♀♀	423-433	58-59	61	158-165 mm.
	(Gujarat coast)			(SA)

COLOURS OF BARE PARTS. 'Iris white to pale straw. Bill yellow with a bright red patch (at the angle) near the tip of the lower mandible; gape and eyelids orange to orange-vermilion. Legs and feet pale yellow to orange-yellow' (Baker).

452a. **Great Blackbacked Gull.** *Larus marinus* Linnaeus
See Appendix

453. **Great Blackheaded Gull.** *Larus ichthyæstus* Pallas

Larus Ichthyæstus Pallas, 1773, Reise Russ. Reichs 2: 713 (Caspian Sea)
Baker, FBI No. 2060, Vol. 6: 101
Plate 45, fig. 6

LOCAL NAMES. For all gulls *Dhokra* (Hindi); *Kheir* (Mirshikars, Bihar).

SIZE. Domestic duck +; c. 66-72 cm. (26-28 in.).

FIELD CHARACTERS. Our largest gull, readily recognized by enormous size and usually solitary habit.

Adult (summer). Head and neck black with two small but prominent crescentic white patches one above one below eye. Mantle pearl grey with a slaty tinge; rest of plumage pure white. Primaries mainly white, the outer ones with subterminal black bands and white tips, the inner ones and secondaries grey with broad white tips. Stout yellow bill with bright red patch at angle. Sexes alike.

In winter head white, more or less mixed and streaked with brownish black. The black head is assumed about February.

Young (immature). Mottled pale brown with almost white head. Wing quills largely brown. Tail with broad terminal blackish band.

STATUS, DISTRIBUTION and HABITAT. Winter visitor to the coasts of India and both Pakistans; occasionally (irregularly) to Ceylon in the Jaffna

GULLS, TERNS

31

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	475-510	60-69	75-84	170-190 mm.
♀♀	435-480	49-61	—	— mm.
				(Witherby)

COLOURS OF BARE PARTS. Adult. Iris hazel brown; fine circumorbital ring coral-red. Bill, basal two-thirds bright yellow followed by a bright reddish orange patch and then by a subterminal blackish-brown band; tips paler yellow; gape and mouth bright orange. Legs and feet bright yellow; claws horny brown. Immature. Circumorbital ring blackish brown. Bill, basal two-thirds greenish yellow or sulphur-yellow, tip reddish orange. Legs and feet greenish yellow or sulphur-yellow. Rest as in adult (SA).

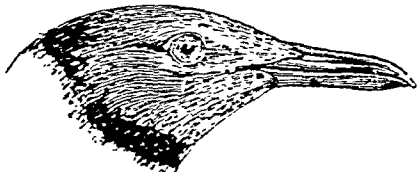
454. **Brownheaded Gull.** *Larus brunnicephalus* Jerdon

Larus brunnicephalus Jerdon, 1840, Madras Jour. Lit. & Sci. 12: 225
(West coast of Indian peninsula)
Baker, FBI No. 2062, Vol. 6: 103
Plate 45, fig. 13

LOCAL NAMES. For all gulls: *Dhokra* (Hindi); *Kādālpāta* (Malayalam); *Kādil kākāi* (Tamil); *Muhudu kaputā* (Sinhala).

SIZE. Jungle Crow ±; length c. 46 cm. (18 in.).

FIELD CHARACTERS. A medium-sized gull, grey above white below with a dark coffee-brown head (the 'hood') in summer. Distinguished from the similar looking Blackheaded Gull (455), with which often seen together,



x.c. 3

by somewhat bigger size and presence of a large white patch, or 'mirror', near the tips of the black primaries.

In winter head greyish white with a vertical black crescent mark behind the ear. Sexes alike. Distinguished from very similar Blackheaded Gull in winter plumage by the prominent wing mirror. Brown head assumed by end March, before emigration.

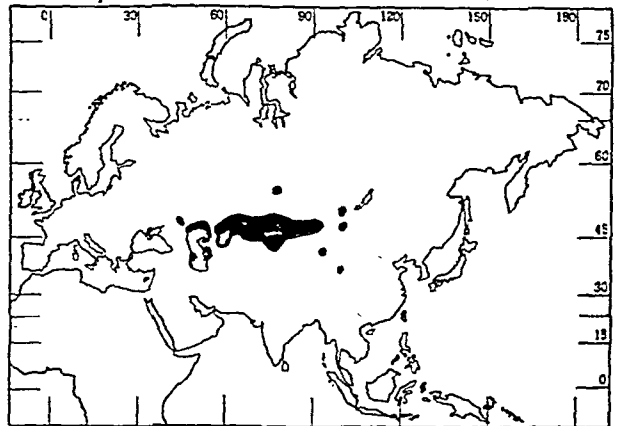
Young (immature). Brownish mottled with pale grey above. Tail white with a broad blackish subterminal band. Various intermediate phases occur, between this and adult plumage, but wing mirror usually distinguishes it from the confusingly similar Blackheaded Gull.

STATUS, DISTRIBUTION and HABITAT. Breeds in Ladakh. Common winter visitor (August/September to March/April) to the sea coasts throughout both Pakistans, India, and Ceylon. Nepal (vagrant?). Not recorded from the Andaman, Nicobar, Maldivé or Laccadive islands, therefore apparently

CHARADRIIFORMES

30

Peninsula and Northern Province. Not recorded from the Andaman or Maldivé Islands. Occasional inland on large rivers and lakes as winter visitor or passage migrant: recorded thus in northern Baluchistan (Saranan), Sind (Manchar Lake), Punjab Salt Range (Khabakki Lake), Rajasthan (Bharatpur), Delhi (Jumna R.), Nepal (terai), Bihar (Darbhanga dist.), Uttar Pradesh (Corbett Park), Upper Assam (Ranganadi).

Larus ichthyæstus

Breeding range

Extralimital. Breeds in S. Russia from the Crimea, Sea of Azov and the Sarpa Steppes eastward (including Caspian and Aral Seas) to NW. Mongolia and the Irtysh. Winters south to the eastern Mediterranean, Red Sea, Persian Gulf, and the coasts of India and Burma (Peters). Breeding on Tibetan lakes conjectural but highly probable (Ludlow, *Ibis* 1950: 42).

GENERAL HABITS. Usually solitary; occasionally small loose flocks. Once a gathering of 50 + in association with Caspian Terns (Vembanad backwaters, Kerala). Often follows fishing-boats returning to port with the catch for sprats thrown overboard, but seldom enters harbours to scavenge among the shipping like its congeners. Hume noted its predilection for swimming about at sea rather than sitting on the shore as other gulls do when resting, but this is largely because of its far ranging habits in search of food and depends on how far from land the bird is at the time.

FOOD. Chiefly fish and crustaceans. Bills and gullets of specimens taken in Kerala were crammed exclusively with sword-fishes (*Hemirhamphus xanthopterus* C.V.) 19-20 cm. long. Like other large gulls also indulges in piracy.

VOICE and CALLS. A loud raucous *kraa-a*, rather like the Raven's. Seldom heard in its winter quarters.

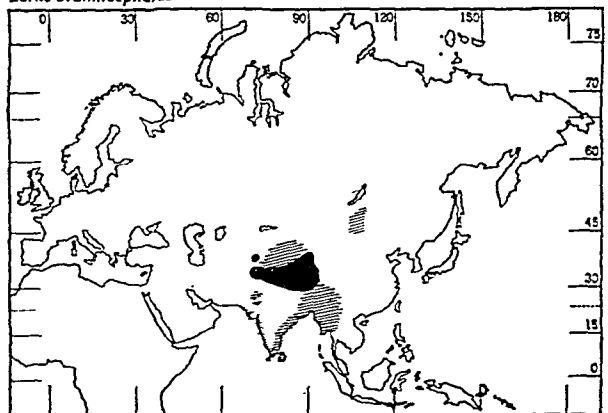
BREEDING. Extralimital.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.; Witherby, 1941, 5: 78-9.

CHARADRIIFORMES

32

does not venture far offshore. Also found in varying numbers inland at most large rivers and lakes, chiefly on passage. Abundant on Sambhar Lake

Larus brunnicephalus

Breeding range Winter

(Rajasthan) throughout winter; in smaller numbers also around the 'Salt Lakes' near Calcutta. On a moderate-sized jheel in Manipur 'a flock of at least ten thousand individuals in March' (Hume, 1888, SF 11: 349). Affects coastal lagoons and backwaters, tidal creeks and estuaries, and the neighbourhood of fishing villages and harbours.

Extralimital. 'Breeds on the inland lakes of the high plateaus of central Asia from Chinese Turkestan to S. Mongolia and south to Ladakh and the eastern Himalayas [?]. Winters on the coasts of southern Asia from the Gulf of Aden to Tenasserim and in the Gulf of Siam' (Peters).

GENERAL HABITS. Gregarious—not different from other gulls. Commonly associates with Pariah and Brahminy kites and other gulls, particularly the Blackheaded (455), in harbours to scavenge kitchen refuse and garbage thrown overboard from ships at anchor. Escorts outgoing and incoming ships and fishing-boats, gliding and circling effortlessly around them for long periods, now ahead now astern, swooping from time to time to pick discarded scraps and offal from the water. Sometimes settles momentarily

GULLS, TERNS

33

In the wake to gobble down a morsel before catching up with the ship again by seemingly leisurely wing-beats, occasionally alighting on the rigging.

MIGRATION. A flock on high-elevation lake in Nepal, c. 5000 m., March 1978?, apparently on aberrant spring passage (Fleming)—CBCN, March 1978: 13.

FOOD. Fish, prawns, and offal. On occasion—in inland localities—insects, grubs, slugs, and earthworms, and shoots of various crops. Has been observed hawking winged termites, and eating floating human ordure from municipal sewage outflows.

VOICE AND CALLS. One call commonly heard, a loud raucous *kreek* very like the Jungle Crow's or Raven's. Much more noisy on its breeding ground than in winter quarters.

BREEDING. On the high plateau lakes in Ladakh at c. 3000-4500 m.—Tsokar, Tso Moriri, possibly Pangong and others. *Season* mainly June-July. *Nest* a mound of grass etc. raised above water level on boggy waterlogged ground on the edge of a lake or on semi-floating spongy grass hummocks or islets. *Nests* colonial, from almost touching to a few metres from one another, as the situation dictates. *Eggs*, normally 3 frequently 2, variable bluish-, greenish- or creamy white, or buff, boldly blotched and spotted with blackish- or reddish brown, with a few hieroglyphic scrawls. Average size of 100 eggs 61.3 × 42.6 mm. (Baker). Both sexes share incubation. Period undetermined.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	330-348	37-45	49-55	139-159 mm.
		(from skull)		
3 ♂♂	345-360	48-56	50-51.5	130-142.5 mm.
1 ♀	344	54.5	52	134 mm.
				(HW, SA)

COLOURS OF BARE PARTS. Adult. Iris red-brown or yellow-brown (biscuit colour); eyelids deep blood-red. Bill and mouth orange-red to deep blood-red. Legs and feet deep blood-red. Immature. Iris 'almost white' (Baker). Legs and bill more yellow or orange-red, the latter tipped with dusky.

455. Blackheaded Gull. *Larus ridibundus ridibundus* Linnaeus

Larus ridibundus Linnaeus, 1766, Syst. Nat., ed. 12, 1: 225 (European seas = England)

Baker, FBI No. 2061, Vol. 6: 102

Plate 45, fig. 11

LOCAL NAMES. For all gulls: *Dhokra* (Hindi).

SIZE. House Crow ±; length c. 43 cm. (17 in.).

FIELD CHARACTERS. A grey and white medium-sized gull with blackish brown head (the 'hood') in summer. Very similar to Brownheaded Gull, q.v.; distinguished from it by somewhat smaller size and, in flight, in the leading edge of the wing being pure white with no white 'mirror' near tip of primaries.

In winter likewise without black head; then distinguishable from Brownheaded Gull chiefly by wing pattern. Sexes alike. The dark coffee-coloured ('black') head is largely assumed by end March prior to emigration.

3

GULLS, TERNS

35

MIGRATION. No ringing or other precise data. 'A few pass up [through Chitral] from March to May' (Perreau).

GENERAL HABITS. Gregarious, and a scavenger like 454, frequently associated with it in winter.

FOOD. As in 454.

VOICE AND CALLS. Loud and raucous; also similar to 454. Most commonly heard: a querulous scream *kree-ah* and a loud wailing *ka-yek, ka-yek*.

BREEDING. Extralimital. More or less as in 454.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.; for fuller details of plumage phases etc. Witherby, 1941, 5: 70-3.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	293-315	31-36	43-49	110-125 mm.
(one 320)				
♀♀	285-302	29-33	—	— mm.
				(Witherby)

COLOURS OF BARE PARTS. Iris dark brown or crimson-brown. Bill, legs and feet deep bright red.

MISCELLANEOUS. Longevity: one ringed as nestling on 13 June 1910 in Cumberland, U.K. found dead in the home colony on 26 May 1930, therefore 20 years old (*British Birds* 24: 55, 1930).

456. Slenderbilled Gull. *Larus genis* Brème

Larus Genis Brème, 1839, Rev. Zool.: 321 (Sardinia)

Baker, FBI No. 2064, Vol. 6: 106

Plate 45, fig. 12

LOCAL NAMES. For all gulls: *Dhokra* (Hindi); *Kothar* (Makran).

SIZE. House Crow ±; length c. 43 cm. (17 in.).

FIELD CHARACTERS. Adult (winter). Confusingly like Blackheaded Gull in size and wing pattern (in flight): head and body, above and below, pure white; mantle pale pearl grey. Differentiated from it, after some experience, both at rest and in flight, by noticeably small head and long neck and longer, bright red bill. Also by absence of brown spot on ear-coverts, and (usually) brighter red legs. Sexes alike.

In summer easily distinguished since head remains glistening white, whilst rest of plumage acquires a delicate rosy flush.

Young (immature) more or less as winter adult, but with some brown on the wing-coverts, and a blackish terminal band on tail. There is a faint pale grey patch on the ear-coverts, and the bill and legs are yellowish red. Adult plumage is acquired in second autumn, *vide* Ticehurst.

For downy chick see Museum Diagnosis.

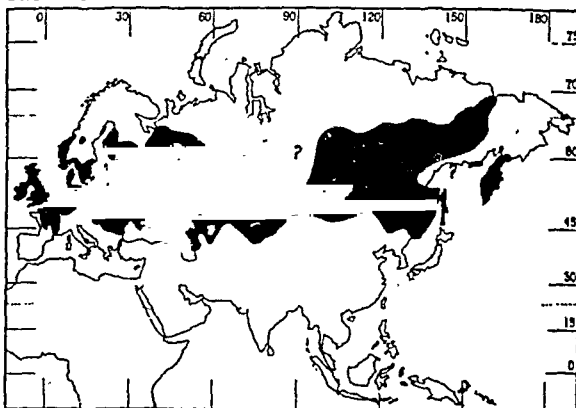
STATUS, DISTRIBUTION AND HABITAT. Resident and breeding within our limits only in West Pakistan (Makran, Las Bela), numbers there largely augmented in winter by immigrants. Winter visitor to Sind where also 'excessively common along the coast and sometimes up the tidal creeks' (Ticehurst). A specimen taken at Bhavnagar on 5 December (Dharmakumarinhiji). Possibly occurs more commonly on the Kutch-Saurashtra

34

CHARADRIIFORMES

Young (immature). As in 454, also with broad blackish subterminal bar to the white tail.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor (August-September to March-April) to the coasts of both Pakistans and India; more abundant on the Makran and Sind coasts and the western seaboard of the peninsula than on the eastern side. Common up the Hooghly R. from its mouth to Calcutta practically to the exclusion of the Brownheaded Gull (H. G. Alexander); regular but in small numbers (Biswas). Not recorded in Andaman or Nicobar Is. Vagrant to the Maldives; possibly the same in the Laccadives.

Larus ridibundus

■ Breeding range

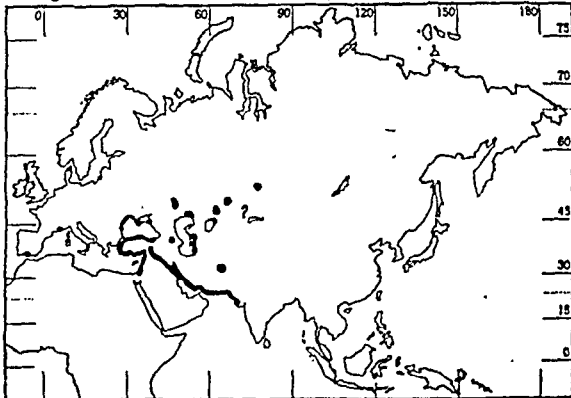
A single sight record from Nilaveli, Sri Lanka (CBCN). Occurs inland in varying abundance and irregularly—perhaps largely on passage—on rivers and jheels. Recorded in Sind (Manchar Lake), Kashmir ('winter visitor'), Chitral (Drosh), N. Baluchistan (Quetta Valley), Delhi (Jumna R.), U.P. (Gorakhpur, Ghazipur), M.P. (Mhow), Punjab (Sutlej R. and lakes in Salt Range), Rajasthan (Sambhar Lake), Nepal (lowland rivers), Assam (N. Cachar), Bihar (Darbhanga district). Published sight records not free from ambiguity with the similar looking Brownheaded Gull. Affects seacoast, estuaries, shipping harbours, and municipal sewage outflows, etc.

Extralimital. 'Breeds in Europe and Asia from Iceland, the Faeroes, British Isles, S. Scandinavia, Finland, Arkhangelsk, lat. 66°40'N. on the Ob, 64° on the Lena, 68° on the Kolyma, and from Kamchatka, south to Sardinia, mouth of the Danube, Central Russia, Transcaucasia, Tarbagatai, N. Mongolia, and Ussuriland. In winter south to the Azores, Gambia, southern shores of the Mediterranean, Nile Valley, Persian Gulf, India, Indochina, Japan and the Philippines' (Peters).

36

CHARADRIIFORMES

coasts than this only positive record indicates, but overlooked among Black-headed Gulls. Since then, in recent years, several specimens have also been collected and observed offshore Greater Bombay (Navarro, 1967, JBNHS 65: 218) and the species may actually be a regular winter visitor to this coast. Nepal (Kosi R.) Feb. 1974—S. C. Madge, *in epist.*

Larus genis

■ Breeding range

Extralimital. 'Breeds on the Black and Caspian Seas, Sea of Azov, Persian Gulf, Makran coast and Sind; S. Spain (?). Ranges throughout the Mediterranean, coast of NW. Africa and the Red Sea' (Peters).

GENERAL HABITS. Not a scavenger like the Black- and Brownheaded gulls, therefore absent in shipping harbours and about coastal villages. But 'huge flocks may be met with not far out at sea feeding on fry as they break the surface; the hindmost birds constantly take the place of the foremost, and they move along, as the fish-shoal moves, with constant screaming and squabbling; when satiated they retire to the sands along the tide's edge, forming a pinkish white line' (Ticehurst).

FOOD. Mainly fish.

VOICE AND CALLS. Not specifically recorded.

BREEDING. Breeds in large mixed colonies with Caspian and Gullbilled terns on the island in Sirunda jheel at Sonmiani (Las Bela, W. Pakistan). Also at other suitable places in Makran. *Season*, May-June. *Nest*, a compacted pad of grass and water-weeds, on the ground. *Eggs*, 2 or 3, variable in coloration and markings. Normally creamy or buffy white, blotched and spotted with blackish brown, with secondary blotches of shades of grey—the markings denser at the broad end. Average size of 200 eggs 55.75 × 38.65 mm. (Baker). Share of the sexes in the domestic chores, incubation period, and other details unrecorded in our area.

GULLS, TERNS

37

MUSEUM DIAGNOSIS. See Key; for description of plumage Baker, loc. cit.
Chick (in down). 'Head, sides of head, upperparts, wings and thighs evenly mottled with about equal areas of black and white alternating; underparts more white but black spots across lower throat and on sides of breast and flanks' (Ticehurst).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	280-316	38-46	47-55	119-144 mm. (Baker)

COLOURS OF BARE PARTS. Somewhat variable individually. Adult. Iris pale yellow; eyelids bright red. Bill deep crimson red. Legs and feet bright dark red.

457. Little Gull. *Larus minutus* Pallas

Larus minutus Pallas, 1776, Reise Russ. Reichs 3: 702
 (Rivers of Siberia and in Russia = Berezovo, Tobolsk, Siberia)
 Not in Baker, FBI
 Plate 45, fig. 10

SIZE. Pigeon —; length c. 25-30 cm. (10-12 in.).

FIELD CHARACTERS. A diminutive gull distinguished by its small size, absence of black in primaries, blackish underside of wings, and noticeably tern-like flight and movements, flicking food off water surface in its stride etc.

Adult (winter). Above, forehead, lores, and a line over eyes white; crown and nape leaden grey. Upperparts blue-grey; upper tail-coverts and tail white. Primaries blue-grey with white tips, broadly blackish on inner webs. Below, underparts and axillaries white; underwing blackish. Sexes alike.

In summer very like a miniature Blackheaded Gull when at rest, but entire head and upper neck (not only the hood) pure black. Rarely a pink tinge on breast.

STATUS, DISTRIBUTION AND HABITAT. Accidental vagrant. A specimen collected in Ladakh by Walter Koelz.¹ A possible sight record in Bombay Harbour (Magrath, 1910, JBNHS 20: 224) and others in Rann of Kutch (SA, 1974, JBNHS 71: 609).

Extralimital. Breeds in northern Europe and Siberia from Holland and Denmark to the Sea of Okhotsk. Winters on coasts of W. Europe, Mediterranean and Black Seas, Sea of Okhotsk, Japan Sea, etc. (Alexander, 1955).

GENERAL HABITS. The Bombay sight record attributed to this species by the observer was noted as 'a very small gull flying about together with a number of Blackheads'.

FOOD, VOICE AND CALLS. Not recorded in our area; presumably more or less as of 455.

MUSEUM DIAGNOSIS. See Key. For description of plumage and its various phases (also bionomics) see Witherby, 1941, 5: 60-4.

¹No. FMNH 229168, ♀ juv., 21 Sept. 1936, Piting, Ladakh, Field Museum Nat. Hist. Chicago.

GULLS, TERNS

39

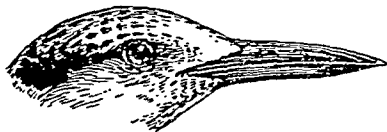
458. Indian Whiskered Tern. *Chlidonias hybridus indicus* (Stephens)

Virelva Indica Stephens, 1826, in Shaw's Gen. Zool. 13 (1): 169 (Cawnpore, India)
Hydrochelidon leucoparia leggii Mathews, 1912, Bds. Austr. 2: 320 (Ceylon)
 Baker, FBI No. 2067, Vol. 6: 111
 Plate 46, fig. 3
 Distribution map, p. 61

LOCAL NAMES. For all terns: *Tehāri*, *Gāngā chel*, *Madh louska*, *Koorāri* (Hindi); *Krind*, *Kru* (Kashmir); *Muhudu līhiniyā* (Sinhala); *Kādāl kūrūri* (Tamil, Ceylon); *Rāmadāru*, *Samūdrapu kākī* (Telugu); *Kīri* (Gond); *Kāḍikkāḍka* (Malayalam).

SIZE. Pigeon —; slimmer and longer winged. Length c. 25 cm. (10 in.).

FIELD CHARACTERS. A slender, graceful silvery grey and white bird with long narrow pointed wings and slightly forked (almost square) grey tail,



Winter, × c. 1

usually seen in flight over water. Crown flecked with blackish in winter. Very short red legs and red bill, the latter looking blackish in winter. When at rest on the ground the closed wings project beyond the tail.

In summer the glossy jet black cap down to the eyes, with prominent contrasting snow white cheeks ('whiskers') below it, and the black belly and short-squarish tail, are leading pointers to its identity. Sexes alike.

Young (immature) have the crown and mantle brown, the head darkest and mottled rufous. Underparts and hindneck white.

STATUS, DISTRIBUTION AND HABITAT. Resident and/or breeding visitor in Kashmir and northern India (Gangetic Plain) east to Assam and East Pakistan, spreading out in winter over the entire Union, Nepal (lowlands), and Ceylon. Chiefly passage migrant and/or winter visitor in W. Pakistan (Baluchistan, Sind, Peshawar, Chitral); may breed locally but no definite evidence. Affects inland jheels, marshes and flooded paddyfields; also coastal lagoons, tidal mudflats, and estuaries.

Extralimital. Persian Baluchistan.

GENERAL HABITS. Gregarious. The normal method of feeding in this short-tailed group known as 'Marsh Terns' is for an individual or small flock to fly methodically back and forth on slowly beating wings at a height of 3 to 6 metres or so, bill and eye directed intently below for signs of life. When a gentle wind is blowing the birds work thus slowly and deliberately upwind to the end of their beat scanning the surface carefully, then shoot back downwind to the starting point to repeat the manoeuvre. From time to time one swoops down at a tangent to lightly flick off with the bill something from the surface of land or water, continuing its flight without interruption. Rarely they also plunge from the air in the manner typical of the sea terns. Occasionally the birds hawk flying insects over cultivation,

38

CHARADRIIFORMES

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	215-230	21-23	25-29	84-94 mm.
♀ ♀	210-226	21-24	—	— mm. (Witherby)

The Ladakh specimen measures Wing 212, bill (from skull) 31, tarsus 25, tail 83 mm.—Traylor.

COLOURS OF BARE PARTS. Iris dark brown. Bill (ad. summer) red-brown, (winter and juv.) blackish; inside mouth (ad.) orange. Legs and feet (ad. summer) vermillion, (ad. winter and juv.) red-brown to flesh (Witherby).

Terns

Terns differ from gulls in being much more lightly built, with longer narrower wings and different flight. In spite of their webbed feet they rarely settle on water (except *Anous*), resting and roosting on rocks or mudbanks on their ridiculously short legs. They capture their living prey—fishes, insects, crustacea, etc.—by scooping them up from the surface in flight, or by plunging vertically from the air and going under water momentarily.

Unlike gulls they have both mandibles of equal length instead of upper longer than lower. Bill straight, generally slender, with pointed tips; nostrils linear. Tail long and deeply forked in some species, with outer rectrices attenuated and greatly lengthened; only slightly forked (almost square) in others. Wings long; first primary (as.) longest. Legs and feet small.

Genus CHLIDONIAS Rafinesque

Chlidonias Rafinesque, 1822, Kentucky Gazette, n. s. 1(8), Feb. 21: 3, col. 5. Type, by monotypy, *Sterna melanops* Rafinesque = *Sterna surinamensis* Gmelin

Bill short and slightly compressed. Legs and feet small, the webs between the toes deeply emarginate making the feet appear only half webbed; claws long and curved. Wings long, exceeding tail when closed. Tail short and very slightly forked, almost square. All the species are largely dark grey or black on the underparts during the breeding season.

Key to the Species

Adult ♂ ♀. Breeding and Winter

Rump slaty grey.....	<i>C. niger</i>
Rump ashy grey.....	<i>C. hybridus</i>
Rump white.....	<i>C. leucopterus</i>

40

CHARADRIIFORMES

turning and twisting in the chase, or swoop to flick them off ground-crops such as gram (*Cicer*).

FOOD. Insects—dragonflies and their larvae, grasshoppers, water beetles—tadpoles, crabs, fish.

VOICE AND CALLS. A sharp *break, break*, sounding in the distance like the harsh churring notes of the Rufous-backed Shrike (*Lanius schach*); reminiscent also of a louder version of the common Skipper frog's (*Rana cyanophlyctis*), especially when nesting birds are disturbed by an intruder and demonstrate agitatedly overhead.

BREEDING. Recorded localities are: Kashmir Valley (c. 1500 m.), Delhi, U.P. (Lucknow, Fyzabad, Etawah, Gonda), Bihar (Darbhanga, Dhanbad), Assam (N. Cachar), E. Pakistan (Khulna, Sylhet). *Season* overall June to August, varying locally, the first layings (e.g. in Kashmir) being frequently washed away by floods. *Nest*, a small and often flimsy pad of water-lily stems and decaying rushes placed on a floating mat of *singāra* (*Trapa*) plants and other aquatic vegetation, anchored to the substrate and bobbing up and down on the ripples. Built in colonies, sometimes up to a hundred nests or more, a few metres from one another. Pilfering of material from neighbouring nests by swoops from the air an almost universal practice, sometimes resulting in the ravaged nest getting overturned, tipping the contents into the water. *Eggs*, 2 or 3 large, moderate ovals sometimes pointed at the smaller end. They are variable in coloration and markings both as to clutches and individual eggs in the same clutch. A common type is some shade of sea-green, blotched and speckled with brown. Average size of 200 eggs 36.9 × 27.4 mm. (Baker). Both sexes incubate; period undetermined. Male feeds incubating female on fish or other titbit often brought over long distances, sometimes followed by copulation. Downy buff-speckled black chicks when alarmed instantly skeddaddle from nest taking cover among and under the floating water-lily leaves, often lying fully submerged with closed eyes and only the bill showing above.

MUSEUM DIAGNOSIS. Differs from the European and SW. Asian nominate race in having a smaller wing. For description of plumage see Baker, loc. cit. Fresh summer dress is acquired between mid March and end May apparently by a complete moult. 'Young birds of the year at the end of August are already moulting their body feathers, though many of the dark-tipped feathers of the upperparts are yet to be cast. These dark markings vary very much in individuals; in [some] specimens they are so profuse as to make the upperparts appear almost black' (Ticehurst).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
7 ♂ ♂	221-229	32-37	20-23	76-81 mm.
5 ♀ ♀	213-219	32-36	20-23	77-80 mm. (HW, SA)

For the nominate race Witherby gives Wing ♂ ♂ 232-250, ♀ ♀ 230-242 mm.

COLOURS OF BARE PARTS. Iris dark greyish brown or brown. Bill dark reddish brown to red. Legs and feet dark coral brown to bright or dark red; soles brighter coral; claws black.

MISCELLANEOUS. Large quantities of eggs of this tern (and moorhens etc.) are collected for sale and local consumption by the boatmen in Kashmir. A diminution in the number of birds in certain areas is evident, calling

GULLS, TERNS

41

for early official restriction and regulation of the practice of commercial egg-gathering.

459. Whitewinged Black Tern. *Chlidonias leucopterus* (Temminck)

Sterna leucoptera Temminck, 1815, Man. d'Orn.: 483
(Coasts of the Mediterranean)
Baker, FBI No. 2070, Vol. 6: 114
Plate 46, fig. 2 and Distribution map, p.61

LOCAL NAMES. As under 458.

SIZE. Pigeon —; slimmer. Length c. 23 cm. (9½ in.).

FIELD CHARACTERS. A short-tailed marsh tern, very similar to Whiskered in winter. Doubtfully distinguishable from it except perhaps by slightly smaller size and dull grey (v. silvery grey) mantle.

In partial summer dress, gradually assumed from about mid March, identity unmistakable in flight by the sharp contrasts of dark and white in the plumage. Forehead white, hind head mottled blackish. Underparts dark sooty grey. Under wing-coverts black or blackish contrasting with grey primaries. Tail pure white, nearly square.

In full summer plumage entire head and body velvety black except lower back which is blackish grey. Wing-quills largely silvery grey; tail pure white. Upper wing-coverts, seen as a broad white band in flight, contrasting strongly with black body and underwing lining. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Rare winter visitor to Assam (Cachar), East Pakistan (Sylhet), West Bengal (Calcutta), and Ceylon. Once taken in Madhya Pradesh (Raipur, D'Abreu, 1935, JBNHS 38: 112). Only thrice recorded on the western side of India: once in Bombay (26.iii.1950, Humayun Abdulali) and twice in Saurashtra (Jasdan, June 1949 and 12.v.1955, Y. S. Shivraj Kumar) — JBNHS 49: 310; 53: 130. Pakistan (Karachi dist.) May 1977 (T. J. Roberts, JBNHS 75: 216). A specimen has been taken and a flock sighted in the Andaman Is. (Hume, 1879, SF 8: 495) and more recently also in the Maldives where it is 'probably an infrequent winter visitor' (Phillips, 1963, JBNHS 60: 576). Possibly less vagrant than appears, as liable to be overlooked among the more numerous Whiskered terns with which it keeps in winter, and is impossible to distinguish from satisfactorily before it starts moulting into its distinctive summer dress. However, upper side of tail pure white in this species, grey in Whiskered.

EXTRALIMITAL. 'Breeds in SE. Europe and C. Asia from Hungary and Galicia, C. Russia, Siberia (N. to lat. 55°), Transbaikalia and Amurland, south to Turkestan and N. Mongolia. Winters in tropical and southern Africa to the Orange R. Colony and Damaraland; Persian Gulf, India, Ceylon, Burma, S. China, and the Malay Archipelago to Australia' (Peters).

GENERAL HABITS, FOOD, VOICE AND CALLS. As of Whiskered Tern (458), q.v.

BREEDING. Extralimital. More or less as in 458.

MUSEUM DIAGNOSIS. 'In winter and juvenile absence of dark brown patches on sides of breast, combined with pale rump and short bill distinguish it from other marsh terns' (Witherby). For description of plumage see Baker, loc. cit.; for plumage phases and other details Witherby, 1941, 5: 9-11.

GULLS, TERNS

43

FIELD CHARACTERS. A common pale pearl-grey and white tern, larger than the Whiskered, with deeper-forked white tail and stout black gull-like bill.

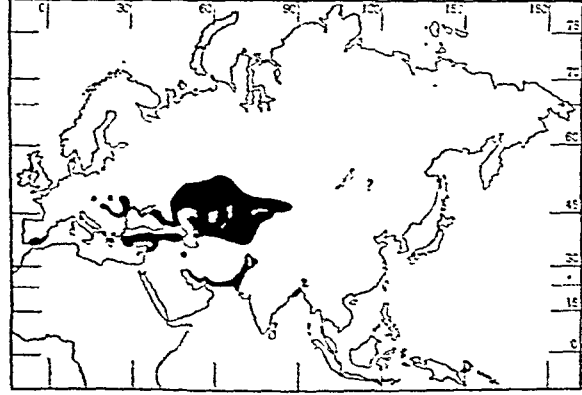
In winter, head white streaked with black and with a blackish patch round eye and above ear-coverts; in summer a jet-black cap down to eyes, covering forehead, crown, and nape. Sexes alike.

Young (immature). Crown grey or greyish white. Upperparts, especially scapulars, inner wing-coverts and inner secondaries pale brown with buffish edges. Primaries grey-brown, darker than in adult.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Breeding locally in West Pakistan and NW. India (Las Bela and Punjab; doubtless also elsewhere). In winter widespread and locally common, numbers largely augmented by extra limital immigrants. Practically the entire Indian Union (see also 461) from

Gelochelidon nilotica



■ Breeding range 1 *G. n. nilotica* (460). 2 *G. n. effusa* (?) (461).

Makran coast and Sind eastward across Rajasthan and the Gangetic Plain to Bihar, south through the Peninsula to Kanyakumari, and Ceylon. Presumptive breeding in Ceylon not yet confirmed. Specimens obtained in the Maldives (December) but status there uncertain. Affects coastal mudflats, backwaters, tidal creeks, salt pans, etc., and large inland jheels and rivers.

EXTRALIMITAL. 'Breeds locally in Europe and the western three-quarters of Asia from Denmark, Baltic Sea, Middle Urals, Zaisan-nor and S. Mongolia (perhaps north to Transbaikalia) south to the Iberian Peninsula, NW. Africa, Asia Minor, Persia, India (east to the Ganges) and Ceylon [?]. Winters in northern and eastern tropical Africa, Persian Gulf and India; occasionally to the Sunda Is.' (Peters).

IMMIGRATION. No ringing data. Fair numbers on passage through Chitral 'during end April and May' (Perrau, 1910, JBNHS 19: 921) and through

42

CHARADRIIFORMES

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail central outer	Depth of fork
♂♂	200-218	23-24	19-22	58-67	67-75
♀♀	192-210	—	—	—	5-11 mm.

COLOURS OF BARE PARTS. Iris dark brown. Bill (ad.) black tinged crimson. (juv. and 1st winter) black-brown tinged orange at gape. Legs and feet (ad.) bright vermilion. (juv. and 1st winter) red to red-brown (Witherby).

459a. Black Tern. *Chlidonias niger niger* (Linnaeus)

Sterna nigra Linnaeus, 1758, Syst. Nat., ed. 10: 137 (near Upsala, Sweden)
Not in Baker FBI
Plate 46, fig. 1

SIZE. Same as 459; length c. 23 cm. (9½ in.).

FIELD CHARACTERS. In winter differs from Whiskered Tern by dull grey v. silvery grey mantle; from Whitewinged Black chiefly by black of hind head continuing as a dark patch on either side of neck in front of base of wings.

Summer plumage unmistakable: dark slate-grey above, black below without the white wing-shoulder or white tail of 459.

STATUS. Sight recorded near Delhi, 11 October 1949, with adequate corroborative evidence by an experienced observer familiar with the species in Europe. (H. G. Alexander, JBNHS 49: 120-21). Confirmatory specimen desirable.

Genus GELOCHELIDON Brehm

Gelochelidon C. L. Brehm, 1830, Isis von Oken, 23, col. 994

Type, by monotypy, *Gelochelidon meridionalis* Brehm = *Sterna nilotica* Gmelin

Differs from *Sterna*, q.v., in its stouter bill. Feet fully webbed as in *Sterna*; tarsus longer than middle toe and claw. Tail comparatively shorter than in *Sterna* with the outer feathers less prolonged.

GELOCHELIDON NILOTICA (Gmelin)

Key to the Subspecies

Larger, wing 300-333 mm.; culmen 35-41 mm.	<i>G. n. nilotica</i>
Smaller, wing 272-292 mm.; culmen 32-35 mm.	<i>G. n. effusa</i>

460. Gullbilled Tern. *Gelochelidon nilotica nilotica* (Gmelin)

Sterna nilotica Gmelin, 1789, Syst. Nat. 1(2): 606 (Egypt)
Baker, FBI No. 2072, Vol. 6: 117
Plate 46, fig. 15

LOCAL NAMES. As under 458. *Kirru*, *Deeri arena* (Maldives).

SIZE. House Crow —; length c. 38 cm. (15 in.).

44

CHARADRIIFORMES

Kohat 'from beginning of April till May — last seen 5th May' (Whitehead, 1911, ibid. 20: 975).

GENERAL HABITS. Gregarious, but frequently seen singly or in twos and threes or small scattered flocks, and in association with other river and marsh terns. Seldom met far offshore along the coast. Flies low over sand- and mudflats, swooping down at a tangent from time to time to pick up some titbit in its bill as it skims close to the surface. Sometimes hawks flying insects over cultivation and stubbles in company with Whiskered Terns, and dips in low flight to scoop up a caterpillar or grasshopper from off ground-crops like gram or groundnut. On the coast flocks together to rest with gulls and other terns at the edge of the tide waiting for the ebb to expose the feeding flats.

FOOD. Largely sand crabs (*Oxyrops*) on the sea coast. Also prawns and other crustacea, frogs, small fish, and insects. Floating ordure from municipal sewage outflow recorded in Cochin Harbour.

VOICE AND CALLS. Not intelligibly described in India. 'Scolding cries of *zit, kuzikterick* or a high-pitched *hik...hikihikihikihik* while flying around one' (G. M. Henry, Ceylon).

BREEDING. Recorded on sandbanks in the Punjab rivers — Chenab, Beas, Sutlej — and on an island in Sirunda jheel, Las Bela. *Season* end April to end June, varying with local conditions. *Nest* a slight depression in the sand, according to Waite (1917, JBNHS 25: 300) characteristically with some small pieces of sticks or other debris which identifies it at once among the bare unlined depressions of River Terns and Skimmers nesting with it in mixed colonies. *Eggs*, 2 or 3, broad to moderately long ovals of variable coloration from pale yellowish- or greenish stone to buffy brown or brown, boldly blotched with purple, red, or blackish brown and with secondary markings of grey and lilac. Average size of 100 Indian eggs 47.9 x 34.2 mm. (Baker). Share of the sexes in incubation, period, and other details of breeding biology not recorded.

MUSEUM DIAGNOSIS. Differs from the eastern race *effusa* (461) in having a longer wing and somewhat longer bill. For description of plumage see Baker, loc. cit.; for details of plumage phases etc. (and bionomics), Witherby, 1941, 5: 12-14.

CHICK (in down). 'Upperparts dirty grey-buff with black spots on crown, behind eyes and the dorsum where they tend to form stripes; carpus white, throat dusky to blackish, rest of underparts nearly white' (Ticehurst).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail central outer	Depth of fork
♂♂	315-332	34-41	33-37	89-93 120-138	30-48 mm.
♀♀	320-330	—	—	—	—

COLOURS OF BARE PARTS. Iris black-brown. Bill black. Legs and feet (ad.) black, (juv. and 1st winter) dark red-brown (Witherby).

461. Javan Gullbilled Tern. *Gelochelidon nilotica effusa* (Horsfield)

Sterna effusa Horsfield, 1821, Trans. Linn. Soc. London 13(1): 199 (Java)
Baker, FBI No. 2073, Vol. 6: 118

LOCAL NAMES. As under 458.

GULLS, TERNS

45

SIZE. As of 460; length c. 38 cm. (15 in.).

FIELD CHARACTERS. Same as the nominate race (460) q.v. Slightly smaller but otherwise indistinguishable. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Breeding locally (race presumed) in West Bengal and East Pakistan (Khulna Sunderbans). Found in winter east of Bihar — W. Bengal, Orissa, and through Assam and E. Pakistan. A specimen taken in the Andaman Is. in November; status there uncertain. In non-breeding season the ranges of the races overlap, making subspecific identification of individual specimens impossible. Extralimital range not yet properly worked out. Inhabits islands of the Malay Archipelago.

GENERAL HABITS, FOOD, VOICE AND CALLS. Not different from 460.

BREEDING. A very large colony with eggs — many quite fresh — discovered on an island in the Khulna Sunderbans on 22 April 1922 (Stanford, 1937, JBNHS 39: 867). Skins of breeding birds needed to confirm the subspecies which is only presumed.

MUSEUM DIAGNOSIS. Differs from the western (nominate) race only in having a smaller wing (272-292 mm. *vide* Baker), and somewhat shorter bill (32-35 mm. from feathers).

COLOURS OF BARE PARTS. As in 460.

Genus *Hydroprogne* Kaup

Hydroprogne Kaup, 1829, Skizz. Entw.-Gesch. Eur. Thierw.: 91. Type, by subsequent designation, *Sterna caspia* Pallas = *Sterna tischgravi* Lepechin

Distinguished from *Gelochelidon* by greater size, comparatively short tarsi, shorter tail, and very large stout red bill. Only the nominate race occurs in our area.

462. Caspian Tern. *Hydroprogne caspia caspia* (Pallas)

Sterna caspia Pallas, 1770, Novi Comm. Acad. Sci. Petropol. 14(1): 582, pl. 22

(Caspian Sea)

Baker, FBI No. 2071, Vol. 6: 115

Plate 46, fig. 10

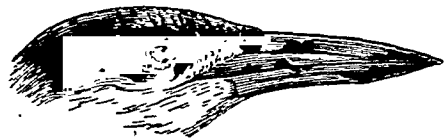
LOCAL NAMES. As for other terns (see under 458). *Kākra* (Sind); *Māruwudu* *lithimā* (Sinhala); *Periya kādai kūrāi* (Tamil, Ceylon).

SIZE. Jungle Crow +; length c. 51 cm. (20 in.).

FIELD CHARACTERS. The largest of our terns; recognizable by its size and very large, stout coral-red bill and black legs and feet.

Adult (winter): Above, pearl-grey with white head and neck (all round), streaked on the crown with black; below, pure white.

In summer, forehead and crown to below eyes glossy jet black. Sexes alike.



Summer, x c. 1

GULLS, TERNS

47

and plunging at the quarry, often submerging completely. Sometimes alights on water like a gull, but normally rests on the ground, on sandspits, etc.

FOOD. Mainly fish, prawns and swimming crabs. Seldom any terrestrial items or flotsam refuse.

VOICE AND CALLS. A loud raucous *krake-krake* (whence its Sindhi name). G. M. Henry describes a loud squawk *kuwuw, kuwuw*, probably an alarm or scolding note, and 'a harsh cry *kruuxiair* repeated several times by a bird flying along a lagoon shore'.

BREEDING. Recorded breeding localities within our limits: Sirunda jheel at Sonmiani, Las Bela, and Astola (or Astalu) Island off the Makran coast (W. Pakistan); sandbanks off the island of Mannar (Ceylon). Breeds in colonies mixed with Gullbilled and other terns. Season, May and June. Nest, a shallow scrape in the sand, c. half a metre or so away from its neighbours. Eggs, 2 or 3, broad to long ovals, varying in ground colour from pale yellowish or greyish stone to dull dark buff, occasionally with a pinkish tinge. Blotched with deep brown or blackish brown, with secondary blotches of grey. Average size of 30 Indian-taken eggs 64.8 x 46.0 mm. (Baker). Both sexes incubate. Period undetermined; elsewhere recorded as 20-22 days.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.; for details of plumage phases and structure etc. (also bionomics) Witherby, 1941, 5: 15-18.

CHICK (in down). 'Like *nilotica* (460, q.v.), but much fewer spots on crown and dorsum, and none behind the eyes' (Ticehurst).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail central outer	Depth of fork
♂♂	398-425	64-72	45-47	98-110 135-150	30-45 mm.
♀♀	400-425	—	—	—	—

COLOURS OF BARE PARTS. Iris dark brown. Bill (ad.) rich coral-red, (juv.) paler, tipped dusky. Legs and feet black (Witherby).

Genus *STERNA* Linnaeus

Sterna Linnaeus, 1758, Syst. Nat., ed. 10, 1: 137. Type, by tautonymy, *Sterna hirundo* Linnaeus (*Sterna prebinomial* specific name in synonymy)

Thalassea Boie, 1822, Isis von Oken, Bd. 1, col. 563. Type, by subsequent designation, 'Th. cantianus' = *Sterna cantianus* Gmelin = *Sterna sandvicensis* Latham

Bill rather long, pointed, more or less compressed laterally, straight or slightly curved throughout. Tarsus shorter than middle toe with claw. Feet small; front toes completely webbed; a hind toe present. Wings long and pointed: first primary (as.) longest. Tail deeply forked, the outer tail-feathers much longer than the rest, narrowing into a 'streamer' towards tip.

Genus world-wide with 12 species and several races normally occurring in our area.

Key to the Species

	Page
A Bill longer (over 49 mm.), slightly curved throughout.....1	
B Bill shorter (under 49 mm.), slender, straight and more or less laterally compressed.....2	
1 Bill black, tipped yellow..... <i>S. sandvicensis</i>	70

46

CHARADRIIFORMES

Young (immature). Head as in winter adult. Upperparts grey barred with brown, especially on scapulars and innermost secondaries. Tail-feathers and primaries darker than in adult.

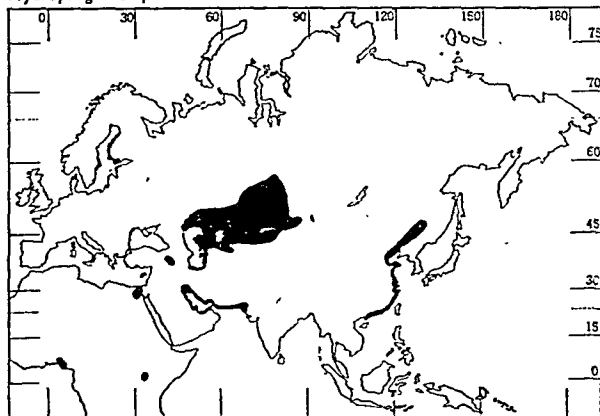
For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Breeds locally in W. Pakistan and Ceylon. In winter spreads out sparingly more or less throughout the sub-continent, locally common, its numbers doubtless augmented by extralimital immigrants. Occurs sparingly also in the Maldives Is. (status?). Affects the sea coast, tidal mudflats, estuaries and backwaters (Kerala), and the larger lakes (e.g. Manchar, Chilka) inland.

Extralimital. Breeds very locally in Europe and Asia over a wide range of latitudes, between c. 10°N. (Ceylon) and 60°N. (Finland). Also breeds in Africa and N. America. In the Old World winters south to Africa, India and the Sunda Is.

MIGRATION. A party of 7 birds blown down in a storm at Thull (in the former N.W.F.P.) on 22 May 1898 (Rattray, 1899, JBNHS 12: 347) was evidently on passage. In Baluchistan 'visits such waters as Khushdil Khan and Saranan lakes on passage. Meinertzhagen noted them there from April 30 to May 17' (Ticehurst, 1927, *ibid.* 32: 86). An example ringed in the Dzhambul Region of Kazakhstan (c. 43°30'N., 70°40'E.) on 1.vii.1961 has been recovered on the Ganges R. in West Bengal (c. 25°20'N., 87°35'E.) on 3.xi.1964 (*ibid.* 61: 693).

GENERAL HABITS. In non-breeding season less gregarious than most other terns, usually seen singly or in twos and threes either by themselves or in

Hydroprogne caspia

■ Breeding range

association with other species. Hunts in the manner characteristic of the sea terns — hovering over a likely spot of water with bill pointing downwards

CHARADRIIFORMES

48

	Page
Bill yellow.....a	
a Wing under 300 mm..... <i>S. bengalensis</i>	69
Wing over 300 mm..... <i>S. bergii</i>	67
2 Mantle dark brown or black.....b	
Mantle grey.....c	
b Wing under 275 mm..... <i>S. anaethetus</i>	59
Wing over 275 mm..... <i>S. fuscata</i>	62
c Wing under 200 mm..... <i>S. albifrons</i>	64
Wing over 200 mm.....I	
I Bill stout; 11-13 mm. in depth; yellow at all seasons..... <i>S. curantia</i>	48
Bill more slender; not always yellow.....a'	
a' Black line running from lores, through eye, round the crown and the back of nape..... <i>S. sumatrana</i>	56
Head markings not as above.....b'	
b' Outer tail-feathers with both webs white..... <i>S. dougallii</i>	52
Outer tail-feathers with inner webs grey or dusky..... <i>S. acuticauda</i>	57
Outer tail-feathers with outer webs grey or dusky.....c'	
c' Upper tail-coverts pale grey..... <i>S. repressa</i>	55
Upper tail-coverts white.....d'	
d' Tarsus 15-17 mm..... <i>S. macrura</i>	54
Tarsus 19-21 mm..... <i>S. hirundo</i>	50

463. Indian River Tern. *Sterna curantia* J. E. Gray

Sterna curantia J. E. Gray, 1831, in Hardwicke's Ill. Ind. Zool. 1(5): pl. 69, f.2 (India)

Baker, FBI No. 2080, Vol. 6: 125

Plate 46, fig. 9

LOCAL NAMES. In general as under 458. *Kūnāi* (Sind).

SIZE. House Crow ±; slenderer. Length c. 38-46 cm. (15-18 in.).

FIELD CHARACTERS. A slender, graceful fluviatile bird, pale grey above white below, with long narrow pointed wings, deeply forked 'swallow' tail, very short red legs, and pointed deep yellow bill.



Summer, x c. 1

In winter, crown and nape flecked and streaked with black. In summer (breeding plumage) entire forehead, crown, and nape down to below eyes

glossy jet black. A horizontal crescentic white patch below eyes. Sexes alike. Young (immature). Upperparts, including wing and tail-feathers edged with buffy white and subedged terminally with blackish. Forehead and a broad supercilium pure white.

STATUS, DISTRIBUTION and HABITAT. Resident and breeding widely on sandy islets in rivers chiefly in the plains practically throughout the Indian Union (including Kashmir Valley), both Pakistans (including the former N.W.F. Province and Punjab Salt Range) and Nepal (lowlands). Absent in Ceylon. Rare on the seaboard and less common in southern peninsular India. Affects the larger rivers, estuaries, and tanks.

Extralimital. Burma and Malay Peninsula east to the Mekong river.

GENERAL HABITS. Keeps singly or in twos and threes, or small scattered parties flying deliberately up and down placid stretches of rivers or large tanks, scanning the water below for prey. Normally hunts by plunging from a height with wings pulled in, often submerging completely, presently to reappear with a small fish held crosswise in the bill. As it resumes its flight, with a little shrug to shake off the water from its feathers, the victim is jerked into position and swallowed head foremost. When satiated the birds flock to rest — as they also roost at night — on sandbanks, the entire gathering with head to wind. When one bird is shot and drops to the ground, its companions in the air will almost instinctively dive down after him presumably meaning to share in his imaginary spoils. Numbers will soon gather at the spot, flying around in a disorderly rabble overhead to investigate.

FOOD. Chiefly fish; also crustaceans and aquatic insects.

VOICE and CALLS. Not specifically recorded. While swooping at intruder in nest colony, making as if to strike, a loud drawn-out note *ping* 'sounding like the scream of a bullet whistling past' (Lowther).

BREEDING. Colonial. *Season*, March to May. *Nest*, a shallow scrape or depression on the bare sand on sandspits and islets in large rivers, often in company with pratincoles, other tern species and skimmers. *Eggs*, normally 3, rarely 4, broad ovals only slightly smaller at one end than the other. Coloration very variable — from buffy stone to greenish grey, spotted, blotched, and streaked with brown and inky purple. Average size of 200 eggs 42.0 × 31.4 mm. (Baker). Both sexes incubate. Period recorded as 'about 18 to 19 days'. Frequently the first crop of eggs is washed out by untimely floods, necessitating a second or even third laying in quick succession.

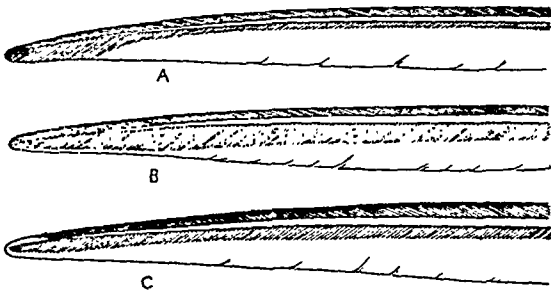
MUSEUM DIAGNOSIS. See Key to the Species; for further details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail (outer feathers)
♂ ♀	260-280	39-43	c. 20-22	178-228 mm. (Baker)

Depth of fork c. 50-80 mm. (SA).

COLOURS OF BARE PARTS. Iris brown. Bill (summer) bright deep yellow; (winter) less bright yellow with a darker tip. Legs and feet red.



× c. 4
Distal portions of outermost primaries of A. *S. macrura* (466a), B. *S. hirundo* (464), and C. *S. dougallii* (466).
N.B. There is considerable individual variation in the width of the black line on inner web in A and B. The white at tip in C is diagnostic.

MUSEUM DIAGNOSIS. For description of plumages, structure, etc. (also bionomics) see Witherby, 1941, 5: 28-35.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail central outer	Depth of fork
♂ ♀	255-288	33-39	19-21	68-87 135-175	65-95 mm.
♀ ♀	255-280	—	—	65-76 140-160	64-86 mm.

COLOURS OF BARE PARTS. Iris dark brown. Bill (ad. winter) mostly black, sometimes some crimson at base; (ad. summer) scarlet, tip black; (juv.) as winter but black portion browner and base more yellowish. Legs and feet (ad. winter) red to red-brown; (ad. summer) vermillion; (juv.) yellow-orange (Witherby).

465. Tibetan Common Tern. *Sterna hirundo tibetana* Saunders

Sterna tibetana Saunders, 1876, Proc. Zool. Soc. London: 649 (Tibet)

Baker, FBI No. 2084, Vol. 6: 130

LOCAL NAMES. In general as under 458.

SIZE. Same as 464; length c. 36 cm. (14 in.).

FIELD CHARACTERS. As for 464 but darker and slightly browner above, darker below. Difference less pronounced in winter, and the races then indistinguishable. Sight records unreliable.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Breeds in Ladakh. Winter visitor to the Indian Union and East Pakistan; fairly common in the Gangetic Plain, less common to scarce in the Peninsula. Irregular visitor to Ceylon, sometimes in considerable numbers. Overall status given by Baker as 'a very common visitor to the whole of western and central India' is palpably erroneous. Affects the larger rivers and jheels, and tidal creeks and estuaries.

STERNA HIRUNDO Linnaeus

Key to the Subspecies

Purer grey above and below and distinctly paler below in breeding plumage.....	<i>S. h. hirundo</i>
Browner grey above and below and decidedly darker below in breeding plumage.....	<i>S. h. tibetana</i>

464. European Common Tern. *Sterna hirundo hirundo* Linnaeus

Sterna Hirundo Linnaeus, 1758, Syst. Nat., ed. 10, 1: 137 (in Europa = Sweden)

Baker, FBI No. 2083, Vol. 6: 129

Plate 46, fig. 8

LOCAL NAMES. In general as under 458.

SIZE. House Crow —; slimmer. Length c. 36 cm. (14 in.).

FIELD CHARACTERS. A grey-mantled tern with deeply forked white tail of which the longest outer feathers, or streamers (grey and white), do not project beyond the wing-tips when bird at rest.

Adult (winter). Upperparts ashy grey. Forehead white or mottled with white; crown streaked with black. *Below*, chin, throat, wing-lining and under tail-coverts white; breast and abdomen greyish white with a vinous tinge. First primary largely black, and blackish bill with red base are suggestive clues for differentiation from confusingly similar Roseate Tern (466) and Arctic Tern (466a) in winter.

In summer a black-cap covers forehead, lores, and crown to lower edge of eye, and the bill becomes coral-red with black tip. Sexes alike.

Young (immature). Like adult in winter but mantle mottled with greyish brown; a dark band on upper wing-coverts; outer webs of tail-feathers dark grey. Bill brownish.

STATUS, DISTRIBUTION and HABITAT. Status anomalous in Sind and in Baluchistan where the birds definitely belong to the nominate race. Chiefly winter visitor but some non-breeding individuals staying on in Karachi Harbour and probably other suitable inlets throughout the hot weather. Probably a passage migrant in Lower Baluchistan — Makran etc. (Tiechurst). Reported by Meinertzhagen as plentiful (non-breeding) on Khushdil Khan lake near Quetta (N. Baluchistan) in May, and early June. No definite records of the nominate race traceable in India. Affects tidal creeks, estuaries, and large inland waters.

Extralimital. Breeds in N. America, Europe and W. Asia — Norway, Finland, etc., in the valleys of the Ob and Yenisey, Black and Caspian Seas, Iran, Iraq, Tarbagatai, etc. In the Old World winters to west coast of Africa, and Makran coast. (For fuller details see Peters, 2: 332; Vaurie, 2: 494-5.)

MIGRATION. No ringing data.

GENERAL HABITS. Similar to other terns. Hunts mainly by plunging

FOOD. Mainly fish. Also crustaceans, molluscs and insects.

VOICE and CALLS. Not recorded in Indian winter quarters.

BREEDING. Extralimital. More or less as in 463.

Extralimital. 'Breeds on the inland waters of Turkestan, Ladakh and Tibet. Winters in central and eastern India and the Malay states' (Peters).

GENERAL HABITS and FOOD. Similar to 464.

VOICE and CALLS. Not intelligibly described.

BREEDING. Breeds commonly on the high-elevation lakes in Tibet, and evidently also Ladakh — Pangong, Tsokri, Tso Moriri (?) etc. c. 3500 m. — though no recent investigator has actually found eggs there. *Season* in Tibet chiefly June-July. *Nest*, sometimes solitary, usually colonial, amongst a mass of dried weeds and grass — occasionally a mere scrape amongst pebbles on the bare shore of an islet in a lake, or on a small grassy hummock in the middle of a bog. *Eggs*, 2 or 3, varying from pale dull grey-green to yellowish stone-colour, blotched with dark brown, reddish brown or blackish, with secondary blotches of grey or lavender-grey. Average size of 50 eggs 41.9 × 30.5 mm. (Baker). The birds generally betray their nests by their loud cries and agitated behaviour. They are bold in attacking intruders, 'one bird stooped 20 or 30 times like a falcon while its nest was being photographed' (Ludlow).

MUSEUM DIAGNOSIS. See Key.

Chick (in down) indistinguishable from nominate race. *Above*, pale sandy or buff mottled on back with black; crown generally marked with two fairly well-defined lateral black bands and a less well-defined central one. *Below*, throat and foreneck purplish brown, paler on the chin; rest of underparts white.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail (outer feathers)
♂ ♀	245-279	34-38	c. 19-22	145-156 mm. (Baker)

Weight 5 oo? 102-110 gm. — BNHS.

COLOURS OF BARE PARTS. As in the nominate race.

466. Roseate or Rosy Tern. *Sterna dougallii korustus* (Hume)

Sterna korustus Hume, 1874, Stray Feathers 2: 318 (Andaman Islands)

Baker, FBI No. 2086, Vol. 6: 132

Plate 46, fig. 6

LOCAL NAMES. In general as under 458.

SIZE. House Crow —; slimmer. Length c. 38 cm. (15 in.).

FIELD CHARACTERS. A slender grey and white tern with deeply forked tail; practically indistinguishable from 464 and 465 in winter, but longer *pure white* outermost tail-feathers or streamers (v. grey and white) noticeable by those familiar with both species.

Adult (winter). Forehead and forecrown white speckled with black; crown and nape black. Underparts white with a very faint rosy flush. Bill black.

The bright red legs readily distinguish it from Blacknaped Tern — also with rosy tinged underparts — which has black legs.

In summer (breeding) forehead, crown, and nape down to lower edge of eye black. White underparts suffused with rosy. Bill black with red base. Sexes alike.

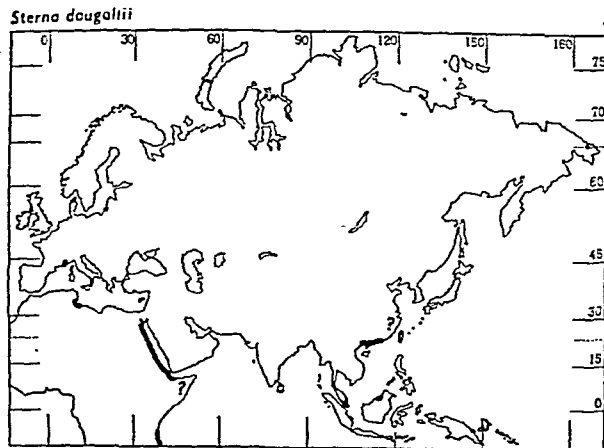
GULLS, TERNS

53

Young (immature). Above, forehead spotted, and crown streaked with brown, black, and white. Upperparts white with double bars of brown rump and upper tail-coverts ashy grey, sometimes mottled with brown; Below, white.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Breeds in the Andamans (islets off Port Blair), off the southeastern and west coasts of India (Rameswaram I.,



Breeding areas

Vengurla Rocks), Ceylon (west coast and east coast islets), and reportedly also the Maldives (Fujarde islet). Non-breeding range and movements imperfectly known. Affects sea coast and offshore islets.

Extralimital. *S. d. korustus* breeds also in the islands of the Mergui Archipelago, South Burma; other races as shown on map.

GENERAL HABITS. A sea tern confined to coastal waters and offshore islets.

FOOD, VOICE and CALLS. Nothing recorded as significantly different from other sea terns, e.g. the Crested (478, 479), q.v., with which it freely associates.

BREEDING. Breeds in mixed colonies, sometimes of considerable size, with Blacknaped and Crested terns. Season April-May-June, varying locally and also in different years. Nest, a scrape in the sand sometimes scantily lined with debris and small shells and pebbles, or amidst scraggy grass tufts on rocky islets. Eggs, 1 or 2 — very rarely 3. Similar to those of Tibetan Tern (465) but somewhat smaller. Variable in coloration, most commonly pale yellowish or greyish stone with numerous freckles and some large blotches of dark brown, reddish brown, purple-black or black, and secondary

GULLS, TERNS

55

467. Whitecheeked Tern. *Sterna repressa* Hartert

Sterna repressa Hartert, 1916, Nov. Zool. 23: 298 (Fao, Persian Gulf). New name for *Sterna albigena* of authors, not Reichenbach

Baker, FBI No. 2082, Vol. 6: 128

Plate 46, fig. 7

LOCAL NAMES. In general as under 458.

SIZE. House Crow —; length c. 35 cm. (13½ in.).

FIELD CHARACTERS. Confusingly similar to Tibetan and Arctic terns; difficult to differentiate with certainty unless in the hand. See Key and Museum Diagnosis.

Adult (summer). Above, black upperparts of head, including upper lores, not descending to lower edge of eye (giving a white-cheeked effect). Upperparts including tail-coverts, tail, and wings dark ashy grey. Below, chin white; rest of underparts ashy grey with a lilac tinge. Legs bright red. Sexes alike.

In winter head white, the feathers round the eye, nape, and upper hindneck more or less black or chocolate-brown; lower hindneck and underparts white.

STATUS, DISTRIBUTION and HABITAT. Breeds on Vengurla Rocks off Malvan on the west coast, c. 16°N., 73°30'E. Common on Makran and Sind coasts, March to May, but no evidence of breeding; probably only on passage to its breeding grounds in the Persian Gulf. Records on Tamil Nadu and Maharashtra coasts scanty, possibly due in part to difficulty in field identification of terns. A specimen, Bombay harbour, 12.vi.1973 (Prabhakara Menon, JBNHS 71: 610). Obtained in the Laccadive Is. by Hume; not recorded in Ceylon or the Andaman Is.

Extralimital. 'Southern parts of the Red Sea, coasts of Somaliland and Kenya Colony, Arabian Sea and Persian Gulf to the Malabar coast and the Laccadive Islands' (Peters).

GENERAL HABITS, FOOD, VOICE and CALLS. A maritime tern, sometimes met many miles out from the coast, but avoiding inland waters. Hunts by plunging from the air; other behaviour also typical of the sea terns. Nothing specifically recorded.

BREEDING on the offshore islets south of Ratnagiri on the West Coast (Vengurla Rocks) where added eggs and desiccated remains of the birds have been picked up after the breeding season during which the heavy monsoon seas make landing on the rocks impossible. The birds evidently nest here in mixed colonies together with Large Crested, Roseate, Sooty, and Brownwinged terns (Abdullah, JBNHS 1940, 41: 661; 1942, 43: 448). Season, the SW. monsoon — evidently May and June, perhaps into July. Nest, (description from islets off the Somali coast) a shallow depression on open sand flats or in sand accumulated by wind and wave action in hollows and roughnesses of sheet rock, sometimes lined — deliberately or fortuitously (?) — with bits of twig and grass stems. The nests placed close to one another. Eggs, 2 or 3, occasionally only 1. Coloration variable, from stone or whitish- to olivaceous buff, spotted and streaked with dark reddish brown, with secondary markings of lilac. Average size of 100 eggs 40.8 × 30.4 mm. (Baker).

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.

54

CHARADRIIFORMES

markings of grey or lavender. Average size of 100 eggs 40.2 × 29.3 mm. (Baker). Incubation by both sexes; period undetermined.

MUSEUM DIAGNOSIS. For description of plumage phases and structure (also bionomics) of the nominate race see Witherby, 1941, 5: 24-7. The race *korustus* differs from it only by slightly darker plumage and slenderer bill.

Chick (in down). Upperparts, chin and throat grey tinged with buff or rich buff, the black bases of the down showing through. Rest of underparts white.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail (outer feathers)
♂ ♀	210-226	31-38	c. 20-22	130-164 mm. (Baker)

COLOURS OF BARE PARTS. Iris dark brown. Bill (winter) black or (breeding) red with terminal third blackish. Legs and feet bright red.

466a. Arctic Tern. *Sterna macrura* Naumann

Sterna macrura Naumann, 1819, Isis: 1847 (Island Nordstrand and coast of West Schleswig)
Not in Baker

SIZE. As of Tibetan Common Tern (465). Length c. 36 cm. (14 in.).

FIELD CHARACTERS. Similar to 464 and 465 'but throat, breast and abdomen French-grey with no vinaceous tint; a white streak on the sides of the head below the black cap (in summer); outermost primaries with inner web narrowly grey next the shaft; secondaries broadly margined with white; outside tail-feathers very long with dark grey outer webs; bill blood red; feet coral red' (Alexander, 1955).

Extralimital. Breeds in the Holarctic Region chiefly between 60° and 75° N. lat. Winters in the Antarctic Ocean south to c. 75° S. lat. performing an annual return migration of over 35,000 km.

STATUS, DISTRIBUTION and HABITAT. The only record for our area is an adult male in full breeding plumage, presumably a lost vagrant, collected on 2 July (1928) in the Suru Valley, Kashmir, c. 4000 m. along with Tibetan terns (Whistler, 1936, *Ibis*: 600).

MUSEUM DIAGNOSIS. For description of plumages and structure see Witherby, 1941, 5: 38-40.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail central outer	Depth of fork
♂ ♂	265-282	30-33	15-17	70-80 170-200	90-138 mm.
♀ ♀	260-275	—	—	66-75 158-185	92-117 mm.

COLOURS OF BARE PARTS. Adult. Iris dark brown. Bill winter blackish, summer blood-red, occasionally with blackish tip. Legs and feet, winter blackish, summer coral-red (Witherby).

56

CHARADRIIFORMES

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail (outer feathers)
♂ ♀	227-254	36-38	c. 19-21	124-154 mm. (Baker)

COLOURS OF BARE PARTS. Iris brown. Bill dark blood-red at base, black on terminal half with a small pale tip. Legs and feet bright red.

STERNA SUMATRANA Raffles

Key to the Subspecies

Wing c. 217-239; culmen 34-35 mm.....	<i>S. s. sumatrana</i>
Wing c. 199-221; culmen 37-41 mm.....	<i>S. s. mathewsi</i>

468. Eastern Blacknaped Tern. *Sterna sumatrana sumatrana* Raffles

Sterna Sumatrana Raffles, 1822, Trans. Linn. Soc. London 13 (2): 329 (Sumatra)
Baker, FBI No. 2092, Vol. 6: 139

Plate 46, fig. 12

LOCAL NAMES. In general as under 458; *Sterna yena* (Car Nicobar).

SIZE. House Crow —; length c. 35 cm. (13½ in.).

FIELD CHARACTERS. A pale pearly grey and white sea-tern, looking particularly white against the dark grey sea. Distinguished by a black band commencing in front of eye and encircling the sides of head and nape. Rest of head white. Tail deeply forked: central feathers grey, streamers white. Underparts white suffused with delicate rosy pink. Legs and bill black. Sexes alike.

In winter black nuchal band narrower and less prominent.

Young (immature) has the nape dark chocolate-brown, inner wing-coverts dark grey-brown, primaries dark grey.

In first-feather plumage (succeeding the down) crown brownish; feathers of upperparts with wavy brown bars.

STATUS, DISTRIBUTION and HABITAT. Common in the Andaman and Nicobar Islands, between May and October, mostly dispersing over the adjacent seas after breeding. May occur in Khulna Sunderbans of East Pakistan and West Bengal.

Extralimital. Breeds also on other small islets in the tropical Pacific and eastern Indian oceans south to the Sunda Is. and c. 20°S. lat.

GENERAL HABITS, FOOD, VOICE and CALLS. Exclusively maritime. Food chiefly fish caught by plunging.

BREEDING. Breeds on small rocky islets off the east coast of the Andamans (and Nicobars?) — more sheltered during the SW. monsoon. Season, May to July. Nest, a skimpy bed of a few small fragments of coral collected on the rock, or mere dimples in sand. In small scattered colonies each nest separated by several metres from its neighbour. Eggs, 2 or 3, sometimes only 1. Variable in coloration and very similar to eggs of *S. dougalii* — mostly greyish stone with numerous spots of dark or light brown; some much warmer coloured with reddish brown blotches; others yellowish brown or pale green in ground colour instead of grey. Average size of 200 eggs 39.6 × 28.6 mm. (Baker).

GULLS, TERNS

57

MUSEUM DIAGNOSIS. See Key. For fuller description of plumage, Baker loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail (outer feathers)
♂ ♀	220-227	31-38	18-19	129-150 mm. (Baker)

Wing 3 ♂♂ (Andamans) 215, 216, 227; 6 ♀ ♀ 208-224 (av. 213) mm. (Abdulali).
COLOURS OF BARE PARTS. Iris brown. Bill black with a small yellowish tip (c. 15 mm.) to both mandibles, not always present. Legs and feet black.

469. **Western Blacknaped Tern.** *Sterna sumatrana matthewsi* Stresemann
Sterna sumatrana matthewsi Stresemann, 1914, Nov. Zool. 21: 60
(Aldabra Islands, type from Ile Piquart)
Not in Baker, FBI

LOCAL NAMES. Kirru dooni (general for terns — Maldivian).

SIZE. House Crow — ; length c. 35 cm. (13½ in.).

FIELD CHARACTERS. As for 468; indistinguishable from it unless in the hand. See Key to the Subspecies.

STATUS, DISTRIBUTION AND HABITAT. Breeds in the Maldive Islands where it is the most abundant and widespread tern. Not recorded in Ceylon or along the western coast of the Peninsula.

Extralimital. 'Islands of the western Indian Ocean from the Seychelles, Amirante and Aldabra Islands east to the Chagos Islands' (Peters).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 468. 'Voice less loud and harsh than in the majority of the family' (W. W. A. Phillips).

BREEDING in the Maldives (Addu Atoll etc.) on small islets and coral banks with scrub. Season, June-July. Clutches laid on bare coral shingle between small lumps of broken coral or in shallow, seemingly unintentional scrapes scattered several metres from one another. Eggs, 1 or 2, mostly light stone grey, spotted, speckled and blotched with sepia to light brown, with faint secondary blotches of purplish grey or lavender. Coloration extremely cryptic on background of weathered grey coral shingle and sand. Average size of 14 eggs 39.4 × 27.44 mm. (Phillips, JBNHS 55: 567-9).

MUSEUM DIAGNOSIS. Differs from eastern nominate race in having a smaller wing and larger bill. See Key to the Subspecies for measurements.

COLOURS OF BARE PARTS. As in 468.

470. **Blackbellied Tern.** *Sterna acuticauda* J. E. Gray

Sterna acuticauda J. E. Gray, 1831? (1830-1832), in Hardwicke's Ill. Ind. Zool. 1(6): pl. 70, f. 3 (Cawnpore, India)

Sterna melanogaster Temminck, 1827, Pl. col., livr. 72: pl. 434 (Islands of Ceylon and Java (error) and the coasts of India)

Cf. Deignan, H. G., 1945, Bull. U.S. Nat. Mus. No. 186: 133-4 (use of name).
Baker, FBI No. 2081, Vol. 6: 127
Plate 46, fig. 13

LOCAL NAMES. In general as under 458.

SIZE. House Crow — ; length c. 33 cm. (13 in.).

GULLS, TERNS

59

MUSEUM DIAGNOSIS. For a fuller description of plumage see Baker, loc. cit.

Chick (in down). 'Upperparts cream; broken line of black from base of bill on each side of crown and down dorsum; rest of upperparts spotted with black except wings; underparts cream coloured' (Ticehurst).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail (outer feathers)
♂ ♀	221-240	32-40	c. 15-16	145-152 mm. (Baker)

COLOURS OF BARE PARTS. Iris dark brown. Bill and mouth (breeding) bright orange-red; (non-breeding) bill duller and tipped with dusky. Legs and feet bright orange-red; claws black.

- 471, 472, 473. **Brownwinged Tern.** *Sterna anaethetus anaethetus* Scopoli¹

Sterna Anaethetus Scopoli, 1786, Del. Flor. et Faun. Insubr., fasc. 2: 92 ('In Guinea' = Panay, Philippine Islands, ex Sonnerat)

Sterna fuligula Lichtenstein, 1844, in Forster, Descr. Anim., ed. Licht.: 276, note (Red Sea)

Sterna antarctica Lesson, 1831, Traité d'Orn., livr. 8: 621 (Mauritius and Calcutta)
Baker, FBI No. 2093, Vol. 6: 141
Plate 46, fig. 19

LOCAL NAMES. In general as under 458.

SIZE. House Crow — ; length c. 37 cm. (14½ in.).

FIELD CHARACTERS. A medium-sized sea tern with dark greyish brown mantle, wings, and tail, and white underparts. Long outer feathers or streamers of the 'swallow' tail largely white. Forehead and superciliary



Summer, x c. 1

region conspicuously white; crown, nape, and a stripe from lores to behind eye black. Aply known as Bridled Tern from its face markings. In flight contrastingly white leading edge of upper wing and white on tail-feathers very conspicuous. Sexes alike.

In winter crown brown, flecked with white.

Young (immature). Above, paler brown, the feathers broadly edged white. Crown brown with greyish edges to the feathers; nape almost all brown. Black band from lores replaced with white speckled with black.

¹ Synonymized, as by Vaurie (1965). The subspecies are inseparable from nominate *anaethetus*.

58

CHARADRIIFORMES

FIELD CHARACTERS. A medium-sized, deeply fork-tailed fluviatile tern.

Adult (summer) ashy grey above, chiefly black below. Forehead, crown, nape, and crest glossy black; lores, cheeks, chin, and throat pure white. Readily distinguished from Whiskered Tern in black-bellied summer plumage by long, deeply forked tail (v. short and almost square). Sexes alike.

In winter upper part of head white streaked with black, and with a black patch behind eye. Below, white tinged with grey on foreneck and breast. Then distinguished from River Tern (463) only by smaller size and slenderer bill.

Young (immature). Above, buffy grey, the feathers edged paler buffy white and subged blackish.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, practically throughout the Indian Union, Nepal, and both Pakistans, affecting large rivers and jheels in the plains. Less common in South India; absent in Ceylon. Occurrence west of Indus river (Las Bela, southern Baluchistan, etc.) needs confirmation. An essentially inland and freshwater tern, not found on the sea coast. Overall less common than River Tern.

Extralimital. Burma, Thailand, western Indochina.

GENERAL HABITS. Keeps in large or small flocks flying up and down placid stretches of rivers or resting on shoals and sandbanks in close-packed gatherings, all uniformly face to wind. The birds hunt methodically, flying a few metres above the surface, bill and eyes directed intently below — sometimes almost skimming the water — with slow wing-beats upwind taking advantage of the resistance for a deliberate scanning of the surface. At the end of its beat the bird turns round and shoots swiftly downwind back to the starting-point to repeat the process. The quarry is captured by plunging vertically from the air and submerging, or by lightly scooping it off the water or land.

FOOD. Mainly fish; also insects and crustaceans.

VOICE AND CALLS. A shrill *krek*, *krek* constantly uttered while flying about.

BREEDING. Colonial. Season, chiefly March and April, sometimes continuing into May — perhaps for second layings when first destroyed by floods; earlier, c. February, in S. India. Nest, a small shallow scrape, often merely a dimple, in the bare sand on sandspits and large sandy islets in rivers. Colonies, frequently of considerable size, and shared with River Terns, skimmers and pratincoles. Eggs, normally 3, sometimes 2, rarely 4, broad ovals very slightly compressed at the smaller end. Variable in ground colour from pale to dark sandy, occasionally with a greenish tinge; speckled or spotted all over with reddish or purplish brown and secondary markings of pale grey or pale purplish grey. As in all river-bed nesting birds, both the eggs and downy chicks become completely obliterated in their sandy background. Average size of 100 eggs 32.4 × 24.9 mm. (Baker). Both sexes incubate; period recorded as '15 or 16 days'. The parents shelter the eggs and chicks from the fierce sun by standing over them or sprinkling them with water carried from the river by dousing their belly feathers. To feed the incubating mate and chicks the birds (♂ only?) have been repeatedly observed to fly unnecessarily long distances to collect fish at outlying tanks, even though plenty were available in the river closer at hand.

60

CHARADRIIFORMES

STATUS, DISTRIBUTION AND HABITAT. A pelagic wide-ranging tern found sporadically far out at sea. Disperses after breeding over the Arabian Sea to the coasts of Pakistan, western India and Sri Lanka. Two records from Andaman Is. (Abdulali, JBNHS 68: 400), but probably occurs oftener than reported. Doubtless occurs off the Sind and Gujarat coasts whence specifically not yet recorded, though several once observed from ship between Karachi and Bombay, and many caught by the sailors while roosting on board.

Extralimital. Breeds on islands in the southern half of the Red Sea, northern Somali coast, Makran coast (?) and Persian Gulf. Ranges southward to Mozambique and east to western India. Also locally on islands in the China Sea from Taiwan to Malacca and eastward through the Sunda Is. to New Guinea and Australia. Ranges to Sri Lanka, Mergui Archipelago and Japan (Peters).

MIGRATION. Flocks totalling an estimated '50 to 100,000' recorded as purposefully flying N-S along the coast at Colombo, Sri Lanka, between c. 17 and 21 August, 1974, conjectured as migrating to winter feeding grounds in the southern Indian Ocean (T. W. Hoffmann, CBCN, August 1974: 132-3).

GENERAL HABITS. Gregarious and exclusively maritime. Usually found offshore, but also wanders considerable distances out to sea. Flocks follow shoals of fish, plummeting on them from a height, several birds at a time or in ones and twos, going completely under. The bird presently reappears with a silvery victim held crosswise in the bill. This is manoeuvred into position and bolted head foremost, as with a little shrug to shake off the water from its plumage, the bird wheels round to resume the slaughter, plunging again and again where the fishing is good. Flocks settle on floating buoys or rocks or ships' rigging to rest, and frequently roost at night up amongst the lifeboats.

FOOD. Mainly fish.

VOICE AND CALLS. Described as 'a rather hoarse *krek* or harsh *quik*'.

BREEDING. Breeds on islands off the Maharashtra coast, on Vengurla Rocks off Ratnagiri (c. 16°N., 73°30'E.), in Lakshadweep (Laccadives) on Balliappanni or Cherbaniani Atoll (c. 12°20'N., 71°50'E.), and reportedly on other atolls (Matthew & Ambedkar, JBNHS 61: 186), and the Maldive islands. Season, SW. monsoon chiefly June-July straggling into September. Nests colonial; in mixed colonies with Large Crested (*Sterna bergii*) and other terns: a shallow scrape or dimple in the sand. Eggs, normally 1, exceptionally 2, cream or buffy pink in ground colour, profusely spotted and speckled with Indian red, with secondary markings of lilac, 'somewhat resembling eggs of the common Moorhen' (Archer). Average size of Vengurla-collected eggs in Hume collection 43.2 × 30.1 mm. (Baker).

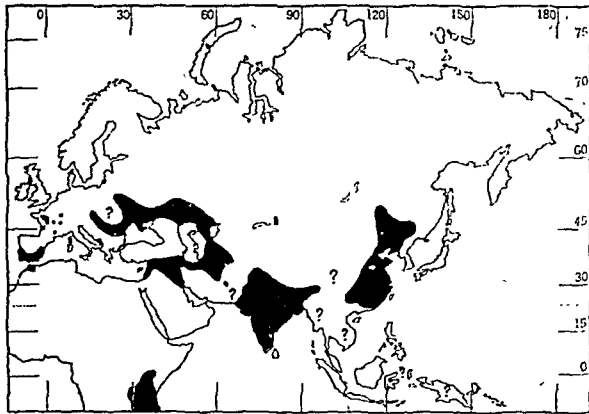
MUSEUM DIAGNOSIS. See Field Characters.

	Wing	Bill (from feathers)	Tarsus	Tail (outer feathers)
♂ ♀	c. 236-263	c. 41-48	c. 23	c. 126-184
(Composite of subspecies from Baker)				

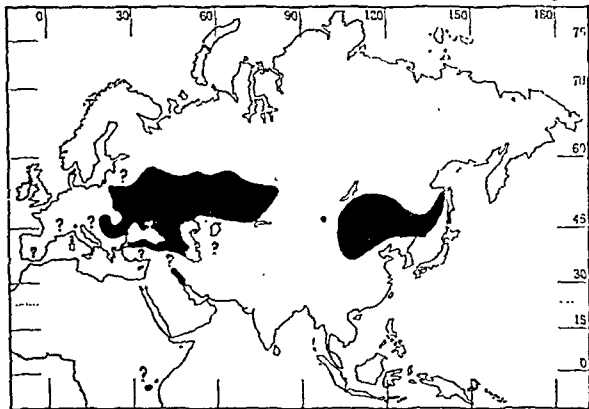
COLOURS OF BARE PARTS. Iris dark brown. Bill, legs, feet and claws black.

GULLS, TERNS

61

Chlidonias hybridus

Breeding range

Chlidonias leucopterus

Breeding range

flocks well out to sea 'never within 7 or 8 miles of land' (Hume, in the Laccadives). F. N. Betts saw one in these waters resting on the back of a sleeping sea turtle (1938, *ibid.* 40: 385). Very active and clamorous both in daytime and during night on its breeding grounds as well as flocks at sea when agitated or attracted in the dark as by a well-lit passing ship. This habit coupled with the distinctive cry have earned its popular name of 'Wideawake' or 'Wideawake Tern'.

FOOD. Fish and squids obtained by plunging from a height or scooping up from the surface; flying fish caught in the air. Clear evidence of nocturnal feeding provided by a case of six undigested (recently swallowed) deep-sea fishes, *Vinciguerria luetia* (Garman), with photophores intact, regurgitated by an example which had landed on shipboard in the Pacific 3 hours after sunset. These bathypelagic fishes (fam. Gonostomatidae) only ascend to the surface from deep water in the darkness to feed (Mörzer Bruyns & Voous, 1965, *Ardea* 53 (1-2): 79).

VOICE AND CALLS. Cry described as a wild wide-wake.

BREEDING. Season in the Laccadives evidently much prolonged, c. December/January to May; on Vengurla Rocks apparently between c. April and August/September. The stormy seas just before and during the SW. monsoon (May to September) make landing on Vengurla Rocks for investigation impracticable. The length of this period suggests the possibility that unsuccessful parents may breed again at an interval of less than twelve months, as on some Pacific islands (Ashmole, 1965, *Proc. U.S. Acad. Sci.* 53 (2): 311-18). Eggs laid on the bare soil, or in a shallow depression in vast closely packed colonies ('about 3½ pairs to the square yard' in Seychelles — Ridley). Normally 1, occasionally (perhaps accidentally) 2; moderately elongated regular ovals. Coloration very variable: white to pinky white or 'yellowish pinkish stone colour' (Hume), speckled and blotched with violet or brown. Average size of 30 eggs 52.3 × 36.0 mm. (Baker). Both sexes incubate; period unrecorded.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail (outer feathers)
♂ ♀	278-297	35-42	c. 23-24	145-162 mm. (Baker)

COLORS OF BARE PARTS. Iris brown. Bill, legs and feet black.

STERNA ALBIFRONS Pallas

Key to the Subspecies

- Black on top of head tapers to a point in front; white of forehead touches eyes; legs and feet orange-yellow to yellow.....1
 Shafts of first three primaries dark brown to brownish white.....*S. a. albifrons*
 Shafts of first three primaries shining white.....*S. a. pusilla*

Page

64

66

62

CHARADRIIFORMES

474. Sooty Tern. *Sterna fuscata nubilosa* Sparrman

Sterna nubilosa Sparrman, 1788, Mus. Carls., fasc. 3, no. 63 (Finland, *errore* = 'India Orientalis' according to Sundevall)

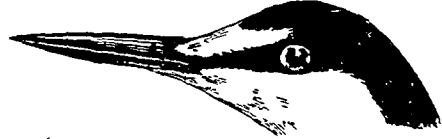
Sterna infuscata Lichtenstein, 1823, Verz. Doubl. Mus. Berl.: 81 (East Indies)
 Baker, FBI No. 2096, Vol. 6: 144
 Plate 46, fig. 16

LOCAL NAMES. As for 458 (all terns).

SIZE. House Crow; length c. 43 cm. (17 in.).

FIELD CHARACTERS. A medium sized black-and-white pelagic tern with conspicuously long pointed wings and deeply forked tail. Leading edge of upper wing contrastingly white; outermost elongated tail-feathers greyish white; bill and feet black.

Adult (summer). Very similar to Brownwinged Tern (471) but somewhat larger and much darker (sooty black) above. White frontal band broader but superciliary portion of it only extending to just above eye. Dark loreal stripe more oblique, reaching bill nearer to gape and extending above eye. *Below*, breast and throat white; abdomen and under tail-coverts greyish. Sexes alike.



Summer, × c. ½

In winter crown and lores speckled with white.

Young (immature). Above, sooty brown or dark grey spotted with buffy white on back and wings, broadest on scapulars and tertiaries. *Below*, somewhat paler sooty brown, whitish on lower abdomen and under tail-coverts.

STATUS, DISTRIBUTION and HABITAT. Breeds in vast numbers on the Laccadive Islands (Cherbaniani Reef). Also breeds on Vengurla Rocks off the western coast of the Peninsula (S. of Ratnagiri); reportedly in the Maldives, and probably the Andamans. Disperses over the ocean after breeding; non-breeding range insufficiently known. Vagrants (storm-blown?) have occurred far inland, e.g. Cachar (Assam), Darbhanga (Bihar), Tirunelveli (Tamil Nadu) and in the Hill zone of Ceylon. Once taken on the Konkan coast (Alibag); occasional winter visitor to coastal Ceylon. Large flocks observed at sea between Ceylon and N. Mahé Atoll (Maldives) in November; also in the vicinity of the islands at various times of the year (Phillips, 1963, JBNHS 60: 577).

Extralimital. 'Islands in the Indian Ocean (Mascarene, Seychelles), China Sea, Sulu Sea; Ryukyu Is.' (Peters).

GENERAL HABITS. A pelagic tern seldom coming to land except in the breeding season, and thought, according to M. W. Ridley (1957, JBNHS 54: 920-1), 'to feed, sleep, and even copulate in the air'! Usually seen in

64

CHARADRIIFORMES

475. Little Tern or Ternlet. *Sterna albifrons albifrons* Pallas

Sterna albifrons Pallas, 1764, in Voeg's Cat., Adumbr.: 6 (Holland)

Sterna minuta innominata Zarudny & Loudon, 1902, Orn. Monatsb. 10: 150
 (Bampur and Esposafar, Persian Baluchistan)

Sterna albifrons praeternissa Baker, Bull. Brit. Orn. Cl. 49: 39
 (Buna Island, Persian Gulf)

Baker, FBI, 2087, 2090, Vol. 6: 135, 138

Plate 46, fig. 4

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 23 cm. (9 in.).

FIELD CHARACTERS. Distinguished from all other grey and white terns by its diminutive size.

Adult (summer) with velvety black cap, white forehead, and orange-yellow bill and feet. Sexes alike.

In winter the black cap much mixed with white, bill blackish, feet dusky red.

Young (immature). Upperparts with dark wavy bars; forehead and crown white, speckled with brownish black; nape blackish finely stippled with white.

STATUS, DISTRIBUTION and HABITAT. The species overall occurs widely but rather locally in both Pakistans, northern India east to Assam, peninsular India south to Kerala and Rameswaram I., Nepal lowlands, Ceylon, Laccadive and Maldivé Is. Ranges of the races uncertain and tentative, since besides being locally migratory the birds spread out extensively in the non-breeding season and mingle confusingly, making sight records insufficiently definitive. Affects tidal creeks, coastal lagoons and salt-pans, but chiefly rivers and freshwater jheels inland.

As presently understood *S. a. albifrons* breeds only in W. Pakistan (Makran, Las Bela) and NW. India (Gujarat — Bhavnagar), wandering down the west coast to about the latitude of Bombay.

Extralimital. 'Breeds in Europe and western Asia from the British Isles, southern Sweden . . . south to the Mediterranean, Black and Caspian Seas and Tarbagatai. Winters south to the Somali coast of Africa and to NW. India' (Peters).

GENERAL HABITS. Keeps singly or in small loose parties or flocks, working deliberately back and forth over water with quick wing-beats, bill and eyes directed below, scanning the surface for food; shooting back downwind to starting-point to repeat the manoeuvre. Often hovers over a promising spot like Pied Kingfisher (*Ceryle rudis*). Plummet with wings pulled in to seize prey below surface, or dips steeply at a tangent to pick it off the water with a backward flick of the bill as it momentarily skims over it. Observed 'dropping from a height of c. 20 feet into water only 2 inches deep' (Hingston, R.W.G., unpublished MS.). A number of birds plunging one after another, each emerging presently with a silvery fish in the bill is a fascinating sight. Flies with quicker wing-beats than the larger terns, reminiscent in silhouette of a hobby (*Falco subbuteo*).

FOOD. Chiefly small fish and crustaceans; also aquatic insects.

VOICE AND CALLS. A sharp *creek, creek* or *cree-uk* of the same tone quality as the Pied Kingfisher's *chiruk* call. Other calls described in Witherby, loc. cit.

GULLS, TERNS

65

BREEDING. In small colonies on sandbanks in rivers (Chenab, Sutlej, Punjab — Whistler) or sandy islets in jheels (Saranda, Las Bela 'in a different part to that occupied by Caspian terns etc.' — Ludlow). *Season*, chiefly May and June. *Eggs* — 2 or 3 — laid on bare sand or shingle in a shallow depression; sandy coloured, variously tinged with yellowish, greyish, or greenish, and blotched, spotted or speckled with some shade of dark brown or reddish brown. Average size about 32 × 24 mm. Both sexes incubate; period unrecorded.

MUSEUM DIAGNOSIS. See Key. In nominate *albifrons* upperparts darker than in 476 and 477. Shafts of first three primaries dark brown to brownish white. Black of crown tapering anteriorly; white of forehead touching eyes above. Legs and feet orange-yellow or yellow (Humayun Abdulali, 1964, JBNHS 61 (2): 441). For plumage phases and structure (also bionomics) see Witherby, 1941, 5: 40-3.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail central outer	Depth of fork
♂♂	164-180	27-32	15-18	43-48 75-95 (one 66)	23-50 mm.
♀♀	164-180	—	—	42-48 74-85	28-41 mm. (Witherby)

COLOURS OF BARE PARTS. Adult. Iris brown. Bill yellow, tip brown. Legs and feet orange.

476. Blackshafted Ternlet. *Sterna saundersi* Hume¹

Sterna saundersi Hume, 1877, *Stray Feathers* 5: 324, note 325 (Karachi, Sind)
Baker, FBI No. 2091, Vol. 6: 138

LOCAL NAMES. *Bondu*, *Bondu dooni* (Maldives).

SIZE. Same as 475; length c. 23 cm. (9 in.).

FIELD CHARACTERS. Indistinguishable in the field from 475 or 477. See Key and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Little definitely known. Breeds for certain in the immediate surroundings of Karachi City, the birds arriving there about the first week in April and disappearing by beginning of September. Probably also breeds in suitable places along the Sind and Makran coasts in W. Pakistan (Ticehurst, C. B., *Jbis* 1924: 143). Non-breeding whereabouts of this population unknown. Non-breeding specimens have been collected in Gujarat (Kandla, May; Pirotan Island, July), near Bombay (Dharamtar Creek, April) and Ceylon (Karativu Island); also at Madras and in the Laccadive (Hume) and Maldivé islands. Very large numbers observed in Addu Atoll (Maldives) throughout the year; reported by the locals to breed there during April with other terns (Phillips, 1953, JBNHS 60: 577).

Affects tidal creeks and coastal lagoons; very seldom found on fresh water.

Extralimital. 'Southern coasts of the Red Sea, the Somali coast of Africa, southern coasts of the Persian Gulf to Sind' (Peters).

GENERAL HABITS, FOOD, VOICE and CALLS. Nothing specifically recorded except that 'it is a salt-water bird entirely, its local migrations presumably

¹ Awarded specific rank on account of sympatry, and different colour pattern and ecology.

GULLS, TERNS

67

but not proved. A breeding visitor to these places; whereabouts in non-breeding season unknown. Collected on Sankosh River, northern W. Bengal, in April (SDR).

Extralimital. 'Korea and Japan south along the coast of eastern China and Indochina [Viet Nam, Cambodia, etc.] and eastward through the Philippines, Celebes and Lesser Sunda Is. to the Bismarck Archipelago and New Guinea' (Peters).

GENERAL HABITS, FOOD, VOICE and CALLS. As in 475 and 476.

BREEDING. *Season*, near Bombay chiefly May and June; in Tamil Nadu and Ceylon May to August. Small to fair-sized colonies ('over 100 nests on Uttan Washi islet near Bombay'). *Eggs*, 2 or 3 laid on bare rock or in a shallow scrape in shingly soil, unlined or with a flimsy bed of grass; the clutches close together (2 or 3 feet apart) where space restricted, or widely spaced as in *saundersi* where spacious. Shape typical of terns' eggs, broad ovals very little smaller at one end than the other. Coloration variable, mostly as in nominate *albifrons*, but some eggs stone colour or beige or bluish white with a few black blotches and spots. Average size about 32 × 24 mm. Both sexes incubate; period unrecorded. On exposed sandbanks and shingle-beds eggs and hatchlings protected from fierce heat of the sun by the parents flying out and dipping their belly feathers in water before relieving each other on nest. Both eggs and newly hatched chicks (covered with greyish creamy down with a disruptive pattern of black spots) blend perfectly with the coarse sand and gravel substrate and vanish from view in an astonishing way.

MUSEUM DIAGNOSIS. Differs from nominate *albifrons* in having shafts of all the primaries glistening white. For description of plumage see Blanford, FBI (1st ed.) 4: 320.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail central outer
♂♀	168-183	26-32 (av. 30) mm. (Baker)		
Whistler (SZ 23 (3 & 4): 270) gives for 13 Ceylon birds				
	Wing	Bill (from feathers)	Tarsus	Tail central outer
8 ♂♂	174-188	30-30.5	16-18.5	43-49 74-106+ mm.
5 ♀♀	173-179	28.5-31.5	16-17.5	43-48 80- 86+ mm.

COLOURS OF BARE PARTS. Iris brown. Bill (summer) yellow, broadly tipped with black; (winter) dark brown. Legs and feet (summer) orange-yellow; (winter) reddish brown.

478. Red Sea Large Crested Tern. *Sterna bergii velox* Cretzschmar

Sterna Velox Cretzschmar, 1827 (1826), in Rüppell's Atlas, Vogel: 21, pl. 13
(Red Sea coasts)

Baker, FBI No. 2075, Vol. 6: 120

Plate 46, fig. 11

LOCAL NAMES. *Gardoni* (Maldives); *Mahudu lūhinya* (Sinhala); *Periya kondai kōdai* (Tamil); *Tharathauri* (Lakshadweep).

66

CHARADRIIFORMES

depending on food supply. The birds come up the creeks following the shoals of fry (which abound in the nesting season) and move off again after breeding to new and better feeding grounds amongst the innumerable sandbanks of the Sind coast — places practically inaccessible to the observer' (Ticehurst).

BREEDING. In small scattered colonies. *Season* (Karachi) April-May to July-August. *Nest*, an unlined hollow, occasionally lined with shell fragments and small pebbles — sometimes an animal's hoof-print — on salt mudflats above high-tide mark, preferably on a small mound of wind-blown sand collected round a *Suaeda* plant or other obstruction. The nests widely scattered, each being 20 to 100 yards from the next. *Eggs*, almost invariably 2, pale to warm buff, with small spots and scrolls of dark brown all over, and secondary markings of violet-grey. 'Average size of 46 eggs 32.52 × 24.05 mm. Weight of clutches 15-17.5 grains (av. 16.4)' — Ticehurst. Both sexes share in incubation; period unrecorded.

MUSEUM DIAGNOSIS. Differs from *albifrons* (475) in being distinctly paler grey above. First three primaries (as.), including shafts, black and white, very contrasting. In *albifrons* usually first two primaries are black and white; occasionally the third also but in that case the black and white is not sharply contrasted. Legs yellowish brown or lemon yellow or orange in *albifrons*. Black of crown not tapering anteriorly but truncated above white forehead; the latter does not reach top of eye.

MEASUREMENTS

	Wing	Bill (from feathers)
10 ♂♂	166-174	29.5-31.5 mm.
6 ♀♀	165-173	27.5-29 mm.

COLOURS OF BARE PARTS. Adult (breeding). Iris brown. 'Bill yellow, black at tip (7.5-13.5 mm.). Tarsi and toes anteriorly and webs yellowish brown, yellower at back of tarsi and soles' (Ticehurst).

477. Whiteshafted Ternlet. *Sterna albifrons pusilla* Temminck

Sterna pusilla Temminck, 1839 (1840), *Man. d'Orn.*, ed. 2, 4: 464
(Sunda Islands and the Moluccas to New Guinea = Java)

Baker, FBI No. 2088, Vol. 6: 136

LOCAL NAMES. *Muhudu lūhinya* (Sinhala); *Kādāl kūrī* — apparently general for all terns (Tamil).

SIZE. Slightly larger than 475; length c. 25 cm. (10 in.).

FIELD CHARACTERS. Indistinguishable in the field from 475 or 476. See Key and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Sight records not definitive. Breeds for certain in Ceylon (Whistler, 1944, SZ 23 (3 & 4): 270, and Phillips MS. notes), and on Uttan Washi, a small offshore islet in the Bombay neighbourhood (Sālim Ali and Humayun Abdulali, 1939, JBNHS 40: 635 — recorded as *albifrons*, later corrected). Also on Rameswaram I., Tamil Nadu (c. 9°18'N., 79°19'E.) (Biddulph, 1938, JBNHS 40: 251) evidently this race,

68

CHARADRIIFORMES

SIZE. Pariah Kite —; length c. 53 cm. (21 in.).

FIELD CHARACTERS. A large sea tern with black crown and prominent nuchal crest, lemon yellow bill, and black legs.

Adult (summer). Lores and a band across forehead white. Crown down to eyes, nape, and a distinct nuchal crest velvety black. Neck (all round) and underparts white. Mantle grey with a lilac tinge. Tail greyish white; primaries blackish. Sexes alike.

In winter head white, lightly speckled with black on forecrown, boldly on hindcrown. Nuchal crest all-black.

Young (immature) has the upperparts dull brownish grey, with the wing-quills greyish brown.

STATUS, DISTRIBUTION and HABITAT. Resident. Breeding in West Pakistan (Astalu I. off Pasni on Makran coast; islands off the mouth of Kajhar Creek near the Sind-Kutch border), and E. Pakistan (Sunderbans). In India on the west coast (Vengurla Rocks south of Ratnagiri); and W. Bengal (Sunderbans). Also on Adam's Bridge and rocky islets off the SW. coast of Ceylon, the Laccadives, and reportedly in the N. Malé Atoll of the Maldivé Is. Probably on other suitable islands in the area. Found at one time of the year or another along the entire western and eastern seaboard. Keeps chiefly to the open sea.

Extralimital. 'Coasts of northeastern Africa and southern Asia from the Red Sea to Tenasserim . . . and Mergui Archipelago' (Peters).

GENERAL HABITS. A typical sea tern usually seen in offshore waters and often considerable distances out at sea — hardly ever even on tidal creeks — single birds or small loose parties and flocks, often mixed with *S. bergii*, scouting for prey. The birds fly a few metres above the sea with steady wing-beats, bill pointing downward, scanning the water intently. Now and again one will stop abruptly and almost double upon itself, hovering momentarily like Pied Kingfisher to investigate more closely. Prey secured by plunging from the air rather obliquely than vertically, several birds dropping one after another or more or less simultaneously as occasion offers. The bird emerges with a fish in its bill and jerks it into position before swallowing and resuming the hunt. When satiated the birds settle to rest on buoys or fishing stakes, or cluster together with gulls and other terns on rocks and sandbanks.

FOOD. Mainly fish and prawns.

VOICE and CALLS. A characteristic *chirrup*, usually when hovering to plunge. Loud clamour of screaming and chattering as typical of all terns when a nesting colony is disturbed and milling around in a rabble overhead.

BREEDING. Colonial. *Season*, April to June. *Eggs*, 1 or 2 (rarely 3?) laid in shallow scrapes in sand or on bare rock or coral, the 'nests' almost touching one another. Exceedingly variable in coloration, the ground colour ranging from white to cream or salmon-pink and even heather-purple, the markings from deep blackish brown (sometimes deep chestnut or pale reddish brown) blotches and spots to twisted scrawls resembling Arabic characters. Average size about 60 × 40 mm. Incubation period 'apparently 3 weeks to 23 days' (Baker). Vast quantities of eggs are (at least were, c. 1890) collected for food by the inhabitants of Astalu Island (as many as 7000 fresh ones in early June mentioned!), besides which they are subject to serious ravages by Sooty Gulls (*Larus hemprichii*).

GULLS, TERNS

69

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit., but his line 5 on p. 121 should read 'outer tail-feathers with white bases [not "lores" (sic)] and dark grey tips...'.
 MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	340-376	60-71	c. 34-35	165-205 mm. (Baker)

8 ad. ♂♂ from the Red Sea, Ceylon, and Kerala give
 (from skull) central outer
 340-358 70-74 31 (msd.) 83-102 152-191 mm.
 (HW, SA)

COLOURS OF BARE PARTS. Iris dark brown. Bill creamy to greenish lemon yellow. Legs and feet: adult, brownish black; immature, greenish yellow irregularly blotched with black; claws horny brown.

479. Indian Lesser Crested Tern. *Sterna bengalensis bengalensis* Lesson

Sterna bengalensis Lesson, 1831, Traité d'Orn., livr. 8: 621 (Coasts of India)

Baker, FBI No. 2079, Vol. 6: 124

Plate 46, fig. 14

LOCAL NAMES. *Iam matie gerdooni* (Maldives); *Muhadu lihiniyā* (Sinhala); *Kendāi kīdāl kūrūci* (Tamil).

SIZE. House Crow ±; length c. 43 cm. (16½ in.).

FIELD CHARACTERS. Very similar to Large Crested Tern (478), q.v., only smaller and with the crown and nuchal crest wholly black down to the eyes in summer, lacking the white lores and forehead. Sexes alike.

Distinguished from Gullbilled (460) by orange bill v. black.

Winter and immature plumages differ in the same way as in 478.

STATUS, DISTRIBUTION AND HABITAT. Resident? According to Ticehurst the commonest tern of Karachi Harbour and coast-line. Occurs commonly along the western and eastern seaboard of India, Andaman and Nicobar Is., and in Ceylon waters practically throughout the year; more abundant between September and end April. Presumptively breeding on the Makran coast (W. Pakistan), Rameswaram Island, Laccadive and Maldive Is. (N. Malé Atoll), but no direct evidence as yet. A typical sea tern like the last, keeping to offshore waters, seldom seen on the coast.

EXTRALIMITAL. 'Coasts of southern Asia from the Persian Gulf to the Straits of Malacca; Sumatra, Java, Celebes' (Peters).

GENERAL HABITS, FOOD, VOICE AND CALLS. Very similar to those of the Large Crested Tern (478).

BREEDING. Nearest definitely known breeding localities, islands in the Persian Gulf, e.g. Al 'Arabiya, Buna, Warba, where season, May and June. Eggs, 1 or 2, smaller but with the same variability of coloration and markings as in 478.

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.

CHICK (in down). 'Upperparts almost white with black spots on crown and ulna, and tending to run into lines on the back. Underparts pure white' (Ticehurst, Iraq).

GULLS, TERNS

71

COLOURS OF BARE PARTS. Iris dark brown. Bill black, tip horn-yellow. Legs and feet black; soles yellow (Witherby).

Genus *ANOUS* Stephens

Anous Stephens, 1826, in Shaw's Gen. Zool. 13 (1): 139. Type, by subsequent designation, *Anous niger* Stephens = *Sterna stolidus* Linnaeus

Differs from *Sterna* in having the third or fourth pair of tail-feathers longest *centra* the outermost. Bill long, slender, considerably curved towards the end of the culmen. Nostrils situated in a groove even further from the base than in *Sterna*. Tarsus very short, much shorter than middle toe without claw. Feet large; fully webbed. Wing long, first primary (as.) longest.

Genus represented throughout the tropical and subtropical seas; by two species within our area.

Key to the Species

- Wing over 270 mm.; crown grey; fourth pair of tail-feathers longest *A. stolidus*
 Wing under 240 mm.; crown white; third pair of tail-feathers longest *A. tenuirostris*

481. Noddy Tern. *Anous stolidus pileatus* (Scopoli)

Sterna pileata Scopoli, 1786, Del. Faun. et Flor. Insubr., fasc. 2: 92

(No locality = Philippines ex Sonnerat)

Baker, FBI No. 2097, Vol. 6: 145

Plate 46, fig. 17

LOCAL NAMES. *Meranga* (Maldives); *Kerifoid* (Lakshadweep).

SIZE. House Crow—; length c. 41 cm. (16 in.).

FIELD CHARACTERS. A smoky chocolate-brown tern with white forehead passing into grey on crown and to brownish grey on neck. Wings and tail



× c. ½

blackish brown. Tail much less forked than in other terns and without the pointed 'streamers'. Sexes, and summer and winter plumages alike.

Young (immature) paler brown and without the grey cap.

STATUS, DISTRIBUTION AND HABITAT. Breeds in the Laccadives, especially Pitti atoll; possibly also in the Maldives and other islets in our seas. Overall status in non-breeding season unclear. Occurs in the Andaman, Nicobar and Maldive Islands as resident?; occasionally seen in the seas around Ceylon, and as a straggler on the west coast south of Colombo—presumably storm-tossed. Has been recorded along the Makran coast of

70

CHARADRIIFORMES

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	271-295	50-57	c. 27-29	130-139 mm. (Baker)
Specimens collected in Ceylon, Kerala and the Andamans give				
4 ♂♂	280-304	59-64	25-28	121-140 mm.
3 ♀♀	280-304	52-60	23-25	110-138 mm. (HW, SA, Abdulali)

COLOURS OF BARE PARTS. Iris brown. Bill yellow to orange-yellow. Legs and feet black; soles yellowish.

480. Sandwich Tern. *Sterna sandvicensis sandvicensis* Latham

Sterna sandvicensis Latham, 1787, Gen. Syn., Suppl. 1: 296 (Sandwich, Kent, England, based on the Sandwich Tern. Gen. Syn. 5: 356)

Baker, FBI No. 2074, Vol. 6: 119

Plate 46, fig. 18

LOCAL NAMES. Unrecorded.

SIZE. House Crow ±; length c. 44 cm. (17 in.).

FIELD CHARACTERS. Adult (summer). Similar to Gullbilled Tern (460) q.v., but somewhat larger. Black bill longer and slenderer, tipped with yellow. A more pronounced nuchal tuft than in Gullbilled. Sexes alike. Confusable also with Large Crested (478). (See Key.)

In winter crown white streaked with black. A black stripe from in front of eye continuing through and behind it into the black nuchal tuft.

Young (immature), like adult in winter but with a dark band on the lesser wing-coverts, and brown crescentic bars on tertiaries and tail-feathers. Primaries dark grey.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor in fair numbers to W. Pakistan (Makran and Sind coasts). In India sight recorded only in Saurashtra, Gujarat (Dharmakumarsinhji, 1958, JBNHS 55: 357) where possibly frequent in winter but overlooked amongst Gullbilled Terns. Essentially a maritime species like the Crested terns.

EXTRALIMITAL. 'Breeds in the British Isles and on the North Sea, Atlantic and Mediterranean coasts of Europe; Black Sea; Caspian Sea. Winters on the coasts of northern Africa, western Africa to Cape of Good Hope; Red Sea, Persian Gulf...' (Peters).

MIGRATION. One ringed Astrakhan-Reserve, Caspian Sea 27.vii.1977, recovered Kalpitiya, Sri Lanka 24.xii.1977 (CBCN, Sept.1978: 50).

GENERAL HABITS, FOOD, VOICE AND CALLS. Similar to other sea terns, e.g. 478. Keeps to the sea coast in company with Lesser Crested and Gullbilled terns. Plunges for fish or picks up marine worms etc. from mudflats in oblique swoops.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. For description of plumages, structure, etc. (also bionomics) see Witherby, 1941, 5: 18-24.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail	Depth of fork
♂ ♂	290-325	52-58	27-30	central outer 72-85 148-170	65-85 mm.
♀ ♀	285-308	—	—	—	—

72

CHARADRIIFORMES

W. Pakistan between Jask and Pasni, and cyclone-driven examples taken at Ormara. Like the sea terns keeps out at sea and away from the coast except when nesting.

EXTRALIMITAL. 'Breeds on tropical islands in the Indian and western Pacific Oceans from the Seychelles and Madagascar to the Hawaiian Islands and the Tuamotu Group, north to the Ryukyu and Bonin Islands, and south to N. Australia, Norfolk Island and the Tuamotu Group' (Peters).

GENERAL HABITS. Similar to the sea terns, but the birds evidently do not plunge for fish. They feed largely by following schools of small fish which are apparently being attacked by some submarine predator, picking them off as they scurry along or skip above the surface in the stampede to escape. The birds momentarily hover over the water and poise before darting downward to snatch the prey. Noddies congregate in groups at such feeding centres which break up and scatter again when the fish dive deeper. They also feed actively during bright moonlit nights. Commonly found resting on buoys, fishing stakes or bits of flotsam offshore and on the rigging of ships. Occasionally they settle on the sea, riding the water like gulls.

FOOD. Mainly small fish captured as above; flying fish caught in the air. VOICE AND CALLS. 'A low harsh croak ker-r-rk sometimes emitted in flight particularly at night' (Gibson-Hill, 1947).

BREEDING. Season, in the Laccadives (Cherbaniani Reef) February (Hume) but apparently much prolonged. Elsewhere (Seychelles, Christmas Island) April to September, mainly July-August. Nest, a small untidy layer of debris on a rock shelf, a shoddily put-together structure of sticks, straw, etc. up in the head of a coconut palm, or on a *Pandanus* or other bush; sometimes on bare shingly ground. Usually in close-packed colonies, but also individually. Egg almost invariably a singleton, roughly ovoid, slightly more pointed at one end, and with a fine matt surface. Warm off-white to very pale fawn in ground colour sparsely blotched with light grey and pale purplish grey, and with fine or coarse dark amber markings chiefly at the broad end. Average size of 10 eggs from North Keeling (Indian Ocean) 52.9 × 36.0 mm. (Gibson-Hill, 1947). Colour of yolk yellow *centra* orange in Sooty Tern (Ridley, 1957).

MUSEUM DIAGNOSIS. For detailed description of plumage see Hume, A. O. (1876, SF 4: 479); for ecology Gibson-Hill, 1947: 104-8.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	271-300	35-42	c. 25	152-176 mm. (Baker)

COLOURS OF BARE PARTS. Iris brown. Bill, legs, feet and claws black or blackish brown.

482. Whitecapped Noddy. *Anous tenuirostris worcesteri* (McGregor)

Aforaneus worcesteri McGregor, 1911, Phil. Jour. Sci. 6, sect. D: 183

(Cavilli Island, Sulu Sea)

Baker, FBI No. 2098, Vol. 6: 147

LOCAL NAME. *Meranga* (Maldives).

SIZE. Pigeon; length c. 33 cm. (13 in.).

FIELD CHARACTERS. Hardly distinguishable from 481 in the distance. A blackish brown tern with white forehead and crown, passing into ashy grey and then into dark brown on nape. Loes and chin jet black; sides of neck, throat and foreneck sooty black. Sexes alike.

Young (immature). Paler brown, but also with white cap and black loes.

STATUS, DISTRIBUTION and HABITAT. Rare straggler. Recorded as seen on occasion in the Bay of Bengal, but no recent report or specimen thence. There is a specimen from Calcutta in the British Museum (Baker). Specimens have been obtained in the Andamans (Port Blair), near the mouths of the Ganges, and at Minicoy Island in the Laccadive Group, c. 8°30'N., 73°0'E. Reported to breed (subsp.?) on the South Mahlosmadulu Atoll, Maldives Is. in November (Gadow & Gardiner, 1903). Possibly a breeding visitor there; not met with by Phillips between December 1956 and February 1957 (JBNHS 55: 212). Sri Lanka, sight record c. March (Loris xv(1), June 1979).

Extralimital. Other known breeding places Cavilli Island, Sulu Sea, Philippines, and Chagos Archipelago south of the Maldives (Ibis 1962, 104: 71). Subspecies in latter case undetermined.

GENERAL HABITS, FOOD, VOICE and CALLS. Not recorded in Indian waters.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	227-234	46-49	20-21	115-122 mm. (Baker)

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet brownish black.

Genus *Gygis* Wagler

Gygis Wagler, 1832, Isis von Oken, col. 1223. Type, by monotypy,

Sterna candida Gmelin

Leucanous Mathews, 1912, Bds. Austr. 2: 432. Type, by original designation,

Gygis microrhyncha Saunders

Plumage pure white. Wing long; first primary (as.) longest. Tail forked, of moderate length, less than half the wing. Bill stout and straight, longer than head. Nostril placed nearer the base than tip. Tarsus very short; toes long and the webs slightly indented.

483. Indian Ocean White or Fairy Tern. *Gygis alba monte* Mathews

Gygis alba monte Mathews, 1912, Bds. Austr. 2: 443 (Seychelles)

Baker, FBI No. 2039, Vol. 6: 148

Plate 46, fig. 5

LOCAL NAMES. *Cundu*, *Wallu dooni* (Maldives).

SIZE. Pigeon —; length c. 27-33 cm. (10½-13 in.).

FIELD CHARACTERS. An elegant, distinctive snow-white tern with long forked tail. Shafts of primaries and tail-feathers dusky. A narrow ring of black feathers round eye. Sexes alike.

484. Indian Skimmer or Scissorbill. *Rynchops albicollis* Swainson

Rynchops albicollis Swainson, 1837 (1838), Anim. in Menag.: 360 (India)

Baker, FBI No. 2100, Vol. 6: 150

Plate 45, fig. 3

LOCAL NAME. *Pānchira* (Hindi).

SIZE. House Crow ±; length c. 40 cm. (16½ in.).

FIELD CHARACTERS. A very long and pointed-winged tern-like bird chiefly blackish brown above, glistening white below. Easily identified by pied plumage, the peculiar compressed knife-like orange-yellow bill with the lower mandible projecting well beyond upper, and bright red legs. The broad white forehead and sides of face and neck (white collar) contrasting with black crown and nape, and a dark stripe down the middle of the white rump and tail (slightly forked) are further pointers. Sexes alike; female somewhat smaller.

Young (immature). Lighter brown above, scalloped with fulvous white. Forehead streaked with brown. Tail-feathers brown-tipped.

STATUS, DISTRIBUTION and HABITAT. Resident, nomadic, and also locally migratory depending upon water conditions. Fairly common in West Pakistan (Baluchistan?, Sind, Punjab, Indus system), northern India east to Assam (Ganges and Brahmaputra systems), and East Pakistan. Less common southward through Andhra Pradesh (Narbada, Tapti, Mahanadi, Godavari, Kistna rivers). Not recorded south of c. 16°N. in the Peninsula; absent in Ceylon. Confined to the larger rivers. Rare vagrant on inland tanks (once several on the lake at Mt Abu, Rajasthan — Butler, SF 5: 225) and even estuaries and inshore coastal waters (Bombay — once). Affects placid expansive reaches of rivers with sandbanks.

Extralimital. Burma and the Indochinese countries.

GENERAL HABITS. Rather tern-like. Hunts singly or in small loose parties, congregating later to rest on sandbanks in rivers in close-packed flocks, all birds sitting with face to wind. Hunts actively also during moonlit nights. Skims gracefully over placid water with quivering tips of wings held in line with body, the projecting tip of lower mandible immersed at an oblique angle, lightly ploughing the surface. The upper mandible, which is capable of much vertical movement, is raised clear as the bird beats methodically back and forth over a promising stretch of shallows along the edge of the main stream sometimes merely 3 cm. deep. On striking knife-blade edge of lower mandible, the prey slides up the tip with the momentum — rather as a tennis ball trundled along the ground runs up an inclined racket. The upper mandible is promptly snapped shut with the head jerked double under the body, the interlocking blades seizing the prey transversely in a vice-like grip. The fish is quickly flipped round through a right angle and swallowed head foremost; on dissection of bird's gizzard, small fish, all more or less same size, found 'lying neatly parallel like sardines in a tin' (Whistler).

FOOD. Mainly small fish. Stomachs frequently found to contain a small quantity of oily fluid only.

VOICE and CALLS. A nasal *kap, kap* (Whitehead). 'A yapping sound like young fox-hounds' (Mohammad Abdulla el-Husseini).

BREEDING. Season, chiefly mid February to mid April, with slight local variations. Nest, an unlined depression in the sand. In mixed colonies with

STATUS, DISTRIBUTION and HABITAT. Resident and breeds on Addu Atoll in the Maldives (Phillips, 1963, JBNHS 60: 578). Also further south in the Chagos Archipelago (Ibis, 1962, 104: 71). A specimen collected over a hundred years ago in the Bay of Bengal (Hume, 1878, SF 7: 447); no other record from elsewhere within our limits. Keeps to the open sea but apparently never at any great distance from land.

GENERAL HABITS. Similar to the Noddies', qq. v.

FOOD. Small fish. To feed the young these 'are brought home [by the adults] in neatly arranged rows in the bill' (Ridley, 1957, JBNHS 54: 924).

VOICE and CALLS. 'Raucous notes, almost a parody of a human being's laughter' uttered both during day and night (Ridley).

BREEDING. Season. On Addu Atoll (Maldives) reported to breed intermittently throughout the year; in the Chagos Archipelago chiefly May to August. Egg, a singleton, greyish white to greyish pink or buff, blotched and spotted and with squiggly lines of black or reddish brown. Average size of 40 eggs 40.2 × 30.7 mm. (Baker). No nest built, the egg being balanced in some slight depression along a branch, sometimes quite high up. It may be on the horizontal portion of the mid-rib of a curving frond of a coconut palm, or as in the Maldives, in a similar position on a banana leaf. The incubating bird does not sit on but behind the egg, covering it by fluffing out its breast feathers. On disturbance, it does not spring up but rather falls away backwards to avoid dislodging the precariously balanced egg. Both sexes incubate; period 30-32 days. Chick on hatching equipped with sharp claws which enable it to hold on to swaying substrate and avoid being blown off in a gale. (For an excellent account of the breeding biology on Cocos-Keeling Island, Indian Ocean, see Gibson-Hill, 1947.)

MUSEUM DIAGNOSIS. Bill rather large, conical, slightly bent upwards, the angle of the gonys large and projecting. Tail graduated, approaching in shape that of *Anous*; forked in the middle (Hume).

MEASUREMENTS

	Wing	Bill (from feathers)	Tail
15 ad. ♂ ♀	225-241 (av. 236)	39-44 (40.5)	102-120 mm (108) (Gibson-Hill)

COLOURS OF BARE PARTS. Iris brown. Bill black, the basal half blue. Legs dusky with the webs yellow.

Genus *Rynchops* Linnaeus

Rynchops Linnaeus, 1758, Syst. Nat., ed. 10, 1: 138. Type, by monotypy,

Rynchops nigra Linnaeus

Culmen curved; lower mandible knife-like, projecting beyond upper; flexible, truncated at the end and closely furrowed on the side with minute oblique ridges. Shorter upper mandible stouter and stronger. Nostrils elongate, near base of upper mandible and near commissure; opening in an irregular hollow. Wings very long, reaching far beyond tail at rest; first primary (as.) longest. Tail short, slightly forked. Tarsus longer than middle toe and claw; feet small, webs between the toes with concave edges.

The genus contains 3 species, one each in America, Africa and India.

River and Little terns, on exposed sandbanks in the larger rivers. Eggs usually 3, less commonly 4. Ground colour variable ranging from pale pinky buff, pale *café-au-lait*, pale salmon or stone, to greyish or greenish white; blotched and streaked with rich umber, chocolate- or reddish brown, sometimes with underlying purplish markings. Average size about 41 × 30 mm. Incubation chiefly by female, though male said to assist. Period unrecorded. Parents constantly soak their undersides in the river and splash water over the eggs and young to keep them cool. Sitting female 'constantly leaves the nest to fly round with the male' (Stanford). When first hatched, bill of downy young like that of a young tern. On alarm chicks lie down stretched out full length perfectly motionless in indentations in the 'crusted' sand, as flat as pancakes, and are very difficult to distinguish in their surroundings. Sandstorms often bury the eggs and crouching young more or less completely (Lowther, 1949).

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit.; for mechanics of feeding and structure of bill, Schilmdmacher, H., 1931, Orn. Monist. 39 (2): 37-41; for feeding behaviour and anatomy Zusi, Richard L., 1962, Publ. No. 3, Nuttall Orn. Club, 101 pp.

MEASUREMENTS

	Wing	Bill (from feathers) upper lower mandible mandible	Tarsus	Tail
♂ ♀	344-398	58-75 78-100	24-26	104-112 mm. (Baker)

COLOURS OF BARE PARTS. Adult. Iris brown. Bill orange-yellow, more scarlet at base, more yellow at tips. Legs and feet bright vermilion. In juvenile before bill assumes the 'scissors' shape, colour — also of feet — horny.

MISCELLANEOUS. Lowther observed from a photographing hide a downy River Tern chick run past a skimmer sitting on eggs. The skimmer left the nest and gave chase, attempting to pick it up in its feet. Succeeded at third attempt and carried it off, vigorously pursued by the parents. Eventually dropped the chick in the river while twisting and turning in the hurly-burly (Lowther, 1949).

Order COLUMBIFORMES

Family PTEROCLIDIDAE: Sandgrouse

For morphological and other details see Stresemann, L., 1927-34, Aves: 762-3; Witherby, 1940, 4: 147; Baker, 1928, FBI, 5: 260; Van Tyne, J., & Berger, A. J., 1959: 453; Meinertzhagen, R., 1964, Article 'Sandgrouse' in Thomson, A. L. (ed.) *New Diet. Birds*, London and New York.

Sandgrouse are terrestrial pigeon-like birds chiefly of sobre sandy brown coloration exquisitely patterned with disruptive black spots and vrmiculations affording them perfect camouflage in their native semi-desert environment. They have an exceptionally powerful flight, and in spite of their short legs are also good walkers and runners.

Key to the Genera

	Page
A hind-toe present; tarsus feathered in front only; toes naked.....	<i>Pterocles</i> 79
No hind-toe; tarsus as well as toes feathered throughout.....	<i>Synhyalae</i> 77

SANDGROUSE

77

Genus SYRRHAPTES Illiger

Syrrhaptes Illiger, 1811, Prodrum: 243. Type, by monotypy, *Tetrao paradoxus* Lin. Gmel. = Pallas

Distinguished by absence of hallux or hind-toe and by having the very short squat toes feathered above to the tips as well as the entire tarsus. Central tail-feathers very long and pointed. Wing long: first primary (as.) much the longest.

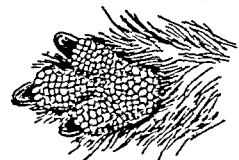
485. Tibetan Sandgrouse. *Syrrhaptes tibetanus* Gould

Syrrhaptes tibetanus Gould, 1850, Bds. Asia, pt. 2: pl. and text (= 6, pl. 61 of bound vol.) (Tsomoriri Lake, Ladak, Tibet)
Baker, FBI No. 1896, Vol. 5: 277

Plate 47, fig. 9

LOCAL NAMES. Kük, Käling, Käkling or Keeling (Ladakh); Kang-ga-ling, Kakali (Tibet).

SIZE. House Crow +; c. 48 cm. (19 in.).



Sole of foot, x c. 1

FIELD CHARACTERS. A sandy coloured pigeon-like but squat ground bird with a long, pin-pointed tail.

Adult (male). Above, forehead and over the crown to upper back white finely cross-barred with black. Mantle vinaceous sandy brown. Lower back and rump greyish white finely vermiculated with black. Tail rufous-chestnut with white tips; elongated central feathers greyish sandy. Face, sides of neck and throat orange-yellow. Wing-quills black. Below, foreneck and upper breast finely cross-barred with black. Rest of lower parts white.

Female overall similar but with mantle coarsely blotched and vermiculated (or barred) with black, and the barring below extending to lower breast.

Young (immature). Like female but with only faint traces of orange-yellow on sides of neck.

STATUS, DISTRIBUTION AND HABITAT. Resident and (?) altitudinal migrant; apparently descending to lower elevations locally in winter. Ladakh (Rupshu, Tso Moriri, Tsokri and Pangong Lake neighbourhoods) and Himachal Pradesh (Baralacha Pass). Just across the northern boundary of Sikkim but apparently not within. Affects barren, stony semi-desert steppes in Tibetan Plateau country between c. 4200 and 5400 metres.

Extralimital. 'Breeds in inner Asia at elevations ranging between 12,000 and 16,000 ft. from the Pamirs to Kokonor, south to Lahul and Sikkim [?]; in winter descending to somewhat lower altitudes' (Peters).

GENERAL HABITS. Terrestrial. Keeps in flocks of 10 to 30, sometimes even up to a hundred, irregularly dotted about, walking like pigeons and picking food on barren stony ground. The birds lie close and rise only when observer 50 paces or so away, settling again at a short distance. They are

SANDGROUSE

79

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	254-270			203-263 mm.
		16-20	c. 27-30	
♀♀	248-266			203-216 mm. (Baker)

COLORS OF BARE PARTS. Iris brown. Bill and nails bluish horny.

485a. Pallas's Sandgrouse. *Syrrhaptes paradoxus* (Pallas)

Tetrao paradoxus Pallas, 1773, Reise Russ. Reichs 2: 712 ('deserto Tatarico australiore')
Plate 47, fig. 8

The only known occurrence within our limits of Pallas's Sandgrouse *Syrrhaptes paradoxus* (Pallas) is of a female shot at Gājñer in Rajasthan on 31 December 1924 by the then Maharajkumar of Bikaner and identified by Stuart Baker (1926, JBNHS 31: 522). It is distinguished from Tibetan Sandgrouse by the presence of a black patch on the belly in both sexes, particularly noticeable in flight.

The species breeds in the steppe region of extreme SE. Russia and central Asia, winters irregularly in the plains of NE. China, and is well-known for its curious sporadic irruptions which occasionally carry it across as far as W. Europe and even the British Isles.

Genus PTEROCLES Temminck

Pterocles Temminck, 1815, Fig. et Gall. 3: 238, 712. Type, by subsequent designation, *Tetrao alchata* Linnaeus

Bill stout, small and arched above. Nostrils elongate, basal, covered by frontal plumes. Wings long and pointed: first primary (as.) longest. Tail moderate, the central rectrices sometimes lengthened to a pin-point. Tarsi feathered in front, reticulated behind. Toes short and naked; hallux present.

Genus represented throughout Africa, S. Europe, and SW. and C. Asia; six species within our limits.

Key to the Species

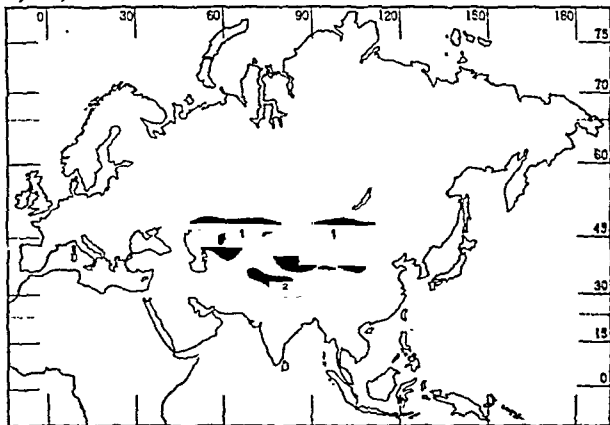
	Page
A Two central tail-feathers greatly lengthened	1
B Central tail-feathers not greatly lengthened	2
1 Abdomen white throughout in both sexes	P. alchata
Lower plumage marked with black	a
a Middle of abdomen marked black and rufous	P. exustus (♀)
Middle of abdomen black	I
I A black band across breast	P. exustus (♂)
No black band across breast	P. senegallus
2 Abdomen all black	P. orientalis
Abdomen unspotted buff (♂); spotted buff (♀)	P. coronatus
Abdomen banded black and white	b
b Two dark pectoral bands (♂); no dark pectoral band (♀)	P. indicus

78

COLUMBIFORMES

usually tame to the point of stupidity permitting close approach even after being fired at once. They rise with the usual sandgrouse chuckle and are very noisy on the wing, constantly uttering a loud clanging double note. Like other sandgrouse they flight to water in the early morning and late dusk, though F. M. Bailey thought they had no special hour for drinking. Prefer fresh water, but will also drink brackish, as at Tsokr.

Syrrhaptes

Breeding range 1 *S. paradoxus* (SE) 2 *S. tibetanus*.

FOOD. Mostly seeds and shoots. Stomach of a specimen contained greens, seeds, elytra of beetle; very little grit (Meinertzhagen).

VOICE AND CALLS. Call in flight variously rendered as *guk-guk*, *yak-yak*, and *caga-caga*. 'Typical sandgrouse call but deeper and more musical — a pleasant *koonk-koonk* uttered by different birds in slightly varying keys reminiscent in this respect of a flock of Demoiselle Cranes' (Sálim Ali, 1946, JBNHS 46: 305).

BREEDING. No authentic eggs taken within our limits, but circumstantially breeds in Ladakh. Season, from second half of June, as just across the Sikkim frontier (Khamba Jong and Neru) and elsewhere in Tibet. Eggs, 3 laid in an unlined shallow depression on bare stony ground; oval, pale stone in ground colour covered fairly evenly with brown spots and blotches, with secondary lavender markings. Incubation (?) and tending of chicks by both parents. Incubation period unrecorded. Downy chicks fast runners. In one case attendant female did broken-wing trick, fluttering piteously along the ground for over 20 metres away from the chicks which meanwhile squatted flat and 'froze', vanishing magically from sight!

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

80

COLUMBIFORMES

486. Large Pintail Sandgrouse. *Pterocles alchata caudatus* (S. G. Gmelin)

Tetrao caudatus S. G. Gmelin, 1774, Reise Russ. 3: 93, pl. 18 (Northern Persia)
Baker, FBI No. 1892, Vol. 5: 268

Plate 47, fig. 7

LOCAL NAME. Kāzū (Baluchi).

SIZE. Pigeon +; length c. 38 cm. (15 in.) including tail c. 10-18 cm.

FIELD CHARACTERS. An overall sandy coloured terrestrial pigeon-like bird of open semi-desert country with a long pin-pointed tail. Abdomen white in both sexes. Readily distinguished on the wing from Imperial Sandgrouse (489) by general appearance, chiefly the white belly; from Spotted (488) by the single call-note v. a bisyllabic chuckle.

Male (adult). Above, head chiefly orange- or rufous-buff with a narrow black line running backward from eye. Rest of upperparts largely sandy olive-green, scantily mottled with yellow; lower back barred with black and buff. Shoulder of wing chocolate, the feathers conspicuously fringed with white. Below, chin and throat black; breast pale rufous bordered by a narrow black band above and below. Rest of underparts white.

In non-breeding plumage male resembles female but lacks the barring on the back.

Female (adult). Upperparts barred black and yellowish buff. Below, chin and middle of throat white. A band across throat dull ochraceous-buff followed by a broad black gorget and a narrow grey band. Breast pale rufous bordered by a narrow black bar above and below as in male. Rest of underparts white.

Young (immature). 'Crown, upperparts and breast yellow-buff with darker crescentic bars. Lower breast and abdomen white with a few black bars on abdomen; central tail-feathers definitely elongated but not to a pin-point' (Meinertzhagen).

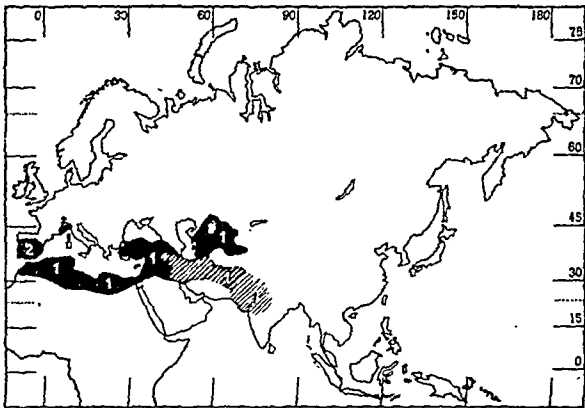
STATUS, DISTRIBUTION AND HABITAT. Abundant winter visitor and/or passage migrant in autumn and spring in West Pakistan (chiefly Baluchistan, trans-Indus Sind, and the northwestern frontier districts). Less common and in smaller numbers in Punjab and Sind east of Indus R. Apparently breeds in central Makran; also perhaps locally in Punjab (oviduct egg, 8 June 1900, Mardan, Bogle, 1901, JBNHS 13: 540). Has occurred as vagrant east to Ludhiana and Delhi, south to Bikaner and Jodhpur (Rajasthan), and Deesa (N. Gujarat, c. 24°15'N.). Affects barren sandy wastes, and fallow land in partly cultivated semi-desert biotope.

Extralimital. 'Resident in northern Africa from central Morocco to Cyrenaica and south to the Sahara; resident also from Asia Minor, the Caucasus, Transcaspia, Afghanistan and NW. India, south to Palestine, Mesopotamia and Baluchistan' (Peters).

GENERAL HABITS. Terrestrial. Often arrives in winter in vast flocks literally of thousands in suitable places in the northwest. According to Hume flocks of 'tens of thousands' first seen in the far distance like a thin cloud, 'positively darkening the air when passing over' and 8, 10 or 12 falling to a single shot (1873, SF 1: 117). Apparently the numbers vary considerably locally and from year to year. The birds usually extremely wary and difficult to approach. Flight very swift and powerful said to be more so than of

its congeners; accompanied continually by the noisy and peculiar call-notes. Like other sandgrouse regularly flights long distances to drink at water-holes, etc. in the early mornings and late afternoons (occasionally also recorded at midday) wading in at the edge and sometimes even alighting directly in the shallows. Has been observed settling on water in a river far from the shore, floating high like a gull, drinking leisurely, and rising off the surface without difficulty (Magrath, 1917, JBNHS 25: 149). Like most other birds sandgrouse drink in the manner of a hen, raising the bill for

Pterocles alchata



■ Breeding range ▨ Winter 1 *P. a. caudatus*.
2 *P. a. alchata* (RE).

each gulp, and not continuously like a pigeon or horse as commonly believed. In breeding season carries water in soaked underplumage to cool the eggs or for the chicks, adults then regularly showing a mud stain on the underparts acquired while watering (Ticehurst, C. B., *Ibis* 1923: 471). At drinking time flocks pack together at a short distance from the water before walking down to drink. They also rest in the heat of the day and during the night in similar packed assemblages.

FOOD. Green leaves — clover and others — small seeds, pulse, and grain of different kinds. Gizzard usually contains a quantity of grit.

VOICE AND CALLS. Rather similar in character to those of Imperial yet distinct; uttered on the ground and in the air. Described variously as 'a ringing *catarr* or *guellar*' and 'a harsh penetrating *caa* followed by a softer *caa*'. Both sexes have an alarm-note *twoi, twoi, twoi* (Ticehurst, C. B. *et al.*, 1922, JBNHS 28: 952).

¹ For further corroboration of this habit see Tom J. Cade & Gordon L. Maclean, 1967, 'Transport of water by adult sandgrouse to their young' — *Condor* 69 (4): 323-43.

Female (adult). Upperparts dull buff streaked, spotted and barred with dark brown. Below, upper breast spotted with black; lower breast pale buff; abdomen and flanks rufous-buff closely barred with blackish.

Young (immature). Upperparts dull buff, finely vermiculated all over with thin wavy black lines. Below, chin, throat and breast buff, finely barred with blackish; abdomen and flanks dull black.

STATUS, DISTRIBUTION AND HABITAT. Common resident — also nomadic and/or locally migratory — throughout West Pakistan (abundant in parts of Baluchistan and Sind), and peninsular India (decreasingly common eastward to Bengal, southward to Madurai and Tirunelveli districts, Madras). Recorded (once) in Jammu. Absent in Assam, East Pakistan, and Ceylon. Affects barren plains and plateaux: dry stubbles, sun-baked ploughed and fallow land, and sparsely scrubbed stony semi-desert. Avoids forest and coastal tracts.

Extratropical. SW. Arabia, Iraq (?), S. Palestine, Syria. Allied races in N. and E. Africa.

GENERAL HABITS. Usually met in small scattered parties of 3 to 5 and flocks of 10 to 30 birds — exceptionally up to a couple of hundred. But where water is scarce, as in the Thar desert of W. Pakistan, vast concentrations of a thousand or more may collect to drink at a single waterhole. Shuffles along the ground on its short legs gleaning weed and grass seeds. Coloration of squatting bird remarkably obliterative in its native environment, even at a few yards' range. Has the common habit of the family of regularly sighting to water in the morning a couple of hours after sunrise, often over considerable distances. At the appointed hour flock after flock will converge from all quarters on a favourite drinking place. The first flock alights some distance from the water, and after a few minutes of sitting around or pecking for food the birds shuffle down to the edge, sometimes wading in up to their bellies. After a few quick gulps they are off again, while relays of further flocks continue to follow. In very hot weather, and less regularly, the birds also drink in the early afternoon — not at dusk as Painted and Coronetted Sandgrouse do, qq. v.

Incidentally the birds provide excellent sport with the gun as they fly to and from their watering places. Their powerful flight with rapid, steady wing-beats, and dense plumage call for straight shooting and heavy shot to bring them down.

FOOD. Vegetarian: mostly weed- and grass seeds along with which a quantity of grit is swallowed. Seeds identified include *Cyamopsis psoraloides*, *Eleusine aristata*, *Pseudanthisteria hispida*, and species of *Tephrosia*, *Indigofera*, *Panicum*, *Phaseolus* and others. (For a detailed list of seasonal stomach contents see Faruqi, Bump, *et al.*, 1960, JBNHS 57: 360-61.) Hume also mentions mustard leaves. 'Their dry droppings are very distinctive — an oblong dark part with a mushroom-like white cap' (Ticehurst).

VOICE AND CALLS. A penetrating double-note *Kut-ro* uttered in flight — not particularly loud but far-carrying — often clearly audible long before the birds come into view. 'A loud musical *gutter, gutter* in flight' (Meinertzhagen).

BREEDING. Season overall January to May, varying somewhat in different parts of the country. Chiefly March to May in northern India, January to

BREEDING. Circumstantially may breed in W. Pakistan (central Makran and Peshawar dist.). In the nearest authenticated breeding place, Iraq, season May to July. Eggs normally 3, sometimes 2, laid on dry open flat ground without any sort of nest; very variable: mostly pale creamy buff in ground colour with dark brown or red-brown primary and violet-grey secondary markings. Average size of 20 eggs 44.36 × 30.0 mm. (F. Ludlow). Incubation by both sexes; incubation period (in captivity) 21-23 days (Meade-Waldo, *Avicultural Magazine*, 1906: 219).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). 'General colour above mottled very pale buffy white, pale ginger with black tips. No definite pattern, but supercilia and coronal streak whitish. The brown down here and there has long black hair-like tips, while on the thighs the whitish down has similar white hairs. Underparts whitish to buffish white. Iris brown; bare skin round eye blue-grey; toes yellowish' (Ticehurst).

MEASUREMENTS		Wing	Bill (from feathers)	Tarsus	Tail
♂♂	213-224	c. 13-15	c. 25-29	140-190 mm.	
♀♀	194-231				

Weight ♂♂ 10-12 oz. (284-340 gm.); ♀♀ 8½-11½ oz. (c. 235-320 gm.) (Baker).
COLOURS OF BARE PARTS. Iris brown. Bill dusky green to dull brown or slate colour. Feet dirty yellow to dusky green.

487. Indian Sandgrouse. *Pterocles exustus erlangeri* (Neumann)

Pteroclorus exustus erlangeri Neumann, 1909, Orn. Monatsb. 17: 154

(El Hot, Lahej, southern Arabia)

Pterocles exustus hindusian Meinertzhagen, 1923, Bull. Brit. Orn. Cl. 43: 158

(Sambhar, Rajputana)

Baker, FBI No. 1893, Vol. 5: 271

Plate 47, fig. 4

LOCAL NAMES. *Bhāt teelār*, *Kuhar* (Hindi); *Bātubār*, *Bātubān* (Sind); *Pokurder*, *Pokundi* (Marathi); *Kāl gojāl hākki* (Kannada); *Jam polānki* (Telugu); *Kāl koudiri* (Tamil).

SIZE. Pigeon; length c. 28 cm. (12½ in.) including tail of c. 12 cm.

FIELD CHARACTERS. A yellowish sandy-grey pintailed pigeon-like ground bird of dry open plains country, with a narrow black band across breast in both sexes. In flight stout bullet-shaped body with tapering tail-end, pointed shortish sickle-like wings, and double-noted call *kut-ro* diagnostic.

Male (adult). Upperparts sandy grey and buff with dark narrow crescentic marks and coarse yellowish speckles. Cheeks, chin, and throat dull yellow; belly chocolate-black.



x c. 1

April in the Deccan; but sporadically also in other months. Nest, an unlined scrape or depression in the bare soil in open scrubby wasteland often interspersed with dry cultivation, usually unsheltered by clod or bush. Eggs, normally 3, sometimes 2, elliptical, equally rounded at both ends. Greyish to yellowish stone in ground colour with numerous spots and specks of brown scattered over the surface, and secondary markings of pale- or inky grey and lavender. Average size of 200 eggs 36.8 × 26.2 mm. (Baker). Incubation and tending of young by both sexes. Birds close sitters, often leaving nest only when intruder a metre or so away and, especially if eggs hard-set, giving the 'broken-wing' distraction display. Period of incubation reportedly 20 days.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for moult Ticehurst, C. B., Bull. Brit. Orn. Cl. 42: 9-11.

Chick (in down). 'General colour above golden brown with black tips, and bill passes over the head as a coronal streak (broken on forehead) to hindneck and then to the middle of the back where it divides, making the top of a "figure of eight". From base of bill another white streak passes in front of eyes, and is lost in the ear. Well-marked "figure of eight" on lower back outlined by black and enclosing coverts. Rest of crown pale ginger-brown dotted with black; underparts buffish white, darkest on the pectoral region. Bill and bare space round eyes lead-blue; iris hazel; feet dusky flesh, nails white' (Ticehurst).

MEASUREMENTS		Wing	Bill	Tarsus	Tail
♂♂	177-185	c. 26-28	17-20	c. 25	105-142 mm.
♀♀	171-177				

Weight ♂♂ 8-10 oz. (c. 227-284 gm.); ♀♀ 7½ to 8½ oz. (c. 212-242 gm.) — Baker.
COLOURS OF BARE PARTS. Iris dark brown; eyelids and orbital skin greenish yellow. Bill horny plumbeous. Feet and claws greyish brown.

MISCELLANEOUS. In 1960-2 a substantial number of Indian and Imperial Sandgrouse were introduced into the states of Nevada and Hawaii (U.S.A.) in ecologically appropriate habitat types with a view to establishing them as supplementary game birds. For a study and review of the species for the purpose of this trial introduction see Christensen, Bohl and Bump, 1964, Special Scientific Report — Wildlife No. 84 of U.S. Dept. of the Interior, Fish and Wildlife Service, Bureau of Sport Fisheries and Wildlife. Later reports show that the species has not 'taken on', and that by the end of 1965 all the birds had disappeared.

488. Spotted Sandgrouse. *Pterocles senegallus* (Linnaeus)

Tetrao senegallus Linnaeus, 1771, Mantissa: 526 (Senegal, error, Algeria accepted as type locality by Hartert, 1924, Nov. Zool. 31: 7)

Pterocles senegallus remotus Neumann, 1934, Verh. Orn. Ges. Bayern 20: 471

(Kunaria, Kutch, NW. India)

Baker, FBI No. 1894, Vol. 5: 273

Plate 47, fig. 6

LOCAL NAMES. *Nānho kālings*, *Kara jat* (or *frī?*) *gūā*, *Gūā* (Sind); *Wāku* (Kutch); *Lūhīnk* (Baluchi).

SANDGROUSE

85

SIZE. Pigeon \pm ; length c. 36 cm. (14 in.).

FIELD CHARACTERS. Like 487, also sandy coloured overall with elongated pin-pointed tail.

Male (adult). *Above*, pale sandy buff or sandy grey. A pale ashy band from forehead encircling crown and running back over eyes down sides of hindneck to meet in front below the orange throat-patch. Scapulars and wing-coverts with paler buff spots. Tail-pins black. *Below*, throat-patch (covering cheeks, chin, throat and sides of foreneck) deep orange yellow. Abdomen to vent blackish brown; rest of underparts buff.

Female. *Above*, buff; crown and upper back spotted, lower back barred with black. *Below*, upper breast buff spotted with black. Orange throat-patch and rest of underparts as in male.

Young (immature). *Above*, sandy, the feathers with darker crescentic bars and almost vermiculated streaks; central tail-feathers barred to tips and shorter than in adult. *Below*, pale sandy with small horseshoe marks on breast and black ventral streak (Meinertzhagen).

STATUS, DISTRIBUTION and HABITAT. Mainly winter visitor to West Pakistan (Baluchistan, Sind, and NW. frontier districts), and NW. India (Punjab, W. Rajasthan, N. Gujarat [Kutch, N. Saurashtra]) sometimes arriving as early as August/September. Local occurrences and abundance, e.g. in Kutch, rather erratic and inexplicably variable from year to year and also periodically. Small numbers resident in parts of Baluchistan and Sind, and evidently breeding, but this not yet proven. Affects arid stony and sandy wastes, and salt-encrusted *pāts* in open semi-desert in preference to thinly scrubbed plains or arable land.

EXTRALIMITAL. Resident in N. Africa from Algeria to Egypt south to Sudan and Somalia; Palestine, Iraq, Arabia, Iran and Afghanistan.

GENERAL HABITS. Typical of the family. More gregarious than Indian Sandgrouse (487), usually keeping in much larger flocks, maybe of 50 to several hundred birds, in the cold weather. Very numerous where it occurs, and in areas of water scarcity literally thousands of birds may congregate from distant points at the only available water-hole or inundated depression. Their drinking habits are marked by the same regularity and punctuality as their congeners' — flock after flock repairing to water a couple of hours after sunrise and then again in the early dusk.

FOOD. Evidently less pure vegetarian than e.g. Indian Sandgrouse. In addition to grass- and weed seeds also takes quantities of insects.

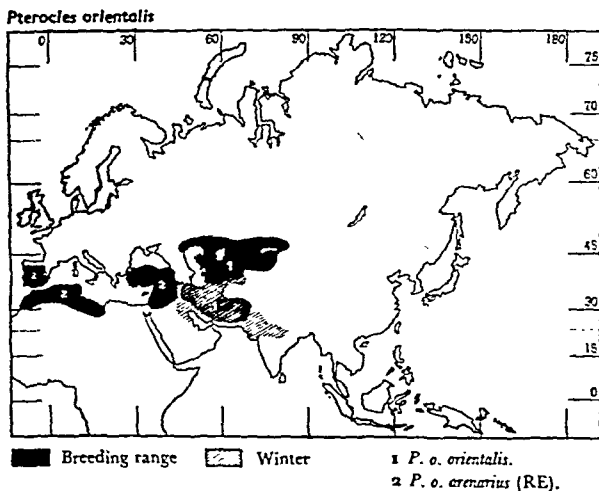
VOICE and CALLS. Distinctive and far-carrying. Various described, perhaps the closest rendering being *gū-tū-gū-tū* or *wāku-wāku*, from which the bird gets its Sindhi and Kutchi names. In the distance, when uttered by an approaching flock in chorus, the sound is curiously reminiscent of a hookah or 'hubble-bubble' being smoked! 'A liquid quiddle, quiddle' (Ticehurst).

BREEDING. Oviduct eggs taken in Sind in February, March, May and August, and the birds must doubtless breed somewhere in that area. However, as yet no complete proof of nesting within our limits. Season in Iraq chiefly June and July, but much protracted. Eggs, 3, laid on bare hard ground, e.g. dried-up marsh, or in pure desert. Colour creamy *café au lait*, blotched and speckled with reddish brown and umber-brown with a few

SANDGROUSE

87

West Pakistan (rare in lower Sind). Winter visitor (September/October to February/March) to NW. India — Punjab, Rajasthan (Thar Desert), N. Gujarat and Kutch (Little Rann environs) — locally in enormous numbers. Winter distribution somewhat nomadic, patchy and curiously erratic, both as to local occurrences and abundance from year to year, and sometimes the birds permanently forsake long-established winter habitats (e.g. in Kutch) after even a short run of aberrant seasons.



Outside the regular winter distribution, odd vagrants have strayed as far east as Lucknow, Allahabad, and Nepal, and south to Bhopal and Mysore. Affects sandy plains in arid semi-desert biotope, often at great distances from water; sometimes *pāts* or salt-encrusted waste land and fallows around canal-irrigated desert cultivation.

EXTRALIMITAL. Resident in the eastern Canary Islands; Iberian Peninsula, NW. Africa; Cyprus, Asia Minor, Palestine' (Peters). Also S. Russia, Kazakhstan, Chinese and Russian Turkestan, Transcaspia, Iran, and Afghanistan.

GENERAL HABITS. Typical sandgrouse, cf. 487. Keeps in flocks usually of 15 to 30 birds or so, but not uncommonly in vast 'swarms' of several hundred strong. Always excessively wary and difficult to approach. Flies long distances to drink ('sometimes 10-15 miles') in the morning a couple of hours after sunrise, and again in the late afternoon, before sunset, though the latter less regularly and punctually. In areas of water scarcity enormous concentrations occur at only available water, flock after flock flying in from every quarter at the appointed time. The flocks fly round once or twice high over the drinking-place before alighting, as if to assure themselves

COLUMBIFORMES

86

secondary markings of pale grey-brown or lavender. Average size of 46 eggs 40.9 × 28.4 mm. (Baker). Incubation 29-31 days.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). General colour above very pale sandy yellow much paler than in *exustus* or *elchata*, with black tips to the down tufts, which on the head are not well marked except above the eyes; area round eyes pale ginger-brown. Underparts very pale isabelline; down pattern less variegated than in *exustus* and *elchata* (Ticehurst).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail (pins)
♂♂	190-208	c. 12-13	c. 23-26	127-167 mm.
♀♀	176-197	—	—	—

Weight ♂♂ up to 12 oz. (c. 340 gm.); ♀♀ up to 9 oz. (c. 255 gm.) — Baker.

COLOURS OF BARE PARTS. Iris brown; orbital skin yellow. Bill bluish white to bluish grey or pale plumbeous, darker at tip. Feet bluish white to pale plumbeous; claws blackish.

489. Imperial or Blackbellied Sandgrouse. *Pterocles orientalis orientalis* (Linnaeus)

Tetrax orientalis Linnaeus, 1758, Syst. Nat., ed. 10, 1: 161

('In Oriente' = Anatolia ex Hasselquist)

Pterocles orientalis enigmaticus Neumann, 1934, Bull. Brit. Orn. Cl. 55: 73

(Rann of Kutch, NW. India)

Baker, FBI No. 1888, Vol. 5: 262

Plate 47, fig. 1

LOCAL NAMES. *Barchūr*, *Kurmār* (Peshawar); *Bādā bhātā* (Haryana); *Sīāh seenā*, *Chahro* (Baluchistan); *Kātingo*, *Chūr* (Sind).

SIZE. Pigeon \pm ; length c. 39 cm. (15 in.).

FIELD CHARACTERS. A typical sandgrouse (cf. 487) with pointed tail and uniformly black lower breast and abdomen in both sexes. In flight large size, partially fanned tail, black belly and contrasting white underside of wings diagnostic.

Male (adult). *Above*, sandy grey, mottled yellow and olive-blackish; upper wing-coverts ochre-yellow. *Below*, upper throat and sides of neck chestnut; lower throat black; breast grey, bounded below by a narrow black pectoral gorget followed by a broader brownish buff band and then by the black belly and flanks.

Female. Overall pinkish grey or pale fawn colour. *Above*, finely and irregularly cross-banded ('herring-boned') with black on back, and spotted with black (shaft-streaks) on head and neck. *Below*, chin and throat yellowish, bounded below by a thin black line. Foreneck ashy; upper breast spotted with black (shaft-streaks) and bounded below by a narrow black pectoral gorget. Underparts below this gorget as in male.

Young (immature) of both sexes very like adult female.

STATUS, DISTRIBUTION and HABITAT. Resident and breeding in parts of Baluchistan. Chiefly winter visitor and/or passage migrant in the rest of

COLUMBIFORMES

88

that the coast is clear, but where undisturbed the birds will often pitch directly at a steep angle. Much squabbling for positions occurs when two flocks arrive together, the birds often wading belly-deep and taking long sucks. They rise off the ground almost vertically with a peculiar rattling sound and have a very swift and powerful, pigeon-like flight with quick regular beats of the pointed wings. This combined with the bird's abundance in its accustomed habitats and the palatability of its flesh make it a coveted game bird, highly prized by sportsmen.

FOOD. Predominantly vegetarian, chiefly tiny grass- and weed seeds and shoots of desert plants. Among the seeds in stomachs and crops have been identified those of *Indigofera*, *Tephrosia*, *Heliotropium*, *Melilotus* and *Astragalus*. From a single crop an estimated 30,000 minute seeds of the last two species have been taken (Ticehurst, JBNHS 28: 949-50). Among cultivated grains species of *Phasolus*, *Panicum*, *Cyamopsis* and *Gynandropsis* have been identified. A quantity of grit is invariably present in the gizzard.

VOICE and CALLS. Various described as 'a clucking call', 'a soft double chuck or chuckle', and 'like the word *catarr* repeated several times'. Uttered on the ground while feeding or drinking, as well as on the wing, and as in other sandgrouse very far-carrying.

BREEDING. Chiefly extralimital but very probably also in Baluchistan (Quetta neighbourhood, Mastung and Pishin Plains) whence however direct proof is as yet lacking. Elsewhere (e.g. Afghanistan) season principally May and June. Eggs, 2 or 3, laid on the bare ground or in a shallow scrape in the sand, in exposed desert situations. Ground colour variable: pale buff or greenish grey to warm buff stone-colour, sometimes with a greenish tinge, with indefinite smudges, blotches and spots of various shades of brown and secondary markings of pale lavender- or purplish grey. Average size of 78 eggs 47.5 × 32.3 mm. (Baker).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	226-248	10-14	c. 24-28	101-128 mm.
♀♀	203-234	[from skull c. 20-21]	—	—

Weight 1 lb.-1 1/2 lb. 7 oz. (c. 450-650 gm.) (Baker).

COLOURS OF BARE PARTS. Iris brown; edge of eyelids lemon yellow. Bill pale to darkish plumbeous, blacker at tip. Legs and feet brownish grey or plumbeous; claws darker.

MISCELLANEOUS. In winter occurs in particularly large numbers in the Thar Desert in Bikaner district, Rajasthan. Here 'prestige' shoots used to be regularly held by the rulers of the erstwhile State for the entertainment of British Viceroy, Governors, and miscellaneous notables. Gājaner Lake has earned special fame in this connexion, but there are also several other favourite drinking-places of the birds in the area. Bags of Imperial Sandgrouse in the big shoots often exceeded 2000 birds per day to a party of 10 or 15 guns, and on one memorable occasion (in 1919 or thereabouts) all previous records were broken by the slaughter of no less than 5963 birds in the course of two successive mornings! For some days prior to these

SANDGROUSE

89

gargantuan holocausts all tanks for miles around were strictly controlled in order to keep the birds off the water and force them to concentrate only on the main source. One day before the great shoot even that was denied them, so that on the appointed morning thirst would drive them to recklessness and provide 'fine sport' to the concealed guns. Butts were strung out 50 metres or so apart along carefully determined strategic lines of the birds' flight to the water. Happily sport on this barbaric scale is no longer possible, for economic and other reasons, but reports suggest that the number of birds now visiting this area is noticeably dwindling nevertheless.

A fairly large-scale trial introduction of Imperial together with Indian Sandgrouse into the U.S.A. has recently been attempted with a view to establishing the species as supplementary game birds in appropriate habitats in the states of Nevada and Hawaii. For a good study and review of the ecology of both species made for this purpose see the Special Scientific Report (Wildlife No. 84) cited under *P. erastus* (487).

490 Coronetted Sandgrouse. *Pterocles coronatus atratus* Hartert

Pterocles coronatus atratus Hartert, 1902, Bull. Brit. Orn. Cl. 12: 48 (Eastern Persia)

Pterocles coronatus laevis Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 29 (Soneri Lake, Sind)

Baker, FBI No. 1891, Vol. 5: 267

Plate 47, fig. 2

LOCAL NAME. *Kūzūgā* (Baluchistan; for any small sandgrouse).

SIZE. Pigeon —; length c. 28 cm. (c. 11 in.).

FIELD CHARACTERS. Rather like Spotted Sandgrouse (488) but smaller and lacking black belly and long pin-feathers in tail. In the air looks very white underneath; flight reminiscent of Golden Plover.

Male (adult). Above, crown pale vinous-buff encircled, except in front, by a band of bluish grey. Surrounding this band is another of ochreous yellow which expands in front to cover cheeks and throat. Chin, a streak on middle of throat, a narrow band round gape and lores, and a stripe running back on each side of forehead, velvety black. Middle of forehead and border to black on cheeks and chin, whitish. Rest of upperparts isabelle-line, spotted with buff and dusky. Below, pale buff; upper breast tinged with grey.

Female. Above, sandy buff with narrow crescentic black cross-bars; no black and white markings on face and throat. Below, paler buff finely cross-barred with black; throat yellowish speckled with black.

Young (immature). Throat whitish, otherwise much as adult female (Meinertzhagen).

STATUS, DISTRIBUTION AND HABITAT. Resident and breeding in West Pakistan (NW. frontier districts, Baluchistan, trans-Indus Sind). Numbers augmented in winter by extralimital immigrants. 'Migrant through Quetta Valley' (Williams, 1929, JBNHS 33: 611); 'in central and coastal Makran commonest small sandgrouse' (Hotson quoted by Ticehurst, 1927, ibid. 32: 74-5). Locally common in Sind. The statement by Baker in FBI

SANDGROUSE

91

491. Closebarred Sandgrouse. *Pterocles indicus arabicus* Neumann

Pterocles lichtensteini arabicus Neumann, 1909, Orn. Monatsb. 17: 152 (Lahej, Arabia)

Baker, FBI No. 1890, Vol. 5: 265

Plate 47, fig. 3

LOCAL NAME. *Gwāzang* (Baluchi).

SIZE. Pigeon —; length c. 27 cm. (10½ in.).

FIELD CHARACTERS. A small sandgrouse without pin-feathers in the tail; superficially very similar to Painted Sandgrouse (492) q.v.

Male (adult). Overall sandy buff, closely black-barred above and below, with white forehead and distinctive black and white head markings; two bold blackish bands across sandy yellow breast.

Female, close-barred above and below like male but lacking the head markings and breast bands.

Young (immature) like female but even more closely barred above and below.

STATUS, DISTRIBUTION AND HABITAT. Resident and breeding in West Pakistan (Baluchistan, NW. frontier district, trans-Indus Sind). Affects bare, stony sparsely scrubbed foothills country and dry rocky nullahs.

Extralimital. Southern Arabia to southern Afghanistan (Peters). Allied races (or same?) in north and east Africa.

GENERAL HABITS AND FOOD. Mainly as in 492 q.v.; like it also crepuscular in drinking habits. Crops of specimens examined by Ticehurst in Sind contained seeds, chiefly of *kandi* (*Prosopis spiciqera*), 'a seed other sandgrouse do not eat'.

VOICE AND CALLS. Note (as the birds came to drink after dark) 'unlike that of other sandgrouse and reminded me rather of a sparrow's "chirrup"' (Ticehurst — Sind). Call, uttered while flying up and down a watercourse, to and from water, 'a peculiar *keerp*, *keerp*' (Blanford — Abyssinia). 'A whistle, *quilo*, *quilo*, very liquid and twice repeated' as flock after flock flights overhead to water an hour or so before dawn (Archer — Somaliland).

MUSEUM DIAGNOSIS. See Key; for details of plumage, Baker loc. cit.

Differs from the nominate race (492) as follows:

<i>P. i. arabicus</i>	<i>P. i. indicus</i>
Both sexes closely barred above and below	
Tail-feathers 14	Tail-feathers 16
Male	Male
Lower throat closely barred	Lower throat plain ochraceous-buff
Feathered front tarsus plain pale buff	Feathered front tarsus spotted and barred
Black bar on white forecrown V-shaped	Black bar on white forecrown straight across
Female	Female
Chin spotted; no spots or bars on tarsus	Chin unspotted; tarsus spotted or barred

MEASUREMENTS

Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀ 166-186	c. 12-14	c. 22-27	72-77 mm. (Baker)

Wing ♂ 175-190; ♀ 172-187 mm. (Hartert).

COLUMBIFORMES

and *Game Birds* (2: 269) that 3 specimens were obtained by Col. Swinhoe so far out of its normal range as the Mhow district in Dhar [Madhya Pradesh, c. 22°32'N., 75°49'E.] seems scarcely credible. Affects barest desert with scraggy grass, and stony wastes, e.g. in the immediate vicinity of the Kirthar foothills, Sind-Baluchistan boundary.

Extralimital. Arabia, Iraq, Iran, and Afghanistan.

GENERAL HABITS. Typical of the family, cf. 487. Flights to water in the early morning till a couple of hours after sunrise in twos and threes and small packs of 6 to 20. Alights 50 to 100 metres from the water, often forming a considerable congregation, the birds pecking and sitting about for some time before gradually working down to the edge. Gait rather like partridge, more upright and quicker than of other sandgrouse. Commonly wades belly-deep, and drinks like chicken — sucking and raising bill for each gulp. After watering the parties and packs, one by one, fly straight back in the direction from which they came. Unlike Imperial, usually tame and easily approached. Perhaps less noisy than its congeners but with a quite distinctive note. Rather crepuscular: like Painted Sandgrouse comes again to drink in the evening dusk often when almost too dark to see; the calls then serve to clinch its identity.

FOOD. Chiefly vegetarian — minute seeds and shoots of desert grasses and weeds.

VOICE AND CALLS. Very different from other sandgrouse — rather soft *klā, klā, klā*, etc. uttered from the ground as well as in flight.

BREEDING. In Sind and Baluchistan season May and June. Eggs, normally 3, laid in an unlined depression in sand in barren windswept sand-dune tracts; broadly cylindrical, glossy, pale drab or yellowish stone (almost white) in ground colour, variably blotched with shades of reddish brown on underlying clouds of inky purple. Average size of 6 Baluchistan-collected eggs 43.7 × 30.0 mm. (C. H. Williams); elsewhere (e.g. Hartert quoting Dresser) the size given is closer to c. 40 × 27 mm.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	178-193	c. 13-14	c. 25	c. 120-132 mm.
♀ ♀	170-189	—	—	—

(Baker)

COLOURS OF BARE PARTS. Iris brown. Bill lavender-grey; feet white (Ticehurst).

PTEROCLES INDICUS (Gmelin)

Key to the Subspecies

		Page
A	No bars across hindneck.....	<i>P. i. indicus</i> (♂) 92
B	Hindneck finely barred.....	<i>P. i. arabicus</i> (♂) 91
C	Chin unspotted, tarsus spotted or barred.....	<i>P. i. indicus</i> (♀) 92
D	Chin spotted, no spots or bars on tarsus.....	<i>P. i. arabicus</i> (♀) 91

These specimens are in the British Museum (Nat. Hist.) and Mr. Ian Galbraith, Keeper of the Bird Department, has since informed us that one of them bears an original label 'Maiwand, Feb. 1881', and they all have secondary labels 'Mhow, Feb. 1881. Swinhoe'. Thus it is evident that the birds were actually collected in Afghanistan (Maiwand near Kandahar).

92 COLUMBIFORMES

COLOURS OF BARE PARTS. Iris brown; orbital skin yellow. Bill fleshy- to orange-brown. Feet orange-yellow; claws dusky.

492. Painted Sandgrouse. *Pterocles indicus indicus* (Gmelin)

Tetrax indicus J. F. Gmelin, 1789, Syst. Nat. 1 (2): 755 (Coromandel, India)

Baker, FBI No. 1889, Vol. 5: 264

Plate 47, fig. 5

LOCAL NAMES. *Pāhāri bhāt tētār*, *Bhāt bān* (Hindi); *Chāpkā* (Sagar; same as for nightjar with which confused); *Gūfā d tētār* (Mirzapur); *Palki* (Belgaum); *Kāl gajāl* *Aḷḷi* (Mysore).

SIZE. Pigeon —; length c. 28 cm. (11 in.).

FIELD CHARACTERS. Smaller than the common Indian Sandgrouse (487). Readily distinguished from it by finely close-barred plumage in both sexes and absence of pin-feathers in tail; also by stony scrub-jungle habitat (c. fallow cultivation).

Male (adult), with conspicuous head and breast markings: white forecrown cut across by a straight black band; broad tricoloured breast-band or gorget — chestnut, buff, and black. Chin, throat, foreneck and wing-shoulder unmarked yellowish buff.

Female buffy fawn overall, closely barred with black, lacking the prominent head markings and breast-band of male. Chin plain buff; throat and head finely spotted with black.

Young (immature) like adult female but even more closely barred above and below.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident and locally nomadic. The greater part of cis-Indus West Pakistan, and peninsular India from Rajasthan (Aravali Hills, etc.) and Gujarat east to Bihar and Orissa, south to Mysore and Tamil Nadu. Rare to absent in the Gangetic Plain. Absent also in deltaic W. Bengal, Assam, East Pakistan, and Ceylon. Affects bare, stony sparsely-scrubbed foothills and plateau country; avoids coastal tracts. Recorded as occurring in Jammu (Ward, 1907, JBNHS 17: 944); a specimen in Hodgson's Nepal collection but not met there by recent investigators (Biswas, 1960, JBNHS 57: 528).

GENERAL HABITS. Usually met in twos and threes or small packs of 8-10 birds frequenting rocky ground in thinly scrubbed hummocky country, or firelines in deciduous forest; especially fond of open stony burnt grass jungle. Collects in considerable numbers in favourite localities towards the end of the rains. Exceptionally large flocks of 80 to two or three hundred have been reported (Phythian-Adams (Vidarbha), Nurse (Gujarat)). Usually tame, permitting close approach, squatting motionless and trusting for safety to its remarkably obliterative coloration. Often flushing when only a couple of metres away with a noisy clatter of wings accompanied by a chuckling chirp, and pitching steeply again after a short flight of 40 or 50 metres. Runs strongly with a partridge-like gait. Flight less swift than of most other sandgrouse, attained by rapid wing-beats, the action producing a curious vibrating or '2-stroke' effect in fading light when bird going away directly

PIGEONS, DOVES

93

from observer — rather reminiscent of Grey Quail. Crepuscular in drinking habits, flying to water over long distances in the dim twilight well before dawn and then again in the gloaming till too dark for the birds to be seen unless momentarily silhouetted against the sky. Pack after pack will arrive at a tiny jungle pool till the air is thick with the traffic and the waterside a jostling mass of birds. Both when arriving and departing they keep well below the skyline, constantly uttering a distinctive *chirik-chirik* in the air and a low chuckle at the water's edge. Frequently the observer will find himself thickly surrounded by these calls and the flutter of innumerable wings without so much as catching a glimpse of a bird.

FOOD. Almost exclusively vegetarian, chiefly hard weed- and grass seeds; also some berries, and reportedly small insects like termites.

VOICE AND CALLS. A clucking *yek-yek-yek* when flushing. A distinctive, constantly-repeated *chirik-chirik* when coming to or going away from water; a soft chuckle when drinking.

BREEDING. Season not well defined; practically all months of the year, varying with local conditions; perhaps most general between March and June. Eggs, 3, rarely only 2, laid in a scrape on stony ground under protection of a small bush or grass clump; ellipse-shaped, cream to salmon-buff in colour with primary blotches and specks of some shade of brownish red and secondary markings of inky grey or lavender. Average size of 88 eggs 35.8 × 25.0 mm. (Baker). Both sexes incubate; period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for differentiation from the confusingly similar Closebarred Sandgrouse, under 491.

Chick (in down). 'Uniform earthy brown' (Baker).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	158-184	c. 13-15 [from skull 16-18]	c. 23-25	80-101 mm.

Weight 6-8 oz. (c. 170-227 gm.) — Baker.

[Wing 9 ♂♂ 166-180 (once 188, once 208); 8 ♀♀ 166-176 mm. — SA.]

COLOURS OF BARE PARTS. Iris brown; naked circumorbital skin pale yellowish green. Bill orange-brown. Tarsus (unfeathered hind portion) and feet dull yellow or greyish leaf-green; claws brownish orange to dark brown.

Family COLUMBIDAE: Pigeons, Doves

For morphological and other details see Stresemann, E., 1927-34, *Ates*: 760-2; Witherby, 1940, 4: 129-30; Baker, 1928, FBI 5: 178; Van Tyne, J., & Berger, A. J., 1959: 454; Goodwin, D., 1964, article 'Pigeon' in Thomson, A. L. (ed.), *New Dict. Birds*, London and New York.

* Typified by the Blue Rock Pigeon which in its numerous domestic breeds is universally known.

Key to the Genera

	Page
A Hackles long and bronzy green, edged with blue-black..... <i>Caloenas</i>	161
B Plumage with much yellow-green above and below..... <i>Treron</i>	94
C Plumage vinaceous with metallic green in upperparts..... <i>Chalcophaps</i>	157
D Head entirely white or tail with fourteen feathers..... <i>Ducula</i>	110

PIGEONS, DOVES

95

SIZE. Pigeon ±; length ♂ c. 42 cm. (16½ in.) including tail of c. 21 cm. (8 in.); in ♀ tail shorter, c. 18 cm. (7 in.).

FIELD CHARACTERS. Overall yellowish green with a long pin-pointed tail and two conspicuous yellow bars in the black wings.

Male (adult). *Above*, with a broad greyish olive-green collar on hindneck. *Below*, greenish yellow, the breast washed with orange-pink; under tail-coverts cinnamon, margined with whitish.

Female duller, with no greyish olive hind collar or orange wash on breast, and much shorter tail.

STATUS, DISTRIBUTION AND HABITAT. Resident and locally nomadic depending upon food supply — fruiting of favourite forest trees; throughout the Himalayas from terai level to c. 1800 metres, Kumaon to easternmost NEFA including Nepal, Sikkim and Bhutan. Also hills of Assam south of Brahmaputra R. (Khasi, Cachar, Naga, Mizo, etc.); Manipur and East Pakistan. Not rare in the Assam plains in the Surma and Brahmaputra valleys. Affects tall tree forest.

Extralimital. Chin Hills, Burma south to Tenasserim. Other races in the Indochinese countries.

GENERAL HABITS. More or less as common to all green pigeons, cf. 503. Exclusively arboreal but sometimes descending to the ground to drink, and regularly at salt-licks to pick the earth. Keeps in flocks of 10 to 30 birds or so, well to the tops of lofty forest trees, clambering about and feeding amongst the fruit-laden twigs and foliage, a deceptive resemblance to parakeets then heightened by the long pointed tails. The birds are perfectly camouflaged amongst the green leaves and become completely obliterated from view while they 'freeze' on suspicion; the unexpected numbers that will tumble out of a tree on the report of a gun is often quite amazing, while others still continue to remain frozen within. Flight swift and direct accompanied by a metallic whirring sound. In common with other green pigeons, and hawks, has the habit of sitting with fluffed plumage on the topmost bare twigs of a towering forest tree on chilly mornings to catch the first rays of the sun before commencing the day's feeding. They are rather stupid birds and even after being fired at, a flock will return to the same tree again and again within a very short time.

FOOD. A variety of berries and drupes, some of astonishingly large size, swallowed entire.

VOICE AND CALLS. A range of mellow, rather wandering musical whistles very similar to those of the Wedgetailed (494) roughly rendered as *ko-kle-ci-ci-ci-illli-illli-lla*.

BREEDING. Season, chiefly April to June. *Nest*, a sketchy platform of twigs high up in a bush or bamboo clump — sometimes a leafy forest tree. Eggs, 2, white, typical of pigeons'. Average size of 100 eggs 31.7 × 23.8 mm. (Baker). Both sexes incubate; period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. A character there omitted is the broad black band across the central tail-feathers in male.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	160-175	c. 15-16 [from skull c. 20-23]	c. 23-25	220-254 mm.

94

COLUMBIFORMES

Page

E Tail with twelve feathers.....1	
1 Plumage of upperparts or underparts, or both, distinctly barred with black..... <i>Macropygia</i>	137
Plumage not as above.....a	
a Wing above 200 mm., or if 180-200 mm., outer tail-feathers blackish at tips..... <i>Columba</i>	119
Wing below 180 mm., or if 180-200 mm., outer tail-feathers white or grey at tips..... <i>Streptopelia</i>	140

Genus TRERON Vieillot

Treron Vieillot, 1816, Analyse: 49. Type, by monotypy, *Columba curvirostra* Gmelin. *Sphenurus* Swainson, 1837, Classif. Bds. 2: 348. Type, by monotypy, *S. semitorquatus* (Pl. enl. 240) = *Columba eyura* Temminck.

Dendrophassa Gloger, 1842, Hand- u. Hülfsb.: 359. Type, by original designation, *Columba aromatica* Gmelin.

Crocopus Bonaparte, 1854, Compt. Rend. Acad. Sci. Paris 39: 973. Type, by original designation, *Columba phoenicoptera* Latham.

Sphenocercus G. R. Gray, 1840, List Gen. Bds.: 57. Type, by original designation, *Columba eyura* Temminck.

Distinguished by yellowish green plumage, often with patches of lilac or chestnut on the mantle and one or two bright yellow wing-bars. Wings long and pointed, the primaries variously notched or scalloped in the different species. Tail also various: partially rounded, wedge-shaped, or pin-pointed. Tarsus stout and very short, considerably shorter than middle toe without claw; feathered on upper portion; soles of feet expanded, fleshy and pad-like, much broader than the toes themselves — an adaptation for exclusively arboreal life.

Key to the Species

	Page
A Third primary expanded and not scalloped.....1	
B Third primary strongly scalloped.....2	
1 Tail grey and acuminate..... <i>T. apicauda</i>	94
Tail green and not acuminate..... <i>T. sphenura</i>	96
2 Rhamphotheca reaches forehead..... <i>T. curvirostra</i>	97
Rhamphotheca occupies terminal half of bill only.....a	
a Middle tail-feathers entirely green..... <i>T. pompadura</i>	99
Middle tail-feathers not entirely green.....I	
I Wing 170 mm. or below; legs red..... <i>T. bicincta</i>	104
Wing 175 mm. or above; legs yellow..... <i>T. phoenicoptera</i>	106

493. Pintailed Green Pigeon. *Treron apicauda apicauda* Blyth

Treron apicauda 'Hodgson' = Blyth, after May 1846 (1845), Jour. Asiat. Soc. Bengal 14 (2): 854 (Southeastern Himalayas and hill ranges of Assam — common at

Darjeeling)

Baker, FBI No. 1840, Vol. 5: 199

Plate 49, fig. 5

LOCAL NAMES. *Hār'il* (all green pigeons), *Kēkhā* (Hindi, Bengal); *Bōr hāithā* or *hāithāk* (Assam); *Deorep galou* (Cachar); *Sang pong* (Lepcha).

96

COLUMBIFORMES

♀ ♀ have shorter tails, c. 150-175 mm.

Weight ♂♂ 6½-9 oz. (c. 185-255 gm.); ♀ ♀ up to 7 oz. (c. 200 gm.) — Baker.

COLOURS OF BARE PARTS. Iris lake red; bare ocular area blue. Bill cobalt-blue, distal half of upper mandible green. Legs and feet crimson.

494. Kokla or Wedgetailed Green Pigeon. *Treron sphenura sphenura* (Vigors)

Vinago sphenura Vigors, 1832 (1831), Proc. Zool. Soc. London: 173 (Himalayas) Restricted to Simla-Almora area by Titchhurst (*Ibis* 1924: 472)

Baker, FBI No. 1841, Vol. 5: 200

Plate 49, fig. 1

LOCAL NAMES. *Kōklā*, *Kēkhā* (Hindi); *Hāithā*, *Bōr hāithā* or *hāithāk* (Assam); *Kēku*, *Kuh-fo* (Lepcha); *Deorep gadzba* (Cachar); *Keiral* (Simla).

SIZE. Pigeon; length c. 33 cm. (13 in.).

FIELD CHARACTERS. Overall yellowish green, similar to 493 but without central 'pins' to the long tapering (wedge-shaped) tail.

Male (adult). *Above*, crown tinged with orange-rufous. A variable amount of maroon on back and scapulars. *Below*, chin and throat yellow; breast pale orange-pink.

Female. Like male but lacking rufous on crown and maroon in upperparts.

Young (immature) like female, but duller and darker.

For description of fledged nestling see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident — partly nomadic and altitudinal migrant depending upon local food supply. The entire lower Himalayas from Kashmir through Nepal, Sikkim, and Bhutan to extreme eastern NEFA, from plains level to c. 2500 metres. Also Assam hills south of Brahmaputra R. including the Nagas and those of E. Pakistan. Recorded as 'never seen or heard of' in Manipur (Higgins, 1934, JBNHS 37: 302) but probably occurs. Chiefly affects broad-leaved hill forest of oak, elm, alder, etc.

Reported from Pachmarhi, Madhya Pradesh as 'a' very rare visitor; seen and heard (April) 'by a competent and reliable observer' — B. B. Osmaston (1922, JBNHS 28: 458). But this needs confirmation since there is no other record of its occurrence in India south of the given distribution.

Extralimital. Chin Hills, Burma south to Tenasserim. Other races in Malaya and the Indochinese countries.

GENERAL HABITS. Usually keeps in small flocks of 6 to 15 birds or so, to the higher trees; common and numerous in the more open forests. Common summer visitor to most Himalayan hill stations and upland valleys. Flocks, frequently found in association with Pintailed Green Pigeon, the remarkably beautiful whistling calls and general behaviour of the two species being almost identical. The birds clamber about among the leafy fruit-laden twigs of forest trees, hanging upside down or sideways to get at the berries and frequently swinging out for one out of reach with the agility of a trapeze acrobat. They commonly descend to the ground at salt-licks to pick pellets of the salty earth. Flight swift, noisy and rather undulating.

FOOD. Exclusively frugivorous: drupes and berries of forest trees (e.g. *Ficus* and *Myrica* spp.), swallowed entire. Is very partial to mulberry (*Morus*) in hill orchards.

VOICE and CALLS. Almost indistinguishable from the Pintailed species (493) q.v., a series of rich mellow whistles 'of over 20 notes' (Osmaston). The birds can be easily decoyed by an imitation of their calls.

BREEDING. *Season*, April to June, sometimes prolonged into July/August. *Nest*, the characteristic flimsy twig structure of all pigeons built high up in a sapling or leafy forest tree; in the hills commonly in spruce firs c. 6 metres or so up, close to the trunk. *Eggs*, 2, also typical of pigeons — white, elliptical, fine-textured and smooth-surfaced. Average size of 200 eggs 31.5 × 23.1 mm. (Baker). Both sexes incubate; period given as '18 to 19 days' (Doddsworth) needs checking. Baker's statement that it has 'two or more broods per year in Assam and Bengal' also requires confirmation.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

'Nestling' [age?]. *Above*, dull green, slightly brighter on the head, upper tail-coverts, scapulars, lesser and median wing-coverts. Greater coverts dull green, edged on the extremities of the outer webs with pale yellow forming a wing-bar. Winglet, primary coverts, and primaries blackish, the majority of the last very faintly edged on the outer webs with pale yellow. Secondaries also blackish, edged on outer webs with pale yellow; tertiaries dull green. *Below*, throat, breast and upper part of abdomen pale grey, the feathers edged with greenish yellow; abdomen and vent fluffy yellowish white; thigh-coverts pale fluffy grey tipped with dark green; under tail-coverts dull green broadly edged with pale yellow.

Iris brown; orbital skin very dull blue. Bill light fleshy brown with a tinge of blue at base of lower mandible. Tarsi and feet fleshy brown, the former with a tinge of dull blue on their upper extremities. Soles of feet very pale fleshy brown; claws horny brown, darker at tips (Doddsworth, JBNHS, 22: 800-1).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	169-187 (av. 176.5)	c. 17-19	c. 17-19	114-139 mm. (Baker, in part)

Weight (winter) 2 ♂♂ 212, 214 gm. (SA).

COLOURS OF BARE PARTS. Iris, outer ring buffy pink to bright crimson, inner ring pale ultramarine blue; orbital skin pale lavender or smalt blue. Bill pale dull smalt blue or greenish blue; cere and tip brighter and more blue. Legs and feet coral-red, cherry-red or deep crimson.

495. Thickbilled Green Pigeon. *Treron curvirostra nipalensis* (Hodgson)

Toria Nipalensis Hodgson, 1836, *Asiat. Res.* 19 (1): 164 (Nepal)
Baker, FBI No. 1838, Vol. 5: 196
Plate 49, fig. 4

LOCAL NAMES. *Daorep buku gajao* (Cachar); *Thoria* (Nepal).

SIZE. Pigeon —; length c. 27 cm. (10½ in.).

General proportions and coloration confusingly like *Treron p. phayrei* (499); distinguished from it as follows: cere considerably reduced making corneous portion of bill (rhamphotheca) almost reach forehead; large bare circumorbital patch; absence of orange on breast; prominent scarlet gape and cere.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	124-146	c. 14-15	c. 18-19	84-95 mm. (Baker)

COLOURS OF BARE PARTS. Adult. Iris, outer ring golden yellow to orange-red, inner ring deep blue; orbital skin vivid verdigris-green. Bill pale yellowish, greenish, or leaden white darker and greener at tip, brilliant coral-red round base and gape. Legs and feet deep lake-pink to coral-red.

TRERON POMPADORA (Gmelin)

Key to the Subspecies

		Page
A	Forehead yellow.....	<i>T. p. pompadora</i> 100
B	Forehead and crown grey.....	1
1	Orange of breast faint or absent in males; grey of head merging into green of hindneck in females.....	a
	Breast strongly tinged with orange in males; grey of head contrasting sharply with green of hindneck in females.....	b
a	Lower tail-coverts cinnamon or whitish.....	<i>T. p. affinis</i> 99
	Lower tail-coverts green tipped with pale yellow.....	<i>T. p. chloroptera</i> 103
b	Underparts a paler, colder green.....	<i>T. p. phayrei</i> 102
	Underparts a warmer, more yellow-green.....	<i>T. p. conoveri</i> 101

496. Greyfronted Green Pigeon. *Treron pompadora affinis* (Jerdon)

Vinago affinis Jerdon, 1840, *Madras Jour. Lit. Sci.* 12: 13
(West coast of the Indian Peninsula)
Baker, FBI No. 1831, Vol. 5: 188
Plate 49, fig. 3

LOCAL NAMES. *Podi pācheha pācurdmu* (Telugu); *Chāndīrāyān* (Malayalam).

SIZE. Pigeon —; length c. 28 cm. (c. 11 in.).

FIELD CHARACTERS. A small green pigeon with red legs.

Male (adult). *Above*, forehead, crown and nape ashy grey; back and scapulars chestnut-maroon; rest of upperparts olive- or yellowish green. Shoulder of wing (median and greater coverts) black; a broad yellow wing-band. Middle pair of tail-feathers olive-green. *Below*, greenish yellow, the upper breast faintly tinged with orange or pink; under tail-coverts cinnamon.

Female olive-green, lacking the chestnut mantle and orange wash on breast; shoulder of wing less black and mixed with grey; under tail-coverts buffy white, more or less streaked with green. May be confused with ♀ Orangebreasted (501) but middle tail-feathers olive-green (c. slaty) diagnostic.

FIELD CHARACTERS. A small green pigeon with chestnut-maroon mantle, grey- and olive-green tail and a prominent yellow wing-bar. The thick bright red and greenish bill and vivid green bare orbital skin are leading clues for recognition.

May be confused with the similar-looking Ashyheaded Green Pigeon (499), but the bare patch round eye, and brilliant scarlet gape and cere are diagnostic.

Male (adult). *Above*, forehead ashy grey, forecrown darker grey; back, scapulars and lesser wing-coverts chestnut-maroon. Rest of upperparts including central tail-feathers above olive-green. Outer tail-feathers grey above with a black cross-band; black below with a very broad grey tip. *Below*, yellowish green; flanks darker green with white edges to the feathers; under tail-coverts pale cinnamon.

Female lacks chestnut on mantle and has whitish under tail-coverts with dark green broken bars.

Young (immature) like female, but whole plumage initially very grey and dull; male acquires a little maroon on the mantle at first moult. Iris pale grey-brown; orbital skin livid grey; basal portion of bill dull pink.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to local movements governed by food supply: the Himalayas from western Nepal eastward through Nepal, Sikkim, northern Bengal (the duars) and Bhutan to extreme eastern NEFA, from plains level to at least 1500 metres. Also Assam hills south of Brahmaputra R. (Garo, Khasi, Cachar, Naga, Mizo, etc.); Manipur and E. Pakistan. Affects well-wooded country and forest.

Extralimital. Burma, Thailand, and Indochinese countries. Other races in Indonesia.

GENERAL HABITS. Goes about in flocks of 10 to 40 birds or so, often congregating in large numbers to feed on fruiting trees such as *Ficus* in season. Descends to the ground to drink; Stuart Baker frequently found it feeding on wild strawberries and berries of other ground plants. Flight and other behaviour not specifically different from other green pigeons, cf. 504. Roosts at night up in leafy trees or bamboo thickets, the birds sitting clumped in twos and threes or small groups along horizontal culms or bushy twigs.

FOOD. Exclusively fruits and berries, the numerous species of wild fig (*Ficus*) providing the staple.

VOICE and CALLS. In addition to a series of mellow whistles (not specifically described), has a hoarse note sounding like *goo-goo* constantly uttered by the birds while jostling for positions in the feeding tree.

BREEDING. *Season*, principally late April to early June. *Nest*, a flimsy pad of twigs in the forking leafy branch of a small tree or on a horizontal bamboo culm, at moderate heights; occasionally two or three nests within a few metres of each other. *Eggs*, 2, typically white and elliptical. Average size of 200 eggs 28.7 × 22.6 mm.; according to Baker Assam eggs average smaller. Both sexes take part in nest-building and incubation; incubation period c. 14 days (Baker).

MUSEUM DIAGNOSIS. Wing long; primaries slightly pointed; third primary (as.) deeply and widely notched or scalloped on inner web. Under tail-coverts long; tail very slightly rounded. For details of plumage see Baker, loc. cit.

Young (immature) male like adult female but acquires a certain amount of maroon on the upperparts, more especially on the lesser wing-coverts, at the first autumn moult (Baker).

STATUS, DISTRIBUTION and HABITAT. Resident, subject to some local and altitudinal movement governed by food supply (fruiting seasons). Western and southwestern India — the Western Ghats complex (including the Nilgiris, Palnis, and associated hill ranges) — from about lat. 20°N. southward through western Mysore (Malnaad) and Kerala. Affects forest and well-wooded country in evergreen and wet deciduous biotope; lowlands and up to c. 1200 m. altitude.

GENERAL HABITS. Not significantly different from other green pigeons. Usually keeps in small flocks of up to a dozen or so; sometimes large congregations on fruiting trees. Flocks commonly seen at sunrise, and also in the late afternoon before retiring to roost, perched among the topmost branches of tall leafless trees on the edge of jungle, uttering their soft whistling calls. On coffee plantations in Mysore and Kerala this pigeon along with the Emerald Dove is often reported flying headlong into the whitewashed walls of shady bungalows and outhouses and getting killed.

FOOD. Fruits and berries, mainly figs of the various *Fici* and drupes of *bēr* (*Zizyphus* spp.); salt mud at licks.

VOICE and CALLS. A series of soft rich whistles up and down the scale very like that of the Southern Green Pigeon (504) but somewhat higher in key.

BREEDING. *Season*, mainly December to March. *Nest* as in other green pigeons — a flimsy platform of twigs in a moderate-sized tree; an exceptional one recorded as high as c. 13 m. *Eggs*, 2, elliptical, white. Average size of 24 eggs 28.1 × 22.0 mm. (Baker). Both sexes share nest-building and incubation; incubation period 12-14 days, but not accurately determined.

MUSEUM DIAGNOSIS. See Key; for further details of plumage Baker, loc. cit. Longer feathers of under tail-coverts cinnamon coloured; shorter lateral ones yellowish white with greenish ashy bases.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	140-154	c. 19-20	c. 20-24	84-88 mm. (SA)

Weight 1 ♂ 151 gm. (SA).

COLOURS OF BARE PARTS. Iris: outer ring bright pink, inner ring lapis blue. Bill: cere and lower mandible near gape yellowish green, rest of bill pale grey; mouth yellowish grey-pink. Legs and feet dull magenta or plum colour; claws horny grey; soles yellow.

497. Pompadour or Ceylon Greyfronted Green Pigeon. *Treron pompadora pompadora* (Gmelin)

Columba Pompadura Gmelin, 1789, *Syst. Nat.* 1 (2): 775 (Ceylon)
Baker, FBI No. 1829, Vol. 5: 185

LOCAL NAMES. *Dala gyye*, *Sipadurā* (Sinhala); *Pācheipadā* (Tamil).

PIGEONS, DOVES

101

SIZE. Pigeon —; length c. 28 cm. (c. 11 in.).

FIELD CHARACTERS. As for the South Indian race *efnir* (495) q.v., but differs in having the forehead and sides of head greenish yellow, the grey confined only as a patch on crown. Under tail-coverts buff (c. cinnamon).

Female may be confused with ♀ Orangebreasted Green Pigeon (502) but has the middle pair of tail-feathers olive-green above (c. slaty grey).

STATUS, DISTRIBUTION and HABITAT. Race peculiar to Ceylon. Common resident. Abundant in forest areas throughout the lowlands and ranging up into the hills to c. 1200 m.; subject to local migrations. Largely replaced by the orangebreasted species (502) on the sea coast.

GENERAL HABITS, FOOD, VOICE and CALLS. Nothing specifically different from 496 and other green pigeons.

BREEDING. Starts, December to June, and in September; chiefly April and May (Phillips). Nest and eggs as in 495. Average size of 22 eggs 28.7 × 22.6 mm. (Baker).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Differs from the southwest Indian race *efnir* (496) in both sexes having the forehead yellow, the crown last pure (greenish) grey, and the under tail-coverts of a different colour. These are white with a faint creamy or yellowish tinge, and with a variable amount of greenish ashy speckling or barring on the feathers. (In *efnir* the longer under tail-coverts are cinnamon, the shorter lateral ones yellowish white with greenish ashy bases.) Bill slightly longer than in *efnir*.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	145-151	21-23	21-23	91-97 mm.
♀♀	141-152	21-23	21-24	88-95 mm. (HW)

COLOURS OF BARE PARTS. As in 496. 'Iris carmine-red with an inner ring of cobalt; eyelids glaucous green. Bill glaucous green, paling to bluish at the tip. Legs and feet purple-red' (Baker).

499. Nepal Greyfronted Green Pigeon. *Treron pompadora cinnamomea* Rand & Fleming

Treron pompadora cinnamomea Rand & Fleming, 1933, Fieldiana, Zool., Chicago, 34 (19): 201-2 (Batal, Nepal)
Not in Baker, FBI

LOCAL NAMES. Not recorded.

SIZE. Same as 496. Pigeon —; length c. 28 cm. (c. 11 in.).

FIELD CHARACTERS. As of the ashyheaded *pompadora* (499), q.v.; not distinguishable from it in the field. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Terai of west-central Nepal (range undefined), in heavy forest.

GENERAL HABITS, FOOD, VOICE and CALLS. Not specifically described; presumably as in other races.

BREEDING. See under 499.

PIGEONS, DOVES

103

c. 12 m. up in main fork of a leafless tree right out in the middle of a meadow with the sitting bird ludicrously conspicuous (Berts, 1947, JBNHS 46: 681). Average size of 200 eggs 27.5 × 21.8 mm. (Baker). Both sexes share in building the nest and incubation; period believed c. 14 days, but needs confirming.

MUSEUM DIAGNOSIS. See Key; for details of plumage Baker, loc. cit.

MEASUREMENTS

Wing ♂♂ 143-163; ♀♀ 145-160 mm. Weight 4.5 oz. (c. 115-140 gm.), sometimes up to 7 oz. (c. 200 gm.) — Baker.

♂♀ Bill (from skull) 17-20; tail 80-87 mm. (SA).

COLOURS OF BARE PARTS. Iris: outer ring pink, inner ring pale blue; orbital skin bluish. Bill French grey, somewhat darker at base. Legs and feet lake-red.

500. Andaman Greyfronted Green Pigeon. *Treron pompadora chloroptera* Blyth

Treron chloroptera Blyth, 1840, Jour. Asiat. Soc. Bengal 14: 832 (Nicobars)
Baker, FBI No. 1832, Vol. 5: 183

LOCAL NAMES. None recorded.

SIZE. Slightly larger than 499; Pigeon ±. Length c. 30 cm. (12½ in.).

FIELD CHARACTERS. As of the ashyheaded *pompadora* (499). See Museum Diagnosis, but 'is large as the Indian Green Pigeon (503, 504) and looks very much like it in the field' (Abdullah, JBNHS 61: 523).

STATUS, DISTRIBUTION and HABITAT. Resident. Race peculiar to the Andaman and Nicobar islands. Common in South and Middle Andamans. Affects tall evergreen forest.

GENERAL HABITS. As of the other races. Often seen feeding in parties of 6-10 or larger flocks on fruiting trees in forest or clearings. Like other green pigeons they gorge themselves to such an extent that when a shot bird falls to the ground the turgid crop frequently bursts open with the impact, expiring and scattering the contents.

FOOD. Wild figs (*Ficus* spp.) and various drupes and berries swallowed entire, including some of very large size.

VOICE and CALLS. A series of mellow musical whistling notes described by W. Davidson as 'very like but more powerful' than those of *Treron p. efnir* (495).

BREEDING. Starts, from indirect evidence of gonads of collected specimens c. February to June; but probably not well-defined. Nest and eggs unknown.

MUSEUM DIAGNOSIS. Male differs from ♂ *T. p. pompadora* (499) as follows: Forehead pure grey; lesser wing-coverts green (c. chestnut), darker and less yellow than neck. Green of upperparts more yellow except on central pair of rectrices. Chestnut-maroon mantle as dark as in *T. p. efnir* (496). Under tail-coverts dark green, merely tipped with yellowish. Bill very large, equally long with that in the other insular race (of Ceylon), but much coarser than in the other races, or even in *T. c. nipalensis* (463).

102

COLUMBIFORMES

MUSEUM DIAGNOSIS. Separated from *pompadora* (499) on character of brighter coloration with yellow of throat and orange of breast more intense. Green of hindneck, breast and abdomen duller and less greyish.

MEASUREMENTS

Wing 2 ♂♂ 156-157; 4 ♀♀ 153-164 mm. (Rand & Fleming).

COLOURS OF BARE PARTS. As in 499.

499. Ashyheaded Green Pigeon. *Treron pompadora pampori* (Blyth)

Oreophaps pampori Blyth, 1862, Jour. Asiat. Soc. Bengal 31: 344 (Toungboon, Burma)
Baker, FBI No. 1839, Vol. 5: 186

LOCAL NAMES. *Chilla kharil* (Bengal and E. Pakistan); *Chilla kharil* (Assam); *Dareh* (Cachar); *Israigan* (Naga); *Wahaly* (Kuki).

SIZE. Pigeon —; length c. 28 cm. (c. 11 in.).

FIELD CHARACTERS. A small green pigeon with red legs, very like 496.

Male (adult). Above, crown and nape dark ashy grey; forehead paler. Sides of head greenish yellow, sharply demarcated from grey crown, as is also green hindneck from grey nape. Back and scapulars chestnut-maroon; rest of upperparts olive- or yellowish green. Wings black with a broad yellow band. Middle pair of tail-feathers olive-green. Below, chin, throat, and sides of neck greenish yellow; upper breast conspicuously orange; rest of underparts olive-green tipped with buff on lower flanks. Under tail-coverts cinnamon.

Female lacks the chestnut mantle and orange breast. Under tail-coverts buff broadly mottled with dark green. Differentiated from the very similar ♀ of the orangebreasted species (501) by the green middle tail-feathers (c. slaty).

Young (immature) male like adult female but acquires a certain amount of maroon on the upperparts, more especially on the lesser wing-coverts, at the first autumn moult (Baker).

STATUS, DISTRIBUTION and HABITAT. Resident, subject to some local and altitudinal movement governed by food supply (fruiting seasons). Common and locally abundant: West Bengal (recorded south to Calcutta), Assam north and south of Brahmaputra river, and eastward through NEFA; Manipur; East Pakistan — from plains level to c. 1500 m., normally below 1000 m. Affects forest and well-wooded country in evergreen and wet deciduous biotope. How far west this race extends towards Nepal (*cinnamomea*) remains to be determined.

Extremal limit. Burma south to Tenasserim, Thailand and the Indo-Chinese countries. Other races in Indonesia.

GENERAL HABITS, FOOD, VOICE and CALLS. Like other green pigeons, cf. 496, 504 — gregarious, sometimes in large flocks of over 200 birds; frugivorous and arboreal, occasionally descending to the ground to drink or visit salt-licks.

BREEDING. Starts, March to early July, mainly April and May. Nest (twig platform) and eggs (2, white, elliptical) as typical of the family. Nests placed fairly low down in moderate-sized trees, bamboo clumps or cane brakes, often with no attempt at concealment. One recorded in Assam

104

COLUMBIFORMES

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂	173-177	20-23	24-26	92-95 mm.
3 ♀♀	169-178	20-23	22-26	86-95 mm. (SA) ¹

Wing of? 171-183 mm. Weight 12 oz. (c. 340 gm.) — Davidson.

COLOURS OF BARE PARTS. More or less as in 499.

TERON BICINCTA (Jerdon)

Key to the Subspecies

Larger; wing over 150 mm.....*T. b. bicincta*
Smaller; wing usually under 150 mm.....*T. b. leggii*

501. Indian Orangebreasted Green Pigeon. *Treron bicincta bicincta* (Jerdon)

Treron bicincta Jerdon, 1840, Madras Jour. Lit. Sci. 12: 13

(Sea coast south of Tellicherry)

Treron bicincta [sic] *prodermine* Robinson & Kloss, 1921, Jour. Fed. Malay States

Mus. 10: 293 (Koh Lak, southwestern Siam)

Baker, FBI No. 1834, Vol. 5: 191

Plate 49, fig. 6

LOCAL NAMES. Generally for all green pigeons *Kharil* (Hindi); *Kharil* (Assam); *Pampora pampora* (Telugu); *Manjariyana* (Malayalam).

SIZE. Pigeon ±; length c. 29 cm. (11½ in.).

FIELD CHARACTERS. Overall olive-green, similar to Greyfronted (496) but

Male (adult) lacks grey on head and chestnut-maroon mantle. Below, underparts yellowish green with a band of lilac across upper breast followed by orange on lower breast. Under tail-coverts cinnamon edged with pale yellow on the outer and longest feathers. Tail slaty grey above with a broad blackish subterminal band (except on central pair of rectrices), black below with a grey tip.

Female similarly olive-yellow above, yellowish green below but lacking the lilac-and-orange breast. Under tail-coverts pale dull cinnamon with greenish mottling. May be confused with females of *pompadora* species but tail pattern diagnostic: middle tail-feathers above slaty grey in *bicincta*, green in *pompadora*.

Young (immature) like female but duller and darker.

STATUS, DISTRIBUTION and HABITAT. Resident with the normal seasonal local movements. Widely distributed in the evergreen and moist deciduous biotopes. Not uncommon in the U.P. terai and bhabar and the lower

¹ These include 1 from Car Nicobar and 5 from S. Andamans, the latter identified by Abdullah (JBNHS 61: 523) as *andamanis* (Richardson), a controversial race.



Himalayas (to c. 1500 m.) eastward through Nepal, Bengal duars, and Assam north and south of Brahmaputra R.; Manipur and E. Pakistan. Records rather patchy, but doubtless occurs more generally. In the Peninsula, West Bengal, Chhota Nagpur and southward along the Eastern Ghats in the appropriate biotopes. Western Ghats and associated hill ranges (normally plains level and up to 1000 m. or so) from Kerala northward through Mysore to about the latitude of Belgaum (16°N.); possibly further north like the Greyfronted (496) but records lacking. Curiously enough once procured as a vagrant in Sind (Karachi) (Eates, K. R., 1938, JBNHS 40: 330). Affects forest and well-wooded country inland as well as in the coastal tracts.

Extralimital. Burma, Thailand, Malay Peninsula and South Vietnam. Other races in Ceylon, Java, and Hainan.

GENERAL HABITS. Gregarious, frugivorous, arboreal; not specifically different from other green pigeons, e.g. 496, 504, qq. v. Often associates with them while feeding in fruit-laden trees, which is chiefly in the morning and late afternoon.

FOOD. Drupes and berries. The figs of the numerous species of *Ficus* form the staple diet of fruit pigeons as of most other frugivorous birds.

VOICE AND CALLS. The characteristic series of modulated mellow wandering whistles. 'A pleasing low subdued gurgling note' (H. Stevens—Assam). But described by another competent observer (J. Davidson—Kanara) as 'hoarse, not like the musical notes of *Treron phoenicoptera* or *T. p. effinis*'!

BREEDING. Seasons overall March to September, perhaps most general April to June. *Nest*, the characteristic pigeon structure—a flimsy platform of interlaced twigs, placed in a moderate-sized tree or cane-brake some 2-8 metres up. *Eggs* 2, white, elliptical, also typical of the family. Size c. 29 x 23 mm. Both sexes share in building the nest and incubation; period c. 12-14 days.

MUSEUM DIAGNOSIS. Differs from the race *leggi* of Ceylon, q.v., only in being larger. For details of plumage see Baker., loc. cit.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	153-164 (once 170)	c. 12-13	c. 23-25	91-110 mm. (Baker)

COLOURS OF BARE PARTS. Adult: Iris outer ring pink to crimson, inner ring bright ultramarine to deep blue; eyelids and orbital skin bright lavender blue. Bill pale blue or pale green, the basal half darker and brighter. Legs and feet deep coral-red to deep crimson; soles paler; claws horny brown. In young (both sexes), as in other green pigeons, iris watery pale brown; eyelids and orbital skin livid. Legs and feet dull crimson.

According to Baker the double-coloured iris is acquired at the first autumn moult, but is much less vivid than in the adult.

FIELD CHARACTERS. A stout green pigeon with a red shoulder-patch and yellow legs. Very similar to 504 but with a markedly greenish yellow forehead, and grey lower breast, belly and flanks instead of uniform bright yellow.

Young (immature) like adult but minus the shoulder-patch.

STATUS, DISTRIBUTION AND HABITAT. Resident, wandering locally with fruit-ripening. West Pakistan and northern India from c. 73°E. long. (Lyallpur, Punjab) south through E. Rajasthan and eastward along the Himalayan foothills and Gangetic Plain (including Nepal lowlands) through Bihar, northern Orissa, W. Bengal, Assam north and south of Brahmaputra R., Manipur (?), and E. Pakistan. Southern boundary uncertain and confused owing to difficulty of interpreting frequent occurrence of both races together. Birds from Gwalior district, Madhya Pradesh (c. 26°N., 78°E.) belong to the southern race *chlorigaster* (Whistler, JBNHS 41: 477), whereas both subspecies have been reported as common and procured together around Pachmarhi, M.P. (c. 22°29'N., 76°26'E.) (B. B. Osmaston, ibid. 28: 458), and Ambala Cantonment, Punjab (c. 34°54'N., 76°57'E.) (Jones, A. E., ibid. 28: 1006). Furthermore, Jones found the southern *chlorigaster* 'very common in one locality c. 3500 ft. in the low hills south of Kasauli [c. 30°54'N., 76°57'E. — Simla district] where only the nominate race would be expected! Further investigation is desirable. Affects dry- and moist deciduous forest with a sprinkling of *Ficus* and other fruiting trees. Also groves of such in the open countryside, around villages and cultivation, and in rambling jungly gardens and roadside avenues.

Extralimital. Other races extend the species to Burma, Thailand and the Indochinese countries.

GENERAL HABITS, FOOD, VOICE AND CALLS. As of 504, q.v.

BREEDING. Season, chiefly March and April; sometimes continuing into May and June or even later. *Nest* and *eggs* as in 504, q.v.



Primaries, x c. 1

MUSEUM DIAGNOSIS. See Key to the Subspecies and Field Characters; for details of plumage Baker, loc. cit.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
	184-200	19-20	c. 25-26	110-118 mm. (Baker)

Females are rather smaller, Wing 180-168 mm.

COLOURS OF BARE PARTS. As in 504.

502. Ceylon Orangebreasted Green Pigeon. *Treron bitorquatus leggi* Hartert

Treron bitorquatus leggi Hartert, 1910, Nov. Zool. 17: 193 (Ceylon)
Baker, FBI No. 1835, Vol. 5: 192

LOCAL NAMES. *Beta goya*, *Sipachura* (Sinhala); *Pachekhi parā* (Tamil).

SIZE. Pigeon \pm ; length c. 29 cm. (11½ in.).

FIELD CHARACTERS. As of 501, q.v. An olive- and yellowish green pigeon with bright orange breast in male and no chestnut-maroon mantle.

Female may be confused with female of Greyfronted (497), but has slaty grey middle tail-feathers instead of green.

STATUS, DISTRIBUTION AND HABITAT. Race peculiar to Ceylon. Abundant but local throughout the forest areas of the low-country Wet and Dry zones, chiefly near the coasts. Subject to local migrations from district to district following fruit-ripening.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the Indian race (501). According to Legge, it drinks regularly at about 7 in the morning and 4 in the afternoon, descending to the margin of a stream or water-hole for the purpose. Gait on ground rather clumsy with the tail held high.

BREEDING. Season, December to May, also July to September; but chiefly December. *Nest* and *eggs* as in 501, the latter measuring 'about 28 x 22.5 mm.' (G. M. Henry).

MUSEUM DIAGNOSIS. Differs from the nominate Indian race (501) only in being smaller; there is no appreciable difference in colour.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	145-155	17-21	c. 21-24	c. 87-89 mm. (HW)

* Wing 140-146, one 149 mm. — Baker.

COLOURS OF BARE PARTS. As in 501.

TRERON PHENOICOPTERA (Latham)

Key to the Subspecies

	Page
A Smaller; wing 170 mm. or below.....	<i>T. p. philippi</i> 109
B Larger; wing above 170 mm.....	1
1 Breast yellow, abdomen grey.....	<i>T. p. phoenicoptera</i> 106
Breast and abdomen both yellow.....	<i>T. p. chlorigaster</i> 108

503. Bengal Green Pigeon. *Treron phoenicoptera phoenicoptera* (Latham)

Columba phoenicoptera Latham, 1790, Index Orn. 2: 597 (India)
Baker, FBI No. 1826, Vol. 5: 181
Plate 49, fig. 2

LOCAL NAMES. General for all green pigeons, *Hārid* (Hindi); *Hāitha* or *Bir hāitha* (Assam); *Dzorep gadoba* (Cachar); *Iraigu* (Naga).

SIZE. Pigeon; length c. 33 cm. (13 in.).

504. Southern Green Pigeon. *Treron phoenicoptera chlorigaster* (Blyth)

Vinago chlorigaster Blyth, 1843, Jour. Asiat. Soc. Bengal 12 (1): 167, note
(No locality = Indian Peninsula)
Baker, FBI No. 1828, Vol. 5: 184

LOCAL NAMES. For all green pigeons, *Hārid* (Hindi, Bengali); *Pāchcha pākha*, *Pāchcha gūrd* (Telugu); *Pāchekhi parā* (Tamil); *Pisara* (Marathi).

SIZE. Pigeon; length c. 33 cm. (13 in.).

FIELD CHARACTERS. A stout arboreal pigeon, chiefly olive-green and ashy grey above, uniformly bright yellow below, with a lilac patch on wing-shoulder and a conspicuous yellow band across the blackish wings. Readily distinguished from all other Indian green pigeons by its yellow (i.e. red) legs. Sexes more or less alike; female somewhat duller, with a less pronounced shoulder-patch.

Young (immature) like adult but minus the shoulder-patch.

STATUS, DISTRIBUTION AND HABITAT. Resident, wandering locally with fruit-ripening. All peninsular India, including southern Rajasthan and Gujarat, roughly south of the Gangetic Plain (south of range of Bengal Green Pigeon) but boundary between the two races undefined (cf. 503). Rare vagrant to Ceylon (low-country Dry zone near Jaffna etc.). Affects dry- and moist-deciduous forest with a scattering of *Ficus* and other fruiting trees. Also groves of such on the open countryside, around villages and cultivation, and in rambling jungly gardens in towns, and roadside avenues.

Extralimital. Allied races in Burma, Thailand, and the Indochinese countries.

GENERAL HABITS. Almost exclusively arboreal descending to the ground only occasionally to drink or to pick earth at salt-licks; rarely also to feed on ground crops (see under Food). Gait on ground rather clumsy, with the tail held well up. Keeps in flocks of 5-10 birds or so, sometimes congregating in very large numbers to gorge themselves on ripe banyan or peepul figs (*Ficus*) in company with other green pigeons, hornbills, barbets and suchlike frugivorous species. The birds deftly clamber amongst the fruit-laden twigs like parakeets, clinging sideways or upside down and swinging out to reach a distant berry with the agility of a trapeze acrobat. When such a tree is approached the green pigeons deliberately 'freeze', and in spite of their large size become completely obliterated among the surrounding foliage till a little inadvertent movement by one here and another there betrays their presence. All the while the frozen bird will be peering intently at the intruder through a tiny gap between the leaves, as can clearly be seen through the binocular. The unsuspected numbers that will tumble out of a fig-laden banyan or peepul tree on the report of a gun is often quite amazing; but the birds soon return in twos and threes and small parties till the foliage is once more a jostling, quarrelling mass of guzzling green pigeons. They stuff themselves so greedily that the impact of a flying bird falling to shot often bursts the turgid crop, exposing and scattering the contents. Twelve complete banyan figs have been removed from a single crop! They feed chiefly in the mornings and afternoons doing regular rounds of their favourite trees, and can then provide excellent sport. Decent bags can be made by two or three guns placed in strategic positions as the

PIGEONS, DOVES

109

birds fly back and forth between the trees. Flight swift and direct, accompanied by a loud metallic clatter when suddenly flying out of a tree. Like all green pigeons has the habit of perching, in couples and small parties, on the topmost branches of dead trees to sun themselves, especially at sunrise and in the late afternoon.

FOOD. Drupes, berries, and wild figs of numerous kinds. Among the most commonly recorded are nearly all species of *Ficus* [especially *F. bengalensis* (banyan), *F. religiosa* (peepul), *F. glomerata* (guler), and *F. benjamina*]; *Zizyphus jujuba* (bêr), *Z. oenopia*, etc., *Eugenia jambolana* (jamun), *Terminalia* spp. (myrabolams), *Buchanania latifolia* (charoli), *Bridelia hamiltoniana*, and *Lantana aculeata*. Specimens have been shot with their crops stuffed with 'peas' (*Cicer*?) (Briggs, JBNHS 37: 386).

VOICE and CALLS. A series of modulated mellow musical whistles of rather human quality; very similar to call of Orangebreasted (*T. bicincta*) but louder and in a lower key.

BREEDING. Season March to June, occasionally a month or two earlier or later; mainly March and April. Nest, characteristic of the family, a flimsy platform of interlaced twigs in a moderate-sized tree, concealed among the foliage. On outskirts of forest, near villages and in gardens; often in same tree as holds a Black Drongo's nest, the birds obviously taking advantage of the protection from nest-robbers like crows and tree pies afforded by these bold and vigilant guardians. Eggs, 2, white, elliptical and glossy. Average size of 40 eggs 31.8 × 24.6 mm. (Baker). Both sexes share nest-building and incubation; period undetermined.

MUSEUM DIAGNOSIS. See Key to the Subspecies and Field Characters; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	187-201	21-24	24-29	104-120 mm.
♀♀	181-202	20-24	24-28	97-116 mm.

(SA, HW)

COLOURS OF BARE PARTS. Iris outer ring pink, inner bright lapis blue. Bill pale French grey, basal portion including cere greenish; mouth greyish pink or greyish yellow. Legs and feet bright chrome yellow; claws French grey.

505. Ceylon Green Pigeon. *Treron phoenicoptera phillipsi* Ripley

Treron phoenicoptera phillipsi Ripley, 1949, Proc. Biol. Soc. Wash. 62: 9

(Nilgala, Uva, Ceylon)

Not in Baker, FBI

LOCAL NAMES. As for other Ceylon green pigeons, cf. 497, 502.

SIZE. Pigeon ±; length c. 30 cm. (12 in.).

FIELD CHARACTERS. As of 504; somewhat smaller but not distinguishable from it in the field.

STATUS, DISTRIBUTION and HABITAT. Race peculiar to Ceylon. Resident in the low-country Dry zone. 'Appears to be confined to and fairly plentiful

PIGEONS, DOVES

111

DUCULA AENEAE (Linnaeus)

Key to the Subspecies

	Page
A Smaller; wing generally under 215 mm..... <i>D. a. fusilla</i>	112
B Larger; wing generally over 215 mm..... 1	
1 Under tail-coverts deep dull maroon..... <i>D. a. sylvatica</i>	111
Under tail-coverts deeper chestnut-maroon <i>D. a. endemania</i>	114
Under tail-coverts dull rufous-brown..... <i>D. a. nicobarica</i>	113

506. Northern Green Imperial Pigeon. *Ducula aenea sylvatica* (Tickell)

Columba sylvatica Tickell, 1833, Jour. Asiat. Soc. Bengal 2: 581 (Borabhum)

Baker, FBI No. 1847, Vol. 5: 208

Plate 48, fig. 9

LOCAL NAMES. *Dinkul* or *Dookul*, *Sonā kāhātār*, *Bādā hārāl* (Hindi); *Pagema*, *Porgema* or *Pargomba* (Assam); *Dūkūl* (Nepali, in Nepal); *Hūkūl* (Nepali, in Bengal duars); *Dookuruma* (Cachar); *Inukuru* (Naga).

SIZE. Crow; length c. 43 cm. (17 in.).

FIELD CHARACTERS. A large arboreal fruit pigeon, pinkish grey overall with bright metallic bronzy green back and tail (above), and chestnut-maroon under tail-coverts. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident; locally abundant, moving about with ripening of wild fruits. Nepal (?) and eastern U.P., eastward through Bihar, Orissa, W. Bengal, Assam and E. Pakistan. Not met with in Manipur (Higgins, JBNHS 37: 302). South to lat. 20°N., the arbitrary boundary proposed by Whistler (ibid. 38: 675) between this and the peninsular form (507). Birds from Orissa and northeastern Andhra Pradesh may well pass for either race. Affects evergreen and moist-deciduous biotope — plains and foothills normally up to c. 300 metres, occasionally to 600 m. Partial to secondary jungle with a scattering of large *Ficus* and other wild fruit trees.

Extralimital. Burma to central Tenasserim, northern Thailand, Indo-chinese countries.

GENERAL HABITS. Keeps singly or in pairs and parties of 5 or 6, sometimes joining up in small feeding flocks up to 20 or so in large fruit-laden trees; seldom in larger numbers like the smaller green pigeons (*Treron*). Gentle and sociable, not blustering and quarrelsome like them while feeding. Has the common green pigeon habit of sunning itself with fluffed plumage on the leafless tops of tall trees in the early morning and before sunset. Flight swift and powerful in spite of the seemingly leisurely wing-beats; accompanied by a noisy clattering of the wings when first launching out of a tree. Flies high and well above the tree-tops when birds commuting between favourite feeding places. Commonly descends to the ground to drink and pick earth pellets at salt-licks. The male has a spectacular seesaw aerial display during the breeding season, reminiscent of the Roller (*Coracias*) and also the Blackbellied Finch-Lark (*Eremophila*), very similar to that of Jerdon's Imperial Pigeon (511), q.v. He also has a bowing display, as common to many pigeons, consisting of a movement in which the head

110

COLUMBIFORMES

in a small area of open [dry deciduous] forest country around Bibile and Nilgala, in the lowlands to the south-east of Uva hills' (Phillips).

GENERAL HABITS, FOOD, VOICE and CALLS. As in the south Indian race (504).

BREEDING. Not yet reported.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Differs from *chlorogaster* in being smaller, with duller more greenish yellow nape, and duller more greyish green back and wings. Vinous shoulder-patch also duller and slightly darker. Below, breast and abdomen dull greenish yellow suffused with greyish green. Lemon-yellow of neck and underparts confined only to a submental spot, and to a patch about thighs and vent.

MEASUREMENTS

	Wing	Bill (from feathers)	Tail
4 ♂♂	163-167	c. 18-19	97-100 mm.
4 ♀♀	160-169	c. 17-18	95-104 mm.

(SDR)

COLOURS OF BARE PARTS. 'Iris (both sexes), inner ring blue, outer carmine; eyelids bluish grey. Bill pale bluish white. Legs chrome yellow' (Phillips).

GENUS DUCULA Hodgson

Ducula Hodgson, 1836, Asiat. Res. 19: 160. Type, by monotypy, *Ducula insignis* Hodgson

Muscadivora Schlegel, 1872, Dier. K. zool. Genoot. Amsterdam: 209. Type, by subsequent designation, *Columba aenea* Linnaeus

Myristicivora Reichenbach, 1852, Nat. Syst. Vög.: 26. Type, by original designation, *Columba littoralis* Temminck = *C. bicolor* Scopoli

Contains three species of large arboreal fruit pigeons — one with some bronzy green in plumage, one without, and one with very peculiar pied white and black coloration. Fleshy padded soles of feet less expanded than in *Treron* but broader



Sole of foot of *D. a. sylvatica*, × c. 1

than in *Columba*. Bill slender and long, with a long soft basal portion (cere) and a short horny tip (rhamphotheca). Caeca absent as in *Treron*, but both ambiens muscle and oil gland present as in *Columba*.

Key to the Species

	Page
A Plumage entirely black and white..... <i>D. bicolor</i>	115
B Plumage not as above..... 1	
1 Mantle green..... <i>D. aenea</i>	111
Mantle plain brown or with purplish or coppery tint..... <i>D. badia</i>	116

112

COLUMBIFORMES

is lowered quickly on to the breast so that the crown and nuchal region is frontally presented.¹

FOOD. Exclusively frugivorous. *Ficus* figs the staple, but most other wild fruits eaten. Nutmegs (*Myristica*) a favourite item; swallowed entire, the mace being digested and the nutmeg voided later through the mouth. Gape, lower mandible (which is wider at base than upper) and gullet enormously extensible and capacious, capable of negotiating fruits of up to c. 4 cm. diameter with ease.

VOICE and CALLS. Of several deep, resounding, rather ventriloquistic notes *uück-uück-uoor*, or *uück-uoor-uoor-uoor-uoor* ending in a peculiar prolonged rollicking which sounds singularly like jeering laughter!

BREEDING. Season overall March to June, aberrantly somewhat earlier or later; principal months April and May. Nest, a skimpy unlined platform of interlaced twigs through which the contents often visible from below; placed up in a leafy sapling in forest, usually under c. 10 metres from the ground. Eggs, normally 1, rarely 2, white, elliptical, slightly glossy. Average size of 22 eggs 45.4 × 33.5 mm. (Baker). Both sexes share nest-building and incubation; incubation period undetermined.

MUSEUM DIAGNOSIS. Differs from the peninsular Indian and Ceylon race *pusilla* (507) only in being cinclally larger. See Key to the Subspecies; for details of plumage — Baker, loc. cit.

MEASUREMENTS

♂♀ Wing 212-254 mm. In northern birds seldom under 224 mm.; Bengal and Orissa birds seldom under 220 mm. — Baker.

In ♂♀ from Eastern Himalayas: Wing 232-248 mm.; bill (from skull) 31-34 mm. — Whistler.

COLOURS OF BARE PARTS. Iris deep red, maroon-red, or crimson. Bill white at tip, bluish white in the centre, purplish red on basal half and cere. Legs and feet dull purple-red to lake red, rarely deep coral-red; claws reddish horny brown.

507. Southern Green Imperial Pigeon. *Ducula aenea pusilla* (Blyth)

Carpophaga pusilla Blyth, 1849, Jour. Asiat. Soc. Bengal 18: 816 (Nilgiris)

Baker, FBI No. 1848, Vol. 5: 209

LOCAL NAMES. *Mēhā nīla gya*, *Māila gya* (Sinhala); *Periya furā* (Tamil); *Kakarani gūre* (Telugu); *Mēsi pūru*, *Porgema* (Malayalam).

SIZE. Same as 506; length c. 43 cm. (17 in.).

FIELD CHARACTERS. As of the northern race 506 q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; locally common, moving about with ripening of wild fruits. Ceylon and peninsular India north to 20°N. lat., the arbitrarily fixed boundary between it and 506. In the Peninsula chiefly in the Eastern and Western Ghats [north to near Bombay (Bassein, c. 19°20'N. lat.) — JBNHS 40: 377] and associated hill ranges in appropriate biotope; in Ceylon in the low-country Wet and Dry zones.

¹ For a discussion on its significance in phylogeny, see Goodwin, Derek, 1966, *The Auk* 83 (1): 117-23.

PIGEONS, DOVES

113

Affects evergreen and moist-deciduous plains and foothills forest, normally to c. 300 metres; somewhat higher with availability of food. Partial to secondary jungle dotted about with large *Ficus* and other wild fruit trees.

GENERAL HABITS, FOOD, VOICE AND CALLS. Same as in the northern race (506). In Ceylon the birds collect in flocks of 6 to 30 or more after the breeding season and appear to have regular roosting places whence they issue in the morning to their feeding grounds, often several miles away (Parker, H., 1881, SF 9: 481), flying high above the tree-tops. Among food items other than *Ficus* figs and nutmegs (*Myristica*), specifically recorded are berries of the Marking Nut or Bibba (*Semecarpus anacardium*) and buds of mangroves (*Avicennia* spp.).

BREEDING. Season, in south India (Kerala, Mysore, etc.) principally February to June; in Ceylon December to May, chiefly during December. Nest—a flimsy platform of twigs, and eggs—normally a singleton, white, smooth, elliptical—as in 506. Average size of 7 eggs (Kerala and Ceylon) 43.1 × 34.1 mm. (Baker).

MUSEUM DIAGNOSIS. Differs from the northern *syliatica* (506) only in being clinically smaller; see Key to the Subspecies.

MEASUREMENTS

♂ ♀ Wing 200–220 mm. Ceylon birds do not exceed 216 mm. and most are under 210 mm.—Baker.

8 specimens from Ceylon, Kerala, and Mysore give

	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂	210–214	31–32	28–32	131–140 mm.
5 ♀♀	202–217	28–32	27–30	131–140 mm. (SA, HW)

COLOURS OF BARE PARTS. As in 506.

508. Nicobar Green Imperial Pigeon. *Ducula aenea nicobarica* (Pelzeln)

Carpophaga insularis Blyth, 1858, Jour. Asiat. Soc. Bengal 27: 270 (Nicobar Islands).

Nomen nudum

Carpophaga aenea var. *nicobarica* Pelzeln, 1865, Reise 'Novara' Zool. Th. 1: 105, Vog. (Nicobars). Restricted by Abdulali to Car Nicobar, 1967, JBNHS 64: 164 Baker, FBI No. 1849, Vol. 5: 210 (= *insularis*)

LOCAL NAMES. None recorded.

SIZE. Jungle Crow; length c. 47 cm. (18½ in.).

FIELD CHARACTERS. A large stout arboreal fruit pigeon, very similar to 506 but purer grey overall with dark metallic bluish- or purplish green back and tail (above), and dingy brown under tail-coverts. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Race peculiar to the Nicobar group of islands south of the Ten Degree Channel. Has been procured on the following by Hume (SF 2: 262): Comorta, Nancowry, Katchall, Trinkat, Bompoka, Teresa, Tillanchang, Treis, Trak, Pili Milu, Chowra, Meroe, Batti Malv and Kondul; and on Car Nicobar and Great Nicobar by Abdulali (JBNHS 61: 525). Resident; possibly moving back and forth between islands not too widely separated. Common and abundant to the

PIGEONS, DOVES

115

VOICE AND CALLS. 'A loud *goo* and sometimes a more guttural *groo*, uttered once, twice or thrice.' Abdulali also considered this species probably 'responsible for a deep *whoom*, often in answer to one calling *gr-groo*, the first *gr* resembling the beginning of a hiccup' (ibid.).

BREEDING. Season, February to May; aberrantly somewhat earlier or later. Nest and eggs as in 506 with which Andamans birds were hitherto included.

MUSEUM DIAGNOSIS. Slightly larger than the north Indian race 506. Differs also in being greener above, with the red coppery bronze less brilliant. Forehead and throat whiter; under tail-coverts deeper chestnut-maroon.

MEASUREMENTS

Wing 13 ♂♂ 222–257 (av. 236); 8 ♀♀ 212–240 (av. 227) mm.

Tail 5 ♂♂ 155–161 (av. 157.6); 4 ♀♀ 137–146 (av. 142.25) mm.

(Abdulali)

COLOURS OF BARE PARTS. As in 506.

509. Pied Imperial Pigeon. *Ducula bicolor* (Scopoli)

Columba bicolor Scopoli, 1786, Del. Flor. et Faun. Insubr., fasc. 2: 94

('Nova Guinea', i.e. New Guinea)

Baker, FBI No. 1850, Vol. 5: 211

Plate 48, fig. 10

LOCAL NAME. *Kaluia* (Car Nicobar).

SIZE. Pigeon +; length c. 41 cm. (16 in.).

FIELD CHARACTERS. A uniquely coloured large arboreal fruit pigeon: overall creamy white with sharply contrasting jet black flight feathers and broad tail-tip. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Abundant resident in the Nicobars but not so generally distributed as *D. a. nicobarica*; possibly wandering to the smaller islands only in search of food. Rare in the Andamans, possibly only a seasonal visitor; also in Great Coco, and Barren Is. (Hume). Fairly common on Narcondam where may be resident (B. B. Osmaston). Affects mangrove swamps and tall evergreen forest near the shore.

Extralimital. 'Philippines, eastward to the Aru Islands and islands west of New Guinea' (Peters).

GENERAL HABITS. Keeps in small parties to high tree-tops, forming into large flocks of 50 or 60 birds where food is plentiful. On some islands abundant to the point of swarming and remarkably tame. On Treis I. Hume's party bagged 50 together with a smaller number of *D. a. nicobarica* in a single fusillade! (c. 1874, SF 2: 84), and they were equally plentiful on Trak I. Reported even now to be very numerous and tame on some of the less disturbed islands of the Nicobar group. Very conspicuous on the wing against background of dark trees, but coloration amazingly obliterative when bird perched high up within the foliage canopy with patches of sunlight filtering through the dense leaves. Flight strong and direct, accompanied by a loud clatter of wings when launching out of a tree. Has the same bowing display as *Ducula aenea* (506), q.v. Aerial display, if any, not known.

114

COLUMBIFORMES

point of swarming on some of the islands not yet subjected to heavy deforestation for human settlement. Affects lofty evergreen forest.

GENERAL HABITS, FOOD. As in 506 and the other races, q.v.

VOICE AND CALLS. A deep low *coo* (Sewell); '(1) a deeper and longer *ghoom* than in *andamanica*, (2) a *koo-o* followed by a *kukku kukku-kukku* more like an owl than a pigeon' (Abdulali).

BREEDING. Very little information. Season, evidently February and March. Apparently the only nest known was a loosely put together platform of twigs 'built on a dried-up fruit branch in a coconut palm c. 20 ft. from the ground' (Davison, SF 2: 263). It contained a single white egg measuring '1.9 × 1.39' inches (= 48.2 × 34.8 mm.).

MUSEUM DIAGNOSIS. Differs from the north Indian race (506), with which Andaman birds were hitherto included, in having the grey of the head and underparts purer, without the pinkish tinge; the green of the upperparts is darker and more blue; tail more blue and darker both above and below; under tail-coverts dingy brown.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	222–260	c. 25–31	25–30	152–177 mm. (Baker)
6 ♂♂	253–265 (av. 257)	—	—	157–169 mm. (av. 161.5)
3 ♀♀	246–250 (av. 248)	—	—	152–158 mm. (av. 155) (Abdulali)

Weight 1 lb. to 1 lb. 12 oz. (454–795 gm.)—Hume.

COLOURS OF BARE PARTS. Irides variable, sometimes pale ruby red; eyelids pale lavender. Bill pale plumbeous, paler on tip and darker on cere and base. Legs and feet dull deep pink, pinkish red or livid purple (Hume).

508a. Andaman Green Imperial Pigeon. *Ducula aenea andamanica* Abdulali

Ducula aenea andamanica Abdulali, 1964, Jour. Bombay nat. Hist. Soc. 61 (2): 414 (Betapur, Middle Andamans)

Not in Baker, FBI

LOCAL NAMES. Not recorded.

SIZE. As 506; length c. 43 cm. (17 in.).

FIELD CHARACTERS. As of the north Indian race 506, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Race peculiar to the Andaman Islands evidently south to the Ten Degree Channel. Common throughout the group. Affects tall evergreen forest.

GENERAL HABITS. As in 506.

FOOD. Items specifically recorded are large yellow flowers and fruits of an unidentified tree, and fruits of *Sideroxylon longepetiolatum*, *Myristica andamanica*, *Calamus pseudorivialis*, and *Ficus infectoria* (Abdulali, JBNHS 61: 525).

116

COLUMBIFORMES

FOOD. Exclusively frugivorous; chiefly wild figs (*Ficus*) and nutmegs (*Myristica*). As in *D. aenea* gape and gullet enormously extensible, ridiculously large nutmegs being swallowed entire, two or three being accommodated in the crop at a time—a seemingly impossible physical feat. The mace is digested, the nut being later voided orally.

VOICE AND CALLS. Rather inadequately described as 'a chuckling *hu-hu-hu*' (Butler). Apparently rather silent, though HA reports an often-repeated *crucroo*, reminiscent of a domestic pigeon's.

BREEDING. Season, reportedly January to March. B. B. Osmaston (JBNHS 18: 201) found some 50 nests in February on South Sentinel I. (c. 1½ km. long, ¾ km. broad) NW. of Little Andaman, each containing a single egg—some fresh some partly incubated. Nest, the usual flimsy stick platform through which the contents visible from below; mostly 7 or 8 metres up in trees. Egg, pure white, fairly glossy, somewhat elongated ellipse. Average size of 28 eggs 45.7 × 30.5 (Osmaston). Share of the sexes in nest-building and incubation, and period of incubation, not recorded.

MUSEUM DIAGNOSIS. Distinctive white and black coloration. No naked skin round eye; lores fully feathered. Tail much shorter than in *Ducula a. nicobarica*. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	c. 218–231	23–26	c. 26–29	c. 125–135 mm. (Baker)
4 ♂♂	233–238 (Nicobars)	(from skull) 26–28	26–27	127–133 mm. (SA)

Weight 2 ♂♂ 465, 510; 1 ♀ 475 gm. (Grubb).

COLOURS OF BARE PARTS. Iris dark brown. Bill leaden blue, the tip darkish horny or dark plumbeous. Legs and feet pale smalt-blue (Davison).

DUCULA BADIA (Raffles)

Key to the Subspecies

		Page
A	Back brown with no purple tint.....	<i>D. b. cuprea</i> 118
B	Back brown with slight purple tint.....	1
1	Crown and hind-neck both lilac.....	<i>D. b. insignis</i> 116
	Crown grey, contrasting with lilac hindneck.....	<i>D. b. griseicollis</i> 119

510. Hodgson's or Nepal Maroonbacked Imperial Pigeon.

Ducula badia insignis Hodgson

Ducula Insignis Hodgson, 1836, Asiat. Res. 19 (1): 162, pl. 9 (Nepal)

Ducula badia carolinax Ripley, 1953, Postilla, Yale Peabody Mus. No. 17: 1–2

(Phok, eastern Naga Hills)

Baker, FBI No. 1843, Vol. 5: 203

Plate 48, fig. 15

LOCAL NAMES. *Dükür* or *Dükül* (Nepal, Sikkim); *Fomek* (Lepcha); *Ldi bogoma* (Assam); *Hükas* (Paharia).

SIZE. Jungle Crow +; length c. 51 cm. (20 in.).

PIGEONS, DOVES

117

FIELD CHARACTERS. A large greyish brown forest pigeon closely resembling Green Imperial on the wing but readily distinguished from it by larger size and whitish under tail-coverts.

Adult. *Above*, crown and hindneck lilac. Back and scapulars maroon-tinged copper-brown; rump and upper tail-coverts ashy grey. Tail black and brownish grey. *Below*, sides of head grey; throat white; breast and underparts vinous-grey. Under aspect of tail grey with a broad black subterminal band. Under tail-coverts buff. Sexes alike.

Young (immature). Duller than adult: upperparts without the copper-purple tint; upper wing-coverts edged with chestnut.

STATUS, DISTRIBUTION AND HABITAT. Resident; with local movements governed by ripening of wild fruits. Eastern Himalayas from W. Nepal (?), Sikkim, Bhutan and through NEFA; from the terai and foothills to c. 2300 m. Assam hills north and south of Brahmaputra R. Affects tall evergreen forest. Birds from upper Assam (especially the Margherita and Tirap area) tend towards the greyheaded Burmese race *griseicapilla*.

GENERAL HABITS. Similar to *Ducula aenea* (506), q.v. Keeps in small flocks of up to 15 or 20 birds to heavy forest, rarely venturing into scrub jungle as *aenea* often does. Descends to drink, and at salt-licks. Sits high up in lofty trees hidden among the foliage canopy and is mostly seen only when flying high above the tree-tops from one feeding ground to another. Flight swift and powerful but with seemingly leisurely wing-beats — rather crow-like in distant silhouette. Early mornings and again late afternoons the birds sit quietly sunning themselves on bare tree-tops high above the forest, flying off quickly and silently to their roost soon after the shadows have fallen. Bowing display in breeding season consists of the male advancing along a branch towards his mate cooing vigorously *ük-ook . . . ook* with lowered head and inflated throat. Each *ook* uttered with a deep bow, bill pointing groundward. Calls often followed by a spectacular aerial display: the bird launches out from the top of a dead tree, and after a few rapid wing-beats he sweeps vertically upward for c. 6 or 8 metres with closed wings, using only the momentum. At peak of zoom reverses abruptly, bill pointing downward, and nose-dives with wings pulled in at the sides and tail expanded, for about the same distance. At bottom of dive, flattens out and flaps vigorously using the momentum to zoom vertically upward once more and repeat the performance. The manoeuvre repeated two or three times, the bird thereafter re-settling on some nearby dead tree. This switch-back aerial display very similar to Green Imperial's, and reminiscent of both Roller (*Coracias*) and Blackbellied Finch-Lark (*Eremopterix*).

FOOD. Exclusively frugivorous; very largely wild figs (*Ficus*) and nutmegs (*Myristica*), swallowed entire. Gullet and gape enormously extensible, as in 506.

VOICE AND CALLS. Quite distinct from Green Imperial's. A deep, booming far-carrying and rather mournful *ük-ook . . . ook* (or *gü-goo . . . goo*); uttered with tail slightly depressed, rump arched, head bowed, and throat inflated.

BREEDING. Season, March to August; possibly has two broods. *Nest*, the characteristic skimpy platform of interlaced twigs, 5 to 8 metres up in a sapling in forest. *Egg*, normally a singleton — very rarely 2 — white,

PIGEONS, DOVES

119

MUSEUM DIAGNOSIS. Under tail-coverts freckled with dusky; white on chin and throat more restricted than in 510 or 512. See also Key to the Subspecies; for details of plumage Baker, loc. cit.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	221-240	29-34	31-34	164-183 mm. (SA, HW)

Tails longer in males.

COLOURS OF BARE PARTS. Iris brown; eyelids magenta. Bill horny brown magenta on cere and base of upper mandible. Legs and feet magenta; claws horny brown.

512. Greyheaded Imperial Pigeon. *Ducula badia griseicapilla* Walden

Ducula griseicapilla Walden, 1875, Ann. and Mag. Nat. Hist. (4), 16: 228
(Karen Hills, between 4000 and 4200 feet)
Baker, FBI No. 1844, Vol. 5: 204

LOCAL NAMES. *Daohukuruma gagao* (Cachar); *Inrukuru gaherba* (Katcha Naga); *Lamkhuru* (Manipur, for wild pigeons generally).

SIZE. As of Nepal Maroonbacked Imperial (510); length c. 51 cm. (20 in.).

FIELD CHARACTERS. A large greyish brown forest pigeon like 510 but with a purer grey head; indistinguishable from it in the field. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Chiefly extralimital, occurring only along the Burma border, in Nagaland, Manipur, and Mizo Hills (?), but the birds here largely intermediate. Affects tall evergreen forest up to c. 2300 m.

Extralimital. Burma and SW. Yunnan to N. Tenasserim, Thailand and all the Indochinese countries.

GENERAL HABITS AND FOOD. As of 510, q.v.

VOICE AND CALLS. As in 510; specifically described in Burma as 'click *ukroom ukroom*, the preliminary click only heard at close range but the other two notes deep and resounding' (Smythies *et al.*, JBNHS 44: 230).

BREEDING. Season, nest and egg (singleton) as in 510.

MUSEUM DIAGNOSIS. Differs from the east Himalayan race *insignis* in having the crown and sides of head pure French-grey, darker than underparts and contrasting strongly with lilac of hindneck. Upper back and smaller wing-coverts more coppery; rump darker and less grey than in *insignis*.

MEASUREMENTS. As in 510 (Baker).

Weight of 2 ♂ 1 lb. 4 oz. (c. 580 gm.) and 1 lb. 7 oz. (c. 665 gm.) respectively; ♀ ♀ weigh somewhat less (Davison).

COLOURS OF BARE PARTS. Iris whitish. Bill cerise, tip plumbeous-brown. Feet dull cherry-red' (SDR).

Genus COLUMBA

Columba Linnaeus, 1758, Syst. Nat., ed. 10, 1: 162. Type, by subsequent designation, *Columba oenas* Linnaeus (Vigors, 1825).

Alloceus Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 461. Type, by monotypy, *Columba puniceus* Blyth.

118

COLUMBIFORMES

elliptical, fairly glossy. Average size of 22 eggs 46.2 × 33.5 mm. (Baker). Both sexes take part in nest-building and incubation; incubation period undetermined. Birds sit very close, usually leaving nest only when climber within a metre or so.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for the subspecies, Key.

Fresh skins are so different in tone from old specimens in collections that at first glance it is difficult to assign them to the same race. The oxidation process inherent in 'foxing' has turned the upperparts of old skins into brown and copper-coloured and taken away the greyish bloom of the fresh skin.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	228-259	c. 25-27	c. 25-32 mm.	— (Baker)
		(from skull)		
2 ♀ ♀	242-245	30-35	29-32	176-187 mm. (SA)

COLOURS OF BARE PARTS. Iris pale- to bluish grey; orbital skin purple-grey, purer grey next the eye. Bill pale brown, white at tip; cere and base of upper mandible fleshy purple or dull carmine. Legs and feet dull cherry-red; claws pale brown.

511. Jerdon's or Southern Maroonbacked Imperial Pigeon. *Ducula badia cuprea* (Jerdon)

Carpophaga cuprea Jerdon, 1840, Madras Jour. Lit. Sci. 12: 12 (Wynaad)
Baker, FBI No. 1845, Vol. 5: 205

LOCAL NAME. *Manti prāru* (Malayalam).

SIZE. Crown ±; length c. 43 cm. (17 in.).

FIELD CHARACTERS. A large forest pigeon, dull olive-brown or liver-brown above with pale greyish lilac head, neck and underparts. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, with seasonal local and altitudinal movements depending on wild fruit ripening. The Western Ghats and associated hills (Nilgiri, Palni, etc.) in Kerala, western Mysore (Malnaad) north to about Belgaum and Goa (c. lat. 16°N.). Affects evergreen forest up to c. 2000 metres. Alleged occurrence in Ceylon not confirmed.

One of the peculiar discontinuously distributed Indo-Malayan forms separated from its nearest east-Himalayan relative by at least 1800 km. of ecologically unsuited country.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the Nepal race (510), q.v.

BREEDING. Season, chiefly January to May. *Nest*, the typical flimsy pigeon structure — a skimpy platform of interlaced twigs through which the contents usually visible from below. Built in small trees, tangles of creepers draping them, or occasionally on the branches of bigger trees, between c. 5 and 8 metres up. *Egg*, normally a singleton, white, elliptical, fairly glossed. Average size of 12 eggs 44.4 × 34.6 mm. (Baker). Incubation by both sexes; period undetermined.

120

COLUMBIFORMES

Ianthoenas Reichenbach, 1852, Nat. Syst. Vög.: 25. Type, by original designation, *Columba ianthina* Temminck & Schlegel.

Dendrocygna Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 937. Type, by monotypy, *Columba hodgsonii* Vigors.

Tail short or of moderate length, square or very slightly rounded. Wings long and pointed reaching to, or almost to, the end of tail in most species. Tarsus bare, shorter than middle toe with claw, the upper part overhung by feathers. Feet without broad padded soles as in fruit pigeons; well adapted for walking. Nostrils narrow and obliquely set in the swollen cere.

Key to the Species

	Page
A Neck-feathers acuminate and lengthened, tipped with same colour as crown.....	<i>C. hodgsonii</i> 131
B Neck-feathers not as above.....	I
1 Plumage deep chestnut above and below, head greyish white	<i>C. punicea</i> 135
Plumage purple-black above; whole head grey, no spangled collar on hindneck.....	<i>C. palumboides</i> 137
Plumage not as above.....	A
a Tail less than two-thirds length of wing.....	I
Tail more than two-thirds.....	II
I White band across dorsal surface of tail.....	a ¹
No white band across tail.....	a ²
a ¹ Head and foreneck grey.....	<i>C. rupestris</i> 123
Head and foreneck black.....	<i>C. leuconota</i> 120
a ² Head lilac, large area of naked skin around eye.....	<i>C. evermanni</i> 128
Head purple-grey, area around eye not as above.....	<i>C. livia</i> 124
II White band across and under tail.....	<i>C. palumbus</i> 129
No white band.....	a ³
a ³ Crown lilac.....	<i>C. torringtoni</i> 134
Crown dove-grey.....	b ¹
b ¹ Upperparts red-brown.....	<i>C. elphinstonii</i> 132
Upperparts slate-grey.....	<i>C. pulchricollis</i> 134

COLUMBA LEUCONOTA Vigors

Key to the Subspecies

Upper back-light brown.....	<i>C. l. leuconota</i>
Upper back paler and more grey, less brown.....	<i>C. l. gradieria</i>

513. West Himalayan Snow Pigeon. *Columba leuconota leuconota* Vigors

Columba leuconota Vigors, 1831, Proc. Zool. Soc. London, pt. 1: 23
(Himalayas, type probably from Nepal).
Baker, FBI No. 1858, Vol. 5: 224
Plate 48, fig. 5

LOCAL NAMES. *Bājīl* (Chamba); *Chat ketūr* (Kashmir); *Lho pen rentiep* (Lepcha); *Bya dān* (Bhutes).

PIGEONS, DOVES

121

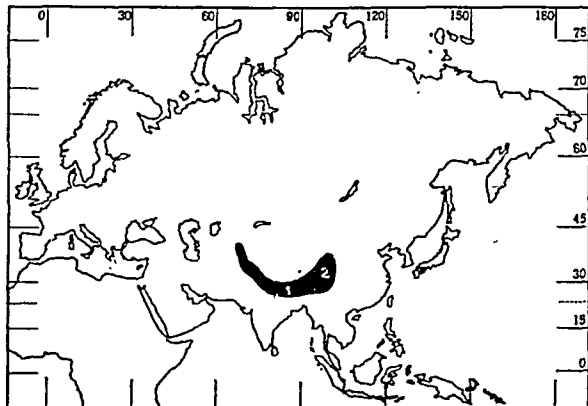
SIZE. Pigeon; length c. 34 cm. (13½ in.).

FIELD CHARACTERS. A particoloured brown and white Himalayan pigeon reminiscent of the domestic bird. In overhead flight the white body and blackish head are pointers; when flying below observer's level the blackish head, brown back, white rump-patch, grey wings with 3 dark bars, and blackish tail with a narrow white subterminal band, are diagnostic features. Sexes alike.

Young (immature). Feathers of upperparts and wings with narrow pale buff margins. White of underparts sullied with buff.

STATUS, DISTRIBUTION and HABITAT. Resident in the Himalayas chiefly between 3000 and 5000 metres; descending lower in winter to c. 1500 m. (occasionally to c. 750 m.). From the Afghan frontier in NW. Pakistan

Columba leuconota



■ Distributional range 1 *C. l. leuconota* (513). 2 *C. l. gradaria* (514).

eastward through Kashmir, Garhwal, Kumaon and Nepal to eastern Sikkim, where intergrading with *gradaria* (514) takes place. Does not extend far north into the desolate Tibetan Plateau. Affects rock cliffs and steep gorges in the alpine zone and above the snow line.

Extralimital. The Alai Mountains and the Pamirs in SW. Turkestan.

GENERAL HABITS. Similar to those of the wild Blue Rock Pigeon (517), living and roosting in colonies on cliffs; sometimes also perching on adjacent trees. Keeps in pairs and small parties in summer, feeding on open boulder scree and grassy slopes, or on the edge of melting snow patches. Gathers in large restless flocks in winter, often of 150 birds or more, flying about incessantly or gleaning in freshly sown wheat and barley fields around mountain villages. Whilst feeding the birds run about briskly like sheep at grass, often forming a close-packed jostling phalanx, each bird eager to be

PIGEONS, DOVES

123

Extralimital. Mountains of E. Tibet and W. China from the eastern Nan Shans south through Kansu and Szechuan to Yunnan and extreme NW. Burma (Peters).

GENERAL HABITS, FOOD, VOICE and CALLS. As in 513, q.v.

BREEDING. As in 513.

MUSEUM DIAGNOSIS. Birds from the eastern end of its range (Kansu and Szechuan) are somewhat larger and paler, with the head more slaty grey less blackish. In freshly moulted plumage the underparts are washed with pale greyish. Abdomen pale grey, darkening on under tail-coverts.

MEASUREMENTS

17 ♂♂ (from Kansu and Szechuan) give Wing 241-260 (av. 248) mm. against 20 ♂♂ from the western end of the range of nominate *leuconota* (Punjab Himalayas) 235-248 (av. 240.5) mm. — Vaurie, 1965.

COLOURS OF BARE PARTS. As in 513.

515. Turkestan Hill Pigeon. *Columba rupestris turkestanica* Buturlin

Columba rupestris turkestanica Buturlin, 1908, Orn. Monatsb. 16: 45 (Altai). New name for *Columba rupestris pallida* Rothschild & Hartert, preoccupied Baker, FBI No. 1857, Vol. 5: 222

Plate 48, fig. 4

LOCAL NAMES. *Taica kăblâr* (Turki); *Angoa*, *Ankhu*, *Oron* (Tibetan).

SIZE. Blue Rock Pigeon; length c. 33 cm. (13 in.).

FIELD CHARACTERS. A high-altitude Himalayan pigeon, very similar to the familiar Blue Rock (517) but readily distinguished from it by much paler upper plumage and whitish underparts; in flight also by a broad white band across middle of blackish tail — a pattern similar to snow pigeon's. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident in the Himalayas usually above the range of *livia*, in Gilgit, Chitral, Ladakh, Kashmir, Lahul, Spiti and through Garhwal eastward to Sikkim (not recorded in Nepal); between c. 3000 and 5500 m. in summer, to lower elevations in winter, occasionally down to c. 1500 m. Affects rocky cliffs and gorges and open rugged country, chiefly the northern slopes of the Himalayas in Tibetan Plateau facies.

Extralimital. Russian Altai, south through Turkestan and western Tibet.

GENERAL HABITS. Lives in colonies on crags and precipices at high altitudes, usually within commuting distance from upland villages where it resorts to feed in the surrounding cultivation. Has been recorded making daily visits to Everest mountaineers' camps up to c. 6100 metres. Usually tame and unafraid of man, moving about and picking grain and dung amongst the muleteers' bivouacs. Flocks commonly met with also along beaten mule tracks and trade routes picking up grains spilt during transport; visits high mountain passes to glean the votive grain scattered by devout pilgrims and travellers. Unlike snow pigeon, also frequents deserted crumbling dwellings where available. Feeds chiefly in the morning and afternoon, sitting about on cliffs and ledges during the day. Bowing display superficially similar to Blue Rock Pigeon's, but not specifically studied.

COLUMBIFORMES

122

the first to investigate new ground. Coloration remarkably obliterative on gravelly soil even at close range, particularly amongst piebald patches of melting snow. In summer reported to feed higher up in the evenings than in the mornings on patches of bare ground whence the snow has melted during the day. Flight, typical of pigeons, strong and direct, with rapid wing-beats. Flapping flight rather reminiscent of Cotton Teal; when sailing gracefully round contours of cliffs, of Ashy Swallow-Shrike.

FOOD. Chiefly weed seeds (once 16 gm. in a crammed crop), barley and other cultivated grain; bulbils (of *Polygonum* etc.). Meinertzhagen found crops stuffed with green food such as crocus bulbs and other small roots, small hard seeds, and a large quantity of quartzite grit.

VOICE and CALLS. Described as 'a repeated croak, not unlike a hiccup', apparently very different from the normal coo of a pigeon. 'On taking flight and alighting a prolonged, high-pitched and tremulous coo reminiscent of the note of the common myna when taking wing' (W. H. Matthews).

BREEDING. Season, principally May to July. Nest, the characteristic skimpy platform of a few twigs, or sometimes a little matted straw and a few feathers. Placed on inaccessible ledges of cliffs and in rock caves and fissures, often in large colonies. Eggs, 2, white, smooth-textured. Average size of 40 eggs 40.3 × 29.1 mm. (Baker). Share of the sexes in the domestic chores, and period of incubation, undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	240-258	c. 24-25	c. 31-35	122-137 mm. (SA)

Weight 3 ♂♂ 277-300; 3 ♀♀ 255-307 gm. (GD).

COLOURS OF BARE PARTS. Iris lemon-yellow. Bill horny brown; cere magenta-brown. Legs and feet reddish pink; claws horny brown.

514. East Himalayan Snow Pigeon. *Columba leuconota gradaria* Hartert

Columba leuconota gradaria Hartert, 1916, Nov. Zool. 23: 85 (Sungpan, Szechuan) Baker, FBI No. 1859, Vol. 5: 225

LOCAL NAMES. *Lho phu rentiep* (Lepcha); *Dya don* (Bhutea).

SIZE. Pigeon; length c. 34 cm. (13½ in.).

FIELD CHARACTERS. A particoloured brown and white Himalayan high-altitude pigeon, indistinguishable in the field from 513. See Key and Museum Diagnosis.

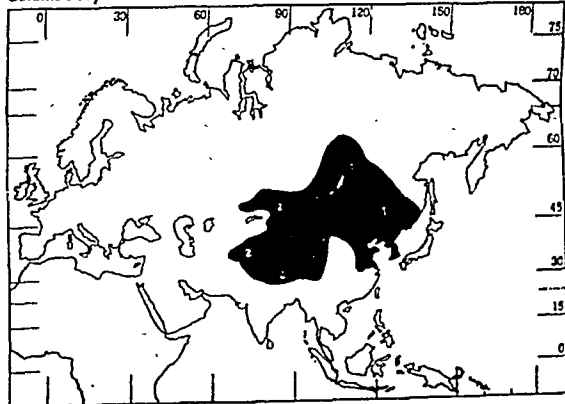
STATUS, DISTRIBUTION and HABITAT. Resident in the Himalayas from extreme eastern Sikkim eastward through Bhutan and NEFA, between c. 3000 and 4500 m. in summer, descending to c. 1500 or lower in hard winters. Does not extend far north into the Tibetan Plateau. Affects rocky cliffs and gorges in the alpine zone and above the snow line.

This eastern population differs from the west Himalayan one clinally. Birds from eastern Sikkim (and Chumbi Valley, Tibet) are intermediate, showing a gradual intergrading between the two forms.

COLUMBIFORMES

124

Columba rupestris



■ Distributional range 1 *C. r. rupestris* (RE). 2 *C. r. turkestanica*.

FOOD. Chiefly green shoots of crops, grain of oats and barley, and weed seeds. A quantity of quartzite grit present in stomachs.

VOICE and CALLS. A high-pitched, quick-repeated *gūt-gūt-gūt-gūt* with a sort of 'jeering' intonation reminiscent of *Ducula aenea*.

BREEDING. Season, principally April to June/July; possibly double-brooded. Nest, the typical scanty pigeon platform of a few bents often matted with excreta, placed in a hole or fissure in a cliff face — sometimes in the crumbling piled stone wall of a deserted dwelling; usually several nests near one another, in a colony. Eggs, 2, white, smooth-textured. Average size of 50 eggs 37.0 × 27.5 mm. (Baker). Share of the sexes in the domestic chores and incubation period not recorded.

MUSEUM DIAGNOSIS. See Key. Wing very pointed: 1st primary (h.a.) equal to 2nd or longer. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	216-243	15-17	c. 25-28	c. 118-130 mm. (Baker)

Wing 5 ♂♂ 230-240 (av. 233.4); 6 ♀♀ 219-228 (av. 223.8) mm. — Strassmann

COLOURS OF BARE PARTS. Iris deep orange. Bill slaty black, tinged on cere and gape with plumbeous or flesh colour. Legs and feet coral-red; claws horny.

COLUMBA LIVIA Gmelin

Key to the Subspecies

Wing-coverts dove-grey with black edgings to secondaries.....
..... *C. l. neglecta* (Baker)
Wing-coverts blackish..... *C. l. intermedia*

PIGEONS, DOVES

125

516. Blue Rock Pigeon. *Columba livia neglecta* Hume

Columba neglecta Hume, 1873, in Henderson & Hume's Lahore to Yarkand: 272 (Ladak)

Baker, FBI No. 1855, Vol. 5: 220

LOCAL NAMES. *Kābūtār* (Hindi); *Kentisiam* (Pushlu); *Kāpūth*, *Chāhi* (Baluchi); *Kāfīār* (Persian); *Wān kotār* (Kashmir).

SIZE. As of 517; length c. 33 cm. (13 in.).

FIELD CHARACTERS. As of 517; indistinguishable from it in the field. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, with seasonal movements — chiefly altitudinal — in W. Pakistan (Gilgit, Chitral, NW. frontier districts, Baluchistan, Sind) and NW. India (Ladakh, Kashmir, Punjab, Himachal Pradesh) from plains level to c. 3300 m. up in the Himalayas. Possibly in a less pure and semi-feral form over the greater part of the Peninsula.¹ Affects rocky gorges and precipices in the Himalayas in the neighbourhood of upland cultivation; also ruins and ancient forts about towns and villages lower down and in the plains.

Extralimital. *Transcaspiia and Turkestan, south to S. Persia* (Peters).

GENERAL HABITS, FOOD, VOICE and CALLS. As in 517, q.v.

BREEDING. Season, principally April to August but also at other times; except for the winter months at the higher altitudes. *Nest*, the typical scanty pad of a few twigs or bents often befouled and matted by the birds' droppings; placed in a hole or crevice of rock on inaccessible scarps at high elevations; also in deserted ruins and crumbling forts lower down. *Eggs*, 2, white, smooth-textured. Average size of 48 eggs 38.5 × 28.7 mm. (Baker). Breeding biology as in 517.

MUSEUM DIAGNOSIS. Paler and somewhat larger than *intermedia*, with the rump varying from pure white to pale blue-grey. But the differences seem clinal in character, and no boundary between NW. Indian and peninsular birds can be fixed.

MEASUREMENTS

Wing 10 ♂♂ 230-242 (av. 236); 10 ♀♀ 218-241 (av. 228.1) mm. (Vaurie, 1965).

COLOURS OF BARE PARTS. As in 517.

517. Indian Blue Rock Pigeon. *Columba livia intermedia* Strickland

Columba intermedia Strickland, 1844, Ann. and Mag. Nat. Hist. 13: 39

(India = Calcutta)

Baker, FBI No. 1856, Vol. 5: 221

Plate 48, fig. 1

LOCAL NAMES. *Kābūtār* (Hindi); *Gōlā pāya* (Bengali); *Kātrīār*, *Pārāwā* (Bihar); *Pārā* (Marathi); *Gūdi pārāi* (Telugu); *Noni dootu* (Cachar); *Māda purā*, *Malai purā* (Tamil); *Gal pārgiya* (Sinhala); *Pārevūn* (Gujarat); *Kūta prāru* (Malayalam).

SIZE. Length c. 33 cm. (13 in.).

FIELD CHARACTERS. A familiar bluish grey pigeon with glistening metallic green, purple, and magenta sheen on upper breast and round the neck, and two dark bars on the wings. Sexes alike.

¹ See Salim Ali, 1954, JBNHS 52: 428-9.

PIGEONS, DOVES

127

in dwelling-houses and mosques, and similar places form favourite sites. Holes in trunks of palms and other large trees are frequently appropriated. *Eggs*, 2, white, smooth-textured, elliptical. Average size of 100 eggs 36.9 × 27.8 mm. (Baker). Both sexes share nest-building, incubation, and tending the young. Incubation period c. 16 days. Squabs fed on regurgitated pap of semi-digested grain mixed with a secretion of the crop ('pigeon's milk').

MUSEUM DIAGNOSIS. Subspecies *intermedia* distinguished by upper back, lower back, and rump being concolorous dark bluish grey; in *neglecta* (516) lower back and rump contrastingly white or greyish white. For details of plumage see Baker, loc. cit.

MEASUREMENTS

Wing	Bill (from skull)	Tarsus	Tail
14 ♂♂ (Peninsula and Ceylon) 213-232	24-26	30-33 (1 ♀ 25)	97-115 mm. (SA, HW)

Wing ♂♂ 210-238; ♀♀ 202-232 mm. (Baker).

COLOURS OF BARE PARTS. Iris orange. Bill brownish black; cere powdery greyish white. Legs and feet magenta; claws brownish black.

MISCELLANEOUS. In many parts of India and Pakistan pigeons enjoy a certain amount of protection based on religious sentiment and are passively, if not cheerfully, tolerated in mosques and temples despite the filthy mess they make on the floor.

There are stories that have gained wide popular credence about the wild pigeons inhabiting the Vengurla Rocks off the Ratnagiri coast, and the gigantic rock scarps flanking Gersoppa or Jog Falls in Mysore. It is believed that the birds lay up — or at least used to lay up — during the dry season a regular granary in caves and hollows for monsoon consumption. In the case of Gersoppa the quantity of hoarded paddy was so large that the right of collecting the grain used to be auctioned by the Bombay Government, a hundred years or so ago, for Rs 500 annually. It is alleged that 20 candies (c. 70 quintals) or more were plundered at a time by a man lowered in a basket. Since a misadventure which terminated the career of the last intrepid exploiter in action, no one has evidently mustered enough nerve to tap this store. As the governmental records have all been destroyed after superannuation the truth about the alleged auction fee and other relevant details cannot now be traced. Believers offer no explanation of how the pigeons transported such vast quantities of paddy to Gersoppa over the many miles from the nearest paddy cultivation, or over the 15 km. or so of sea that separates Vengurla Rocks from the Konkan coast! However, it would be interesting to learn the factual bases of these two quite independent legends¹. (For particulars see Vidal, G. W., 1881, SF 9: 74; Salim Ali, 1943, JBNHS 44: 24-5.)

COLUMBIFORMES

126

STATUS, DISTRIBUTION and HABITAT. Resident and locally abundant throughout the Indian Union, Nepal, Bhutan, E. Pakistan, Ceylon and Laccadive Islands; plains and hills — up to at least c. 3000 m. in the Himalayas, where it is a seasonal altitudinal migrant. Was introduced into Car Nicobar Island in c. 1898 but has apparently failed to become established (Abdulali, 1964, JBNHS 61: 526). Affects rocky cliffs and gorges in the hills, old ruins, ancient forts on the countryside, factory and warehouse sheds, residential and public buildings, temples, railway stations, etc. in populous cities.

Extralimital. Burma, Thailand.

GENERAL HABITS. In the wild state lives in colonies, roosting on ledges, and in fissures and holes in rock scarps, crumbling hill forts, ancient ruins, or down the shafts of old wells. Some colonies roost in palm trees in wild date groves, and in groves of large trees near villages. From here the birds flight regularly back and forth, often considerable distances, in small parties or large flocks of several hundred strong to feed in the mornings and afternoons, gleaning spilled grain in stubble fields and around ryots' threshing floors. They cause considerable local damage by digging out newly sown maize, pulse and other cereals, and also to groundnut crops. Flight swift and powerful with rapid wing-beats and tail fairly fanned out; often followed by a graceful sweep round contours of cliffs and upward glide before alighting. Short flights from ledge to ledge on nesting cliffs by deliberate wide deep strokes ('delayed action') and loud clapping together of wings above the back — a form of display during the breeding season. In urban localities the Blue Rock has degenerated into a semi-feral commensal of man, living in and about buildings in towns and cities, regularly fed at appointed places by pious citizens, and leading a pampered life of indolent ease. The birds become completely inured to the din and bustle of the most congested bazaars and factories, roosting and nesting within the buildings regardless of the inmates, and making an unmitigated nuisance of themselves by the filthy mess they create. They interbreed freely with domesticated varieties, producing a chaotic mixture of races.

FOOD. Grains of maize, jowar, and other cereals, moong dāl and other pulses; groundnuts, weed seeds, small tubers and green shoots of ground crops. A quantity of grit usually present in stomachs.

VOICE and CALLS. A deep *goolr-goo*, *goolr-goo*, etc. uttered by the male with head bowed and throat puffed out while he turns round and round on his own axis in courtship or aggressive display. A deep, nasal *goo*, *goo*, *goo* by an unaccompanied bird — apparently both sexes — at nest site; a squeaky squealing by squab begging for food.

BREEDING. Season not well defined, practically all year; mainly between May and July in the higher Himalayas, varying locally elsewhere. In heavy-rainfall areas activities slacken between July and September. Double (or multiple ?) brooded. *Nest*, the usual skimpy pad of bents, rubbish, and a few feathers, etc. often befouled and matted with the bird's droppings. Placed on sheltered ledges and in holes and fissures in rock scarps and crumbling ramparts of hill forts; often in large colonies, the nests sometimes huddled close together. In urban locations holes and niches in the sides of masonry and kutchra wells, rafters in factory and warehouse sheds, cornices

COLUMBIFORMES

128

518. Eastern Stock Pigeon. *Columba eversmanni* Bonaparte

Columba eversmanni Bonaparte, 1856, Compt. Rend. Acad. Sci. Paris 43: 838

(Western and central Asia)

Baker, FBI No. 1860, Vol. 5: 226

Plate 48, fig. 3

LOCAL NAMES. *Pāhāri kābūtār* (Hindi); *Bān pārāwā*, *Bāgar* (Bihar); *Kāpūth*, *Chari kāpūth* (Baluchi); *Kāfīār* (all pigeons, Persian).

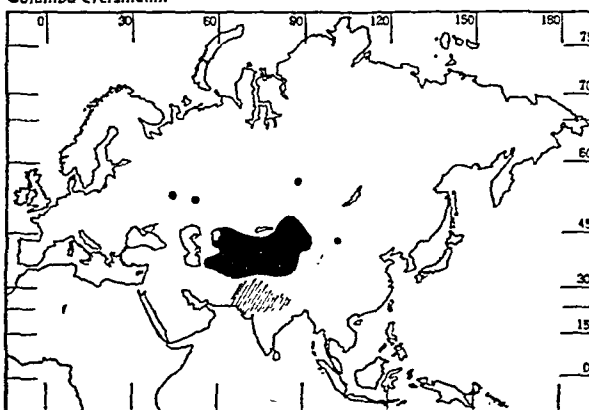
SIZE. Pigeon —; length c. 30 cm. (12 in.).

FIELD CHARACTERS. A smaller and paler edition of the Blue Rock Pigeon, easily recognized on the ground and in flight by the dark grey rump contrasting with white lower back. In fading light flight silhouette confusingly like Ring Dove (534) but the comparatively shorter tail of the pigeon usually decisive.

Adult, overall ashy grey. Crown, hindneck and breast tinged with vinous or lilac; sides of lower neck glossed metallic green and lilac showing up as a distinct patch of glossy purple-red on either side. Three interrupted black bars on wing. Lower back pure white; rump, upper tail-coverts, and most of tail leaden grey; terminal third of tail blackish with a paler grey band across the outer feathers. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Winter visitor and/or passage migrant, chiefly W. Pakistan (NW. frontier districts, Baluchistan, Sind). Less commonly also NW. India — recorded in Jammu and Kashmir,

Columba eversmanni



■ Breeding range □ Winter

Punjab (Ludhiana and Ambala dists.); Uttar Pradesh (Lucknow and Gorakhpur dists.), and as far east as Bihar (Darbhanga dist.). Affects groves of trees amidst open cultivated country.

PIGEONS, DOVES

129

MIGRATION. 'Migrates in small flocks through Kohat in the latter half of April; probably also through the Kurram Valley' (Whitehead, 1911, JBNHS 20: 966-7).

EXTRALIMITAL. Turkestan from the Aral Sea to N. Afghanistan and east to Zaisan-nor. For details of range see Vaurie, 1955: 542.

GENERAL HABITS. Similar to those of the Blue Rock Pigeon (517), q.v. Keeps in small parties or flocks, sometimes of a hundred or more. Roosts in poplar, mango or babool groves, feeding in the surrounding fields in the mornings and afternoons, often in company with Blue Rocks, resting in the trees during mid-day. Flight fast and direct but interrupted by lightning twists and turns when once thoroughly disturbed, the birds then affording a variety of difficult shots and excellent sport with the gun.

FOOD. Ripening mulberries plucked from the trees. Maize and other cereals dug up in freshly sown fields or gleaned in stubbles after harvest.

VOICE AND CALLS. Not recorded in India.

BREEDING. Extralimital. Colonial. Season, May-June. Nest, the characteristic flimsy twig platform placed high up in a poplar tree, in a hollow in a trunk, or hole in an earthen cliff. Eggs, 2, white.

MUSEUM DIAGNOSIS. See Key; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	200-208 (once 210)	c. 16-19 (from feathers)	c. 26-28	96-105 mm. (Hartert)
Wing 7 ♂♂ (Afghanistan)	197-205; 1 ♀ 194 mm.		Weight 183-234 gm. (Paludan).	
COLOURS OF BARE PARTS. Iris light yellow to golden brown; bare skin around eyes pale yellow. Bill greenish, slaty at base brownish at tip. Legs and feet pale flesh; claws horny brown.				

519. Eastern Wood Pigeon or Cushat. *Columba palumbus casiotis* (Bonaparte)

Palumbus casiotis Bonaparte, 1854, Compt. Rend. Acad. Sci. Paris 39: 1103 (Chinese Tartary)

Baker, FBI No. 1861, Vol. 5: 227
Plate 48, fig. 6]

LOCAL NAMES. *Dahnud* (Chamba); *Kūkil* (Kashmir); *Sitera* (Punjab).

SIZE. Pigeon +; length c. 43 cm. (c. 17 in.).

FIELD CHARACTERS. A large, stout grey and brown pigeon distinguished by a broken buff collar at sides of hindneck, and a broad whitish band across wing very prominent in flight.

ADULT. Above, head and upper neck all round dark ashy grey with narrow bare red ring round eye. Sides of lower neck glossed metallic green and purplish red near the shoulders; a conspicuous buff spot (like broken half collar) on either side of neck near body. Mantle brownish grey; a broad whitish longitudinal band on wing. Lower back, rump, and upper tail-coverts dark ashy grey; tail above mostly blackish. Below, ashy grey, tinged with lilac or vinous on breast. Tail underneath black with a broad whitish grey band across the middle. Sexes alike.

PIGEONS, DOVES

131

Nuptial display rather similar to that of Ring Dove (534), rising a few metres steeply from a branch with a couple of loud claps of the wings and volplaning down to another perch some distance away.

FOOD. Cereals, gleaned on the ground or pecked out of freshly sown fields; buds, acorns, mulberry, *bēr* (*Zizyphus*) and other berries plucked from trees and bushes.

VOICE AND CALLS. A deep muffled cooing of five notes *kookoo-koo* . . . *kookoo* (accent on 2nd syllable) with slight variations, repeated two or three times.

BREEDING. From c. 700 m. (Salt Range) to c. 2500 m. (N. Baluchistan, Gilgit). Season, April to August; chiefly June and July at the higher altitudes. Nest, a sketchy pad of interlaced twigs placed 4 to 6 m. or so up in a juniper, pine, oak, or other tree in forest. Eggs, 2, pure white, fairly glossy. Average size of 50 eggs 37.0 × 27.5 mm. (Baker). Incubation and other details not recorded in India.

MUSEUM DIAGNOSIS. Neck and tail longer than in Blue Rock Pigeon. Wing more rounded: 1st primary (as.) more or less equal to 4th. No dark bars on wing. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	243-263	(from feathers) c. 17-18	c. 24-27	139-153 mm. (Baker)

COLOURS OF BARE PARTS. Iris pale yellow; circumorbital skin carmine-red. Bill rather variable: orange-red at base, pinkish white in centre, orange at tip; cere whitish. Legs and feet coral-red.

520. Speckled Wood Pigeon. *Columba hodgsonii* Vigors

Columba Hodgsonii Vigors, 1832, Proc. Zool. Soc. London, pt. 2: 16 (Nepal)
Baker, FBI No. 1867, Vol. 5: 234
Plate 48, fig. 14

LOCAL NAMES. *Hagrani daohukuruma* (Cachar); *Pāhāri pagooma* (Assam); *Bhākalā* (Garhwal).

SIZE. Pigeon +; length c. 38 cm. (c. 15 in.).

FIELD CHARACTERS. A dark arboreal Himalayan pigeon.

Male (adult). Above, head and neck grey, the latter speckled with blackish behind. Upper back and wing-shoulders (coverts) claret-maroon, the latter speckled with white. Rest of upperparts dark brown and dark grey; tail blackish brown. Below, upper breast grey, speckled with blackish grey and claret, changing to uniform claret on lower breast and passing into deep slaty grey on abdomen and under tail-coverts. The bright yellow claws contrasting with the dull green feet are an arresting feature through binoculars.

Female has grey of head brownish, and red of back and breast duller and browner.

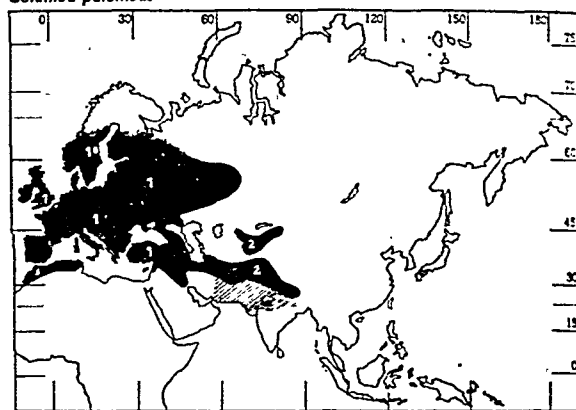
STATUS, DISTRIBUTION AND HABITAT. Resident, with local altitudinal and spatial movements dependent on food supply. The Himalayas from Gilgit

130

COLUMBIFORMES

STATUS, DISTRIBUTION AND HABITAT. Resident and rather erratic wanderer and altitudinal migrant. W. Pakistan (Chitral, Gilgit, NW. frontier districts, Salt Range, Baluchistan, Sind ?); and NW. India (Jammu and Kashmir). In summer chiefly between c. 1500 and 3000 m.; in winter at lower altitudes. Affects wooded hillsides, valleys, and nullahs with firs, oaks

Columba palumbus



1 *C. p. palumbus* (RE).
2 *C. p. cariotis*. 3 *C. p. extelsa* (RE).

and junipers, etc. Not reported within recent years in the Himalayas east of Kashmir—in Garhwal, Kumaon, where in the 1830s Hume found it about Simla, Mussooree and Almora between November and April. There is an old specimen from Nepal where a large flock was recently observed by R. L. Fleming in Kathmandu Valley at c. 2300 m. in February (JBNHS 65(2): 327). Reported occurring in winter in vast flocks ('of thousands', '17 killed in a single shot') even until 1952 in parts of Punjab (Man Mohan Singh) and Doon Valley, Kumaon (S. M. Osman), now almost completely deserted. Cause needs investigation.

EXTRALIMITAL. Turkestan and Zaisan, south to eastern Persia (Peters).

GENERAL HABITS. Locally abundant. Keeps in small parties and large flocks in non-breeding season, sometimes of 50 or more birds. Moves about a great deal depending on food conditions, normally descending to the lower limit of its range (800 m. or so) in November/December and ascending to c. 3000 or 3500 m. in March/April to breed, commuting back and forth daily in quest of food over a wide range of altitudes. Feeds on the ground in paddy stubbles etc. as well as in trees and shrubbery. Flight fast and direct, with rapid steady wing-strokes, accompanied by a loud initial clatter when suddenly flushed from tree or ground. Congregates in large numbers to roost in oak woods etc.

COLUMBIFORMES

132

and Kashmir eastward through Garhwal, Kumaon, Nepal, Sikkim, Bhutan and NEFA; Nagaland, Manipur, Mizo. E. Pakistan (?). Affects tall evergreen and semi-evergreen hill forest of oak, rhododendron, etc., between c. 1800 and 4000 metres.

EXTRALIMITAL. Burma and western China (S. Kansu, W. Szechuan, W. Yunnan)—Peters.

GENERAL HABITS. Chiefly arboreal and frugivorous, but also glean weed seeds and cereal grain in harvested stubbles. Keeps in twos and threes and small flocks of 6 to 10, wandering about the wooded hillsides and valleys in search of fruits and berries. The birds clamber about among the foliage while feeding, and have a habit of 'freezing' on alarm, as on an observer's approach, in whatever position they happen to be, even hanging upside down! Flies with steady purposeful wing-strokes high above the forest when travelling from one feeding ground to another.

FOOD. Acorns, drupes, and berries. Blue-black plum-like fruits of *Prinsepia utilis* favoured in Garhwal (local name of the fruit *Bhākalā*, same as of the bird). Cereal grains, weed seeds.

VOICE AND CALLS. A very deep *whack-whr-o-o* . . . *whroo*.

BREEDING. Season, at c. 1800 to 3300 metres altitude, chiefly May-June. Nest, a sketchy platform of interlaced twigs, placed in a leafy branch c. 8 m. up in an oak or similar tree in forest or wooded nullah. Egg apparently only a singleton, white, smooth-textured. Average size of 8 eggs 39.3 × 30.1 mm. (Baker). Courtship display, incubation period, etc. not recorded.

MUSEUM DIAGNOSIS. Distinguished from all other pigeons by the tapering elongated feathers of the neck. No metallic gloss on any part of the plumage; for details of latter see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	228-244	(from feathers) c. 16-18	c. 24-26	140-153 mm. (Baker)

Wing 4 ♂♂ (Sikkim) 218-232 mm. (av. 227.7); 4 ♀♀ 221-233 mm. (av. 225.4) — Stresemann.

COLOURS OF BARE PARTS. Iris greyish white; ocular skin grey. Bill purple at base; black distally. Legs and feet brownish yellow to dull green; claws bright yellow.

521. Nilgiri Wood Pigeon. *Columba elphinstonii* (Sykes)

Ptilinopus Elphinstonii Sykes, 1833 (1832), Proc. Zool. Soc. London, pt. 2: 149 (The Ghats of Dukhun)

Baker, FBI No. 1862, Vol. 5: 228
Plate 48, fig. 7

LOCAL NAME. *Marapāw* (Malayalam).

SIZE. Pigeon +; length c. 42 cm. (16½ in.).

FIELD CHARACTERS. A large dark forest-haunting fruit pigeon with grey head and a conspicuous black-and-white 'cheesboard' of white-tipped stiff

PIGEONS, DOVES

133

Above, reddish brown with a glistening metallic green-and-purple sheen on upper back. *Below*, chin and throat whitish; rest of underparts grey with a lilac tinge on abdomen. Under tail-coverts and underwing lining slaty. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, but moving about a great deal consequent upon fruit ripening: the Sahyadri or Western Ghats complex from Kerala northward to c. 19°N. lat. (a little beyond Bombay), including the Anaimalais, Nilgiris, Palnis, and hills of western Mysore (Malnaad). Affects moist evergreen forest from the foothills up to the highest sholas at c. 2000 m. In Kerala cardamom sholas with their tall shade trees constitute a favourite habitat.

GENERAL HABITS. Frugivorous and arboreal, but frequently descending to the mulchy forest floor to feed on fallen berries and snails. Keeps singly, or in pairs and small parties. Wanders about a good deal: a shola full of them one week may not contain a single bird the next when the particular attraction — some special berry — is over. Rests sitting quietly up in densely foliated trees. Numbers reported roosting at night on the roof trusses of an old derelict grass hut high up in the Anaimalai Hills, but this unusual. Flies at speed, twisting and turning through the dense tree-trunks and branches in forest with remarkable agility, and offering a number of difficult snap shots to the sportsman.

FOOD. Various fruits, berries, and buds; 'small snails' (Jerdon).

VOICE and CALLS. A langur monkey-like *who*, somewhat undertone, followed by three or four quick-repeated deep owl-like, almost eerie, notes *who-who-who* or *who-who-who-who*.

BREEDING. Season, March to July, principally April to June. *Nest*, the typical sketchy pigeon platform of twigs, placed in a moderate-sized tree in a shola, normally above c. 1000 metres elevation. *Egg*, a singleton, pure white. Average size of 9 eggs 38.4 × 28.8 mm. (Baker). Other particulars of breeding biology unrecorded.

MUSEUM DIAGNOSIS. See Key; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	204-224	c. 17-18	c. 25-26	152-178 mm. (Baker)

5 ♂ ♀ (from Kerala and Mysore) wing 199-205; bill (from skull) 27-28 mm. (SA). Weight 1 ♂ 379 gm. (SA).

COLOURS OF BARE PARTS. Iris bright khaki or greyish brown. Bill, basal half including cere magenta; distal half old ivory white; mouth greyish pink. Legs and feet magenta; claws old ivory.

MISCELLANEOUS. Advice of one epicure: 'Do not put in a pie but serve on toast!'

PIGEONS, DOVES

135

buff collar, and all round lower neck blackish with iridescent sheen of lilac and green. Tail blackish brown. *Below*, chin white changing to buff on throat and passing into the glossy buff collar. Breast metallic-glossed dark slaty blue passing into pale cinnamon or brownish buff on abdomen and vent. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, but like other fruit pigeons subject to considerable wandering dependent on fruit supply; from west-central Nepal through Sikkim, Bhutan, NEFA, Nagaland, Manipur (?), Mizo (?). Normally between c. 1200 and 3200 m., but recorded locally in Bengal duars and NEFA foothills (Charduar, Gorumara) as low as 100-150 m. in both winter and summer, so possibly resident. Altitudinal movements unclear. Affects dense mixed deciduous and evergreen forest of oak, chestnut, and rhododendron, etc.

Extralimital. NE. Burma, Arakan, N. Thailand, Taiwan.

GENERAL HABITS. Very little specifically known. Largely frugivorous and arboreal. Keeps singly, or in pairs or small flocks of 10 to 30 birds. Shy and difficult to observe as it usually sits quietly high up in a tree concealed by the foliage, launching out on the approach of an observer with a muffled clatter of wings, flying fast and silently and vanishing among the trees. Normally very silent and thus doubtless often overlooked.

FOOD. Various drupes and berries, acorns, grain and seeds; 'tiny snails, wild cardamom pods' (Baker).

VOICE and CALLS. Seldom heard, and needs proper description. Described as a deep, sonorous *coo* very like that of the English Wood Pigeon, but perhaps deeper still, and more abrupt and less soft (Baker, 1913: 175).

BREEDING. Little known. Season (Darjeeling dist.) evidently May to August. *Nest*, the usual flimsy twig platform fairly low down in a small tree in forest. *Egg*, singleton, white, c. 38 × 28 mm. No other information.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	194-216	16-17	c. 22-25	120-130 mm. (Baker)

COLOURS OF BARE PARTS. Iris white, greyish white, or pale yellow; ocular skin grey. Bill purplish at base, dull grey-green distally. Legs and feet fleshy purple to coral-red, soles paler; claws horny brown.

524. Purple Wood Pigeon. *Columba punicea* Blyth

Columba (Alucoemus) puniceus 'Tickell' = Blyth, 1842, Jour. Asiat. Soc. Bengal 11(1): 461 (Chyebassa [Chaibasa, Bihar])
Baker, FBI No. 1865, Vol. 5: 232
Plate 48, fig. 11

LOCAL NAMES. *Lili pegoona* (Assam); *Dashukuruma kero goftu* (Cachari).

SIZE. Pigeon +; length c. 36 cm. (14 in.).

134

COLUMBIFORMES

522. Ceylon Wood Pigeon. *Columba torringtoni* Bonaparte

Columba torringtoni 'Layard' = Bonaparte, 1854, Compt. Rend. Acad. Sci. Paris 39: 1103 (Ceylon)
Baker, FBI No. 1863, Vol. 5: 229
Plate 48, fig. 12

LOCAL NAMES. *Mā nila goya* (Sinhala); *Kāriṭṭa parā* (Tamil).

SIZE. Pigeon +; length c. 36 cm. (14 in.).

FIELD CHARACTERS. A dark forest pigeon very like 521 (also with a prominent black-and-white 'chessboard' on hindneck) but dark slaty grey above, lacking any brown on the mantle. Head and neck glossy lilac turning to green. Hindneck, below the 'chessboard', and upper back richly glossed with reddish lilac. *Below*, reddish grey; breast darker and glossed with reddish lilac; abdomen paler; under tail-coverts darker; wing-lining blackish brown. Sexes alike.

Young (immature) duller, with only a trace of the black-and-white chessboard on hindneck.

STATUS, DISTRIBUTION and HABITAT. 'Species peculiar to Ceylon. Resident in the Hill zone. Plentiful in the mountain forests [usually above 1200 m.] especially around Nuwara Eliya and the Horton Plains; occasionally wanders down to the foothills as low as 1000 ft. [c. 300 m.]' — Phillips, 1952.

GENERAL HABITS and FOOD. As in Nilgiri Wood Pigeon (321), q.v.

VOICE and CALLS. Rather silent except for a deep, rather owl-like *hoo* uttered when courting (Henry).

BREEDING. Season 'February, March and August to November, but chiefly during October' (Phillips). *Nest* and *egg* (a singleton) as in 521. Size c. 39 × 29 mm.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

♂ ♀ Wing 182-208; bill (from feathers) c. 15-17 mm. (Baker).

1 ♀ Wing 199; bill (from skull) 26; tarsus 26; tail 138 mm. (HW).

COLOURS OF BARE PARTS. 'Iris pale red; orbital skin dull pink. Bill plumbeous; apical portion bluish. Legs and feet pinkish fleshy, toes and soles red; legs sometimes white with the fronts of the tarsus and tops of the toes reddish' (Legge).

523. Nepal or Ashy Wood Pigeon. *Columba pulchricollis* Blyth

Columba pulchricollis 'Hodgson' = Blyth, 1846 (1845), Jour. Asiat. Soc. Bengal 14 (2): 866 (Wooded region of eastern Himalaya, i.e. Nepal)
Baker, FBI No. 1864, Vol. 5: 230
Plate 48, fig. 8

LOCAL NAMES. *Ke-o* (Lepcha); *Dashukuruma majungbi* (Cachari); *Pukurr* (Dafila).

SIZE. Pigeon +; length c. 36 cm. (14 in.).

FIELD CHARACTERS. A Himalayan forest pigeon. *Above*, dark ashy or slaty grey, with pale grey head and nape. A conspicuous buff collar, broad and stippled with blackish behind, narrow in front. Upper back below this

136

COLUMBIFORMES

FIELD CHARACTERS. Male (Adult). *Above*, crown and nape greyish white; upperparts rich chestnut-brown with dark slaty rump and blackish brown tail. *Below*, vinous-chestnut. Entire plumage with brilliant metallic green and amethyst sheen.

Female somewhat smaller and duller. Head browner grey with a lilac gloss.

Young (immature) like female but with head more or less unicolorous with body. Juveniles in first plumage very dull and brown with the wing-coverts and scapulars

marginated with rufous.

STATUS, DISTRIBUTION and HABITAT. Resident but very local; Bihar, Orissa, eastern Madhya Pradesh (Bastar dist.), W. Bengal, Assam, Nagaland, Manipur, Mizo (?) and E. Pakistan; from plains level up to c. 1600 metres. Affects forested tracts interspersed with scrub jungle and cultivation, and wooded ravines with dense evergreen undergrowth.

Extralimital. Burma, Thailand, Laos, northern Malaya, central Vietnam.

GENERAL HABITS. Usually keeps singly, occasionally in small parties; local gatherings of 30 or 40 birds where food is abundant, e.g. in patches of gregarious bamboo seeding. Feeds up in fruiting trees as well as by gleaning on the ground. Sits quietly, concealed among the foliage, flying out on an observer's close approach and resettling in another tree a short distance away. Flight comparatively slow, reminiscent of Green Imperial Pigeon's.

FOOD. Wild figs and other fruits and berries (those of *Litsea nitida* specifically recorded); also bamboo seeds, paddy, and other grains.

VOICE and CALLS. 'Rather similar [to *Ducula aenea*'s] though notes not so loud nor so prolonged' (Mooney, 1934, JBNHS 37: 735). 'A soft mew, not unlike that of *Carpophaga [Ducula] aenea*, only not half so loud or booming' (Bingham, 1880, SF 8: 196).

BREEDING. Season, May to July-August. *Nest*, the usual flimsy pigeon structure of twigs, placed fairly low down — normally under 6 metres — in a tall bush or bamboo clump in forest. *Egg*, a singleton, pure white; according to Baker occasionally two. Average size of 15 eggs 37.6 × 29.2 mm. (Baker). No other precise information.

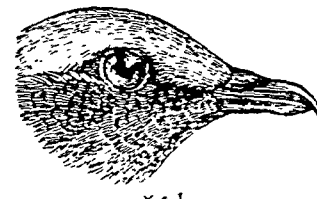
MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	210-236	c. 16-17	c. 23-25	152-178 mm.
♀ ♀	203-225	—	—	— (Baker)

Weight c. 13-18 oz. (c. 370-510 gm.).

COLOURS OF BARE PARTS. Iris creamy yellow, orange-yellow or orange-red; orbital skin greyish magenta, eye-rim brighter. Bill: cere and base magenta, rest pale horn or old ivory colour. Legs and feet crimson-magenta; claws pale horn.



PIGEONS, DOVES

137

525. **Andaman Wood Pigeon.** *Columba palumboides* (Hume)¹
Carpophaga palumboides Anonymous = Hume, 1873, Stray Feathers 1: 302
(Port Mouat, Andaman Islands)
Baker, FBI No. 1866, Vol. 5: 233
Plate 48, fig. 13

LOCAL NAMES. None recorded.

SIZE. Pigeon +; length c. 41 cm. (c. 16 in.).

FIELD CHARACTERS. A dark fruit-eating pigeon, confusingly like Nicobar Green Imperial (508) especially when seen from below perched on a high tree.

Male (adult). *Above*, head and neck all round pale grey with a slight metallic green gloss, especially on lower hindneck. Rest of upperparts blackish with dark slaty rump, the feathers edged with metallic green and amethyst gloss ('scalloping'). *Below*, underparts from lower neck down slaty grey with metallic emerald-and-purple sheen. Wing-lining dark slaty.

Female has the head and neck darker grey.

Young (immature) duller coloured overall, with the head and neck still darker and brownish.

STATUS, DISTRIBUTION and HABITAT. Resident; Andaman and Nicobar Islands, comparatively scarcer than Green Imperial in both groups. Wanders from island to island with availability of food — ripening of the different fruits and berries. Affects dense evergreen forest.

GENERAL HABITS. Arboreal and entirely frugivorous. Seen in pairs and small parties in forest trees, often perching at lower heights than Green Imperial. Flies high up in the air while crossing the straits from one island to another.

FOOD. Wild figs and other fruits and berries. Abdulali obtained fruits of *Leae* sp. and *Syzygium cumini* from crops of specimens killed, and Davison 'several fruit about the size of a walnut, two of these with stalks about 2 inches long and as thick as a goose-quill, attached'.

VOICE and CALLS. 'A deep *whoom* without the preliminary *gr* of *Ducula [aenea andamanica]*' (Abdulali, 1964, JBNHS 61: 526).

BREEDING. Unrecorded.

MUSEUM DIAGNOSIS. See Key; for details of plumage Baker, loc. cit.

MEASUREMENTS

♂ ♀ Wing 241–258 mm. (Baker).

Weight 1 lb. 2 oz. (c. 510 gm.) — Davison; 1♂ 520 gm. (Grubb).

COLOURS OF BARE PARTS. Iris orange, reddish yellow or orange-pink. Bill: cere and base lake red or pinkish lilac, rest yellowish white. Legs and feet fleshy pink redder in front; claws horny white.

Genus *MACROPYGIA* Swainson

Macropygia Swainson, 1837, Classif. Bds. 2: 348. Type, by subsequent designation, *Columba phasianella* Temminck, 1824, pl. col. 100

Distinguished by the long graduated tail, exceeding the wing in length. Rump feathers spinous; tail-coverts elongate. Head small and dove-like. Bill slender.

¹ On the basis of some comparative material obtained by him recently in the Andamans and Nicobars, Abdulali (1967, JBNHS 64(2): 166) seeks to resuscitate the race *nicobarica* Walden collected on Trinkat and Nancowry, which was suppressed by Hume (1874, SF 2: 498–9). It was originally described, *inter alia*, as having the entire head, nape, cheeks and neck dark French-grey and wanting the pearly white or greyish white head, throat and nape of *palumboides*.

PIGEONS, DOVES

139

Assam 2 eggs stated to be not uncommon. Pale buff to *café-au-lait* in colour, smooth-surfaced long narrow ovals. Average size of 200 eggs 35.3 × 25.4 mm. (Baker). Both sexes incubate and feed the young. Incubation period unrecorded. Aerial display of male, as described by Baker, of the same general pattern as, e.g. in Ring Dove (534) but with his feathers fluffed out 'until the shiny ones on his rump stand out like a lady's powder-puff'.

MUSEUM DIAGNOSIS. See Key; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	177–203	13–15	c. 16–18	200–210 mm.
♀♀	191–200	—	—	—

(Baker)

6 recent specimens from Nepal, Sikkim and Bhutan give Wing 4 ♂♂ 196–209; 2 ♀♀ 191–200 mm. Weight c. 200 gm. (SA).

COLOURS OF BARE PARTS. Iris outer ring pink, inner pale blue (sometimes brown); ocular skin grey, eyelids purple. Bill leaden black. Legs and feet dull cherry-red or purplish brown; claws horny black.

MACROPYGIA RUFIPENNIS Blyth

Key to the Subspecies

Crown of male glossed with lilac-purple *M. r. rufipennis*
Crown of male without such gloss.....*M. r. andamanica*

527. **Nicobar Cuckoo-Dove.** *Macropygia rufipennis rufipennis* Blyth

Macropygia rufipennis Blyth, 1846, Jour. Asiat. Soc. Bengal 15: 371 (Southern Nicobars)
Baker, FBI No. 1885, Vol. 5: 255
Plate 49, fig. 10

LOCAL NAMES. None recorded.

SIZE. Same as 526; length c. 41 cm. (16 in.).

FIELD CHARACTERS. A slender reddish brown long-tailed pigeon.

Male (adult). *Above*, whole head and hindneck chestnut, glossed with metallic lilac-purple on crown. Rest of upperparts dark brown (more rufous on wing-coverts, rump, and tail) minutely speckled and barred with black and rufous-buff on hindneck and upper back. *Below*, chin and throat whitish; rest of underparts rufous-buff wavyly cross-barred with black; sides of neck and breast with metallic gloss. Under tail-coverts, wing-lining and wing-quills conspicuously ferruginous-red in flight.

Female. *Above*, head variously mottled with black; neck all round lightly streaked with brown; stipplings on upper back more pronounced and bar-like in character. *Below*, more chestnut than male, and unbarred.

Young (immature). Overall more rufous than adults. Feathers of head and neck edged with black; upperparts more heavily barred; wing-quills edged and tipped with rufous.

STATUS, DISTRIBUTION and HABITAT. Species peculiar to the Andaman and Nicobar Islands, and this race to the latter group. Affects heavy evergreen forest and secondary jungle.

138

COLUMBIFORMES

Tarsus short and partly feathered; feet adapted for perching: toes long, soles broad.

Key to the Species

Central tail-feathers banded throughout with black and rufous *M. unchall*
Central tail-feathers not banded.....*M. rufipennis*

526. **Bartailed Cuckoo-Dove.** *Macropygia unchall tusalia* (Blyth)

Columba tusalia 'Hodgson' = Blyth, 1843, Jour. Asiat. Soc. Bengal 12 (2): 936 (Darjeeling)
Baker, FBI No. 1884, Vol. 5: 253
Plate 49, fig. 8

LOCAL NAMES. *Tusal* (Nepal); *Phoochong-pho*, *Ka-er* (Lepcha); *Pumot* (Bhutes); *Dastukum laima* (Cachari).

SIZE. Pigeon ±; with longer, pointed tail; total length c. 41 cm. (16 in.).

FIELD CHARACTERS. A slender reddish brown long-tailed pigeon.

Male (adult). *Above*, forehead buff shading to lilac-purple on crown and hindneck, highly glossed with metallic green. Rest of upperparts rufous, barred with black. Tail long, broad, graduated, barred with brownish black and rufous. *Below*, chin and throat lilac-buff. Upper breast metallic lilac, changing to dull lilac on lower breast and to buff on lower abdomen, vent, and under tail-coverts.

Female has the upperparts duller; head and breast barred with dark brown.

Young (immature) like female but duller overall, with no trace of metallic gloss.

STATUS, DISTRIBUTION and HABITAT. Resident: Himalayas from Kashmir eastward through Garhwal, Kumaon, Nepal, Sikkim, Bhutan and NEFA; Assam hills south of Brahmaputra river (Garo, Khasi, etc.), Nagaland, Manipur, Mizo (?); E. Pakistan — between c. 450 and 2700 metres. Affects dense evergreen forest and secondary jungle.

Extralimital. W. Szechuan (?), Burma, N. Thailand.

GENERAL HABITS. Keeps in pairs, small parties, and flocks of up to 10 or so. Feeds on the ground by gleaning in cultivation clearings and open glades in forest; also in trees like green pigeon, clambering about among the fruit-laden twigs, sometimes hanging upside down and swinging out for a berry just out of reach. Very jealous of its feeding tree, attacking and chasing off bulbuls and other birds arriving in the same quest. Extended flight fast and pigeon-like, but when moving from tree to tree the habit of gliding upwards to settle on a branch very cuckoo-like. Hind aspect of the bird, perched upright, also strongly reminiscent of a hepatic cuckoo. Silent except in the breeding season.

FOOD. Grain, seeds, shoots, buds, acorns, small drupes and berries.

VOICE and CALLS. Described as a very deep *croo-umm*, the second syllable a booming note, audible a long way off. Heard in the distance only as a low, muffled, single *hu* or *umm* repeated at short intervals.

BREEDING. *Season*, chiefly May to July. *Nest*, the typical flimsy platform of twigs with a slight central depression, placed c. 2 to 8 metres up in a sapling or stunted oak growing in forest. *Eggs*, normally a singleton; in

COLUMBIFORMES

140

GENERAL HABITS. As of 526, q.v.

FOOD. Various fruits and berries, those of *Vitis* and *Leae* spp. identified in crops (Abdulali); bird's-eye chilli (*Capsicum fastigiatum*) growing commonly in secondary jungle and on the edge of clearings, evidently the staple food locally (Davison).

VOICE and CALLS. Unsatisfactorily described as 'peculiar, somewhat resembling that of *Cuculus canorus*, the Common Cuckoo' (B. B. Osmaston). A hoarse, deep, subdued croaking only audible at close range 'resembling o-o-o-o-ah repeated several times successively' (Blyth).

BREEDING. No data.

MUSEUM DIAGNOSIS. See Key to the Species; for details of plumage, Baker loc. cit.

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	180–193	12–13	c. 23–25	210–233 mm. (Baker)

Weight 8–10 oz. (c. 230–285 gm.).

COLOURS OF BARE PARTS. 'Iris violet or light blue with an inner ring of carmine. Bill dull horny or purplish red, paler at gape. Legs and feet, dull pinkish red in front, bright pale pink behind, soles still paler' (Baker).

527a. **Andaman Cuckoo-Dove.** *Macropygia rufipennis andamanica* Abdulali

Macropygia rufipennis andamanica Abdulali, 1967, Jour. Bombay nat. Hist. Soc. 63 (2): 421 (Betapur, Middle Andamans)

SIZE and FIELD CHARACTERS. As of 527, q.v.

STATUS, DISTRIBUTION and HABITAT. Race peculiar to the Andaman Is. BREEDING. A male collected by Abdulali in the Middle Andamans on 24 February had enlarged testes.

MUSEUM DIAGNOSIS. Lacks the lilac-purple gloss on the crown of the male, described as a character of the Nicobar population.

Genus *STREPTOPELIA* Bonaparte

Streptopelia Bonaparte, 1855, Compt. Rend. Acad. Sci. Paris 40: 17; id., *Conspectus* Av. 2: 63. Type, by subsequent designation, *Columba risoria* Linnaeus
Oenopelia Blanford, 1898, Fauna Brit. Ind., Bds. 4: 28 (in key): 47. Type, by monotypy, *Columba tranquebarica* Hermann

Doves of this genus differ from *Columba* chiefly in smaller size, comparatively small head and slender neck, and weaker narrower bill. Wing relatively long and narrow:



Sole of foot of *S. r. risoria* (537), × c. 1

PIGEONS, DOVES

141

2nd and 3rd primaries (as.) longest. Tail considerably graduated, never exceeding two-thirds length of wing. Feet well adapted for walking: tarsus stout and short, toes narrow. All the species are grey or brown in colour with a dark narrow collar or a patch ('chestboard') of black-and-white or rufous feathers on the neck. The genus contains both resident and migratory forms.

Key to the Species

	Page
A Sexes differing; 1st and 2nd quills longest..... <i>S. tranquebarica</i>	149
B Sexes alike; 2nd and 3rd quills longest..... 1	
1 A collar of black feathers with rufous tips around front of the neck..... <i>S. senegalensis</i>	153
A collar of black feathers around back of the neck..... a	
A collar of black feathers on either side of the neck, divided at the nape..... b	
a Collar feathers plain black..... <i>S. decacota</i>	147
Collar feathers ending in a double white spot..... <i>S. chinensis</i>	151
b Tips to feathers of neck-patch white..... <i>S. turtur</i>	141
Tips to feathers of neck-patch grey..... <i>S. orientalis</i>	142

STREPTOPELIA TURTUR (Linnaeus)

Key to the Subspecies

Darker and duller with more vinous on the upperparts. <i>S. t. turtur</i>
Paler and brighter with the abdomen more extensively white..... <i>S. t. arenicola</i>

529. Persian Turtle-Dove. *Streptopelia turtur arenicola* (Hartert)¹

Turtur turtur arenicola Hartert, 1894, Nov. Zool. 1: 42 (Fao on the Persian Gulf)
Baker, FBI No. 1869, Vol. 5: 237
Plate 49, fig. 15

LOCAL NAMES. None recorded.

SIZE. Pigeon —; length c. 28 cm. (c. 11 in.).

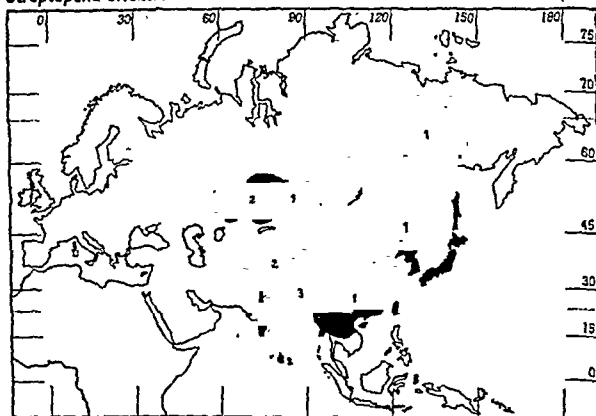
FIELD CHARACTERS. A small, rather slender pinkish and ashy grey pigeon with a patch of white-spotted black feathers on either side of base of neck, looking like miniature chessboards. Upperparts rufous with blackish centres to the feathers, and contrasting ashy grey wing-coverts. Tail black, graduated, with broad white terminal border conspicuous in flight especially when spread before alighting. Sexes alike.

Confusingly like *S. orientalis*, and field identification except by experienced experts unreliable.

¹ *Streptopelia turtur turtur* (Linnaeus) was included in FBI 5: 236 and then in Synopsis (No. 528) on the strength of a single specimen obtained at Quetta (N. Baluchistan) by Swinhoe. Dr Ticehurst examined this skin in the British Museum and found it inseparable from some examples of the race *arenicola*. Since Quetta would be well over 1000 miles beyond the range of nominate *turtur*, we agree with Dr Ticehurst that it would be more satisfactory to delete this form from the Indian list.

PIGEONS, DOVES

143

Streptopelia orientalis

■ Breeding and wintering ranges (see text) 1 *S. o. orientalis* (530).
2 *S. o. meena* (531). 3 *S. o. agricola* (532). 4 *S. o. erythrocephala* (533).

328), northern Sikkim, northern Bhutan, and NEFA, but the population there largely intermediate with resident *agricola* (532), in addition to being subject to a considerable amount of individual variation; specimens usually impossible to assign to either race with conviction.

Extralimital. Breeds in central Siberia, Transbaikalia, Amurland, south to SE. Tibet, Yunnan, and across to Japan.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 531, 532, qq.v.

MUSEUM DIAGNOSIS. See Key; very similar to *agricola* but has the crown and nape clinically greyer, and the rufous margins of upper wing-coverts more greyish.

MEASUREMENTS

Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀ 180-198	15-17	25-28	c. 130-145 mm. (Hartert)

COLOURS OF BARE PARTS. As in 532.

531. Western Turtle-Dove. *Streptopelia orientalis meena* (Sykes)

Columba meena Sykes, 1833 (1832), Proc. Zool. Soc. London, pt. 2: 149 (Dukhun)
Columba ferrug Evermann, 1842, Addenda Pallas Zoogr. Rosso-Asiat., fasc. 3: 17
(Songaria and mountains of Targabatai)
Baker, FBI No. 1871, Vol. 5: 239

LOCAL NAMES. *Kāla fākhā, Barko fākhā* (Hindi); *Wān kūl, Gūgi, Jāngū kōnkī, Kāmār, Kāmra* (Kashmir).

SIZE. Pigeon; length c. 33 cm. (13 in.).

142

COLUMBIFORMES

STATUS, DISTRIBUTION and HABITAT. A vagrant in winter, or straggling passage migrant, in W. Pakistan (Gilgit, Afghanistan frontier, N. Baluchistan). Affects open cultivated country.

Extralimital. Breeds in N. Africa from Morocco to Tripoli; in SW. Asia from the Kirghiz Steppes and Turkestan south to Iraq, Persia, Afghanistan and Yarkand (Peters).

GENERAL HABITS and FOOD. As in other members of the genus, qq.v. A migrant form.

VOICE and CALLS. A continuous and rhythmic 'deep crooning or purring note *roo-rrrr, roo-rrrr, roo-rrrr*' (Witherby, for nominate race) heard chiefly in the breeding season.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Keys to the Species and Subspecies; for details of plumage Baker, loc. cit.

MEASUREMENTS

Wing ♂ ♀ 163-177 mm. (Hartert).

7 adult specimens from Afghanistan give: Wing 5 ♂ 169-173; 2 ♀ 166 mm.

Weight 111 (1), 121-140 gm. (Paludan, 1959).

COLOURS OF BARE PARTS. Iris deep or brownish orange; orbital skin purple-brown, eye-rim reddish brown. Bill greyish or slaty black, purple-red at gape. Legs and feet purple or reddish purple, soles paler; claws horny brown.

STREPTOPELIA ORIENTALIS (Latham)

Key to the Subspecies

	Page
A Forehead and crown vinous-red	
Under tail-coverts and terminal fringe of tail slaty grey..... <i>S. o. erythrocephala</i>	146
B Forehead and crown grey..... 1	
1 Under tail-coverts and terminal fringe of tail white..... <i>S. o. meena</i>	143
Under tail-coverts and terminal fringe of tail dove-grey.....	
..... <i>S. o. orientalis</i>	142
Under tail-coverts and terminal fringe of tail slaty grey.....	
..... <i>S. o. agricola</i>	145

530. Rufous Turtle-Dove. *Streptopelia orientalis orientalis* (Latham)

Columba orientalis Latham, 1790, Index Orn. 2: 606 (China, ex Sonnerat)
Streptopelia orientalis baicalensis Buturlin, 1934, Polnyi opredelitel ptitsy S.S.S.R. 1: 224. New name for *S. o. orientalis* (Pallas)
Cf. Whistler, H., and Kinnear, N. B., 1936, JBNHS 38: 677-9
Baker, FBI No. 1870, Vol. 5: 238

LOCAL NAMES. As for 531.

SIZE. Pigeon; length c. 33 cm. (13 in.).

FIELD CHARACTERS. As of 531, q.v., but with dove-grey tips to tail-feathers instead of white.

STATUS, DISTRIBUTION and HABITAT. Evidently only a winter visitor to ? Nepal (a pair in Kathmandu Valley — October, Fleming, JBNHS 65(2):

144

COLUMBIFORMES

FIELD CHARACTERS. A large reddish brown dove with scaly-patterned upperparts, black 'chessboards' on sides of neck, and broad white terminal border to the rounded tail—conspicuous when spread while alighting. Distinguished from the rather similar and commoner Spotted Dove (537) by rich rufous coloration and stocky pigeon-like build.

Adult. Above, head and neck vinous-brown, greyish on forehead and crown; a grey-spotted black patch on either side of hindneck. Mantle rufous-brown with dark centres to the feathers producing a scaly pattern; lower back and rump slaty grey; tail largely blackish brown with terminal white band. Below, chin and centre of throat whitish; foreneck and breast pale vinous-rufous passing to whitish on abdomen and white on under tail-coverts. Sexes alike.

Young (immature) browner and less rufous, lacking the grey on head and rump, and also the checkered neck-patches. Feathers of back, wing-coverts, and breast with pale margins.

STATUS, DISTRIBUTION and HABITAT. Resident and breeds in the western Himalayas up to c. 4000 m. from the Afghan frontier in W. Pakistan eastward through Kashmir (also in Baltistan and Ladakh as far as Leh), Garhwal and Kumaon to central Nepal where it meets and intergrades with the richly coloured east Himalayan form *agricola* (532). Migrates south in winter, its numbers augmented by extralimital immigrants, and spreads widely over northern and peninsular India, chiefly on the western side, south to Mysore. Rare vagrant to Ceylon; only four records in the last 90 years, the last in December 1954. Affects open mixed deciduous and bamboo forest, particularly broken foothills country and the neighbourhood of cultivation. Avoids semi-desert tracts.

Extralimital. 'Breeds in the southern part of western Siberia east to western Altai; Turkestan, Persia, Afghanistan...' (Peters).

MIGRATION. No ringing records. 'Small numbers migrate through Kohat from mid April till the 3rd or 4th of May, returning in September and October' (Whitehead). 'None had arrived about Leh by the middle of May' though common there and in full moult [post-nuptial] in early August (Meinertzhagen).

GENERAL HABITS. A ground-feeding granivorous dove. Keeps in pairs and small parties, forming into larger flocks when migrating. Gleans scattered grain and weed seeds in stubbles and on shaded dusty cart-tracks connecting forest villages etc. Also commonly frequents the *parāos* or bivouac sites of bullock-carts along country roads to glean the spillage from the grain sacks etc. Flight swift and direct, typical of the pigeons. In courtship male bows and bobs ludicrously in front of the female as he advances towards her in stiff mincing hops, calling with goitred-out throat—an action rather reminiscent of a *Calotes* lizard. Also has the characteristic aerial display of the doves, springing up into the air with clapping wings and coasting down in an arc or wide spiral with fanned-out tail.

FOOD. Paddy and other cereals, weed and bamboo seeds, and green shoots.

VOICE and CALLS. Commonly heard at Himalayan hill-stations: a hoarse, rather mournful *goor*... *gūr-gūgūgū* repeated in slow runs, the final *gūgū* particularly mournful-sounding and as though uttered with intake of breath.

PIGEONS, DOVES

145

BREEDING. *Season*, principally May to June-July. *Nest*, a flimsy platform of twigs, placed in a sapling or scrubby bush or bamboo clump in fairly open forest, as a rule under c. 3 or 4 metres from the ground. *Eggs*, almost invariably two, white, of the typical oval shape of pigeons' eggs. Average size of 40 eggs 32.2 × 23.9 mm. (Baker). Both sexes share in incubation and tending the young. Incubation period unrecorded.

MUSEUM DIAGNOSIS. Distinguished from the other races by conspicuously paler underparts, much white on belly, white under tail-coverts, and white tips to the tail-feathers.

Chick. 'Down long, plentiful, hair-like, yellowish white. Whole body covered except sides of head, centre of abdomen and breast, chin and upper throat. Distribution and character as in the Columbae' (Ticehurst).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
10 ♂♂	ad. 185-207 (av. 196.2)	c. 22-23	c. 26-28	c. 122-140 mm. (SA)

Weight 165-229 gm. (Paludan, 1959).

COLOURS OF BARE PARTS. Iris orange; ocular skin magenta. Bill: base and cere magenta, distal half horny brown. Legs and feet magenta, hind tarsus paler and pinkish; claws horny brown.

532. Rufous Turtle-Dove. *Streptopelia orientalis agricola* (Tickell)

Columba agricola Tickell, 1833, Jour. Asiat. Soc. Bengal 2: 581
(Jungles of Borahhūm and Dholbūm)

Streptopelia orientalis meridionalis Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 28 (Sangau, Lushai Hills)

Streptopelia orientalis khasiana Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 28 (Mawryngkneng, Khasi Hills)

Baker, FBI No. 1872, Vol. 5: 240 (= *merula*)

Plate 49, fig. 16

LOCAL NAMES. *Rām ghūghū* (Bengal); *Dantu gajao* (Cachari); *Piko* (Assam); *Inruikū* (Naga); *Veh gūra* (Kuki); *Hāruā kōpu* (Nowgong, Assam); *Khumi chaphubi* (= 'the pot pigeon', alluding to likeness of coloration to red earthenware pot burnt blue in patches); *Leina khumi* (= 'the goddess pigeon' — Manipur).

SIZE. Pigeon; length c. 33 cm. (13 in.).

FIELD CHARACTERS. A stocky rufous dove like 531, q.v. — also with black-and-whitish chessboard on either side of neck — but more richly coloured and with slaty border to tail instead of white. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident and breeds in the Himalayas to c. 4000 m. alt. from central Nepal [where it intergrades with the paler *meana* (531)] eastward through Sikkim, Bhutan and NEFA; also in the Assam hills south of Brahmaputra R. to c. 1300 m. alt., Nagaland, Manipur, Mizo, E. Pakistan. Affects oak and other mixed deciduous forest, often around cultivation. Migrates in winter southward into peninsular India, chiefly on the eastern side. Winter range unclear owing to intermingling then with the very similar resident peninsular race *erythrocephala* (533).

10

PIGEONS, DOVES

147

MUSEUM DIAGNOSIS. Distinguished from the equally richly coloured *agricola* (and/or *eritralis*) by vinous-red crown, nape, and mantle without any trace of grey. Edges to scapulars, wing-coverts, and tertiaries deeper red. Vinous-red of underparts much redder.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	183-193	22-24	25-28	122-134 mm.
♀♀	179-190	22-23	26-27	112-127 mm.

10 ♂♂ (Orissa, M.P., Mysore) average wing 189.1, tail 126.4 mm.; 5 ♀♀ wing 183.8, tail 120 mm. (SA).

Weight 4 ♂♂ 173-206 gm. (SA).

COLOURS OF BARE PARTS. As in 531.

534. Indian Ring Dove. *Streptopelia decaocto decaocto* (Frivaldszky)

Columba risoria Linnaeus, 1758, Syst. Nat., ed. 10, 1: 65 (India). [Based on a pale domesticated bird.]

Columba risoria L. var. *decaocto* Frivaldszky, 1838 (1834-6), K. Magyar Tudos Társaság Evkönyvi, 3: 183, pl. 8 (Turkey)

Baker, FBI No. 1879, Vol. 5: 248

Plate 49, fig. 12

LOCAL NAMES. *Dhēr fāktā*, *Pārki*, *Pāndūk*, *Gūgi* (Hindi); *Kēkil* (Kashmir); *Gero* (Sind); *Jāngli kápōth* (Baluchi); *Doalo*, *Doale* (Bihar); *Pār ghūghū* (Bengal); *Pithā hālā*, *Kānda* (Marathi); *Dhāl* (Gujarati); *Peddā killa gūcā* (Telugu); *Kelli pūrā*, *Sāmbel pūrā* (Tamil, Ceylon); *Pettanckengūli* (Malayalam); *Māhā kōtōyā* (Sinkhala); *Dasta gēphu* (Cachari); *Set kōpu* (Assam).

SIZE. Pigeon —; length c. 32 cm. (12½ in.).

FIELD CHARACTERS. A pale grey and brown pigeon distinguished by a prominent narrow black half-collar on hindneck. Breast lilac passing into ashy grey on abdomen and darker grey on vent and under tail-coverts. Broad white terminal edge to blackish tail conspicuous in flight, especially when spread while alighting. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident but subject to marked seasonal migrations, altitudinal and presumably of a local character. Found in appropriate biotopes throughout both Pakistans, the entire Indian Union, and Ceylon. Not recorded in Sikkim or Bhutan, and only as occasional post-monsoon visitor to Nepal Valley. Absent in the Andaman, Nicobar, Laccadive, and Maldivé islands. Occurs up to c. 2400 m. alt. (rarely to c. 3000 m.) in the western Himalayas in summer, in Kashmir then almost completely replacing *S. eritralis rufina* below c. 1800 m.

Affects open, cultivated, essentially dry deciduous country (even semi-desert) with groves or a scattering of babool (*Acacia*), dhāk (*Butea*) and similar trees, commonly sharing these facies with Little Brown Dove (541). Avoids moist evergreen tracts.

Extremal. 'Resident from Hungary over SE. Europe, Asia Minor, Turkestan, N. China and Japan; south to Palestine, Iraq, Persia . . . and W. China' (Peters). Within the last decade has 'exploded' phenomenally all over Europe, now breeding regularly as far west as Great Britain, and north to Scandinavia.

146

COLUMBIFORMES

Extremal. Burma south to Tenasserim.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 531. In captivity 'Besides the usual coo they will, when annoyed, utter a sharp noise like the twang of a banjo string' (Ludlow).

BREEDING. *Season* and *Nest* as in 531. Average size of 11 eggs (*orientalis*, Gyanse) 33.5 × 24.5 mm. (Ludlow).

MUSEUM DIAGNOSIS. Intermediate between *rufina* and nominate *orientalis* and merged by some authors with the latter. Markedly richer coloured than 531. Crown and nape grey; abdomen grey; thighs, under tail-coverts, and terminal fringe of tail slaty grey. Individual specimens of the two could be assigned to either form.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	166-198	22-24	c. 26-27	135-140 mm.
♀♀	164-191	22-24	26-27	112-132 mm.
		(once 28)	(once 30)	(SA)

Weight c. 200-210 gm.

10 ♂♂ (Sikkim) average wing 183.9 mm. (Stresemann).

COLOURS OF BARE PARTS. As in 531.

533. Peninsular Turtle-Dove. *Streptopelia orientalis erythrocephala* (Bonaparte)

Turtur erythrocephalus Bonaparte, 1855, Cons. Gen. Av. 2: 60 (South Africa in error southern India vide Whistler, H., 1943, JBNHS 44: 26). Restricted to Mysore by Ripley. Type in British Museum Not in Baker, FBI

LOCAL NAMES. As for the other races where applicable.

SIZE. Pigeon; length c. 33 cm. (13 in.).

FIELD CHARACTERS. A stocky rufous dove, practically indistinguishable from 532 when both together in winter except by redder forehead and crown. See Museum Diagnosis. Both distinguished from 531 by richer coloration and slaty grey (c. white) fringe to tail. Sexes alike.

Young (immature) like juvenile *meana* (531) but brighter rufous overall with faint rusty edges to slaty feathers of rump and upper tail-coverts, and marked rufous wash on central pair of rectrices.

STATUS, DISTRIBUTION AND HABITAT. Resident and breeds in peninsular India from Bihar and Orissa south to Mysore. Has not yet been procured in western India north of Castle Rock (c. 15°N. lat.) nor in the Bombay Deccan, but range not properly worked out. Local movements unknown. Affects open mixed deciduous forest and bamboo jungle in the neighbourhood of cultivation.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the other races q.v.

BREEDING. *Season* in Bihar, Orissa and Madhya Pradesh as well as Mysore November to January/February, but possibly not well defined. *Nest*, the usual skimpy pad of twigs placed fairly low down (c. 2 to 4 m.) in a bushy sapling or shrub, or up in a bamboo clump. *Eggs*, normally 2, very rarely 3, white, as in other races. Measurements not available.

148

COLUMBIFORMES

GENERAL HABITS. One of our commonest doves; very plentiful in some areas, inexplicably scarce in others outwardly just as suitable. Keeps in pairs or small parties — often in company with other doves — gleaning in paddy stubbles, newly sown millet fields, or fallow land often in the environs of towns and villages. The birds perch freely on the buildings, and boldly enter cattle sheds and verandas and courtyards of rustic dwellings to feed within an arm's length of the occupants. Occasionally gathers in large flocks, maybe of a hundred or more, where food is particularly abundant, or when preparing for one of its local migrations. Flight characteristically pigeon-like, strong and direct, with rapid steady wing-beats — and high up in the air when migrating. Courtship display on ground consists of the male bowing and bobbing to the female, cooing with inflated throat and depressed tail as he advances on her in stiff ludicrous hops punctuated by a mincing step or two. Also displays in the air, springing up from a tree-top or post at a steep angle with a loud clapping of wings and then coasting down with tail fanned-out in a graceful arc or wide spiral to the accompaniment of an aggressive-sounding nasal *koon-koon-koon*. Very pugnacious when nesting, chasing an intruder in its territory with vigour and determination, literally from 'pillar to post', accompanied by the strident challenging *koon-koon* as 'war cry', until he is driven off. On the ground the rivals side up to one another rather surreptitiously, then suddenly jump up and lash out viciously with the wings, each ducking in turn to avert the coming onslaught, one bird frequently jumping clean over the other in the excitement of these comical antics. Often seen in hot pursuit of a crow making off with an egg or chick filched from its nest, but contact with marauder seldom registered, and even then is so innocuous as to leave the crow mildly surprised and not at all repentant!

FOOD. Grain and seeds. Stomachs examined at Pusa in Bihar contained chiefly wheat, barley, and paddy grains, and seeds of mustard, linseed and various weeds (Mason & Lefroy, 1912). Toria (*Brassica campestris*) at time of threshing (Afzal Husain & Bhalla, 1937).

VOICE AND CALLS. 'Song' a deep, pleasant *kūkoo . . . kook* repeated several times in runs. A strident *koon*, *koon* in aggression and aerial display.

BREEDING. Breeds throughout its range — up to c. 2400 m. alt. in Kashmir and the western Himalayas. *Season*, in the northern areas with a definite cold winter May to September, chiefly May-June. Elsewhere, and in peninsular India, practically all year; in Ceylon December to May, chiefly April and May. *Nest*, a flimsy-bottomed sketchy pad of twigs usually placed low down in a *Euphorbia* bush or small tree such as babool (*Acacia*); occasionally on rafters in a cattle-shed or outhouse. *Eggs*, normally 2, exceptionally 3, pure white, smooth-textured. Average size of 60 eggs 30.1 × 23.2 mm. (Baker). Both sexes share in nest-building and incubation; period unrecorded.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	160-174	20-23	21-24	116-134 mm.

No disparity in the sexes, but tail of ♀♀ averages shorter.

(SA, HW)

PIGEONS, DOVES

149

Weight 2 o? 127; 138 gm. (SA).

COLOURS OF BARE PARTS. Iris lake red to crimson; edge of eyelid red; narrow circumorbital skin greyish pink. Bill brownish black. Legs and feet dark pinkish red or magenta; claws black.

STREPTOPELIA TRANQUEBARICA (Hermann)

Key to the Subspecies

Paler, especially on the lower parts.....*S. t. tranquebarica*
Darker and more red, especially on the lower parts.....*S. t. humilis*

535. Indian Red Turtle-Dove. *Streptopelia tranquebarica tranquebarica* (Hermann)

Columba tranquebarica Hermann, 1804, Obs. Zool.: 200 (Tranquebaria, India)
Baker, FBI No. 1881, Vol. 5: 250

Plate 49, fig. 11

LOCAL NAMES. *Seōti fākhā, Gīrī fākhā, Biki* (Hindi); *Itoā* (Bihar); *Vitākāri konda* (Marathi); *Terra geová* (Telugu); *Powari* (Maria Gond).

SIZE. Myna \pm ; length c. 23 cm. (9 in.).

FIELD CHARACTERS. A small, dainty, brightly coloured grey and pinkish brick-red dove.

Male (adult). Above, head and nape dark ashy grey, with a black collar round hindneck; mantle vinous-red, wing-coverts grey; lower back, rump and upper tail-coverts dark slaty grey. Tail brownish and grey with the outer feathers and a broad terminal band (broken in centre) conspicuously white. Below, vinous-red; chin and vent whitish, under tail-coverts white, flanks grey.

Female pale brownish and grey with hindneck collar and tail as in male. In overall effect a good replica of Ring Dove but smaller and with relatively shorter tail.

Young (immature) like female but feathers of upperparts, wing-coverts and breast narrowly edged with pale fulvous.

STATUS, DISTRIBUTION AND HABITAT. Resident; widely but rather capriciously distributed, and subject to marked local migrations as yet little understood, involving some intermingling and overlap of the races. From West Pakistan (Baluchistan, Sind, Punjab) east through Uttar Pradesh to W. Nepal (?) and Bihar, south through peninsular India to Madras and Mysore. Only a summer (breeding) visitor to the Himalayan duns and foothills, normally under c. 800 m. alt. Rare vagrant to Ceylon; once (c. 1880) recorded breeding in the Jaffna area. Affects open scrub jungle and cultivation in deciduous biotope.

MIGRATION. Only a single definite record: a bird ringed in Bhavnagar, Gujarat (c. 21°45'N., 72°15'E.) 13.ix.1961, recovered near Karachi, West Pakistan (c. 24°37'N., 67°5'E.) 27.iii.1967.

GENERAL HABITS. Similar to (534) but the least common of all the doves and seldom found in close familiarity with man. Associates with Ring and Little Brown Doves to glean in outlying stubble fields and village environs, and on the countryside, in the morning and late afternoon, retiring during the midday heat into the trees and tope dotted around. Usually seen in twos and threes, but flocks and feeding congregations of up to 50 or more,

PIGEONS, DOVES

151

Weight 1 ♂ 104 gm. (GD).

COLOURS OF BARE PARTS. Iris hazel- to dark brown; eye-rim plumbeous. Bill black, tinged with plumbeous at base and on cere. Legs and feet dull red or magenta; claws black.

536. Burmese Red Turtle-Dove. *Streptopelia tranquebarica humilis* (Temminck)

Columba humilis Temminck, 1824, Pl. Col., livr. 44: 259 [but not pl. 258]
(Bengal and Luzon)

T. (urtur) murvensis 'Hodgs.' = Bonaparte, 1856, Compt. Rend. Acad. Sci. Paris 43, no. 20: 942 ('continent [de l'Asie]' = Nepal ex Hodgson), vide Hartert, 1922, Vög. pal. Fauna 3: 2222

Baker, FBI No. 1882, Vol. 5: 251

LOCAL NAMES. *Lāli pōhū, Hārūā kōpū* (Assam); *Daotu kashiba gejao* (Cachari); *Gūlāhī ghūghū, Ikhūyā ghūghū, Tama khari, Lāl ghūghū* (Bengal).

SIZE. Myna \pm ; length c. 23 cm. (9 in.).

FIELD CHARACTERS. As in 535, q.v. — an elegant, brightly coloured little dove, grey pinkish and brick-red overall, with a narrow black collar on hindneck. Female, a smaller replica of Ring Dove.

STATUS, DISTRIBUTION AND HABITAT. Resident and locally migratory; east of range of 535 — Nepal, Sikkim (?), Assam (north and south of Brahmaputra river), Manipur, East Pakistan; Andaman Islands. Summer (breeding) visitor to Nepal Valley, bhabar and duns, and to the Bengal and Assam duars, up to c. 1300 m. altitude. Affects scrub jungle and open cultivated country, as 535.

EXTRALIMITAL. The greater part of SE. Asia: NE. Tibet and N. China south to Burma, Thailand, and the Indochinese countries and N. Philippines (Peters).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the Indian race (535). BREEDING. Season in northern areas with a cold winter chiefly March to September; elsewhere no fixed period; in the Andamans B. B. Osmaston took eggs between February and April. Nest and eggs as in 535. As in the case of several mild-mannered birds and other dove species, nest often sited in the same tree as holds a drongo's nest (*Dicrurus* sp.) obviously for the protection from crows and other nest robbers afforded by these vigilant and pugnacious guardians.

MUSEUM DIAGNOSIS. Differs from the nominate Indian race in its much darker and richer coloration, above and below. But this variation is clinal and many intermediate individuals are impossible to place with conviction. The axillaries given as white in *tranquebarica* and grey in *humilis* are variable in colour and not infallibly diagnostic.

MEASUREMENTS AND COLOURS OF BARE PARTS as in 535. 'Wing 137-148' (Baker).

STREPTOPELIA CHINENSIS (Scopoli)

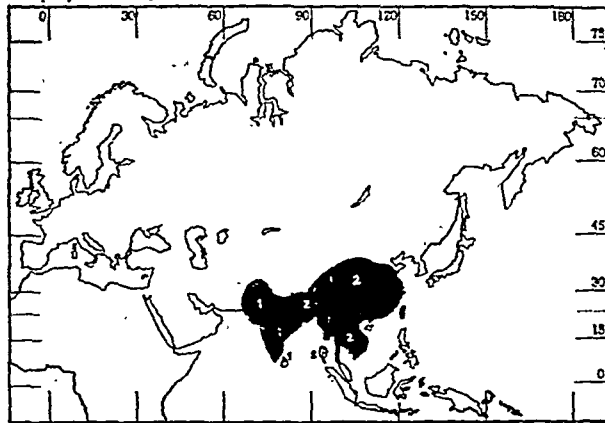
Key to the Subspecies

A Wing usually under 130 mm.....*S. c. ceylonensis* 153
B Wing usually over 130 mm.....*S. c. chinensis*

150

COLUMBIFORMES

Streptopelia tranquebarica



■ Distributional range 1 *S. t. tranquebarica* (535). 2 *S. t. humilis* (536).

mixed with other doves, not uncommon after the harvest. In cold weather they have the common dove habit of sitting with fluffed plumage, bunched like starlings, on bare tree-tops at sunset to warm themselves before retiring to roost. Courtship display as in 534 and other doves; when bowing and bobbing to female, calling with distended throat, looks in the distance as if hammering the ground with the bill.

FOOD. Granivorous: grains of paddy, maize, and other cereals; grass- and weed seeds.

VOICE AND CALLS. A somewhat harsh rolling *gloo-gurr-goo gloo-gurr-goo* quickly repeated several times without interruption — in runs.

BREEDING. Season in northern India, with a cold winter, chiefly April to September; elsewhere more or less all year, the incidence varying locally and individually. Nest as of other doves, a skimpy platform or saucer of twigs and grass-stems placed perhaps somewhat higher up than in others (c. 3 to 7 or 8 metres) near the extremity of a leafy branch. Eggs, normally 2, rarely 3, white, typical. Average size of 49 eggs 25.9 × 19.9 mm. (Baker). Both sexes share in nest-building, incubation and tending the young; incubation period unrecorded.

MUSEUM DIAGNOSIS. Paler than the eastern race *humilis* (536) especially on the underparts, but variation clinal and many individuals impossible to assign definitely. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	136-145	16-19	17-21	84-92 mm.
No disparity between the sexes.				(SA, HW)

152

COLUMBIFORMES

	Page
1 Back distinctly and boldly spotted with pale rufous..... <i>S. c. surattensis</i>	152
Back less distinctly spotted with darker buff..... <i>S. c. edwardsi</i>	155
Back spotted very indistinctly or not at all..... <i>S. c. tigrina</i>	154

537. Indian Spotted Dove. *Streptopelia chinensis surattensis* (Gmelin)

Columba surattensis Gmelin, 1789, Syst. Nat. 1 (2): 778
(Surat, Gulf of Cambay, India)
Baker, FBI No. 1873, Vol. 5: 242
Plate 49, fig. 14

LOCAL NAMES. *Chitrāka fākhā, Chitta fākhā, Pārki, Chittā, Kangskiri, Pāndūk* (Hindi); *Chhitā ghūghū, Tēla ghūghū* (Bengal); *Thipkyā kācā* (Marathi); *Chakkara kutta prāru, Aripāru* (Malayalam); *Vānā hāli* (Gujarati); *Bode* (Gond); *Poda bellāgūcā* (Telugu); *Pūli pūrā* (Tamil); *Pāti kōpū* (Assam); *Kedāyā pāndūk* (Bihar); *Daotu* (Cachari); *Inruigu* (Naga); *Voh kūrūp* (Kuki).

SIZE. Pigeon —; slenderer. Length c. 30 cm. (12 in.).

FIELD CHARACTERS. A slender pigeon, above pinkish brown and grey, spotted with white and with a conspicuous black-and-white 'chessboard' at base of hindneck. Tail blackish brown and slate with broad white terminal border which flashes prominently when spread out as bird is alighting. Below, vinous-grey, paler on throat, white on belly, vent, and under tail-coverts. Sexes alike.

Young (immature) paler and browner without the black chessboard on hindneck. Above, barred instead of spotted; wing-coverts edged with rufous. Below, fulvous-brown; breast feathers narrowly fringed with pale fulvous.

For downy chick see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; in some areas altitudinal and local migrant. Common in appropriate biotopes throughout West Pakistan (excepting desert and semi-desert areas), and India east to c. Cachar in Assam, including Nepal, Sikkim, and Bhutan, south through the Peninsula to Kanyakumari. Normally to c. 2400 m. alt. in the Himalayas in summer (individual stragglers once observed at c. 4900 m., Lahul, Himachal Pradesh, in June — H. G. Alexander); up to c. 1500 m. in the peninsular hills. Everywhere affects better wooded, better watered facies than Ring and Little Brown Doves — gardens, groves, cultivation and moist deciduous jungle. Habitat preference more clear-cut in dry season.

GENERAL HABITS. Except the preference for moister facies, not appreciably different from other doves. Pairs or small parties glean in stubble fields, on cross-country dust tracks, cartmen's bivouac sites, and in village environs, freely entering courtyards and verandas of inhabited dwellings. When disturbed suddenly on the ground takes off with an explosive flutter of wings and a quick side to side rolling action. Flight, as of other doves, strong and direct with a peculiar jerky saw-toothed action of gliding and abrupt braking with wings and outspread tail when alighting on a branch. Bowing and aerial nuptial displays, and agonistic and territorial behaviour as described under 534.

FOOD. Grains of paddy, jowar and other cereals, lentils and pulses, grass- and weed seeds.

PIGEONS, DOVES

153

VOICE and CALLS. A soft, pleasant though rather mournful-sounding *Krookrük-krookroo* . . . *kroo-kroo-kroo*, the number of the final *kroos* varying from two to six. Pattern of this song common, but individual idiosyncracies very marked; also discrete dialects in different parts of the range.

BREEDING. *Season*, in the northern portions, with a definite cold season, mainly April to July; elsewhere practically throughout the year; evidently two broods (or more ?). *Nest*, the customary flimsy platform of a few twigs and grass-stems with a central depression; placed fairly low down in a tree, thorn bush, or bamboo clump, or in the head of a stunted date palm; commonly also under eaves and on cornices and rafters in verandas of inhabited bungalows. *Eggs*, normally 2, exceptionally 3, white, with a smooth texture. Average size of 100 eggs 27.2 × 21.8 mm. (Baker). Both sexes take part in nest-building, incubation and tending the young. Incubation period c. 13 days; needs confirming.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick. 'Down long, plentiful, hair-like, yellowish white, darker than in *S. orientalis merna*' (Ticehurst).

There is a slight variability in colour and in the amount of spotting on the back and tertiaries; *S. Indian* birds are also clineally somewhat smaller than *N. Indian*, but less markedly so than Ceylonese (538) q.v. Intergrades with the darker *edwardi* (540) in eastern NEFA and Nagaland, and with the Burmese *tigrina* (539) in Manipur and E. Pakistan.

MEASUREMENTS

Peninsular and S. Indian birds measure:

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	135-146	18-21	21-24	118-143 mm.
♀♀	132-143	19-21	20-24	117-133 mm. (SA)

21 examples from Nepal give

11 ♂♂	135-151 (av. 142)	—	—	131-150 mm. (av. 139.5)
10 ♀♀	133-145 (av. 139.2)	—	—	125-141 mm. (av. 134.1) (Biswas)

Weight 3♂♂ 123-128 gm. (GD); 1 o? 116 gm. (SA).

COLOURS OF BARE PARTS. Iris pale reddish brown; eyelids and narrow bare orbital patch dull crimson. Bill dark horny or plumbeous-brown. Legs and feet bright magenta; claws brown.

MISCELLANEOUS. Popular as a cage bird for its song, especially in the eastern portions of its range. Has been introduced as a colonist into Mauritius.

538. **Ceylon Spotted Dove.** *Streptopelia chinensis ceylonensis* (Reichenbach)

Turtur ceylonensis Reichenbach, 1851, Vollst. Natursyst., Tauben, pl. 253b. ff. 3373-4 (Ceylon)

Baker, FBI No. 1876, Vol. 5: 245

LOCAL NAMES. *Alu kobēyā* (Sinhala); *Mani purā*, *Ūmi purā* (Tamil).

SIZE. Pigeon —; slenderer. Length c. 30 cm. (12 in.).

PIGEONS, DOVES

155

coverts the same with pale grey edges instead of all grey as in *suratensis*. White of underparts less in extent and often replaced with pale fulvous-brown.

MEASUREMENTS. Wing ♂♂ 137-155 mm. (Baker).

COLOURS OF BARE PARTS. As in 537.

MISCELLANEOUS. A favourite cage bird for its song throughout its range.

540. **NEFA Spotted Dove.** *Streptopelia chinensis edwardi* Ripley

Streptopelia chinensis edwardi Ripley, 1948, Proc. Biol. Soc. Wash. 61: 99 (Chabua, Lakhimpur dist., NE. Assam)

Not in Baker, FBI

LOCAL NAMES. As under 537 where applicable.

SIZE. Pigeon —; slenderer. Length c. 30 cm. (12 in.).

FIELD CHARACTERS. As of 537. A slender white-spotted pinkish grey and brown pigeon with a conspicuous black-and-white 'chessboard' on hindneck. See Key to the Subspecies, and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Eastern NEFA, in moist deciduous biotope, chiefly plains and foothills.

Extralimital. Unrecorded; possibly extreme N. Burma, W. China (?).

GENERAL HABITS, FOOD, VOICE and CALLS. As in 537, q.v. Song 'noticeably different from *suratensis* of peninsular India. Ends abruptly with a single *krük* in place of several prolonged *kroos*' (SA). Local dialect?

BREEDING. *Season, nest, and eggs* as in the Burmese race.

MUSEUM DIAGNOSIS. Conspicuously darker on the upperparts than Indian *suratensis*. Terminal bars on feathers of back and median wing-coverts darker buff and much reduced in extent. Differs from Burmese *tigrina* in having the upperparts darker still with more pronounced dark margins to feathers of back.

MEASUREMENTS

10 ♂♂ Wing 141-151; tail 139-146 mm. (SDR).

COLOURS OF BARE PARTS. As in 537.

541. **Indian Little Brown or Senegal Dove.** *Streptopelia senegalensis cambayensis* (Gmelin)

Columba cambayensis Gmelin, 1789, Syst. Nat. I (2): 779 ('Cambaya', i.e. Gulf of Cambay, NW. India)

Baker, FBI No. 1877, Vol. 5: 246

Plate 49, fig. 13

LOCAL NAMES. *Chhīta fākhā*, *Pārki*, *Torrā fākhā*, *Pāndūt* (Hindi); *Tulan ghēri* (Sind); *Chitti bellagūrvā*, *Sowata gūrvā* (Telugu); *Touta purā* (Tamil); *Aripāru* (Malayalam); *Rām kōpū* (Nowgong, Assam).

SIZE. Myna +; length c. 27 cm. (10½ in.).

FIELD CHARACTERS. A small slim pinkish brown-and-grey dove. *Above*, head and neck lilac-pink with a miniature 'chessboard' in black and rufous on either side of foreneck; rest of upper plumage earthy brown with prominent grey patches on wing-shoulders. *Below*, breast pinkish brown; rest of underparts white. Tail graduated, with much white near tips of the outer feathers. Sexes alike.

154

COLUMBIFORMES

FIELD CHARACTERS. As for 537. A slender white-spotted pinkish grey and brown pigeon with a conspicuous black-and-white 'chessboard' on hindneck. See Key to the Subspecies, and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Race peculiar to Ceylon. Abundant all over the island up to c. 1400 m. in the hills. Affects well-wooded country and paddyfields.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 537 q.v.

BREEDING. *Season* practically all year; chiefly from December to September (Phillips). *Nest and eggs* as in peninsular birds. Average size of 30 eggs 25.7 × 20.0 mm. (Baker).

MUSEUM DIAGNOSIS. Differs from the Indian *suratensis* (537) only in its smaller size.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	128-136	19-20	20-22	114-132 mm.
♀♀	130-136	19-20	20-22	118-127 mm. (HW)

COLOURS OF BARE PARTS. As in 537.

539. **Burmese Spotted Dove.** *Streptopelia chinensis tigrina* (Temminck)

Columba Tigrina Temminck, 1810, in Knip, Les Pigeons, les colombes: 94, pl. 43 (Timor and Batavia; type from Java)

Baker, FBI No. 1874, Vol. 5: 244

LOCAL NAMES. As under 537 where applicable.

SIZE. Pigeon —; slenderer. Length c. 30 cm. (12 in.).

FIELD CHARACTERS. As of 537. A slender white-spotted pinkish grey and brown pigeon with a conspicuous black-and-white 'chessboard' on hindneck. See Key to the Subspecies, and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident: Cachar, Manipur, Mizo, and East Pakistan. A single doubtful old record from the Nicobars. Affects well-wooded moist deciduous biotope chiefly plains and foothills, keeping to paddyfields etc. like the other races.

Extralimital. 'Burma, [Thailand], Malay Peninsula, Indochinese countries, Palawan, Borneo, Sunda Is. from Sumatra to Babar. Introduced into Celebes, small islands in the Flores Sea, and the Moluccas' (Peters).

GENERAL HABITS, FOOD. As in 537.

VOICE and CALLS. Pattern of 'song' of Manipur birds recorded as consistently different from Indian — a syncopated *krük-kroo* minus the terminal *kroos* (SA).

BREEDING. *Season, nest, and eggs* as in the Indian race. Average size of 50 eggs 27.6 × 21.9 mm. (Baker).

MUSEUM DIAGNOSIS. Birds from Cachar, Manipur, etc. are intermediate between the Indian *suratensis* and the Burmese *tigrina*. The latter is distinguished by absence of rufous spots on back, whilst those on the wing-coverts, scapulars and tertiaries are obsolete or absent. Outer webs of median coverts pale vinous-brown; greater

COLUMBIFORMES

156

Young (immature) lacks the chessboards on foreneck. Plumage duller and browner overall; feathers of upperparts and wing-coverts edged with rufous; breast duller and less pink.

STATUS, DISTRIBUTION and HABITAT. Mainly resident, hitherto believed more or less sedentary. Evidently also migratory to an unsuspected extent, but movements as yet very unclear. Restricted to dry deciduous biotope, and largely coincident with Ring Dove (534); more common in semi-desert facies. Throughout West Pakistan and India (up to c. 1000 m. in the western Himalayas and 1500 m. in the peninsular hills) east to Bihar, W. Bengal and East Pakistan (Tippera), south through the Peninsula to Rameswaram I. and Kanyakumari. Not Nepal, Sikkim, Bhutan, Assam or Ceylon. Recorded in the Andaman Islands (Port Blair) c. 1898; possibly introduced. Not met by later observers, so evidently failed to establish in the palpably inappropriate moist biotope. Birds in Baluchistan and NW. frontier districts of W. Pakistan intergrade with the paler race *ermanni* (Bonaparte) of Turkestan etc. Affects village environs and stony scrub-and-bush country about cultivation, particularly where interspersed with *Euphorbia* hedges and *Opuntia* thickets.

MIGRATION. An example ringed on 15.iii.1961 near Bhuj in Kutch (c. 23°10'N., 69°50'E.) was recovered on 27.ii.1964 near Hyderabad in W. Pakistan (c. 25°20'N., 68°25'E.), c. 200 km. north of the ringing place. Previously Ticehurst had recorded with surprise 4 or 5 exhausted birds, obviously on migration, coming on board ship when c. 10 miles off Karachi on a foggy morning in late March 1918 (*Ibis* 1923: 466).

GENERAL HABITS. Similar to Indian Ring Dove (534). Keeps in pairs or small parties — sometimes large close-packed flocks of 50 or more — glean-ing with it and with other doves in stubble fields and village environs. Occasionally stretches up to pluck seeds from growing weeds 30 to 50 cm. high. Male has the characteristic bowing courtship display on the ground, advancing towards the female in stiff ludicrous hops punctuated by a couple of mincing steps — head lowered, throat inflated, rump arched and tail depressed — bobbing and cooing. Female, seemingly quite unimpressed, usually moves away from these amorous advances, *flying off* when too ardently pursued, but sometimes crouching to permit copulation. Also has the typical aerial display, launching upwards from an exposed perch with noisy flapping, and sailing down on motionless wings in an arc or wide spiral to another perch nearby.

FOOD. Grains of paddy, jowar, bajra and other cereals and lentils; grass- and weed seeds.

VOICE and CALLS. A soft, pleasant *coo-roo-coo-roo-coo* or *coo-do-do-do-do*.

BREEDING. *Season* not defined, practically all year, chiefly January to October; two or more broods raised. *Nest*, a ridiculously flimsy and sketchy platform of twigs and grass stems, placed low down in a *Euphorbia* or other open bush, or a stunted date palm (*Phoenix sylvestris*). Although in exposed situations, with the incubating bird sitting closely the nest is quite inconspicuous. Nests frequently built on cornices and rafters, or on a rolled-up chik, in inhabited dwellings unmindful of the close proximity and comings and goings of the human occupants. *Eggs*, almost invariably 2, white, elliptical, with a smooth texture. Average size of 60 eggs 25.3 × 19.3 mm.

PIGEONS, DOVES

157

(Baker). Both sexes share in building the nest, incubation, and tending the young; incubation period unrecorded.

MUSEUM DIAGNOSIS. The extralimital race *ermeni* (of Afghanistan and Turkestan) with which the West Pakistan population is intermediate, is slightly larger and markedly paler (Wing ♂♂ 135-145; ♀♀ 130-140 mm. — Hartert). It is likely that some of these birds may be found as winter visitors in NW. India.

Chick (in down) dull yellowish fawn coloured.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	121-137	17-19	18-22	107-119 mm.
♀♀	124-134	17-19	20-21	104-113 mm. (SA, HW).

Weight 30 ♂♂ 71-91 gm. (av. 80.4 gm.).—SA.

COLOURS OF BARE PARTS. Iris brown; eyelids pale magenta. Bill brownish black. Legs and feet magenta; claws brownish black.

Genus CHALCOPHAPS Gould

Chalcophaps Gould, 1843, Bds. Austr., pt. 13; pl. (8) (= 5, pl. 62 of bound vol.). Type, by monotypy, *Columba chrysoclerus* Wagler

Small, terrestrial-feeding, metallic-plumaged pigeons rather closely allied to *Caloenas* both in anatomy and the possession of 12 tail-feathers, but lacking the neck-hackles. Wing of moderate length: 2nd and 3rd primaries (as.) subequal. Tarsi and toes bare, the latter slender and well adapted for running about on the ground.

CHALCOPHAPS INDICA (Linnaeus)

Key to the Subspecies

	Page
A A grey median line from head to scapulars..... <i>C. i. robinsoni</i>	159
B No median line on hindneck	
Larger..... <i>C. i. maxima</i>	160
Smaller..... <i>C. i. indica</i>	157
Medium. Richer coloured. Breast and abdomen concolorous..... <i>C. i. angusta</i>	319

542. Indian Emerald Dove. *Chalcophaps indica indica* (Linnaeus)

Columba indica Linnaeus, 1758, Syst. Nat., ed. 10, 1: 164 (*orientalis* = Amboina ride Stresemann, 1952, Ibis 94: 511)

Chalcophaps indica salimellii Mukherjee, 1960, Bull. Brit. Orn. Cl. 80 (1): 6 (Jenmalai (sic) = Tenmalai, central Travancore, Kerala)*

Baker, FBI No. 1852, Vol. 5: 215

Plate 49, fig. 9

LOCAL NAMES. *Rāj ghāhū* (Bengal); *Pāchu kārdā* (Marathi); *Ardi bellagurā* (Telugu); *Pāḍiki pūrā* (Tamil); *Ōmāra prāru*, *Mārikā prāru* (Malayalam); *Kār* (Lepcha); *Matī kupōku* (Assam); *Sil kopu* (Nowgong, Assam); *Dastulei* (Cachar).

SIZE. Myna +; length c. 27 cm. (10½ in.).

* Described as larger and darker (Wing ♂♂ 153-157) with abdomen paler than throat and breast, and green more pronounced in upperparts than metallic bronze. Race untenable.

PIGEONS, DOVES

159

normally 2 or 3 metres up in a dense bamboo clump or sapling in forest. Eggs, 2, pale creamy buff or *cafe-au-lait*, elliptical, smooth-textured. Average size of 200 eggs 27.0 × 21.0 mm. (Baker). Both sexes share in nest-building, incubation, and tending the young. Incubation period believed to be about 12 days, but needs confirming.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Female like male but generally with less white on forehead and supercilia; grey crown and nape somewhat suffused with reddish. White patch on wing-shoulder and white barring on rump less pronounced. Central tail-feathers redder brown and only the outermost pair grey.

Young (immature) of both sexes like adult female but duller, the bronze-green of mantle less in extent and barred with copper-red. A broad dull green and rufous band across wing (median and lesser coverts); inner secondaries tipped with rufous-red. Underparts except for pale chin and throat uniform dull brown darker than in adult, the feathers faintly vermiculated and narrowly barred with dull black, especially on breast and flanks. Under tail-coverts black.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	147-156	22-26	25-29	93-100 mm.
♀♀	147-149	c. 22	24-26	89-91 mm. (SA)

Wing average 14 ♂♂ 149, 8 ♀♀ 143 mm. (HA).

Weight 8 ♂♂ 119-144 gm. (av. 132) — SA.

COLOURS OF BARE PARTS. Adult. Iris brown. Bill coral-red, magenta on cere. Legs and feet pinkish- or purplish red; claws brown. Immature. Iris brown; orbital skin slaty brown. Bill slaty brown with ivory tip; mouth pink. Legs and feet pinkish grey; claws horny brown.

543. Ceylon Emerald Dove. *Chalcophaps indica robinsoni* Baker

Chalcophaps indica robinsoni Baker, 1928, Bull. Brit. Orn. Cl. 48: 58

(Cocawatte Estate, Ceylon)

Baker, FBI No. 1853, Vol. 5: 217

LOCAL NAMES. *Nīl kobḍiyā* (Sinhala); *Pāḍhakai parā*, *Thamīl parā* (Tamil).

SIZE. Myna +; length c. 27 cm. (10½ in.).

FIELD CHARACTERS. As of 542. A small brownish pink forest dove with brilliant bronzed emerald-green mantle. See Key to the Subspecies, and Museum Diagnosis.

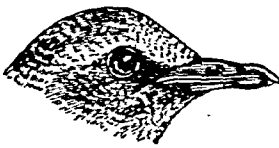
STATUS, DISTRIBUTION and HABITAT. Common resident. Race peculiar to Ceylon. Affects forests and well-wooded areas throughout the island, to over 1600 m. in the hills.

GENERAL HABITS. As of the Indian race (542) q.v. 'The highest elevations are visited only when *nīlā* [*Streblanthus* = *Kercia*] is seeding upcountry (about once in eleven years) when it migrates to exceptional heights to feast on the seeds' (Henry).

158

COLUMBIFORMES

FIELD CHARACTERS. A small brownish pink forest dove with brilliant bronzed emerald-green upperparts. Crown and neck grey, with prominent white forehead and eyebrows, and a band of white-fringed feathers across lower back. A white-bordered vinous-grey patch on wing-shoulder. Rump grey; tail brown and grey, with a broad black cross-band, broken in the middle. Sexes more or less alike, but see Museum Diagnosis.



× c. 1

Bronze-green mantle, white rump-patch, chestnut underwing, and coral red bill conspicuous in flying flash-past.

Superficially a more brilliant but passable facsimile of Green Imperial Pigeon (506).

STATUS, DISTRIBUTION and HABITAT. Resident (and sedentary as far as known) in evergreen and moist deciduous biotope, patchily throughout India up to c. 1800 m. in the lower Himalayas, from Kashmir (Jammu) east to NEFA and Assam (including Nepal, Sikkim, and Bhutan); East Pakistan. South through the entire Peninsula. Affects thick secondary and mixed bamboo jungle and outskirts of forest clearings, chiefly in foothills country.

Probability of some sort of migratory movement suggested by their attraction to incandescent lights during certain moonless overcast nights in the late monsoon months with heavy fog and ground mist. These doves along with several other belivedly sedentary diurnal species then obviously distracted from their course while actively on the move. (For details see Sálím Ali, 1962, JBNHS 59: 128-9.) Further investigation is desirable.

Extralimital. Burma, Malay Peninsula, Indochinese countries, Philippines, Indonesia.

GENERAL HABITS. A ground-feeding dove. Keeps singly or in pairs, but locally quite abundant. Usually seen running about gleaning on earth roads through forest and plantations, or on the sites of cartmen's bivouacs with scattered spillage from grain bags in transit, or leavings of bullock feed. Fond of overgrown outscoured ravines running through tea plantations etc., and tangles of wild castor plants (*Ricinus communis*) in old *jhoom* or cultivation clearings, for midday rest. Flight silent, very swift and direct but evidently lacking in quick manoeuvrability; hence the frequent casualties of birds dashing themselves to death against walls of plantation buildings as they shoot across at top speed through the surrounding glades low under the forest canopy.

FOOD. Grain, seeds, and fallen berries — those of lantana (*Lantana aculeata*) being a favourite. Termites caught on the ground (Baker).

VOICE and CALLS. A soft, deep, very low single moaning note *hoon*, with a nasal ending, repeated at intervals.

BREEDING. Season, variable locally, covering practically the whole year; in areas with a definite cold winter chiefly March to May; in Kerala peak periods April-May and again November-December. Nest, the typical flimsy twig structure of doves, perhaps somewhat more compact and better concealed;

COLUMBIFORMES

160

FOOD. Seeds and berries. Said to be very fond of seeds of the candlenut tree (*Sehium sebiferum*) and castor (*Ricinus communis*).

VOICE and CALLS. A mournful, somewhat ventriloquistic booming note, as of the Indian bird, ' *th-oon* . . . *th-oon*, uttered with crop inflated as in Pouter Pigeon' (Henry).

BREEDING. Season, practically all year but chiefly February-March and again in September. Nest and eggs as in 542. Nest sometimes placed on a cardamom or tree-fern frond in jungle. Average size of 24 eggs 25.9 × 20.8 mm. (Baker).

MUSEUM DIAGNOSIS. Differs from peninsular birds both in colour and size. Adult male has the grey of head and neck running down to the scapulars in a well-defined line. Abdomen in both sexes lighter coloured than throat and breast, a difference hardly perceptible in Indian birds.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	135-147	21-22	c. 24	— mm.
♀♀	130-142	19-21	22-24	80-93 mm. (HW)

COLOURS OF BARE PARTS. As in 542.

544. Andaman Emerald Dove. *Chalcophaps indica maxima* Hartert

Chalcophaps indica maxima Hartert, 1931, Orn. Monatsb. 39: 145

(Golapabung, South Andamans)

Not in Baker, FBI

LOCAL NAMES. Unrecorded.

SIZE. Myna +; length c. 27 cm. (10½ in.).

FIELD CHARACTERS. As of 542. A small brownish pink forest dove with brilliant metallic emerald-green mantle. See Key to the Subspecies, and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Race peculiar to the Andaman Islands. Common resident in appropriate forest biotope everywhere.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 542.

BREEDING. Season, undefined as in other races: a fresh egg taken on 29 May (Osmaston, 1906, JBNHS 17: 489) and specimens with mature gonads procured on 16 February (Abdulali, 1964, *ibid.*, 61: 528). Nest and eggs as in Indian birds.

MUSEUM DIAGNOSIS. Differs from nominate *indica* of peninsular India and Burma only in having a larger wing.

MEASUREMENTS

Wing 12 ♂♂ 145-155 (av. 151), 6 ♀♀ 142-162 (av. 149) mm. — HA.

Hartert gives Wing 3 ♂♂ 157-164; 1 ♀ 165 mm.

COLOURS OF BARE PARTS. As in 542.

544a. **Nicobar Emerald Dove.** *Chalcophaps indica augusta* Bonaparte
See Appendix

Genus **CALOENAS** G. R. Gray

Caloenas G. R. Gray, 1840, List Gen. Bds.: 59. Type, by original designation, *Caloenas nicobarica* (Gmelin) = *Columba nicobarica* Linnaeus
Cf. Salvadori, 1893, Cat. Bds. Brit. Mus. 21: 614-18

Distinguished from all other pigeons by its long metallic neck hackles, longest and narrow on hindneck, disintegrated and hair-like on occiput and foreneck. Legs long and stout; toes slender, well adapted for walking. Bill large with the apical portion curved; a fleshy protuberance at base of culmen, larger in male than in female. Tail of 12 feathers.

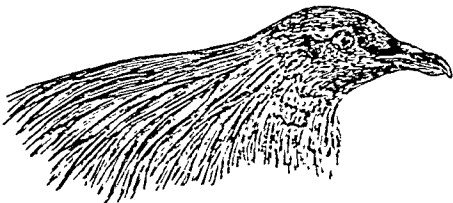
544b. **Nicobar Pigeon.** *Caloenas nicobarica nicobarica* (Linnaeus)

Columba nicobarica Linnaeus, 1758, Syst. Nat., ed. 10, 1: 164 (Nicobar Islands)
Baker, FBI No. 1851, Vol. 5: 213
Plate 49, fig. 7

LOCAL NAME. *Lo-wag* (Nicobars).

SIZE. Pigeon \pm ; length c. 41 cm. (16 in.).

FIELD CHARACTERS. A dark slaty grey pigeon with lustrous metallic blue-green and copper-bronze upperparts; unmistakable by the glistening mane-like neck hackles and sharply contrasting white tail-coverts and tail.



$\times c. \frac{1}{2}$

Female very similar to male but with head, neck and breast more greyish slaty; sheen on upperparts less deep blue; neck hackles shorter.

Young (immature) duller coloured, lacking the neck hackles, and with bronzy green tail instead of white.

STATUS, DISTRIBUTION and HABITAT. Resident, common and locally abundant in the Nicobar Islands (Car Nicobar, Batti Malv, Tillanchang, Teresa, Camorta, Nancowry, and others). Perhaps less rare and straggling

PARROTS

163

Order PSITTACIFORMES

Family PSITTACIDAE: Parrots

Contains arboreal fruit- and grain-eating birds usually of brightly coloured plumage, all the Indian representatives being chiefly green. Bill short, stout, strongly hooked: upper mandible loosely articulated with the skull and capable of kinetic movement. Tongue thick and fleshy. Feet zygodactylous — 2 toes in front, 2 behind — adapted for clambering among branches. Feathers furnished with an aftershaft. Primaries 10; tail-feathers 12 in both Indian genera. For general information see Jean Dorst, 1964, Article 'Parrot' in Thomson, A. L. (ed.) *New Dict. Birds*: 600-602; for morphological details Stresemann, E., 1927-34, *Ates*: 820-4; Baker, 1927, FBI 4: 196; Van Tyne, J. & Berger, A. J., 1959: 455.

Key to the Genera

	Page
A Tail long, graduated, extending a considerable distance beyond tip of closed wing.....	<i>Psittacula</i> 163
B Tail short, slightly rounded, about even with tip of closed wing.....	<i>Loriculus</i> 188

Genus PSITTACULA Cuvier

Psittacula Cuvier, 1800, Leçons d'Anat. Comp. 1, table at end. Type, by subsequent designation, *Psittacus alexandri* Linnaeus. (Mathews, 1917, Bds. Austr. 6: 169)

Tail very long and graduated, the median feathers narrow, pointed, and much exceeding the others in length. Bill thick, deeper than long: upper mandible swollen at the sides, culmen convex, much curved; lower mandible short and blunt.

The genus contains some of the most abundant and destructive bird pests of agriculture and horticulture in India.

Key to the Species

	Page
A Crown green.....	1
B Crown not green.....	2
1 Cheek-patch reddish.....	<i>P. longicauda</i> (σ^7 φ) 176
Cheek-patch not reddish, males with pink or red collar at nape..	a
a Red patch on wing-coverts.....	<i>P. eupatria</i> (σ^7 φ) 164
No red patch on wing-coverts.....	<i>P. krameri</i> (σ^7 φ) 169
2 Wing 190 mm. and above.....	b
Wing below 190 mm.	c
b Underparts violet.....	<i>P. derhiana</i> (σ^7 φ) 175
Underparts green.....	<i>P. caniceps</i> (σ^7 φ) 175
c Underparts pinkish violet.....	<i>P. alexandri</i> (σ^7 φ) 172
Underparts not as above.....	I
I Red patch on wing-coverts.....	a ¹
No red patch on wing-coverts.....	a ²
a ¹ Head grey or dark lavender.....	b ¹
Head not as above.....	b ²
b ¹ Wing c. 162-174 mm.....	<i>P. himalayana</i> (σ^7) 183
Wing c. 146-150 mm.....	<i>P. finschii</i> (σ^7) 184
Wing 140 mm. or below.....	<i>P. roseata</i> (φ) 181
b ² Forehead and orbital region pale rose, nape and crown pale lavender.....	<i>P. roseata</i> (σ^7) 181

162

COLUMBIFORMES

in the Andamans than supposed. Has been collected and/or observed (in some cases breeding) as far north as the Cocos (Barren I., Havelock I., S. Sentinel, S. Andaman, and doubtless occurs on others of the group). Affects heavy evergreen forest, chiefly on small uninhabited islets off the larger land masses.

Extralimital. Mergui Archipelago eastward through the Indonesian, Philippine and other islands over the greater part of the Indo-Australasian region.

GENERAL HABITS. Keeps singly, in parties of 3 or 4, and flocks of a dozen to 20 or 30. Feeds entirely on the ground, walking about briskly hither and thither with a steady sprightly gait flicking aside the leaves to expose fallen seeds and berries, or pecking in the mulch with its bill. Walks very much like Emerald Dove but with wings drooping low at the sides, giving the impression of being maimed in the shoulders. Flight looks rather heavy, but in fact is swift and powerful, capable of being sustained over long distances when traversing wide stretches of sea from one island to another in search of food. A flock in swift commuting flight high up in the air is reminiscent of sandgrouse (Hume). Launches from tree and flushes from ground with a characteristic very noisy flutter of wings often sufficiently diagnostic even when the bird itself unseen. When settling, pitches clumsily on to a horizontal bough high up in the foliage canopy, often walking along it like a hen.

FOOD. Fleshy fruit picked off the forest floor, and seeds including some very hard ones like plum stones, evidently for crushing which the stomach is specially adapted (for structural details see Flower, 1860, *Proc. zool. Soc. London*: 330).

VOICE and CALLS. Normally very silent. Occasionally utters a harsh guttural croak not unlike that sometimes made by a domestic pigeon when handled (Butler).

BREEDING. *Season.* January to March-April; presumably, as in most pigeons, also at other times. *Nest.* an untidy loosely put-together platform of twigs built c. 3 to 8 metres up in trees in evergreen forest; often several nests thickly in a single tree in rookery fashion. In the 1870s W. Davison found it breeding 'in thousands' on Batti Malv island, almost every bushy tree containing several nests. *Egg.* a singleton, white, smooth-textured, long ellipse, often slightly pointed at either end. 'Colour of the membrane lining the shell gives a delicate purple tinge to the egg' (Osmaston). Average size of 18 eggs 48.0 \times 33.9 mm. (Baker). Both sexes incubate (in captivity) and tend the young. Incubation period unrecorded.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus
σ^7 φ	247-268	c. 24-27	c. 36-42 mm. (Baker)

An adult σ^7 recently collected has wing 240 mm. (Abdulali).

Weight 2 σ^7 460, 525; 4 φ 490-600 gm. (Grubb).

COLOURS OF BARE PARTS. Iris white, buff, or nut-brown [age?]. Bill greyish or slaty black. Legs and feet purplish violet to almost coral-red.

164

PSITTACIFORMES

	Page
Forehead and orbital region bright red, nape violet.....	
a ² Flight-feathers blue.....	<i>P. cyanoptera</i> (σ^7) 178
Flight-feathers green.....	<i>P. columboides</i> (σ^7 φ) 185
b ² Rump grey.....	<i>P. calthorpe</i> (σ^7 φ) 187
Rump viridis-green.....	<i>P. cyanoptera</i> (σ^7 φ) 178
Rump grass- or yellow-green.....	c ¹
c ¹ Collar obsolete or occasionally yellow.....	<i>P. roseata</i> (σ^7) 181
Collar viridis-green.....	d ¹
d ¹ Back dark grass-green.....	<i>P. himalayana</i> (φ) 183
Back paler, more yellowish green.....	<i>P. finschii</i> (φ) 184

NOTE: *Psittacula intermedia* not seen but said to be intermediate in size and colour between *P. himalayana* and *P. roseata*.

PSITTACULA EUPATRIA (Linnaeus)

Key to the Subspecies

	Page
(Males only)	
A Bill 39 mm. or over; generally over 40 mm.....	<i>P. e. magnirostris</i> 168
B Bill 39 mm. or under; generally under 37 mm.....	1
1 Moustachial streak very broad.....	<i>P. e. nipalensis</i> 164
Moustachial streak narrow.....	a
a Blue of nape and sides of head more extensive; throat less yellow; tarsus slaty.....	<i>P. e. eupatria</i> 166
Blue of nape and sides of head less extensive; throat more yellow; tarsus yellowish.....	<i>P. e. arvensis</i> 167

545. **Large Indian Parakeet.** *Psittacula eupatria nipalensis* (Hodgson)

Palaeornis Nipalensis Hodgson, 1836, *Asiat. Res.* 19 (1): 177 (Nepal)

P. (alcecorus) indoburmanicus Hume, 1878, *Stray Feathers* 7: 459 (No locality; restricted to Sikkim by Kloss)

Baker, FBI Nos. 1497, 1498, Vol. 4: 199, 200

LOCAL NAMES. *Rāi lōā*, *Hirēmān lōā* (Hindi); *Pāhārī Lōā* (U.P., Lucknow); *Kārdān lōā* (M.P., Saugor); *Tekru* (= 'of the hills', Sukkur, Sind); *Chandras* (Bengal); *Kārdān sōā*, *Kārdān* (Nepal); *Ni to* (Lepcha); *Sōā* or *Sōā* (Orissa).

SIZE. Pigeon \pm ; slenderer. Length σ^7 (including long pointed tail) c. 53 cm. (21 in.); φ somewhat smaller.

FIELD CHARACTERS. A large grass-green parakeet with the typical short massive, deeply hooked red bill, and a conspicuous deep red patch on the wing-shoulders (secondary wing-coverts).

Male (adult) has a prominent rose-pink collar round the back and sides of neck, and a broad black band from the lower mandible to the rose collar. Tail-feathers below dull yellow.

Female and Young (immature) lack the rose-pink collar and the black mandibular stripe.

PARROTS

165

STATUS, DISTRIBUTION and HABITAT. Resident; also nomadic and locally migratory — the movements dependent chiefly on food supply. West Pakistan (Sind, chiefly the northern and southern parts; Bahawalpur; Peshawar district), and all India from Punjab along the Himalayan foothills (recorded up to c. 1600 m.), bhabar, terai, and duars (including Nepal, Sikkim and Bhutan) across the Gangetic Plain to eastern Assam and NEFA; Nagaland and Manipur (subspecies? See under 547). East Pakistan (Dacca, Chittagong, Tippera, etc.) south through Gujarat, N. Andhra, Madhya Pradesh and Orissa roughly to about latitude 18°N.; plains and hills normally to c. 800 metres. Affects dry and moist deciduous biotope — forest and well-wooded country. Also the older canal-irrigated desert settlements with well-grown trees and forest plantations, e.g. in the Punjab.

GENERAL HABITS. Keeps in parties of 3 or 4 birds or small flocks which band together in large congregations where food is abundant. Has noisy communal roosts, usually, unshared with other species, in large densely foliated trees and groves in forest at which the birds collect from all quarters at sunset flying over long distances in batches of 5 to 50. Flight graceful and swift in spite of the seemingly 'stately' and unhurried wing-beats — reminiscent of the Naktas as compared with the smaller ducks. Flocks do considerable damage in orchards, the birds clambering amongst the branches and gnawing into the half-ripe fruit while still on the tree or plucking and flying off with it to a convenient perch, there raising it up to the bill held in one foot; often wastefully abandoning it after a bite or two and returning to filch more. Highly destructive also to ripening cereal crops, cutting off the growing ears, wantonly pulling them to shreds and wasting far more grain than it actually consumes.

FOOD. Fruits, vegetables and seeds of all kinds, wild or cultivated; also cereals like maize, wheat, and paddy. Analyses of stomach contents in an agricultural area in Lyallpur (W. Pakistan) showed 52 per cent crop seeds, 2.7 per cent weed seeds, 11.4 per cent neutral seeds, 4.8 per cent vegetables, 19.3 per cent cultivated fruits, 9.80 per cent wild fruits (Husain & Bhalla, 1937). Thus the bird is harmful in the highest degree to agriculture and horticulture. Like other parakeets feeds avidly also on the nectar of *Salmalia*, *Butea*, *Erythrina*, and suchlike flowers, but biting off and discarding (sometimes eating) the petals and floral parts to reach the liquid, thus evidently not even useful in cross-pollinating.

VOICE and CALLS. A loud, high-pitched screaming single note *keeek*, or *kee-arr*, deeper and more sonorous than of the commoner Roseringed species; uttered from a perch as well as on the wing. In captivity readily learns to imitate a few words of human speech, but not known to mimic any extra-specific calls or sounds in the wild state.

BREEDING. Season, overall December to April, generally somewhat earlier than the Roseringed Parakeet. Nest, a vertical shaft a few cm. deep with a neat round entrance-hole, cut by the birds themselves in the trunk of a coconut palm or large softwood tree such as *Salmalia malabarica*; occasionally also in sal (*Shorea robusta*), sheesham (*Dalbergia sissoo*) and other hardwoods growing in rambling gardens or in forest. In the Sunderbans the mangroves Keora (*Sonneratia apetala*) and Sundri (*Heritiera minor*) are

PARROTS

167

SIZE. Pigeon \pm ; slenderer. Length σ (including long pointed tail) c. 51 cm. (20 in.); φ somewhat smaller.

FIELD CHARACTERS. A large grass-green parakeet with the typical short massive, deeply hooked red bill, and a conspicuous deep red patch on wing-shoulders (secondary wing-coverts). Indistinguishable from 545 except in the hand (see Museum Diagnosis).

STATUS, DISTRIBUTION and HABITAT. Resident, with nomadic and local migratory movements governed mainly by food supply; patchily throughout peninsular India roughly south of 18°N. latitude, and Ceylon (low-country Dry zone). Affects forest and well-wooded country to c. 900 metres elevation, in dry- and moist-deciduous biotope.

GENERAL HABITS, FOOD, VOICE and CALLS. As in the northern race 545, q.v. In season the fleshy petals of *mhowa* flowers (*Bassia latifolia*) comprise a favourite food item.

BREEDING. Season, both in peninsular India and Ceylon chiefly November December to March/April. Nest and eggs as in 545, the latter somewhat smaller. Ceylon eggs measure c. 31 \times 24 mm.

MUSEUM DIAGNOSIS. Slightly smaller and less richly grass-green than *nipalensis*. Bill less massive (greatest height c. 20.21 mm. f. 22-24). Black mandibular stripe narrower. For details of plumage see Baker, loc. cit.

MEASUREMENTS

Size decreases clinally southward; Ceylon birds measure			
Wing	Bill (from posterior edge of cere)	Tarsus	Tail
$\sigma\sigma$ 187-219	32-36	c. 20	200-304 mm. (HW, CBT)
$\varphi\varphi$ 175-195 (Baker)			

COLOURS OF BARE PARTS. 'Iris pale blue speckled with yellow, pale yellow, or yellow with a blue outer ring. Bill deep red. Feet plumbeous or greenish slate' (Baker).

547. Large Burmese Parakeet. *Psittacula eupatria acensis* (Kloss)

Palaeornis eupatria acensis Kloss, 1917, Jour. Nat. Hist. Siam 2: 219

(Bhamo, Upper Burma)

Baker, FBI No. 1498 (part), Vol. 4: 200 = *indoburmanica*

LOCAL NAMES. Unrecorded.

SIZE. As of 545: pigeon \pm ; slenderer, with long pointed tail.

FIELD CHARACTERS. A large grass-green parakeet with long pointed tail and a bright red shoulder-patch. Indistinguishable in the field from 545 or 548 qq.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, with local movements as in 545. Cachar ('very common'); presumably also Nagaland and Manipur, but western limits of this form not yet worked out.

Extremities. Burma south to Amherst (to c. 16°N. lat.).

166

PSITTACIFORMES

specially favoured. Holes — sometimes several in the same trunk in apartment-house fashion — unlined, but may have a bed of wood shavings fortuitously accumulated at the bottom during excavation. Nest-holes of barbets and woodpeckers are often enlarged and appropriated. Normally nests away from populated human settlements and only exceptionally in holes in buildings etc., as is so common with Roseringed. Eggs, 3 or 4, white, glossless, roundish ovals. Size c. 34 \times 28 mm. Both sexes partake in excavating the nest, incubation, and feeding the young by regurgitation. Incubation period 19-21 days (Baker). Courtship display not specifically described but presumably of same ludicrous pattern as in Roseringed (550), q.v.

MUSEUM DIAGNOSIS. Distinguished from the nominate race (546) of peninsular India and Ceylon by somewhat larger size, brighter coloration, and more massive bill. Black mandibular stripe much broader and more conspicuous; occiput, cheeks, and nape usually more washed with blue.

MEASUREMENTS

	Wing	Bill (from posterior edge of cere)	Tarsus	Tail
$\sigma\sigma$ 200-234		33-40	19-22	220-361 mm.
$\varphi\varphi$ 192-221		33-36	19-22	206-325 mm. (SA)
Ticehurst (<i>Ibis</i> 1923: 43) gives for birds from N. India to Madhya Pradesh				
$\sigma\sigma$ 225-236		36-38	—	— mm.

Greatest height of bill 22-24 mm.

COLOURS OF BARE PARTS. Iris lemon-yellow with a narrow outer blue ring; eyelids orange-yellow. Bill scarlet, darker on culmen orange-red at tips. Legs and feet dirty yellow; claws slaty.

MISCELLANEOUS. Learns to imitate a few words but is a far less accomplished mimic than the Hill Myna. Along with the Roseringed Parakeet is taught to perform a variety of clever table-top tricks such as loading and firing a toy cannon, and performing parakeets usually form a popular side-show at upcountry *melas* and fairs. Very popular as the 'common man's' pet, vast numbers of partly fledged young being regularly taken from nests for sale in bird markets, or hawked in the streets of most Indian towns; usually hung imprisoned in tiny hoop-iron cages outside bazaar shops. Birds from certain areas (e.g. Amrabad Plateau in Andhra and Dumkhal in Rajpipla, Gujarat) have acquired a local reputation for special excellence as talkers, and are highly prized by fanciers.

546. Large Ceylonese Parakeet. *Psittacula eupatria eupatria* (Linnæus)

Psittacus Eupatria Linnæus, 1766, Syst. Nat., ed. 12, 1: 140

(No locality = Gingi, India ex Brisson)

Baker, FBI No. 1496, Vol. 4: 198

Plate 50, fig. 3

LOCAL NAMES. *Hirēmān tīlā* (Hindi); *Pedda chilukā*, *Bandi rama chiluka* (Telugu); *Periya kili* (Tamil); *Laba giravā* (Sinhala).

168

PSITTACIFORMES

GENERAL HABITS, FOOD, VOICE and CALLS. As in the other races, cf. 545.

BREEDING. Season, chiefly December to February/March. Nest and eggs as in 545; size c. 34 \times 28 mm.

MUSEUM DIAGNOSIS. Closely resembles *P. e. magnirostris* (548) of the Andamans, but has a smaller bill and perhaps a yellower throat, while it lacks the narrow sky-blue neck-ring of that race (C. Boden Kloss).

MEASUREMENTS of the type specimen, σ adult: Wing 217; 'culmen' 38 (greatest height 22); tarsus 21; tail 342 mm.

COLOURS OF BARE PARTS. Iris 'white bluish speckled' (Anderson). Rest as in 545.

548. Large Andaman Parakeet. *Psittacula eupatria magnirostris* (Ball)

Palaeornis magnirostris Ball, 1872, Jour. Asiat. Soc. Bengal 41 (2): 278

(Andaman Islands)

Baker, FBI No. 1499, Vol. 4: 201

LOCAL NAMES. None recorded.

SIZE. As of 545: pigeon \pm ; slenderer, with long pointed tail.

FIELD CHARACTERS. A large grass-green parakeet with long, pointed tail and a bright red shoulder-patch. Indistinguishable in the field from the other races, qq.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Race peculiar to the Andaman Islands. Common and fairly plentiful everywhere in the North, Middle, and South Andamans, moving about between the smaller islands of the group in search of food. Has been specifically recorded on Table, Long, Barren, and South Sentinel islands besides the main ones, but is doubtless found on most others ecologically suitable. Also occurs on Coco Is. and Narcondam. Not reported south of the Ten Degree Channel — in the Nicobar Group. Affects tall evergreen forest and mangroves.

GENERAL HABITS. Keeps in noisy parties and flocks of half a dozen to several score to the lofty forest trees, joining up into enormous congregations at roosts which are often shared with the Redbreasted species (552). The birds commonly roost among mangroves (*Rhizophora mucronata*) growing along tidal creeks, preferably such patches as are more or less islanded from the shore by shallow water. Large areas of such mangroves become denuded ('stag-headed') at the top, the branches presenting a dead appearance due to the stripping of the leaves by the myriads of parakeets that sleep in them.

FOOD. As in the other races — fruits, grain, buds, seeds both wild and cultivated.

VOICE and CALLS. Loud harsh screeching screams as typical of the parakeets (cf. 545), but the notes said by W. Davison to be very distinct from either the Redchecked or Redbreasted species occurring side by side with it.

BREEDING. Season, February-March. Nest, a self-cut hole high up in the trunk of a lofty tree, usually on the edge of forest. Osmaston found one nest 150 feet up, and another over 100 feet, in immense jungle trees. The latter nest was more than 8 feet below the entrance-hole. Eggs, 2 or 3, white. Average size of 10 eggs 35.1 \times 28.2 mm. (Baker).

PARROTS

169

MUSEUM DIAGNOSIS. Distinguished from all other races by its heavier, more massive bill; from *nipalensis* by the well-developed narrow, almost sky-blue ring above the rosy hind-collar. Red shoulder-patches much brighter.

MEASUREMENTS		Wing	Bill (from cere)
♂♂	205-217		39-45 mm.
♀♀	190-209		34-39 mm.
			(Baker)

Weight 2 ♀♀ 220, 225 gm. (Grubb).
COLOURS OF BARE PARTS. As in 545.

PSITTACULA KRAMERI (Scopoli)	
Key to the Subspecies	
(Males only)	
Lower mandible black.....	<i>P. k. manillensis</i>
Lower mandible red.....	<i>P. k. borealis</i>

549. Northern Roseringed Parakeet. *Psittacula krameri borealis* (Neumann)

Palaeornis krameri borealis Neumann, 1915, Orn. Monatsb. 23: 178 (Assam)
Psittacula krameri fragosa Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 25 (Anadra, Sirohi, Rajasthan)
Baker, FBI No. 1501, Vol. 4: 204

LOCAL NAMES. *Tōtā*, *Lybār tōtā* (Hindi); *Gallar* (NW. Pakistan); *Chātūn* (Sind); *Tiyā*, *Tiyā tōtā* (Bengal); *Tenthia sūga* (Nepal); *Tōtā sōrāi* (Assam); *Daobator* (Cachari); *Pōpāt*, *Sūdo* (Gujarat); *Pōpāt*, *Kerā* (Marathi).

SIZE. Myna +; with long, pointed tail. Length overall c. 42 cm. (16½ in.).

FIELD CHARACTERS. A slim grass-green parakeet with the typical short, heavy, deeply hooked red bill.

Male with a rose-pink and black collar; no red shoulder-patch as in 545.

Female without the collar but with an indistinct emerald-green ring round neck.

Young (immature) like female. Male acquires pink-and-black collar in the third year.

STATUS, DISTRIBUTION AND HABITAT. Resident. West Pakistan (Baluchistan, Sind, NW. frontier districts, Punjab), and all northern India, eastward along the Himalayan foothills, terai, and the entire Gāngetic Plain through Assam and E. Pakistan, south to the arbitrarily fixed boundary of 20°N. lat.; Nepal, terai and bhabar. Affects moist- and dry-deciduous biotope—even semi-desert—keeping to light secondary jungle, gardens, orchards and cultivation in the neighbourhood of human habitations. Was introduced in the Andamans by Col. Tytler, about a hundred years ago (Hume, 1874, SF 2: 177) but failed to 'take off'.

Extralimital. Burma (including Shan States), SE. China, and reportedly Vietnam.

GENERAL HABITS. One of the most destructive bird pests of agriculture and horticulture. Keeps in small parties or large noisy rabbles which often

PARROTS

171

in rock scarps and walls of ruined buildings and ancient forts are freely occupied, many pairs often nesting close to each other in a loose colony. Frequently holes in the outside walls of buildings in towns are appropriated, often in the heart of noisy congested bazaars. Eggs, 3 or 4, sometimes 5, rarely 6; pure white roundish ovals. Average size of 20 eggs 29.3 × 24.0 mm. (Baker). Cutting of nest-hole by both sexes; incubation entirely by female. Period of incubation undetermined. Both parents feed the nestlings by regurgitation. According to Malcolm Macdonald, young leave nest about four weeks from laying of the egg by parent.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. *P. k. borealis* differs from the peninsular and Ceylon race *manillensis* in being clinally larger and slightly paler and yellower; also in having—in the majority of cases—both mandibles red; in *manillensis* the lower mandible is black.

MEASUREMENTS		Wing	Bill (from cere)	Tarsus	Tail
10 ad. ♂♂	175-187		24-27	—	225-263 mm.
(Punjab)	(once 191)				(once 189)
5 ad. ♂♂	170-180		26-29	18-19	157-245 mm.
(Gujarat)					(HW)
Baker gives					(SA)
♂♂	164-183		24-26	16-17	240-282 mm.
♀♀	162-170				190-240 mm.
Weight 5 ♂♂ (104)	116-139 gm. (SA).				

COLOURS OF BARE PARTS. Iris yellowish white. Bill, both mandibles coral-red. Legs and feet greenish slate.

550. Roseringed Parakeet. *Psittacula krameri manillensis* (Bechstein)

Psittacus Manillensis Bechstein, 1800, Stubenvögel, 2nd Gotha ed.: 612 (Philippines, *error* = Ceylon)
Baker, FBI No. 1500, Vol. 4: 202
Plate 50, fig. 9

LOCAL NAMES. *Tōtā*, *Lybār tōtā* (Hindi); *Suā*, *Sūwā* (E. Madhya Pradesh); *Pōpāt*, *Sūdo* (Gujarat); *Pōpāt*, *Kerā* (Marathi); *Chilukā* (Telugu); *Kili* (Tamil); *Ransā giravā* (Sinhala); *Taitā*, *Modirattatā* (Malayalam).

SIZE. Myna +; with long pointed tail. Length overall c. 42 cm. (16½ in.).

FIELD CHARACTERS. A slim, grass-green parakeet with the typical short, heavy, deeply hooked red bill. Indistinguishable in the field from 549 q.v. except by black (v. red) lower mandible.

STATUS, DISTRIBUTION AND HABITAT. Resident. Peninsular India south of lat. 20°N. — the arbitrarily fixed boundary with the northern race — and Ceylon (low-country Wet and Dry zones). Affects moist- and dry-deciduous biotope: lightly wooded country and cultivation in the neighbourhood of human habitations.



1 In some cases lower mandible partly red partly black.

PSITTACIFORMES

170

band together in enormous swarms to raid ripening crops of jowar, maize, and other cereals, and orchard fruit. The birds clamber about among the twigs and gnaw into the half-ripe fruits, one after another, wasting far more than they actually eat. Or they descend in swarms upon ripening fields of food crops, biting into the ears of grain or cutting off the head completely and flying with it to a nearby tree where it is raised up to the bill with one foot and after a nibble or two wastefully discarded, the bird soon returning to the field to renew its ravages. Frantic shouts and stones hurled from slings by the ryot from his machan amidfield only serve to move the destructive horde to a different corner of the field where the depredation complacently continues. Rabbles of these parakeets commonly gather at wayside railway stations and goods sheds, clambering amongst the sacks of grain and groundnuts awaiting entrainment, biting through the fabric and helping themselves to the contents; or they waddle about comically on the ground with partly raised tail to pick up the spillage. Has communal roosts, often shared with crows and mynas, among groves of trees in sprawling urban gardens and outskirts of habitation where enormous numbers collect at sunset, flying in; battalion after battalion, from all points of the compass. The birds are extraordinarily abundant in and around some of the larger northern cities like Lahore, New Delhi and Kanpur. Flight swift and direct with rapid wing-beats.

A large noisy swearing mob of parakeets soon musters at the summons of a pair whose nest is threatened, e.g. by mynas or a snake, the birds flying at and around the intruder, flitting angrily about him in a sort of hypnotized frenzy, all screeching and screaming wildly together. The male has a very ludicrous courtship display, sidling up to his mate, stretching himself up to his full height, feeding her on regurgitated pap and caressing her, often with the bills interlocked. He suddenly backs away stiffly, eying her from a foot's distance with his head pulled well back (as if in rapt admiration), strutting and posturing, wings partially open at the shoulders, and the foot on her side lifted and ridiculously 'clawing the air' towards her. He then crosses over to the other side of the hen to repeat the antics, and thus back and forth several times. (For further details of courtship and mating see Sālim Ali, 1927, JBNHS 32: 218-19; also Malcolm Macdonald, 1960, *Birds in my Indian Garden*: 48-60.)

FOOD. Fruits, cereal, grain, and seeds of all kinds, wild as well as cultivated. Among items specifically identified are chillies (*Capsicum*), groundnuts (*Arachis hypogaea*), gram (*Cicer arietinum*); flower-petals and nectar of *Salvia miltiorrhiza*, *Erythrina indica*, *Butea monosperma*, *Bassia latifolia* and other species; seeds of *Prosopis spiciogera*, *Acacia arabica*, *Caruarina equisetifolia*, green spiny fruit of the common wasteland weed *Xanthium*, and flowers and fruits of *Capparis aphylla*.

VOICE AND CALLS. A loud, shrill screaming *kee-āk*, sometimes quickly repeated several times, varying in tempo with the occasion, and uttered at rest as well as on the wing.

BREEDING. Season, chiefly January to April but may go on till July. Nest, an unlined hollow in a tree-trunk, usually some small natural hole cut and enlarged by the birds to size; or preferably a readymade nest-hole of barbet or woodpecker, at any height between c. 3 and 10 metres. Holes

PSITTACIFORMES

172

GENERAL HABITS. As of the northern form (549), q.v. By its ubiquitous abundance, the vast swarms in which it occurs in agricultural areas, and its wasteful feeding habits, is a menace to food crops and orchard fruit. A highly destructive pest with no compensating virtues from the economic point of view. A popular pet of the 'common man'. If taken as nestling and hand-reared learns to repeat a few words rather indistinctly, and to perform a variety of table-top tricks.

FOOD, VOICE AND CALLS. As in 549. Locally very destructive to coffee 'cherries' in Mysore plantations.

BREEDING. Season overall (including Ceylon) chiefly between January and April/May. Nest, eggs and site as in the northern race. Average size of 100 eggs 30.5 × 24.3 mm. (Baker).

MUSEUM DIAGNOSIS. Clinically somewhat smaller than 549; differentiated from it chiefly by the lower mandible being black (v. red). Specimens from around lat. 20°N. are intermediate in this regard and can readily pass for either form. Ceylon birds agree with those from S. India in size and colour and cannot be separated from them.

MEASUREMENTS		Wing	Bill (from cere)	Tarsus	Tail
11 ad. ♂♂	159-172		22-25	16-17	186-238 mm.
(Ceylon, Kerala, Mysore)					(SA, HW)

COLOURS OF BARE PARTS. As in 549.

PSITTACULA ALEXANDRI (Linnaeus)

Key to the Subspecies

Paler above and below; tail longer: ♂ 196-198, ♀ 172-193 mm.	<i>P. a. abbotti</i>
Darker above and below; tail shorter: ♂ 168-189, ♀ 145-171 mm.	<i>P. a. fasciata</i>

551. Indian Redbreasted Parakeet. *Psittacula alexandri fasciata* (P. L. S. Müller)

Psittacus fasciatus P. L. S. Müller, 1776, *Natursyst.*, Suppl.: 74 (Pondicherry, *error*, restricted to Arakan¹ by Ticehurst, 1933, Jour. Bom. nat. Hist. Soc. 36: 934)
Baker, FBI No. 1508, Vol. 4: 210
Plate 50, fig. 11

LOCAL NAMES. *Mādnā*, *Kājilā*, *Gour tōtā* (Hindi); *Imri bhilā* (Nepal); *Daobator gejaō* (Cachari).

SIZE. Pigeon —; with long, pointed tail. Length overall c. 38 cm. (15 in.).

FIELD CHARACTERS. A long and pointed-tailed grass-green parakeet with greyish pink head and plum-red throat and breast. A prominent yellow shoulder-patch where maroon in Alexandrine Parakeet (545).

1 But see remarks on allocation of type locality, Birwās, 1960, JBNHS 57: 536-7.

PARROTS

173

Male (adult). *Above*, head purplish grey with narrow black forehead running back to eyes, and broad black stripes from lower mandible to sides of head. Hindneck and sides of neck brighter green than rest of upperparts. A large yellow patch on wing-shoulder (median and greater coverts). *Below*, throat and breast vinaceous red; belly bluish green; vent and under tail-coverts yellowish green. Tail bluish green above with yellowish tips; dusky yellow below. Bill largely red.

Female. Head tinged blue-green and with less plum-coloured bloom; breast redder and darker, untinged with plum colour. Bill largely black.

Young (immature). Green throughout lacking the red breast and with only a slight dull brownish plum-colour about the head. Black head markings are acquired after the first moult (Baker). Bill like female's, but nestlings said to have both mandibles horny reddish orange. Needs confirmation.

STATUS, DISTRIBUTION and HABITAT. Resident, with local nomadic movements governed by food supply. The lower Himalayas (terai, bhavar, and up to c. 1500 m.) from about Dehra Dun (Kumaon) eastward through Nepal, Sikkim, Bhutan, and NEFA; south through Assam, Nagaland, Manipur, and Mizo (?). East Pakistan. Affects moist-deciduous biotope — thin secondary jungle and the neighbourhood of *jhoom* or shifting hill cultivation. Avoids dense evergreen forest.

Extralimital. SW. Yunnan, Burma, N. Vietnam and the other Indochinese countries; S. China and Hainan Island.

GENERAL HABITS. Usually keeps in parties of 6 to 10, occasionally larger flocks as when raiding fields of hill paddy or orchards. Often descends to the ground in harvested fields, parties of the birds waddling about actively to glean the fallen grain. Small flocks do the rounds of particular fruiting or flowering trees day after day until a tree is cleared. The birds feed quietly among the foliage as they clamber about, their presence in a tree only betrayed by the rain of leaves and other matter dropped in the process or by the muffled whirr of wings as a bird flies from one branch to another. When moving to another tree the flock fly swiftly as a compact wheeling battalion, uttering their distinctive cries. 'If one of a flock should happen to be wounded, its calling will bring the whole party flying round almost within arm's length, the entire number keeping up all the time an unceasing din of not unpleasant chatter' (Armstrong, 1876, SF 4: 308).

FOOD. Wild figs (*Ficus* spp.) and other wild and orchard fruit; leaf buds, and fleshy petals and nectar of *Salmaia*, *Butea*, and suchlike flowers; hill paddy, maize, etc.

VOICE and CALLS. A short sharp nasal, not unpleasant-scream, *kink*, quickly repeated by several birds together when a flock is disturbed and flying off; cry arrestingly different from that of Roseringed or Alexandrine.

BREEDING. *Season*, chiefly between January and April, varying locally with altitude and other conditions. *Nest*, a natural tree-hole enlarged and excavated by the birds to suit; normally c. 3 to 10 metres up in thin forest or well-wooded country, often close to cultivation and habitations; sometimes several nests in neighbouring trees in a loose colony. Nest-holes of barbets and woodpeckers frequently utilized. *Eggs*, 3 or 4, white, less spherical than of most parakeets. Average size of 50 eggs 30.9 × 25.6 mm.

PARROTS

175

553. Blyth's Nicobar Parakeet. *Prittacula caniceps* (Blyth)

Palaermis caniceps Blyth, 1846, Jour. Asiat. Soc. Bengal 15: 23 (Nicobars)

Baker, FBI No. 1509, Vol. 4: 212

Plate 50, fig. 1

LOCAL NAMES. None recorded.

SIZE. Pigeon ±, slenderer and with long, pointed tail. Length overall c. 61 cm. (24 in.).

FIELD CHARACTERS. A large, rather dingy-looking, long-tailed grass-green parakeet with black head markings similar in pattern to Redbreasted, but without the red breast.

Male (adult). *Above*, forehead black continued backward as a broad stripe to each eye; a very wide black band from lower mandible to each side of neck. Rest of head, hindneck and sides of neck brownish grey gradually diffusing into the bright yellowish green upperparts. Tail dingy yellow; middle feathers blue at base, violet-grey towards tips. *Below*, chin black; rest of underparts yellowish green like back. Bill red.

Female has the grey of the head tinged with bluish, and black bill.

STATUS, DISTRIBUTION and HABITAT. Resident. Nicobar Islands; so far recorded only on Great Nicobar, Montschall and Kondul. Affects high forest.

GENERAL HABITS. Keeps singly or in pairs or parties of 5 or 6, much to the tops of high trees when not feeding. Difficult to observe among the dense foliage, its presence only betrayed by its distinctive noisy calls which can be heard a long way off (Davison).

FOOD. Largely 'the ripe fruit of the pandanus, so abundant on the inhabited islands of the Nicobar group'.

VOICE and CALLS. 'A wild screeching note (but quite unlike either *magnirostris*, *erythrogenys* or *fasciatus*)'; continually uttered while at rest and in flight. A loud raucous *kraan kraan*, not unlike a crow's (HA).

BREEDING. Unrecorded.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; Hume, 1874, SF 2: 178-80.

MEASUREMENTS			
Wing	Bill (from cere)	Tarsus	Tail
♂♂ 202-222 } ♀♀ 195-212 }	28-30	20-21	290-345 mm. (Baker)

The female has as long a tail as the male.

10 examples from the Nicobars in the Abbott collection, U.S. Nat. Mus., give

5 ♂♂ 200-215	29-32	19-23	308-358 mm.
5 ♀♀ 208-217	29-30	21-22	290-308 mm.

COLOURS OF BARE PARTS. Iris orange-red. Bill: upper mandible in ♂ coral-red, in ♀ black; lower mandible in both sexes black. Legs and feet plumbeous green (or plumbeous red, according to Baker).

554. Lord Derby's Parakeet. *Prittacula derbyana* (Fraser)

Palaermis Derbyana Fraser, 1852 (1850), Proc. Zool. Soc. London: 245, Aves, pl. 25.

(No locality, cage bird)

Not in Baker, FBI

Plate 50, fig. 2

LOCAL NAMES. None recorded.

PSITTACIFORMES

174

(Baker). Courtship not described, but judging from mating behaviour is evidently of same pattern as Roseringed Parakeet's. 'While on female's back (for over two minutes) male's wings drooped limply at her sides as he actively trod her shifting from one foot to the other, his head bobbing quickly up and down, first on one side of hers then on the other as if kissing alternately on both cheeks' (SA).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS			
Wing	Bill (from cere)	Tarsus	Tail
♂♂ 162-174 } ♀♀ 157-162 }	23-28	16-17	{ 168-189 mm. 145-171 mm. (Baker)

COLOURS OF BARE PARTS. Iris, ♂ straw-yellow to bright pale yellow, ♀ whitish yellow. Bill, ♂ upper mandible coral-red, lower brownish black; ♀ upper mandible black, lower brownish black. Legs and feet dusky greenish yellow or pale yellowish slate.

552. Andaman Redbreasted Parakeet. *Prittacula alexandri abbotti* (Oberholser)

Corvus fasciatus abbotti Oberholser, 1919, Proc. Biol. Soc. Washington 32: 29 (South Andaman Island)

Baker, FBI No. 1508 (part), Vol. 4: 210

LOCAL NAMES. Unrecorded.

SIZE. As of 551; length overall c. 38 cm. (15 in.).

FIELD CHARACTERS. As of 551, q.v.; indistinguishable from it in the field. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Race peculiar to the Andaman Islands. Recorded from Middle and South Andamans, but doubtless occurs over the entire group wherever conditions favourable, with settlements and cultivation. 'Perhaps the commonest bird in the Andamans. Comes into Port Blair in tens of thousands in December and January, devouring the paddy' (Osmaston, 1906, JBNHS 17: 487). Not reported south of the Ten Degree Channel, in the Nicobar Islands.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 551, q.v.

BREEDING. *Season*, evidently chiefly February during which month Osmaston found numerous nests. *Nest*, eggs and clutch size as in 551.

MUSEUM DIAGNOSIS. Differs from *P. a. fasciata* in being larger and paler-coloured overall.

MEASUREMENTS			
Wing	Bill (from cere)	Tarsus	Tail
3 ♂♂ 170-174	28-31	13-14	187-193 mm. (BNHS Coll.)
8 ♀♀ 168-172	23-25	14-21 [!]	172-190 mm. (U.S. Nat. Mus. Coll.)

COLOURS OF BARE PARTS. As in the Indian form.

PSITTACIFORMES

176

SIZE. Myna ±; with long pointed tail. Overall length c. 46 cm. (18-19 in.).

FIELD CHARACTERS. Head violet-blue washed with green, with a narrow black band from eye to eye along base of bill, and a wide moustache of the same colour; underpart of neck, breast, and upper abdomen a fine purplish violet. Rest of plumage green, becoming yellowish on the wings and bluish on dorsal side of the tail. Bill red and black in male; all-black in female.

STATUS, DISTRIBUTION and HABITAT. Presumably summer visitor to NEFA in the Siang and Subansiri Divisions, as in adjacent SE. Tibet (between c. 2700 and 3500 m.), where according to Ludlow it only arrives during the first half of May and departs about end September. Evidently does not occur west of about the 93rd meridian.

Extralimital. SE. Tibet; SW. China in the provinces of Szechuan and Yunnan (Peters).

GENERAL HABITS. On arrival (in SE. Tibet), and before departure, seen in large flocks of 40 to 50 birds in cultivated valleys and conifer forest higher up. Noisy and very destructive to ripening crops.

FOOD. Barley, poplar catkins, cones of *Pinus tabulaeformis* and orchard fruit, according to season and availability.

VOICE and CALLS. Not described.

BREEDING. *Season* (in SE. Tibet) mid June. *Nest*, in holes in trees especially those of *Populus ciliata* (Ludlow, 1944).

MUSEUM DIAGNOSIS. Distinguished from *Prittacula a. fasciata* (551) chiefly by the green of the back running up on the nape and occiput (v. these parts concolorous with the crown). Breast much more lavender (v. vinaceous rosy), the colour extending considerably lower down towards vent than the rosy in *fasciata*.

MEASUREMENTS of specimens collected by F. Ludlow in SE. Tibet, Wing 3 ♂♂ 223-231; 5 ♀♀ 218-224 mm. (Kinnear).

COLOURS OF BARE PARTS. Iris greyish yellow. Bill: upper mandible in adult ♂ red, in ♀ and juv. ♂ black; lower mandible in both sexes black. Legs greenish grey; claws brown.

PSITTACULA LONGICAUDA (Boddaert)

Key to the Subspecies

- Back distinctly pale, tinged with lilac and blue... *P. l. tyleri* (♂♀)
Back almost concolorous with crown... *P. l. micberica* (♂♀)

555. Andaman Redcheeked Parakeet. *Prittacula longicauda tyleri* (Hume)

Palaermis Tyleri Hume, 1874, Stray Feathers 2: 454 (Andaman Islands; new name for *Palaermis effinis* Beavan, 1867, not of Gould, 1858)

Baker, FBI No. 1511, Vol. 4: 214

Plate 50, fig. 8

LOCAL NAMES. None recorded.

SIZE. Myna ±; with a very long pointed tail. Overall length c. 46 cm. (18 in.).

FIELD CHARACTERS. Redcheeked like 556, q.v., but both sexes less yellowish green and much bluer above and below.

STATUS, DISTRIBUTION and HABITAT. Resident and very common throughout the Andaman Islands, including Barren I., Narcondam, the Cocos, and Preparis. Affects cultivated areas and surrounding forest.

GENERAL HABITS. Keeps in vast flocks of thousands about fields of ripening paddy, to which the birds are enormously destructive (Butler, 1899).

FOOD. As of other parakeets — grain and fruit.

VOICE and CALLS. Unrecorded.

BREEDING. Season, February-March. *Nest*, a hole in a tree, very commonly a padouk (*Pterocarpus marsupium*), between about 4 and 8 metres up, growing near habitation or in forest. Eggs, two or three, white. Average size of 30 eggs 30.6 × 24.7 mm. (Baker).

MUSEUM DIAGNOSIS. Male distinguished from that of the Nicobar population (556) by the strong wash of violet on the upper back and blue on the lower back; underparts much less yellow, more tinged with bluish. Female also more bluish overall, and with the mandibular stripe all green instead of green-tinged black. Both sexes rather smaller than Nicobar birds.

MEASUREMENTS

	Wing	Bill (from cere)	Tarsus	Tail
♂♂	173-182	23-25	c. 19-20	235-253 mm.
♀♀	165-173	22-23	c. 17-18	178-204 mm. (Baker)

COLOURS OF BARE PARTS. As in 556.

556. Nicobar Redcheeked Parakeet. *Psittacula longicauda nicobarica* (Gould)

Palaeornis Nicobaricus Gould, 1857, Bds. Asia, pt. 9, pl. 13 [= 6, pl. 6 of bound vol.] (Nicobars). New name for *Palaeornis erythrogens* Blyth, 1846, not of Lesson, 1831 Baker, FBI No. 1510, Vol. 4: 213

LOCAL NAMES. *Talaka*, *Talahi* (Car Nicobarese).

SIZE. Myna ±; with a very long pointed tail. Overall length c. 48 cm. (19 in.).

FIELD CHARACTERS. Male (adult). Above, crown green; a black band of green-tipped feathers from nostril to eye; sides of head light brick-red; nape yellowish green with an indistinct lilac collar on hindneck. Upper back pale greyish yellow-green, interscapular region more bluish, rump bright green. Wings largely yellow-green and blue-green. Tail green-and-blue, the middle feathers largely blue. Below, chin and broad mandibular stripe to each side of neck black; rest of underparts green, yellower on throat and breast.

Female has the cheeks duller red and the mandibular stripe partially tinged with green. Rest of plumage, above and below, nearly uniform green.

STATUS, DISTRIBUTION and HABITAT. Resident. Nicobar Islands. Recorded in the 1870s and 90s as excessively abundant on all the islands of the group; presumably this status continues. Affects forest, gardens (kampongs), cultivation, and mangroves.

GENERAL HABITS. As in 555.

Madhya Pradesh to lat. 20°N., the arbitrarily fixed boundary where it intergrades with nominate *cyanocephala*. Affects well-wooded moist-deciduous plains and foothills country; avoids semi-desert areas.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 558.

BREEDING. Season, overall January to April, varying with locality. *Nest*, eggs, etc. as in the nominate race. Average size of 40 eggs 25.0 × 20.4 mm. (Baker).

MUSEUM DIAGNOSIS. Differs from the nominate form of south India and Ceylon (558) in being clinally larger, with the head paler coloured (less blue, more red) in the male. Tail much paler blue; rump, upper tail-coverts, under wing-coverts, and axillaries green (*contra* bluish green or verdigris). Birds approaching the 20th parallel are intermediate and can pass with either race.

MEASUREMENTS

	Wing	Bill (from cere)	Tail
♂♂	138-150	17-19	183-253 mm.
♀♀	135-144	16-18	185-200 mm. (Biswas)

Tarsus ♂♀ 14-16 mm. (SA).

Weight 2 ♂♂ 70, 71.5; 1 ♀ 66 gm. (GD).

COLOURS OF BARE PARTS. As in 558.

558. Southern Blossomheaded Parakeet. *Psittacula cyanocephala* (Linnaeus)

Psittacus cyanocephalus Linnaeus, 1766, Syst. Nat., ed. 12, 1: 141 (East Indies = Gingi, South Arcot district, Madras)

Psittacus rosa Boddaert, 1783, Table Pl. enlum.: 53 (Mahé; restricted to Chittagong by Whistler & Kinnear, 1935; re-restricted to Malabar coast by Biswas, 1951, loc. cit. *supra*)

Baker, FBI No. 1503, Vol. 4: 206 Plate 50, fig. 5

LOCAL NAMES. *Tūiya tātā* (Hindi); *Kerā* (Marathi); *Tūi* (Gujarati); *Rēma chiluka* (Telugu); *Pāmnū girāwā*, *Rosa girāwā* (Sinhala); *Kūli* (Tamil); *Poon tūtā* (Malayalam).

SIZE. Myna —; with a long, pointed tail. Overall length c. 36 cm. (14 in.).

FIELD CHARACTERS. A slender, dainty grass-green or yellowish green parakeet with bright bluish red or plum-coloured head, a black-and-verdigris collar, and a maroon-red patch on wing-shoulder. Broad white tips to the narrow, blue central tail-feathers particularly conspicuous in the swift arrow-like flight.

Female has the head duller and greyer, surrounded by a bright yellow collar. No neck-ring; maroon shoulder-patch absent or obsolete.

Young (immature) green overall, with the central tail-feathers shorter and broader. Tips of primaries more pointed than in adults. Dark head apparently acquired after the first winter.

STATUS, DISTRIBUTION and HABITAT. Resident, with marked local movements governed mainly by food supply. All peninsular India south of lat. 20°N. (the arbitrarily fixed boundary with 557), and Ceylon; lowlands and hills, locally up to c. 1300 metres. Affects moist-deciduous biotope — light

FOOD. As of other parakeets — grain and fruit. Items specifically recorded are papaya (*Carica papaya*), ripe pandanus fruit, and occasionally the outer covering of betel nuts (*Areca catechu*) — Davison, 1874, SF 2: 183.

VOICE and CALLS. Loud, not unlike that of *Psittacula krameri* (HA).

BREEDING. Season, evidently as in the Andamans, February-March. *Nest*, the only two known were in tree-holes on Trinkut I. c. 4 metres up in a *Pandanus* and 10 m. up in a large forest tree respectively. Each contained two young birds (Davison).

MUSEUM DIAGNOSIS. Both sexes rather larger and bluer than Andaman birds. For distinguishing from that population see under 555; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from cere)	Tarsus	Tail
♂♂	186-192	26-28	18-20	250-286 mm.
♀♀	178-187	24-25		180-205 mm. (Baker)

6 ♂♂ ad. Wing 195-202 (av. 199.5); tail 240-290 mm. (HA).

COLOURS OF BARE PARTS. Iris yellow, creamy white, or pale brown. Bill: ♂ upper mandible vermilion, yellow at the tip, lower mandible horny black, yellowish horny, or dingy red; ♀ both mandibles blackish; in very young birds (both sexes) dull red. Legs and feet dull earthy or dingy green (Hume).

PSITTACULA CYANOCEPHALA (Linnaeus)

Cf. Whistler, H. & Kinnear, N. B., 1935, JBNHS 37: 752-3. Biswas, B., 1951, Amer. Mus. Novit., No. 1500: 1-8

Key to the Subspecies

Head in ♂ richer coloured, more blue less red; under wing-coverts and rump (♂♀) bluish green *P. e. cyanocephala*
Head in ♂ paler, less blue more red; under wing-coverts and rump (♂♀) bluish green *P. e. bengalensis*

557. Northern Blossomheaded Parakeet. *Psittacula cyanocephala bengalensis* (Forster)

Psittacus bengalensis Forster, 1781, in Pennant's Indian Zool.: 40 (Bengal; restricted to Calcutta by Whistler & Kinnear)

Baker, FBI No. 1502, Vol. 4: 204

LOCAL NAMES. *Fāridī* (= 'complainer'), *Tūi*, *Fūltūi* (Bengal); *Bengali tātā* (Punjab); *Dini tūiya*, *Lābirā tātā*, *Tūiya tātā* (U.P.); *Tūi sūgā* (Nepal).

SIZE. Myna —; with a long, pointed tail. Overall length c. 36 cm. (14 in.).

FIELD CHARACTERS. As of the southern bird (558), q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, with local movements governed mainly by food supply. Roughly from about Rawalpindi (c. 73°E. long.) in West Pakistan eastward along the lower Himalayas through Jammu and Kashmir, Uttar Pradesh and Nepal to Bhutan duars and West Bengal; normally up to c. 600 metres, exceptionally and locally to c. 1500 m. Southward in the Gangetic Plain and through Saurashtra in Gujarat and

forest, well-wooded compounds, and cultivation; altogether less closely associated with man than Roseringed Parakeet.

GENERAL HABITS. Largely restricted to wooded country. Usually keeps in small parties of 5 to 10 birds, but in areas of food abundance, especially in cultivation within forest, often collects in very large flocks, of several hundred, committing serious depredations on ripening crops. Flight — aptly likened by one observer to 'a badly balanced arrow' — very swift, the flocks turning and twisting from side to side and in and out of the stems of forest trees with amazing agility. It is accompanied by a distinctive, interrogative, shrill but pleasant note *tooi?* or *tooi-tooi?* which, coupled with the prominent white-tipped blue tail, makes its identity unmistakable even while dashing past. Roosts in large noisy rabbles in bamboo clumps and *Butea* jungle, and the like.

FOOD. Grain and fruit of all kinds, buds, fleshy petals and nectar of flowers such as *Salmaia*, *Butea*, and *Bassia*. Figs of peepul and other *Ficus* species, and *bēr* drupes (*Zizyphus* spp.) are important 'wild' items. Very destructive to paddy (*Oryza*), jowar (*Sorghum*), maize (*Zea mays*), gram (*Gicer*), and vetches (*Dolichos lablab* and other species) commonly cultivated in forest clearings. Destructive also to orchard fruit.

VOICE and CALLS. Besides the shrill *tooi-tooi?* uttered in dashing flight, has a variety of soft musical conversational notes when at rest in company.

BREEDING. Season, chiefly December/January to April; in Ceylon occasionally also in July and August. *Nest*, as of other parakeets — a vertical shaft in a tree-trunk or bough with a neat round entrance-hole at the top, at moderate heights from the ground. Usually chiselled out by the birds themselves (both sexes), but old nest-holes of small woodpeckers and barbets, enlarged to suit, also freely utilized. Nest unlined, but sometimes with a little chance debris of wood-chips fallen in during excavation. F. N. Betts observed that this species chisels out long slivers of wood unlike other parakeets which bite off dice-shaped pieces. Several pairs often nest in a loose colony in the same or adjacent tree-trunks. Eggs, 4 or 5 — rarely 6 — white, more spherical than of most other parakeets. Average size of 50 eggs 24.9 × 20.2 mm. (Baker). As far as observed the hen alone incubates; share of the male, if any, and period of incubation undetermined. Nestlings fed by regurgitation, apparently also by the hen alone.

Courtship pattern and antics mainly as in Roseringed Parakeet (549), q.v.

MUSEUM DIAGNOSIS. Clinally smaller than the northern *bengalensis* (557). Head richly coloured in male (more blue, less red). Tail much darker blue; rump, upper tail-coverts, under wing-coverts, and axillaries bluish green or verdigris (*contra* green). Birds approaching the 20th parallel are intermediate and can pass with either race. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from cere)	Tail
♂♂	132-145	16-19	180-210 mm.
♀♀	126-140	16-18	164-176 mm. (Biswas)

Tarsus 13-15 mm. (SA).

Weight 9 ♂♀ 56-70 gm. (av. 65) — SA.

PARROTS

181

COLOURS OF BARE PARTS. Iris yellowish white. Bill (paler in ♀): upper mandible pale orange-yellow; lower blackish brown, pale flesh colour at chin. Legs and feet greenish grey; claws horny.

MISCELLANEOUS. Like other parakeets extremely wasteful in its feeding habits and wholly injurious from the economic point of view. Is a popular and ornamental though rather uninteresting pet. May learn to whistle snatches of some simple tunes, but has no claim to talking ability.

Psittacula roseata BiswasKey to the Subspecies
(Males only)

Green above and below; red patch on upper wing-coverts smaller; under wing-coverts green..... *P. r. roseata*
Similar to above but more yellowish; red patch on upper wing-coverts larger..... *P. r. juneae*

559. Assam Blossomheaded Parakeet. *Psittacula roseata roseata* Biswas

Psittacula roseata Biswas, 1951, Amer. Mus. Novit., No. 1500: 4
(Gunjong, North Cachar, Assam)

Included by Baker under FBI No. 1503

Plate 50, fig. 7

LOCAL NAMES. *Daobator kashiba* (Cachar); *Assāmi fūltūsi* (Calcutta bird dealers).

SIZE. Myna —; with a long, pointed tail. Overall length c. 36 cm. (14 in.).

FIELD CHARACTERS. As of the Indian Blossomheaded parakeets (557, 558), q.v. Indistinguishable from 557 in the field. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, with the usual local movements governed by food supply. Lower Himalayas and duars of Sikkim, Bhutan and northern Bengal; Assam; East Pakistan. Intergrades with *P. r. juneae* (560) in southeastern E. Pakistan (Tripura area) roughly around 91-92°E. longitude. Affects well-wooded country, light forest, and cultivation in jungle clearings.

Extralimital. 'Upper Burma' (Biswas).

GENERAL HABITS, FOOD, VOICE and CALLS. As in 558, q.v.

BREEDING. Season, chiefly January to March/April; in the Assam hills sometimes continuing into early May. Nest and eggs as in 557.

MUSEUM DIAGNOSIS. The species *Psittacula roseata* differs from *P. cyanocephala* in having the forehead, cheeks, and ear-coverts rosy pink instead of red; the crown bluish lilac; back and rump green; no verdigris collar; the colour of the patch on wing-coverts between Morocco Red and Claret Brown of Ridgway (1912, pl. 1); under wing-coverts green and not verdigris; tips of central rectrices pale yellow; tail conspicuously shorter. The nominate subspecies is larger and darker; the patch on the wing-coverts is smaller (Biswas).

MEASUREMENTS

	Wing	Bill (from cere)	Tail
♂♂	139-150	18-20	155-195 mm.
♀♀	137-143	18-19	140-163 mm.

(Biswas)

COLOURS OF BARE PARTS. As in 558.

PARROTS

183

The seventh specimen, immature (sex ?), is green overall and matches well in coloration and size immature examples of *Psittacula himalayana*.

COLOURS OF BARE PARTS. Unrecorded.

562. Himalayan Slatyheaded Parakeet. *Psittacula himalayana* (Lesson)

Psittacus (Corvus) Himalayanus Lesson, 1832, in Belanger's Voy. Ind. Orient, Zool.: 239 (Valleys of the Himalayas)

Palaeornis schisticeps Hodgson, 1836, Asiatic Res. 19: 178 (Nepal)

Baker, FBI No. 1504, Vol. 4: 206

Plate 50, fig. 6

LOCAL NAMES. *Tātā, Shōgā* (Kashmir); *Pāhāri tūyā* (U.P.); *Mādānā sūga* (Nepal); *Gāgi, Pāhāri tātā, Pāhāri mādnā* (Calcutta bird dealers).

SIZE. Myna; with a long, pointed tail. Overall length c. 41 cm. (16 in.).

FIELD CHARACTERS. A grass-green parakeet with the entire head dark bluish slaty in the male. Chin and a narrow black ring encircling neck followed by a bright verdigris-green collar on hindneck; a prominent dark red patch on wing-shoulder (secondary coverts). Tail steeply graduated, all the feathers broadly tipped with bright pale yellow, particularly the narrow, pointed, blue middle pair.

Female similar but without the red shoulder-patch.

Both sexes readily distinguishable from Blossomheaded Parakeet by dark slaty head v. bluish red or grey, and bright yellow tail-tip v. white, these features striking even in a flashing fly-past.

Young (immature) green overall, apparently acquiring the dark head after the first winter.

STATUS, DISTRIBUTION and HABITAT. Resident, migrating altitudinally in winter and with marked nomadic wanderings governed by food supply. The Himalayas from the Afghan frontier in West Pakistan (Kohat, Kurram, Chitral) eastward through Kashmir, Garhwal, Kumaon, Nepal and Sikkim to Bhutan and western Assam — roughly to around 92°E. longitude. At higher elevations than other parakeets, chiefly between c. 600 metres (winter) and 2500 metres (summer); occasionally down to 250 m. locally. Affects well wooded hillsides and valleys; especially partial to deodar forest and the neighbourhood of terraced cultivation and hill orchards.

GENERAL HABITS. Keeps more to forest than other parakeets, in family parties and small flocks; nowhere as abundant or in such large congregations as e.g. the Blossomheaded. Like other parakeets clammers among the foliage and branches in hand-over-hand fashion aided by the hooked bill for leverage. Flight very swift and direct, accompanied by a high-pitched double note, the birds turning, twisting, and banking in unison to weave their way through the forest trees with remarkable agility, the whole flock suddenly swinging upwards to alight in the foliage canopy.

FOOD. Nuts, acorns, seeds, and fruits — wild as well as cultivated. Very destructive to walnuts, and apples and pears in hill orchards, gnawing into the half-ripe fruit and wasting far more than it actually consumes. Is a local pest of maize in upland valleys.

VOICE and CALLS. The high-pitched double scream *too-too?* uttered in flight is like the Blossomhead's but harsher and quite distinctive: rather

182

PSITTACIFORMES

560. Arakan Blossomheaded Parakeet. *Psittacula roseata juneae* Biswas

Psittacula roseata juneae Biswas, 1951, Amer. Mus. Novit., No. 1500: 5
(Arakan, Burma)

Included by Baker under FBI No. 1503

LOCAL NAMES. Not specifically recorded. *Tenawā* (for parakeets generally, Manipur).

SIZE. Myna —; with a long, pointed tail. Overall length c. 36 cm. (14 in.).

FIELD CHARACTERS. As of 558. Indistinguishable in the field from other Blossomheaded parakeets. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. The Tripura area (roughly around longitude 91-92°E.) where the population intergrades with nominate *roseata*; Mizo (?); Manipur (?); Chittagong, E. Pakistan(?).

Extralimital. 'Arakan, Lower Burma south to Tavoy district, Siam, and Indochina [Vietnam, Laos, Cambodia]' (Biswas).

BREEDING. As in 557; nothing specifically recorded.

MUSEUM DIAGNOSIS. 'Similar to *roseata* but more yellowish, both above and below; the central tail-feathers less bluish; the patch on the wing-coverts more extensive on the average; wing smaller' (Biswas).

MEASUREMENTS of intermediate examples from the Tripura area: 4 ♂♂ Wing 137-145; bill (from cere) 18-19; tail 170-198 mm.

COLOURS OF BARE PARTS. As in 558.

561. Rothschild's Parakeet. *Psittacula intermedia* (Rothschild)

Palaeornis intermedia Rothschild, 1895, Nov. Zool. 2: 492 (India)

Cf. Hartert, E., 1924, Nov. Zool., 31: 126

Not in Baker, FBI

LOCAL NAMES. Unrecorded.

SIZE. About that of the Himalayan Slatyheaded Parakeet (562).

FIELD CHARACTERS. Presumably more or less as of 562, q.v., but never consciously seen alive in the wild state by any ornithologist.

STATUS, DISTRIBUTION and HABITAT. Completely unknown. Originally described from a single trade skin (the Type) of unknown provenance — allegedly 'Native Sikkim' — shipped from Bombay along with two skins of *Psittacula himalayana*. Six more were obtained later from a London plume dealer. These 7 specimens — all that are known — are now in the Rothschild Collection, American Museum of Natural History, New York.

GENERAL HABITS, FOOD, VOICE and CALLS. Unknown, but presumably not different from its putative parent stocks.

MUSEUM DIAGNOSIS. Superficially a hybrid between *Psittacula himalayana*/*P. finschii* and *Psittacula cyanocephala*/*P. roseata* sharing many characters with both the groups. Approximates in coloration to the Blossomheaded species, and in size to the Slaty-headed. For a discussion and analyses of the shared characters see Biswas, 1959 JBNHS 56: 558-62.

MEASUREMENTS

	Wing	Bill (from cere)	Tail
6 ad. [♂]	148-158	19-21	185-221 mm. (3 measured) (Biswas)

184

PSITTACIFORMES

reminiscent of the shrill 'whistles' of a marmot. A single high-pitched shriek commonly uttered at rest; also a variety of softer and more musical conversational notes when in company.

BREEDING. Normally up to c. 2500 metres. Season chiefly March to May, varying with altitude. Nest, a natural hollow in a tree-trunk, or old woodpecker or barbet hole, chiselled out to suitable size, or one self-excavated by the birds, between c. 6 and 18 metres up. Sometimes several holes in the same or adjacent trees in forest occupied in a loose colony. Eggs, 3 to 5 — most commonly 4 — white, glossless, rather spherical ovals. Average size of 40 eggs 28.3 × 22.2 mm. (Baker). Share of the sexes in the domestic chores presumably as in Blossomhead but not specifically recorded. Incubation period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Differs from the allied eastern species (563) by darker plumage, including slate colour of head. Wing longer; central tail-feathers shorter and broader (breadth near tip c. 11 mm.) in both sexes.

MEASUREMENTS

	Wing	Tail
39 ♂♂	157-175 (av. 166)	38 ♂♂ 175-275 (av. 233) mm.
11 ♀♀	153-165 (av. 160)	11 ♀♀ 149-275 (av. 200) mm.

(K. Z. Husain)

Tarsus 12-13 mm.; bill (from cere) 20-22 mm. (Baker).

COLOURS OF BARE PARTS. Iris creamy white to lemon-yellow. Bill: upper mandible orange, reddish at base, yellow at tip; lower mandible yellow. Legs and feet yellowish green; claws plumbeous horn.

563. Eastern Slatyheaded Parakeet. *Psittacula finschii* (Hume)¹

Palaeornis Finschii Hume, 1874, Stray Feathers 2: 509

(Kollidoo, 3500-5000 ft, upper Salween River, Burma)

Baker, FBI No. 1505, Vol. 4: 208

Plate 50, fig. 4

LOCAL NAME. *Daobator kogashim* (Cachar).

SIZE. Myna; with a long, pointed tail. Overall length c. 36 cm. (14 in.).

FIELD CHARACTERS. A slatyheaded hill-forest parakeet, indistinguishable from 562 in the field. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. From southeastern Bhutan and western Assam east and south through NEFA, the rest of Assam, Nagaland, Manipur, Mizo, and East Pakistan (Sylhet-Chittagong area); foothills and up to c. 2100 m. Affects hill forest and cultivation.

Extralimital. W. Yunnan, Burma south to Tenasserim, N. Thailand, southern Laos, and central Vietnam.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 562, q.v.

¹ Treated as a race of *Psittacula himalayana* in Synopsis. The fact of sympatry (overlapping breeding distribution) in the duars area of northern Bengal and southeastern Bhutan apparently without hybridization, pointed out by K. Z. Husain (1959, *Ibis* 101 (2): 249-50) and confirmed by Biswas (1960, JBNHS 57: 538), necessitates this change in its taxonomic status.

PARROTS

185

BREEDING. Season, February to May. Nest, eggs, etc. as in *P. himalayana*. Average size of 30 eggs 27.1 × 21.5 mm. (Baker).

MUSEUM DIAGNOSIS. Similar to *P. himalayana* (562) sex for sex, but paler overall including slate colour of head. Back more yellow; central tail-feathers a paler lilac-blue in the middle and duller lilac-yellow on the terminal halves; under wing-coverts and axillaries a darker blue-green. Wing shorter; central tail-feathers much longer and narrower (breadth near tip c. 5 mm.) in both sexes.

MEASUREMENTS

	Wing	Tail
34 ♂♂	145-155 (av. 150)	32 ♂♂ 240-305 (av. 270) mm.
10 ♀♀	141-149 (av. 143)	9 ♀♀ 212-250 (av. 223) mm.

(K. Z. Husain)

COLOURS OF BARE PARTS. Iris creamy white to yellow. Bill: upper mandible coral-red or vermillion, tipped yellow; lower mandible all yellow. Legs and feet dirty green (Baker).

564. *Bluewinged Parakeet. Psittacula columboides* (Vigors)*Palaeornis columboides* Vigors, 1830, Zool. Jour. 5: 274

(No locality = Aneichardi, Travancore)

Baker, FBI No. 1506, Vol. 4: 208

Plate 50, fig. 10

LOCAL NAMES. *Mādāngour lōā* (Hindi; of bird dealers?); *Nīlātātā* (Malayalam). **SIZE.** Myna ±; slenderer and with a long, pointed tail. Overall length c. 38 cm. (14½ in.).

FIELD CHARACTERS. A bluish green (rather than grass-green) parakeet with pinky grey head, back and breast, and a brilliant blue-green and black collar round occiput. Lower back, rump, and upper tail-coverts greenish blue. Wings and central tail-feathers conspicuously blue, the latter tipped with yellow.

Female lacks the blue-green or verditer collar behind the black neck-ring and has the dove-grey on back and breast less pure in tint.

Young (immature) more or less entirely green with the collar only faintly indicated. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, with the usual nomadic wandering in quest of food. The Western Ghats complex from Kerala north to c. 19°N. lat. (Kasa in Thana dist., north of Bombay) including the Nilgiri, Palni, and associated hills of Tamil Nadu and Mysore States—chiefly between c. 500 and 1500 m. alt. Not in Ceylon. Restricted to evergreen biotope but wandering into the intermediate zone to about the same limit as *P. cyanocephala* does from the deciduous end. Both species frequently occur together in low foothills country; only the Bluewinged at higher elevations.

GENERAL HABITS. Keeps in parties of 4 or 5, or small flocks, to forested hillsides in the vicinity of hillmen's settlements and cultivation or *poddus*.

PARROTS

187

released after their graduation is not clear. But they were regularly fed and so kept in the neighbourhood of the holy man's abode. To his glorification they caused open-mouthed wonderment amongst the devout who pilgrimaged to the saint periodically, and who helped later to broadcast the magical piety of Bābūddin and the spell it had cast upon the parakeets of the locality!

565. *Layard's Parakeet. Psittacula calthorpae* (Blyth)*Palaeornis Calthrapae* (sic) 'Layard' = Blyth, 1849, Jour. Asiat. Soc. Bengal 18

(2): 800 (Ceylon)

Baker, FBI No. 1507, Vol. 4: 209

Plate 50, fig. 12

LOCAL NAMES. *Alu girāwā* (Sinhala); *Kili* (Tamil).

SIZE. Myna —; slenderer, with a long, pointed tail. Overall length c. 31 cm. (12 in.).

FIELD CHARACTERS. A slim green parakeet, superficially very like the Bluewinged (564) of southwestern India, but ♂ with green wings (v. blue), bluish crown and upper back (v. grey) and green breast instead of grey.

Male (adult). Above, forehead, lores and a patch round eye green; rest of head, nape, and upper back bluish grey; a conspicuous broad emerald green and black collar. Lower back, rump, and upper tail-coverts blue. Central tail-feathers deep purplish blue tipped with greenish yellow.

Female similar to ♂ but duller green on the face, and with black instead of red upper mandible.

Young (immature) green throughout except the tail which is blue.

STATUS, DISTRIBUTION AND HABITAT. Species peculiar to Ceylon. Resident; moderately plentiful in the wooded areas of the hills to c. 1800 metres and throughout the greater part of the lowlands (both Wet and Dry zones) to the east and southeast of the mountains (Phillips). An unconfirmed sight record in January on Hulule Island, N. Mahé Atoll, Maldives (Gadow & Gardiner, 1903). Probably escapes.

GENERAL HABITS. Principally a hill parakeet though descending locally to nearly sea level in the Wet zone. Coincident with the Blossomhead (558) over much of its range. Keeps in fair-sized flocks on the outskirts of woods, in open spaces in the jungle, and in the wooded gorges of the *palanas* (open stretches of grassland). Flight and general behaviour not significantly different from 558.

FOOD. Fruits, flowers, buds, nectar, etc.; 'less destructive to grain fields than the Blossomhead and Roseringed Parakeets, being more definitely arboreal than they' (Henry).

VOICE AND CALLS. A loud, harsh chattering scream *ak ak ak ak* (Henry).

BREEDING. Season, 'January to May, and often again in July-September' (Henry). Nest, a tree-hole as in other parakeets, usually high up, sometimes in the top of a dead coconut palm. Eggs, 2 or 3, white, glossless, broad ovals. Average size of 9 eggs 24.7 × 19.2 mm. (Baker). Share of the sexes in the domestic chores and incubation period unrecorded.

186

PSITTACIFORMES

Secondary jungle on old forest clearings and abandoned coffee and rubber plantations are favourite haunts. Flight and general behaviour as in the Blossomhead Parakeet.

FOOD. Grain, seeds, and fruits—especially the various wild figs (*Ficus*). Also buds, petals and flower nectar, *Erythrina* and *Grevillea*, so widely grown as shade trees in South Indian tea and coffee plantations, being regularly patronized. Very destructive to jowar (*Sorghum*) and other cereals and vetches (*Dolichos*) in hillmen's cultivation; also to orchard fruit.

VOICE AND CALLS. A double-noted cry like the Blossomhead's but harsher and distinctive. Uttered chiefly on the wing, and rather reminiscent of the harsh *che-chue* of Paradise Flycatcher (*Terpsiphone*), but much louder. Parties very noisy.

BREEDING. Season, January to March. Nest, a hole in a tree-trunk in forest, coffee plantations, and the like between c. 6 and 30 metres from the ground. Lofly ironwood trees (*Mesua ferrea*) seem particularly favoured in spite of the considerable extra effort it must involve to chisel this hard wood. Readymade woodpecker and barbet holes are also altered to suit and utilized. Eggs, normally 4, white, spherical. Average size of 25 eggs 28.3 × 24.5 mm. (Baker). Share of the sexes in the domestic chores, and incubation period, undetermined.

MUSEUM DIAGNOSIS. For details of adult male plumage see Baker, loc. cit.

Female (adult) differs in having the green wash on forehead and lores reduced to a minimum; no ring of verditer green behind the black neck-ring; grey of breast less pure in tint.

Young (immature). Sexes alike. Entire head, hindneck, mantle, and underparts green, with the neck rings only shadowed in verditer and black. Scapulars, wing-coverts, and inner secondaries more green, less blue; pale edging to wing-coverts less defined; central tail-feathers shorter and broader. Adult plumage attained with first complete moult. On leaving nest both sexes have red bills like adult males. They rapidly darken to black as in adult female, that of male again reverting gradually to red within the first year.

MEASUREMENTS

	Wing	Bill (from cere)	Tarsus	Tail
♂♂	142-156	22-26	14-18	204-246 mm.
♀♀	135-145			170-190 mm. (SA)

COLOURS OF BARE PARTS. Iris pale golden to bright yellow. Bill: ♂ upper mandible scarlet or cherry-red with yellow tip; lower mandible horny brown tinged with orange at chin, yellowish at tip; ♀ both mandibles dark horny brown or blackish, tinged with orange at chin. Legs and feet greenish grey; claws horny brown.

MISCELLANEOUS. Much prized by fanciers as the 'Bababudan Parrot', this species has acquired a spurious reputation, especially in Mysore, as a talking paragon, being able to converse with humans in Arabic! The basis for this widespread belief appears to be that one Bābūddin, a pilgrim from Mecca (and incidentally the introducer of coffee from Yemen into S. India) who settled on the hills that now bear a semblance of his name (Bababudan), kept some local parakeets whom he taught to call to Allah and recite verses from the Koran. Whether some of his trained birds escaped or were artfully

188

PSITTACIFORMES

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from cere)	Tarsus	Tail
6 ♂♂	143-148	21-23	14-16	127-145 mm.
4 ♀♀	133-143	20-22	14-16	111-124 mm. (HW)

COLOURS OF BARE PARTS. Iris white to greenish white or yellow. Bill: ♂ coral-red, tipped paler; ♀ and imm. black, lower mandible sometimes tinged reddish. Legs and feet dusky green, greenish plumbeous, or dirty green (Baker).

Genus *LORICULUS* Blyth*Loriculus* Blyth, 1850, Jour. Asiat. Soc. Bengal 19: 236. Type, by monotypy,*Psittacus galgulus* Linnaeus

Bill much smaller and longer comparatively than in *Psittacula*, much more compressed, the culmen less curved; depth at base less than length from cere to tip. Tail short, slightly rounded. Two species within our limits.

Key to the Species

Crown green.....	<i>L. vernalis</i>
Crown red.....	<i>L. berylurus</i>

566, 567. *Indian Lorikeet. Loriculus vernalis* (Sparman)*Psittacus vernalis* Sparman, 1787, Mus. Carth., fasc. 2, no. xxix and pl.

(No locality = Cachar)

Coryllis vernalis rubropygialis Baker, 1926, Bull. Brit. Orn. Cl. 47: 44

(Belgaum dist., India)

Baker, FBI Nos. 1513, 1514, Vol. 4: 217, 218

Plate 50, fig. 14

LOCAL NAMES. *Lūkōn*, *Bhōra* (Hindi, Bengali); *Daobator lai* (Cachar); *Tāttichinnar* (Malayalam); *Chrey* (Marathi).

SIZE. Sparrow ±; length c. 14 cm. (5½ in.).

FIELD CHARACTERS. A diminutive, dainty, bright grass-green parrot with short square tail and rich crimson rump. A small blue patch on throat of male.

Female similar to male but lacking the blue throat-patch.

Young (immature) has the red rump mixed with green. See also Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; with a wide range. Also subject to local migrations as yet little understood, but apparently not altogether connected with food supply: rains visitor in certain parts, winter visitor in others. Nepal, Sikkim, Bhutan, NEFA, Assam, Nagaland, Manipur, Mizo (?), Tripura, and East Pakistan (Tippera, Sylhet, Chittagong); Western India—coastal strip and Ghats—from north of Bombay (c. 19°N. lat.) southward, including the Nilgiris, Palnis, and associated hills of Mysore, Tamil Nadu, and Kerala States; thence north along the Eastern Ghats through eastern Madhya Pradesh and Orissa; plains, and foothills normally up to c. 1000 m.; in the Nilgiris to c. 1800 m. Also Andaman and Nicobar

PARROTS

189

Islands (very common). Affects wooded country in evergreen and moist-deciduous biotopes.

Extralimital. Arakan, central and southern Burma to Tenasserim, Thailand, and the Indochinese countries.

GENERAL HABITS. Keeps in pairs or family parties — sometimes small loose flocks of up to 50 or more where the feeding is good, as in a grove of flowering trees. Their diminutive size and concealing coloration make the birds difficult to observe in the canopy of the tall trees they usually frequent; oftener seen when dashing from one tree to another. They have a curious way of ascending a branch in a spiral course around it, clambering energetically — almost at a run — among the trusses and leaf-stalks, aided by bill and feet, and seem just as much at home hanging upside down or sideways as perched the right way up. Flight very swift, rather finch-like, consisting of several rapid 'vibrating' wing-strokes punctuated by a short pause with wings closed and a consequent dip. It is invariably accompanied by a shrill trisyllabic bat-like squeak *chi-chi-chee* repeated every couple of seconds or so. These characteristic cries, sometimes also uttered when clambering about in the foliage, are often the only indication of the presence of the birds in a locality. Lorikeets possess one very unorthodox peculiarity, unique among Indian birds, that of sleeping at night hanging upside down like a bat.¹ Another unique habit of the female (or both sexes?), of conveying strips specially cut out of green leaves for nest lining tucked under her rump feathers, as in the small African parrots or Love Birds (*Agapornis*), has not been observed in India, but see under Ceylon Lorikeet (568). For details of behaviour see Buckley, Francine G. (1968), 'Behaviour of the Blue-crowned Hanging Parrot, *Loriculus galgulus*, with comparative notes on the Vernal Hanging Parrot, *L. vernalis*'. *Ibis*, 110: 64; for courtship and mating, Neelakantan, K. K., 1974, JBNHS 70: 554-6.

FOOD. Soft pulp of fruits and berries, chiefly wild figs (*Ficus* spp.), largely supplemented by flower nectar. Flowers of the parasitic Loranthaceae and of *Salmaia malabarica*, various species of *Erythrina*, and of many introduced

Eucalypti are irresistible, the trees often 'crawling' with these little birds in season. Unlike the parakeets they do not destroy the floral parts of non-tubular blossoms to reach the nectar, and by transporting pollen adhering to their head-feathers must play a helpful role in cross-fertilization. Fond of coconut palm toddy, bibbing from the pots hung up for collecting the juice, sometimes becoming stupefied and helpless as a result. Partial to seeds of casuarina, bamboo, and teak (*Tectona grandis*) in forest and plantations, and to guavas (*Psidium*) and

loquats (*Eriobotrya japonica*) in orchards, often doing considerable damage locally.

VOICE AND CALLS. As above. Normally very quiet.

BREEDING. Overall January to April; in the Andamans chiefly January and February. *Nest*, a vertical or oblique natural hollow in a rotten tree-stem or branch sometimes up to a metre in depth, enlarged to suit where

¹ In captivity some other members of the Pittacidae, e.g. *P. cyanocapilla*, frequently sleep clinging to the wire-netting of their cages upside down but not freely suspended like bats.



× c. 1

CUCKOOS

191

wandering higher seasonally with fruit ripening. Affects wooded country in evergreen and moist-deciduous biotopes.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in Indian Lorikeet (566), q.v. Courtship described by Henry (1955: 189). Male strikes ridiculous postures before female, struts along the perch towards her with jerky gait and short hops, beak held high, blue throat-feathers puffed out; tail spread, and scarlet rump-feathers raised, all the while uttering a squeaky warble. Further sequences not recorded. Female procures the nest-padding material by nibbling strips from the edges of green leaves, tucking one end into the bases of the scarlet rump-feathers and flying off when a rumpful has been collected.

BREEDING. *Season*, January to August, chiefly March to May. *Nest*, similar to Indian Lorikeet's: a narrow vertical or oblique hollow in a tree-stump or branch with entrance near the top, padded with strips of green leaves. *Eggs*, 2 or 3, white, nearly spherical. Size c. 19 × 16 mm. Apparently the female alone incubates, or largely so; period undetermined. 'She sits very close and, if interfered with, voices her displeasure in angry screechings and, in some mysterious way, produces an extraordinary, heavy, thumping sound, suggestive of pounding the inside of the hollow with a sledge-hammer' (Henry).

MUSEUM DIAGNOSIS.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	90-98	12-13 (from cere)	10-12	36-44 mm. (HW)

COLOURS OF BARE PARTS. Iris white. Bill light orange-red, paler at tip, yellow on cere. Legs and feet dusky yellow.

Order GUCULIFORMES

Family GUCULIDAE: Cuckoos

Feet zygodactyle, the first and fourth toes directed backwards. Contour feathers without any afterfeather; dorsal feather-tract divided between the shoulders and enclosing a lanceolate naked patch on the back; a nude oil gland present. Young nidicolous — hatched naked and not passing through a downy stage before acquiring feathers. Tail-feathers 10 in all Oriental genera. For general information see Thomson, A. L. (ed.) 1964, *New Dict. Birds* (Article 'Cuckoo'): 169-71; for morphological details Stresemann, E., 1927-34, *Aves*: 817-20; Baker, 1927, FBI 4: 133.

The family has an almost world-wide distribution, but its members are most numerous in the tropics. They are best known for their habit of brood-parasitism: building no nests of their own, laying their eggs in the nests of other birds, and foisting on them the labour of incubating them and bringing up the young. One section of the family is non-parasitic, whose breeding habits are normal as in most other birds. Both groups are well represented in India and Pakistan.

In spite of all that has been published in literature by Stuart Baker and others, unequivocal data on the breeding biology of Indian parasitic cuckoos are, by and large, lacking. Much of what exists is of a dubious nature, and even some of the eggs ascribed to this or that species appear to be wrongly identified. A thorough-going and *de novo* investigation of our cuckoo problems is an urgent need, and reference is invited to J.H. Becking's 'Notes on the Breeding of Indian Cuckoos' (JBNHS).

190

PSITTACIFORMES

necessary, and with entrance from the top or through a lateral hole between 2 and 10 metres from the ground. Usually lined with a pad of cut out strips of green leaves. In the Andamans, Osmaston found nests at the bottom of holes in stumps, the eggs being laid below ground level. *Eggs*, 3 or 4, white, rather spherical and glossy, often stained brownish by contact with rotten wood of nest-interior during incubation. Average size of 30 eggs 19.1 × 15.8 mm. (Baker). Apparently both sexes incubate, but female takes the major share. Close sitter, only uttering a long-drawn querulous *chee-ee* when nest about to be handled, without forsaking the eggs. Incubation period undetermined. Both parents feed the nestlings by regurgitation.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. The subspecies *rubropygialis* erected by Baker for south Indian birds and included in *Synopsis* (567) cannot be sustained. The northern and southern populations, assumed to be disjunct at the time, have since proved to be continuous. The supposed characters on which the race was based — darker coloration above and below, deeper duller red rump, and darker undersurface of tail and wing-quills — are evidently due to individual variation or wear, or both.

Young (immature) differs from adult in the paler blue of the abdomen and absence of any purple wash on chin and throat. Tail-feathers much narrower with the outer pair more rounded at the tips.

MEASUREMENTS

	Wing	Bill (from cere)	Tarsus	Tail
♂ ♂	91-102	11-15	10-12	38-45 mm.
♀ ♀	96-100	11-15	10-12	45-48 mm. (SA, HW)

COLOURS OF BARE PARTS. Iris yellowish white, brownish buff, or greyish khaki. Bill reddish orange or coral-red, yellower at tip. Legs and feet pale orange or pale yellowish slate; claws horny brown.

568. Ceylon Lorikeet. *Loriculus beryllinus* (J. R. Forster)

Pittacus beryllinus J. R. Forster, 1781, Indische Zool.: 40 (Ceylon)
Baker, FBI No. 1515, Vol. 4: 219

Plate 50, fig. 13

LOCAL NAMES. *Girā malichā*, *Pol girāwā* (Sinhala); *Kāmi kili*, *Thēmāng kili* (Tamil).
SIZE. Sparrow ±; length c. 14 cm. (5½ in.).

FIELD CHARACTERS. A diminutive bright grass-green parrot with short square tail, exactly like Indian Lorikeet but with the crown rich crimson, in addition to rump, passing into orange on nape and into yellowish-tinged hindneck and upper back.

Female similar to male but duller coloured with merely a trace of the blue throat-patch.

Young (immature) lacks the crimson crown; at time of leaving nest, though fully fledged, has the whole forehead and face naked (Henry).

STATUS, DISTRIBUTION AND HABITAT. Species peculiar to Ceylon. Abundant, locally throughout the lowlands and hills up to c. 1300 metres,

192

GUCULIFORMES

Key to the Genera

	Page
A Tarsus more or less feathered anteriorly.....	1
B Tarsus naked, plumage of head and shoulders not spiny....	<i>Eudynamis</i> 226
Tarsus naked, plumage of head, or of head and shoulders, spiny....	2
1 Head crested, tarsus feathered at top only.....	<i>Clamator</i> 192
Head not crested, tarsus feathered throughout in front.....	a
a Tail square or forked.....	<i>Sumiculus</i> 224
Tail rounded or graduated.....	I
I Plumage of upperparts metallic.....	<i>Chalcites</i> 221
Plumage of upperparts not metallic.....	a ¹
a ¹ Larger; wing 150 mm. or above.....	<i>Cuculus</i> 198
Smaller; wing below 150 mm.....	<i>Cacomantis</i> 215
2 Claw of hind toe much lengthened and nearly straight.....	<i>Centropus</i> 239
Claw of hind toe not as above.....	b
b Naked sides of head united across forehead.....	<i>Phaenopneuste</i> 237
Naked sides of head not united.....	<i>Rhopodytes</i> 230
Sides of head not naked.....	<i>Taccocua</i> 234

Genus CLAMATOR Kaup

Clamator Kaup, 1829, Skizz. Entw.-Gesch. Eur. Thierw.: 53. Type, by original designation and monotypy, *Cuculus glandarius* Linnaeus

Genus distinguished from all others of the family by having a long pointed crest. Wing short and rounded, the primaries not exceeding the secondaries by more than one-fourth the length of the wing. Bill compressed, culmen much curved towards tip. Tarsus feathered at base only. Tail much longer than wing; well graduated. Sexes alike.

Key to the Species

	Page
Wings black and white.....	<i>C. jacobinus</i> 194
Wings chestnut.....	<i>C. coromandus</i> 192

569. Redwinged Crested Cuckoo. *Clamator coromandus* (Linnaeus)

Cuculus coromandus Linnaeus, 1766, Syst. Nat., ed. 12, 1: 171

(Coromandel = Pondichery)

Baker, FBI No. 1474, Vol. 4: 170

Plate 52, fig. 3

LOCAL NAMES. *Tsaben* (Lepcha); *Terra golā kēkilā* (Telugu); *Uppān kiyil* (Malayalam); *Ratu kōndē kōhā* (Sinhala); *Kōndē kiyil* (Tamil).

SIZE. House Crow +; slenderer. Length c. 47 cm. (c. 18 in.).

FIELD CHARACTERS. A largish, crested cuckoo similar in overall effect to the more familiar Pied Crested (570) but metallic glossy black above interrupted by a white half-collar on hindneck, and with chestnut wings as in Crow-Pheasant. *Below*, chin, throat, and upper breast rust-coloured; rest of lower parts white or whitish. When flying across observer's front, crested head, white nuchal collar, red wings, and whitish underparts are diagnostic pointers. Sexes alike.

Young (immature). *Above* brown, the feathers (including wing-coverts) broadly edged with rufous; *below* white.

CUCKOOS

193

In older young when glossy black upper plumage first assumed, many feathers, especially on the wings, still fringed with rufous, and tail tipped with dull buff instead of white.

STATUS, DISTRIBUTION AND HABITAT. Breeding and apparently resident in the Himalayan duns, duars, and foothills (up to c. 1500 metres altitude) from Garhwal and Kumaon eastward through Nepal, Sikkim, N. Bengal, Bhutan and NEFA; in the Assam hills (Garo, Khasi, N. Cachar, etc.), and probably in Nagaland, Manipur, Mizo, and also in East Pakistan (Tippera, Chittagong). Common in eastern Assam. In peninsular India recorded variously as on passage, or a rare straggler, or scarce but regular rainy season or winter visitor, in Kerala, Mysore, Tamil Nadu, and Maharashtra States; status and movements very imperfectly known or understood. Regular winter visitor in small numbers to Ceylon, up to c. 2000 metres, from about October/November to April. Affects evergreen and moist-deciduous biotopes: foothills forest, and scrub-and-bush jungle.

Extralimital. Malay Peninsula, Sumatra, Lingga Archipelago, Borneo, Java during northern winter only, as in Ceylon (Stresemann, *in epist.*).

MIGRATION. On passage (to Sri Lanka?) in numbers through Pt Calimere (10°18' N., 79°51' E.), mid-October.

GENERAL HABITS. Keeps singly or in loose parties of 3 or 4. Not shy but rather retiring. Strictly arboreal, preferring the foliage canopy of trees in forest, but frequently descends into undergrowth of scrub and bushes, skulking about silently in search of food. Actions and behaviour very like Pied Crested Cuckoo's. Flight swift and direct though seeming somewhat leisurely, with quick wing-beats like Koel.

FOOD. Mainly caterpillars.

VOICE AND CALLS. A harsh grating or rasping scream resembling the cry of the jay or magpie, but more so (B. B. Osmaston). Also a quite different 'bisyllabic whistling note very like Collared Pygmy Owl (*Glaucidium brodiei*) but with more metallic sound' uttered at night (H. H. Harington). Bird rather silent in winter; reportedly very noisy in breeding season.

BREEDING. Brood-parasitic mainly on Himalayan laughing thrushes (*Garrulax* spp.), the commonest fosterers being *Garrulax pectoralis* and *G. moniligerus*. (For a list of other fosterers see Baker, 1942: 196-7.) Season, synchronous with that of the fosterers: overall April to August, principally May and June. Eggs, pale hedge-sparrow blue, unmarked, very broad ovals, fine-textured, glossless; matching perfectly the eggs of the fosterers and normally indistinguishable from them except by more spherical shape. Usually 2 or more (up to 4 recorded) eggs are laid in the same nest which, from their similarity in colour, shape and size could all well be the product of one and the same female. Evidently some of the rightful eggs are removed to make room, but a much more thoroughgoing study of the Indian cuckoos is desirable for elucidating the various problems they pose. Average size of 50 eggs 26.9 x 22.8 mm. (Baker).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Fledgling (at time of leaving nest) was rufous, with pale bars. Crest developed at c. 5 weeks; moulted gradually into adult plumage at 3 months old (Osmaston, JBNHS 34: 361).

A fledgling in the Brit. Mus. collection from Assam has upperparts dark brown, with pale tips to the feathers; white below (David Lack, *in epist.*).

CUCKOOS

195

from west of a diagonal line from slightly south of Bombay (Maharashtra) to Darbhanga dist. (N. Bihar). A specimen collected in Mysore during November (SA) with a large wing (148 mm.) and excessive body-fat could well be a straggler of this form preparing for belated emigration. East of this line there is a paucity of definitive records and a confusing intermingling during the rainy season with the resident southern population (571). Sight records dubious since the two races cannot be told apart in the field. Affects open well-wooded country, gardens and groves, even within the precincts of towns and villages, and the neighbourhood of cultivation. Also stunted jungle in semi-desert areas.

Extralimital. Putatively Africa south of the Sahara in winter.

MIGRATION. No ringing data, and evidence of migration to and from Africa as yet only circumstantial and largely conjectural. For a discussion of Indian evidence see Whistler, H., 'The Migration of the Pied Crested Cuckoo', JBNHS 33 (1): 136-46, 1928, and E. Ghas Survey Report, *ibid.* 37: 522-3, 1934; of African, Friedmann, H., 1948, *The Parasitic Cuckoos of Africa*: 19, 23, *passim*. Route of migration unknown and enigmatical. Only odd specimens have been obtained in SW. Arabia in March, April, and May presumably on passage (to India?) but no mass movement observed. 'Occurs rarely during autumn migration, August and September' in Kohat and Kurram Valley, NW. Pakistan (Whitehead). A specimen (straggler?) obtained by the first Mt Everest Expedition at Tingri, Tibet (28°33' N., 86°40' E.) at c. 4270 metres altitude (Wollaston & Kinnear, 1922, *Ibis*: 504) and another by M. Babault at Rahla near the Rotang Pass in Kulu (Himachal Pradesh) at c. 3800 m. on 28 June, the latter a male with testes in breeding condition!



x c. 1/2

GENERAL HABITS. Largely arboreal and insectivorous, feeding up in trees but commonly also descending into low bushes and even to the ground, hopping about in search of food. In many areas arrives overnight with almost clockwork regularity, heralding the monsoon, in the last week of May or early June, proclaiming its advent unmistakably by loud metallic calls. At first the birds are usually seen in loose parties of 5 or 6 chasing each other about from tree to tree (territorial or sexual rivalry?) calling noisily and evidently

194

CUCULIFORMES

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	157-166	c. 24-25 (from feathers)	c. 27-28	231-245 mm. (Baker)
Whistler gives for 2 ♀ ♀ from Ceylon	153-158	30-32 (from skull)	27-28	217-222 mm.

Weight 600? 61-75 (av. 70) gm. — SA.

COLOURS OF BARE PARTS. Iris pale reddish brown. Bill black, base of lower mandible generally paler and yellowish; angle of gape and mouth salmon-pink. Legs and feet plumbeous or slaty brown (Baker).

CLAMATOR JACOBINUS (Boddaert)

Key to the Subspecies

- Larger; wing over 144 mm. *C. j. serratus*
- Smaller; wing under 144 mm. *C. j. jacobinus*

570. Pied Crested Cuckoo. *Clamator jacobinus serratus* (Spartman)

Cuculus serratus Spartman, 1786, Mus. Carls., fasc. 1, no. 3 and pl. (Cape of Good Hope = Cape Peninsula, Cape Province, S. Africa)

Cuculus pica Hemprich & Ehrenberg, 1833, Symb. Phys., Aves, sig. r. note 2 (Ambukohl, Dongola)

Baker, FBI No. 1472, Vol. 4: 167

LOCAL NAMES. Pāpiya, Kālā pāpiya, Chatak (Hindi); Hōr kīk (Kashmir); Kālā bulbul, Shāh bulbul (Bengal); Chāllak (Marathi).

SIZE. Myna ± with a much longer tail. Overall length c. 33 cm. (13 in.).

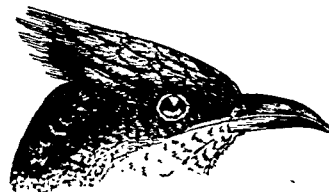
FIELD CHARACTERS. A slender, long-tailed, crested black and white bird.

Adult. Black above, including prominent pointed bulbul-like crest; white below. A roundish white patch on the black wings, and white tips to the black graduated tail-feathers conspicuous in flight. Sexes alike.

Young (immature). Crest less developed; wing-patch

smaller. Black portions of plumage dull and sooty; white portions strongly suffused with fulvous, or fulvous-grey.

STATUS, DISTRIBUTION AND HABITAT. SW. monsoon (breeding) visitor, arriving over most of its Indian range more or less synchronously with the rains (early June) and departing by September-October: West Pakistan and northern India — Sind, Punjab, Gilgit, Kashmir, U.P., Nepal, eastward through Assam, Manipur, and East Pakistan; south in peninsular India to c. 18° N. lat.; plains, and up to c. 2600 m. Not recorded in the Andaman and Nicobar Is. The majority of definite records (specimens) are



x c. 1

196

CUCULIFORMES

establishing themselves. In urban areas invariably set upon and persecuted by the resident House Crows (*Corvus splendens*), and commonly blundering into buildings to escape their tormentors. Courtship displays and chasing commence almost simultaneously with arrival, the male calling lustily and chasing the female about often with tail partly spread and slow deliberate wing-action, as in a pigeon 'clapping'; but breeding biology very imperfectly known. Whether pair bond maintained throughout the season or female promiscuous in her sex relations uncertain.

FOOD. Mainly caterpillars including large hairy ones; also mealy bugs, beetles, ants, terrestrial molluscs (in shady woods in the rains); occasionally green leaves ('possibly of digestive value' — Hingston). Flying termites hawked in air by vertical leaps from a bush-top perch, like bulbul.

VOICE AND CALLS. A loud metallic, rather plaintive but pleasant *piu . . . piu . . .* *pee-pee-piu*, *pee-pee-piu*, and so on, uttered on the wing, especially during courtship chase, and from a perch — in daytime as well as during moonlit nights. Often only the tinkling initial *piu* is repeated, every second or so. Flying juvenile utters a harsh *chū-chū-chū-chū*, and so on, rather reminiscent of the Large Wood Shrike (*Tephrodornis gularis*).

BREEDING. Brood-parasitic mainly on babblers of the *Turdoides* group — most commonly on the lowland and foothills species, e.g. *T. caudatus*, *T. striatus*, and *T. malcolmi*. In the lower Himalayas laughing thrushes (*Garrulax*) are commonly victimized, *G. lineatus* being a popular dupe. In Kashmir the Rufous-backed Shrike (*Lanius schach erythronotus*) is a frequent victim. (For a fuller list of fosterers see Baker, 1942: 195-6.) Season overall June to August, synchronizing with that of the local fosterers. Eggs, unmarked sky-blue varying in depth of tint, usually closely matching those of the fosterer, though in some cases rather larger. The larger size and more rounded oval shape — blunt at both ends — often give the clue. Average of 100 eggs, varying greatly in size, c. 23.9 x 18.6 mm. (Baker). Indistinguishable with certainty from eggs of Hawk-Cuckoo (*Cuculus corvus*) both of which sometimes found together in the same nest. Incubation period undetermined, but believed to be shorter than that of fosterer. Usually only a single cuckoo fledgling (rarely 2) is found in the fosterers' nest or being fed by them outside, which makes it evident that the impostor somehow disposes of the rightful eggs or hatchlings to monopolize the food brought by the parents. A more definitive study is called for.

Has been recorded as 'often feeding fully fledged young of its own species' (E. H. N. Gill). This observation may actually represent courtship feeding of female cuckoo by male and needs critical verification.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. This migratory race is clinically larger than nominate *jacobinus*; there is no difference in the plumage, and borderline examples are impossible to assign satisfactorily.

MEASUREMENTS. Birds from NW. India (Kashmir, Punjab, U.P.)

	Wing	Bill	Tail
12 ♂ ♂	146-155	25-28 (from skull)	158-176 mm.
8 ♀ ♀	144-151	25-28	156-169 mm. (HW)

Tarsus 25-23 mm. (SA)

CUCKOOS

197

20 ♂ ♀ from Africa and Arabia measure Wing 147-162 (once 167) mm. (Ticehurst).
Weight 40 ♂ 61-74 gm. (SA).

COLOURS OF BARE PARTS. Iris brown. Bill horny black, lemon-yellow at chin.
Legs and feet slaty grey; claws black.

571. Ceylon Pied Crested Cuckoo. *Clamator jacobinus jacobinus* (Boddaert)

Cuculus jacobinus Boddaert, 1783, Table Pl. enlum.: 53 (Coromandel Coast, ex Daubenton, Pl. enlum., pl. 872)
Clamator jacobinus taprobanus Hartert, 1915, Nov. Zool. 22: 254 (Northwestern Ceylon) Baker, FBI No. 1473, Vol. 4: 169
Plate 52, fig. 2

LOCAL NAMES. *Kendé kōhā* (Sinhala); *Kendé kūyil* (Tamil); *Gola kōkila*, *Tangada gorankah* (Telugu); *Erattāttalachi kūyil* (Malayalam).

SIZE. Myna \pm , with a much longer tail. Overall length c. 33 cm. (13 in.).

FIELD CHARACTERS. As of 570; a slender, long-tailed, crested, black and white cuckoo. A roundish white patch on the wings, and white tips to tail-feathers conspicuous in flight. Sexes alike.

Young (immature). Crest less well-developed; wing-patch smaller; black portions of plumage dull and sooty; white portions strongly suffused with fulvous or fulvous-grey.

STATUS, DISTRIBUTION AND HABITAT. Resident; Ceylon and peninsular India chiefly south of c. 15°N. lat. — Mysore, Tamil Nadu, Kerala. Disperses widely in the rainy season (SW. monsoon, May/June to September/October), then intermingling with the migratory population (*serratus*) in Andhra Pradesh, Madhya Pradesh and possibly elsewhere. Affects lightly wooded country in dry- and moist-deciduous biotope, lowlands and hills: up to c. 1300 metres in Ceylon (Uva), and to c. 2000 m. in south India (Nilgiris etc.).

GENERAL HABITS, FOOD, VOICE AND CALLS. Not different from 570, q.v., except that its rainy-season migrations and dispersal are restricted to within our limits; but no ringing or other precise data.

BREEDING. Brood-parasitic, like the migrant form, on babblers of the *Turdoides* group, the species most commonly victimized being *T. caudatus*, *T. striatus*, *T. malcolmi*, and *T. subrufus* in the plains, and the laughing thrush *Garrulax cashinians* in the Nilgiri Hills. In Ceylon the local common babbler, *T. affinis taprobanus*, is the chief fosterer. Season, practically the whole year coincidentally with the fosterers', but mainly June to September in peninsular India, February to May in Ceylon. Eggs, beautiful glossy turquoise-blue as in 570, as a rule matching the eggs of the dupes closely; usually distinguishable from them only by their blunter more oval shape. Average size slightly smaller than in *serratus*. Breeding biology as far as known, same as in the migrant form.

MUSEUM DIAGNOSIS. Identical with *C. j. serratus* except for somewhat smaller size clinically. Borderline examples impossible to assign satisfactorily.

MEASUREMENTS. Specimens from Ceylon and Kerala:

	Wing	Bill (from skull)	Tail
16 ♂ ♀	136-144	24-27	147-163 mm. (HW)

CUCKOOS

199

Young (immature), brown above rufous below broadly streaked (not barred) with blackish.

Both adults and young deceptively hawk-like in plumage-pattern at comparable ages, the resemblance to shikra (*Accipiter badius*) further heightened by style of flight.

STATUS, DISTRIBUTION AND HABITAT. Breeds in the Himalayas between c. 900 and 2700 metres, from West Pakistan (c. Murree in Rawalpindi dist.) eastward through Kashmir, Himachal Pradesh, Garhwal, Kumaon, Nepal, Sikkim, and Bhutan to easternmost NEFA (and beyond); also Naga, Manipur, Khasi, and N. Cachar hills. Affects wooded hillsides and valleys. Migrates southward into the Peninsula in winter, recorded then from Madhya Pradesh, Orissa, Tamil Nadu, Mysore and Kerala. Not Ceylon. Unsupported winter sight records not reliable owing to possibility of confusion with the commoner *Cuculus varius*.

Extralimital. From Szechuan and the lower Yangtse valley south to the hills of Burma, Thailand and South Vietnam; partially resident, but migratory in China. In winter Malay Peninsula, Sumatra, Borneo, Java, the Philippines, and Celebes (Sulawesi) — Peters.

GENERAL HABITS. Chiefly arboreal keeping singly to the foliage canopy of forest trees. Drops suddenly out of one and flies swiftly to another, threading its way deftly through the trunks — a few rapid wing-strokes followed by a glide, very like a hawk. The shikra-like plumage and flight, together with the bird's habit of sweeping upward into the branches before settling, are sufficiently convincing to cause a flutter among small birds each time the mimic is on the move. Mostly silent in its winter quarters, but extremely vocal in spring and summer on its Himalayan breeding grounds.

FOOD. Predominantly caterpillars, including large hairy ones; also beetles, bugs, crickets, grasshoppers and hoppers of locusts, ants and spiders.

VOICE AND CALLS. A loud, shrill, insistent screaming whistle, rather musical and even pleasant in small doses: *pipēēēē*, *pipēēēē* or just *pipēē*, *pipēē*, etc. (accent on second syllable) shrieked with monotonous persistency in runs of 5 or 6, usually rising in scale to frantic pitch and breaking off abruptly — presently to commence all over again. The birds call chiefly in the mornings and at sunset, often continuing far into the night and even throughout moonlit nights. Particularly vocal in cloudy overcast weather.

BREEDING. Brood-parasitic chiefly on laughing thrushes (*Garrulax*) and also on a miscellaneous lot of smaller birds of which the Large Spiderhunter (*Arachnothera magna*) and Nepal Shortwing (*Brachypteryx l. ripalensis*) are described as the most popular victims. Season. In the Western Himalayas eggs have been taken between 15 June and end July; in Assam April to end June coinciding with the laying of its accustomed hosts. Evidently two types of eggs have been evolved: (1) turquoise blue, matching closely those of laughing thrushes, (2) brown, approximating the eggs of spiderhunters, shortwings, etc.; in both cases usually distinguishable from the dupes' by larger size and blunt oval shape. Average size of blue eggs c. 30 × 22 mm.; of the brown type c. 26 × 19 mm. (Baker). For a fuller list of fosterers see Baker, 1942: 191-2, and 1906, JBNSHS 17: 364.

No other explanation seems rational for the cuckoo's egg being found in the closed nest of the spiderhunter — attached on the underside of a swaying

198

CUCULIFORMES

Tarsus 25-28 mm. (SA).

Weight 1300 ♂ 50-73 gm. — SA.

COLOURS OF BARE PARTS. As in 570.

Genus CUCULUS Linnaeus

Cuculus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 110. Type, by tautonymy, *Cuculus canorus* Linnaeus (*Cuculus prebinomialis* specific name in synonymy)
Hierococyx S. Müller, 1842, Verh. Nat. Gesch. Ned. Land-en-Volkenk.: 223. Type, by monotypy, *Cuculus fugax* Horsfield

No crest. Bill of moderate size; gape exceptionally large and flexible. Nostrils round. Tarsus partly feathered. Contains both migratory and sedentary forms. In the former, wing long and pointed: 1st primary (as.) = two-thirds length of 3rd, which is longest. Tip of closed wing exceeds tips of secondaries by nearly half its total length. In the non-migratory forms (formerly *Hierococyx*) wing shorter and more rounded: 3rd or 4th primary longest. Tip of closed wing exceeds tips of secondaries by only one-fifth to one-third its total length. Tail long, yet shorter than wing, well graduated; upper tail-coverts very long, somewhat pointed, reaching to about middle of tail.

Plumage in adults chiefly ashy grey or ashy brown above, barred below — remarkably accipitrine in pattern. Young pass through more than one phase before assuming adult plumage. Sexes alike or nearly so.

Key to the Species

	Page
A Secondaries in closed wing two-thirds length of primaries or more... 1	
B Secondaries scarcely exceeding half the length of primaries..... 2	
1 Tail 197 mm. or above..... <i>C. sparveroides</i> 198	
Tail under 197 mm..... a	
a Tail shorter, under 145 mm.; abdomen never banded..... <i>C. fugax</i> 203	
Tail longer, 150 mm. or above; abdomen transversely banded in adults..... <i>C. varius</i> 200	
2 A broad black subterminal band on upper side of tail..... <i>C. micropterus</i> 204	
No subterminal black band on tail..... b	
b Edge of wing mixed brown and white..... <i>C. canorus</i> 207	
Edge of wing white..... <i>C. saturatus</i> 211	
Edge of wing ashy..... <i>C. poliocephalus</i> 213	

Key to the Calls, Appendix

572. Large Hawk-Cuckoo. *Cuculus sparveroides sparveroides* Vigors

Cuculus sparveroides Vigors, 1832 (1831), Proc. Zool. Soc. London 1: 173 (Himalayas)
Baker, FBI No. 1457, Vol. 4: 146
Plate 51, fig. 1

LOCAL NAMES. *Bādā bhārāo* (Nepal); *Nimbin pīyal* (Lepcha).

SIZE. House Crow —; slimmer. Length c. 38 cm. (c. 15 in.).

FIELD CHARACTERS. Adult. Above, crown, nape and sides of neck ashy grey passing into rich ashy brown of rest of upperparts. Tail above brown, banded with blackish and tipped with white or rufous-white. Below, throat white streaked with ashy and rufous, passing into more rufous upper breast and then into the white underparts suffused with rufous and cross-banded with brown. Sexes alike.

200

CUCULIFORMES

banana leaf, and with only a narrow semicircular entrance-hole — than that the egg is initially laid elsewhere and then transferred to the nest with the cuckoo's bill. However, the actual process has never been observed.

MUSEUM DIAGNOSIS. See Key; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	213-236	28-30	c. 25-27	175-220 mm. (SA, BB, HW)

Weight 2 ♂ 116, 131 gm. (GD).

COLOURS OF BARE PARTS. Iris [creamy khaki to] orange-yellow; edges of eyelids lemon-yellow. Bill: upper mandible dark horny, paler on the tip, lower mandible greenish slaty, dusky on sides of anterior half and on tip; gape dull lemon-yellow. Legs and feet lemon-yellow; claws pale yellowish horny; pads dirty lemon-yellow (Biswas).

CUCULUS VARIUS Vahl

Key to the Subspecies

Paler above and below in all plumages..... <i>C. v. varius</i>
Darker above and below in all plumages..... <i>C. v. cielliae</i>

573. Common Hawk-Cuckoo or Brainfever Bird. *Cuculus varius varius* Vahl

Cuculus varius Vahl, 1797, Skriv. Naturhist.-Selsk., Kjøbenhavn 4 (1): 60
(Tranquebar)
Baker, FBI No. 1458, Vol. 4: 148
Plate 51, fig. 3

LOCAL NAMES. *Kepak*, *Upek*, *Pāpiya* (Hindi); *Bhārāo* (Sinhālikars, Bihār); *Chokgallo* (Bengal); *Kūtti pitta* (Telugu); *Zakkhat* (Deccan); *Bāppāyo* (Gujarati); *Shikrā kūyil* (Malayalam).

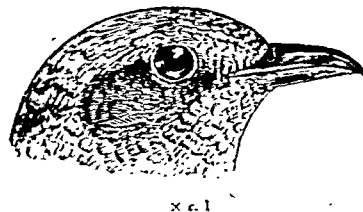
SIZE. Pigeon \pm , slenderer and with proportionately longer tail. Overall length c. 34 cm. (13½ in.).

FIELD CHARACTERS. A shikra-like cuckoo.

Adult. Above ashy grey, tail tipped rufescent and with 4 or 5 whitish and black bars, the terminal one broadest. Below, white suffused with rufous and ashy on breast and barred with brownish on abdomen and flanks. Sexes alike.

Young (immature).

Above, brown, barred with dull rufous; barring in tail rufous and black instead of whitish and black. Below, buffy white broadly streaked (not barred) with blackish brown drops. Thus juvenile plumage also very like immature shikra hawk.



CUCKOOS

201

STATUS, DISTRIBUTION and HABITAT. Resident, but subject to local migratory and nomadic movements especially during the rainy season. Apt to be overlooked in winter when it is silent. Occupies a lower zone in the Himalayas than *sparveroides*, normally not above c. 1000 m. Widespread over the entire subcontinent from Punjab (Rawalpindi dist.) eastward through Nepal, Sikkim, Bhutan, Assam, and East Pakistan; southward to Kanyakumari, and straggling into Ceylon. A rains straggler in Rajasthan and the semi-desert portions of Gujarat. Affects well-wooded deciduous and semi-evergreen biotope, hill and plain; partial to gardens, groves of trees, mango topes, etc. in the neighbourhood of cultivation and human habitations.

GENERAL HABITS. Arboreal, seldom if ever descending to the ground; usually keeps singly or in pairs to the foliage canopy of trees. Silent in winter and then very liable to be passed over as absent. With approach of the hot weather (c. March in the Himalayan foothills and duns) wakes increasingly vocal to a peak in about May, thereafter gradually reverting to silence by August/September. Exasperatingly obstreperous in the plains during the rainy season, calling monotonously and often almost incessantly throughout the day and during moonlit nights. Flight and movements deceptively hawk-like, as in 572, q.v.

FOOD. Principally caterpillars and cutworms; also grasshoppers, locust hoppers, beetles, bugs, ants, winged termites and spiders; wild figs (*Ficus* spp.); occasionally lizards. Among stomach contents the following insects have been frequently identified: *Brachytrypes achatus*, *Gryllos melanoccephalus*, *Schizodactylus monstrosus*, *Gryllotalpa africana*, *Dysdercus cingulatus*, *Amnomala varians*, cutworms (*Agrotis* spp.), hairy caterpillars (*Lymantriid*?), and ants (*Oecophylla*, *Camponotus*).

VOICE and CALLS. A loud shrieking high-pitched *wee-piehit*, aptly syllabified as *brainf-er* (accent on *fe*), repeated *ad nauseam* in runs of 4 to 6 crescendo calls, mounting progressively to frantic shrillness and breaking off abruptly, to commence all over again after a minute or two. On cloudy overcast days and moonlit nights during the peak period the screaming is almost non-stop. A 'trilling note' in addition to the *brainf-er* calls has been recorded, without details (Basil-Edwards, 1926, JBNHS 31: 569). 'Female has a harsh grating call quite different from male's' (W. E. Brooks, 1878, SF 7: 265).

When clamouring to be fed by foster parents (Jungle Babbler), a stub-tailed fledgling uttered a harsh single screech like a Roseringed Parakeet's. While accompanying a flock of these babblers, it gave a grating *kē-kē* from time to time, a very passable imitation of the fosterers' but in somewhat higher key (SA).

BREEDING. Brood-parasitic chiefly on babblers of the *Turdoides* group, mostly the Jungle Babbler (*T. striatus*). In the Himalayan foothills and the Nilgiris, laughing thrushes (*Garrulax*) are commonly victimized. For a fuller list of hosts see Baker, 1942: 192-3. Season, variable, coinciding with the laying season of the local hosts, chiefly between March and June, but also in later months. Eggs, beautiful glossy turquoise-blue, often indistinguishable from those of its babbler hosts except by somewhat blunter oval shape. They are hard to tell from eggs of Pied Crested Cuckoo, both sometimes found in the same nest, but are somewhat more elliptical. Size very variable,

CUCKOOS

203

575. Hodgson's Hawk-Cuckoo. *Cuculus fugax nivicolor* Blyth

Cuculus nivicolor Blyth, 1843, Jour. Asiat. Soc. Bengal 12(2): 943 (Nepal)
Baker, FBI No. 1460, Vol. 4: 151
Plate 51, fig. 2

LOCAL NAME. Ding-pit (Lepcha).

SIZE. Pigeon —; slenderer. Length c. 29 cm. (11½ in.).

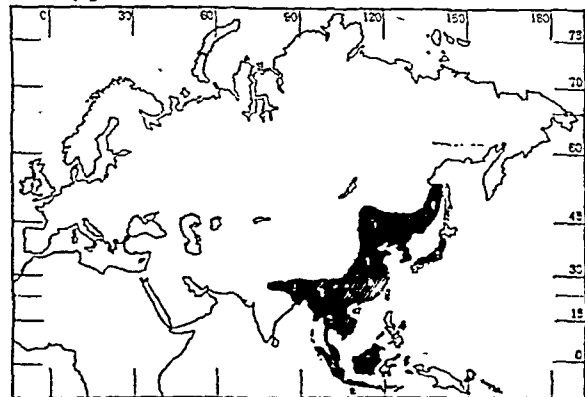
FIELD CHARACTERS. A slender grey cuckoo with unbarred rufous underparts.

Adult. Above, including sides of head and hindneck uniform slaty grey; wings brownish; tail alternately banded grey and black, tipped with rufous. Below, chin grey; throat and foreneck white sparsely streaked with grey; rest of underparts largely rufous; vent and under tail-coverts white. Sexes alike.

Young (immature). Above, brown, the feathers edged and barred with rufous; tail as in adult. Below, white, rather rufous on breast, closely barred and streaked with blackish (Baker).¹

STATUS, DISTRIBUTION and HABITAT. Predominantly a hill species like *C. sparveroides*. Mainly resident, but subject to local and altitudinal migration, occasionally (or regularly?) wandering considerable distances possibly

Cuculus fugax



1 *C. f. hyperythrus* (RE).
2 *C. f. fugax* (RE). 3 *C. f. nivicolor*. 4 *C. f. pectoralis* (RE).

even extraliminally. The lower Himalayas in Nepal, Sikkim, Bhutan and eastward through NEFA. Assam hills south of Brahmaputra river, Nagaland, Manipur, East Pakistan. Affects wooded country in deciduous,

¹ This needs confirming; see Key to the Species. Fledglings and immatures of parasitic cuckoos are notoriously difficult to identify with certainty chiefly owing to lack of definitive clues to their parentage. Hence the confusion and contradictions in published descriptions.

202

CUCULIFORMES

averaging c. 26 × 20 mm. (Baker). A young cuckoo accompanying a flock of Jungle Babblers will be fed by its particular foster parents from time to time, and occasionally even by other members of the sisterhood. Yet paradoxically enough each time the fledgling flies there will be a nervous stir among the flock, some members promptly giving the 'ware hawk' alarm; they will, however, tolerate the same impostor complacently and resume tending it the moment it has settled again and is hopping about in their midst greedily begging food!

MUSEUM DIAGNOSIS. As in 572, wing more rounded than in *Caculus* species; primaries exceeding secondaries in closed wing by only one-fifth to one-third the total length. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	193-213	25-31	21-23	157-183 mm.
♀♀	192-207	26-29	23-26	156-180 mm. (SA, BB)

Weight 1 ♀, very fat, 104 gm. (GD).

COLOURS OF BARE PARTS. Adult. Iris greyish yellow or yellowish buff; rim round eyes (eyelids) and gape lemon-yellow. Bill yellowish green, black on culmen and tips; mouth pink and yellow. Legs, feet, and claws bright chrome yellow. Fledgling (just ex nest). Iris greyish brown; eyelids greenish yellow. Bill pale brownish yellow; gape and mouth yellow (like young babbler's). Legs, feet, and claws pale yellow.

574. Ceylon Hawk-Cuckoo. *Cuculus varius ceticus* (Phillips)

Hierocorys varius ceticus Phillips, 1949, Bull. Brit. Orn. Cl. 69: 56 (Caledonia Estate, 4000 ft, Lindula, Dimbula, Ceylon)
Not in Baker

LOCAL NAMES. Kāśā (Sinhala); Kūyil, Kūnil (Tamil).

SIZE. Pigeon ±, slenderer and with proportionately longer tail. Overall length c. 34 cm. (13½ in.).

FIELD CHARACTERS. An ashy grey shikra-like cuckoo, indistinguishable from 573 (q.v.) except in the hand. See Key and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Race peculiar to Ceylon. Resident; moderately plentiful locally in the hills above c. 650 m., especially in the Central Province, possibly visiting the Wet zone when not breeding. Affects well-wooded country such as tea estates and gardens.

It is probable that the nominate race also visits the island from the Indian mainland.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 573, q.v.

BREEDING. Brood-parasitic on babblers of the *Turdoides* group. Season, January to April and probably later. Eggs not yet taken but doubtless the same as in Indian birds, glossy turquoise-blue closely matching those of its normal hosts.

MUSEUM DIAGNOSIS. Differs from nominate *varius* only in being somewhat darker overall in a comparative series.

MEASUREMENTS and COLOURS OF BARE PARTS as in 573.

204

CUCULIFORMES

semi-evergreen and evergreen biotopes, between c. 600 and 1800 m. altitude. Keeps chiefly to bushes and the understorey.

Extralimital. Breeds also in Burma, Thailand, Indochinese countries, and S. China. Winter visitor in part (?) to the Malay Peninsula, Sumatra, Java, etc.

GENERAL HABITS. Apparently nowhere common. Little specifically known as the bird is usually very silent and skulking, thus doubtless often overlooked.

FOOD. Caterpillars, cicadas, and other insects. Also a quantity of fruits and berries.

VOICE and CALLS. Described as a sibilant, insistent *gee-whizz*, *gee-whizz* repeated up to 20 times; vaguely reminiscent of the shrill shrieking of *C. sparveroides* but the call is even thinner and shriller and quite distinct from any other cuckoo's. In breeding season often calls throughout the night.

BREEDING. Brood-parasitic apparently chiefly on flycatchers and shortwings (Muscicapinae and Turdinae), but the breeding biology is practically unknown. The only oviduct egg ever taken was from a nest by Baker as late as 14 September. A putative egg was taken from a nest by Baker as late as 14 September. The oviduct egg was broad oval in shape with unglossed but smooth and firm shell, uniform olive-brown in colour with an indistinct ring of darker shade round the larger end. It measured 22.6 × 16.3 mm.

Baker (1942: 198) gives the average of 73 eggs from all fosterers' nests as 24.44 × 15.84 mm.

MUSEUM DIAGNOSIS. Underparts unbarred. Penultimate broad black band in tail followed by a narrow band of rufous grey or grey-brown and then a narrow band of black.

Nestling. Feathers of head and upper back more definitely edged with pale rufous. Below, chin, throat, and upper breast dark brown narrowly edged with rufous (Baker).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	178-182	19-20	c. 23-24	141-144 mm.

COLOURS OF BARE PARTS. Iris orange to vermilion; eyelids yellow. Bill horny black, the base and nearly all the lower mandible pale greenish horny; gape more yellow. Legs, feet, and claws bright yellow (Baker).

576. Indian Cuckoo. *Cuculus micropterus micropterus* Gould

Cuculus micropterus Gould, 1837, Proc. Zool. Soc. London: 137 (Himalayas)
Cuculus micropterus fatidicus Koelz, 1954, Contrib. Inst. Regional Exploration, No. 24 (Laikul, N. Cachar)
Baker, FBI No. 1456, Vol. 4: 144
Plate 51, fig. 10

LOCAL NAMES. *Bru-kath-kas* (Bengal); *Kyphal pilla* (U.P., Mussooree); *K pilla* (Himachal Pradesh); *Kyd-pilla-pillo* (Nepal); *Tāpō* (Lepcha); *Kāng kō* (Bhutan); *Kōpōo* (Hunza).

SIZE. Pigeon ±, slenderer and with proportionately longer tail. Overall length c. 33 cm. (13 in.).

CUCKOOS

205

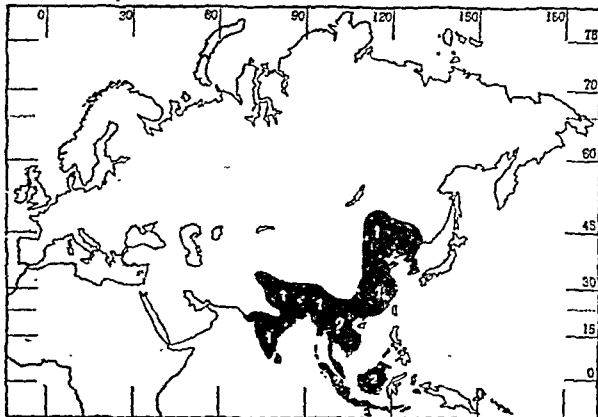
FIELD CHARACTERS. Very similar to the European and Himalayan Cuckoos (578, 580) q.v. Dark slaty grey above with a brownish tinge; pale ashy and white below cross-banded with widely spaced broad black bands. Readily distinguished from them also by broad black subterminal band on tail, more rounded and quicker flapping wings, and most conclusively by the unmistakable 4-syllabled call—a musical *kyphāl-pāka* or *crossword-puzzle*, repeated *ad nauseam*.

Female differs in having the pale grey throat and breast browner and with a rufous tinge.

Young (immature). Above, barred with white or rufous white on head and neck; broadly tipped with rufous and white elsewhere. Below, pale buff broadly barred with black. Tail as in adult but more rufous and more numerous barred.

STATUS, DISTRIBUTION and HABITAT. Occurs variously as resident, nomadic or seasonal visitor (rains and winter) in the lower Himalayas from Kashmir eastward through NEFA (including Nepal, Sikkim, and Bhutan), and southward throughout the subcontinent excepting the arid portions of W. Pakistan, Rajasthan, Kutch, Saurashtra and N. Gujarat. Occurs also in E. Pakistan ('excessively common in Chittagong'—Bates),

Cuculus micropterus



Overall range 1 *C. m. micropterus*. 2 *C. m. canorus* (RE).

Ceylon, and the Andaman and Nicobar islands. Affects fairly wooded country in deciduous and evergreen biotopes up to c. 2300 m. altitude, and rarely even to c. 2800 m. In Nepal 'very common [in summer] up to 10,000 ft [c. 3300 m.] and at 12,000 ft [c. 3700 m.]' (Desirée Proud). Silent over most of its range between August/September and March/April, then

CUCKOOS

207

period of the cuckoo's eggs is c. 12 days, i.e. 2 or 3 days shorter than the shrikes'. [For an excellent recent account and details see Neufeldt, I., 1966, 'Life History of the Indian Cuckoo (*Cuculus micropterus micropterus* Gould) in the Soviet Union', JBNHS 63: 399-419.]

MUSEUM DIAGNOSIS. See Key.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	190-207	28-32	c. 20-21	142-161 mm. (SA, HW, BB)

A pair from Ceylon are smaller, and more material may reveal a discrete insular population there. They measure (from feathers)

♂	187.5	24	148 mm.
♀	185.5	21.5	143 mm.

Weight 1 ♂ 128 gm. (winter)—SA.

COLOURS OF BARE PARTS. Iris brown to reddish brown; rim round eye (eyelids) bright lemon-yellow. Bill: upper mandible horny brown, lower greenish brown, yellow at chin and gape; mouth yellowish pink. Legs and feet yellow; claws horny brown.

CUCULUS CANORUS Linnaeus

Key to the Subspecies

	Page
A Colour of upperparts darkest; barring on lower plumage broader and blacker..... <i>C. c. bakeri</i>	210
B Colour of upperparts palest; barring on lower plumage finer and less black..... <i>C. c. subtelephonus</i>	207
C Colour of upper- and underparts intermediate..... <i>C. c. canorus</i>	208

577. Asiatic Cuckoo. *Cuculus canorus subtelephonus* Zarudny

Cuculus canorus subtelephonus Zarudny, 1914, Orn. Mitt. 5: 108, 115 (Turkistan) Not in Baker, FBI

LOCAL NAMES. Not recorded.

SIZE. Pigeon ±; slenderer. Length c. 33 cm. (13 in.).

FIELD CHARACTERS. As for 578, q.v. See Key and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Evidently occurs in Baluchistan (breeding or on passage?) but available material insufficient to clarify the status (Ticehurst, 1927, JBNHS 31: 881). It is the breeding bird of Iran (west to the Caspian Sea), and a passage migrant in Iraq and 'Persian Baluchistan' (SE. Iran). May also occur in northeastern NEFA.

Extralimital. 'Transcaspia, Russian Turkistan and western Chinese Turkistan; recorded from the western slopes of the Ala Shan in extreme southern Mongolia, from the valley of the upper Huang ho and from a northern tributary of the Mekong in SE. Tibet. Winters in East Africa' (Peters).

CUCULIFORMES

206

likely to be overlooked and assumed absent; but most vociferous in Ceylon between c. January and May, especially during March and April.

Extralimital. Breeds also in Burma, Thailand, Malay Peninsula, S. China, Korea, and U.S.S.R. (lower Amur region). Winters in the Philippines and Indonesian islands.

MIGRATION. No ringing data. Whether, as suspected, it performs regular extralimital migrations in addition to local seasonal movements not proven.

GENERAL HABITS. Chiefly arboreal, keeping singly to tree-tops and canopy foliage or seen flying about hawk-like above the forest canopy. In northern and most of peninsular India very vocal when breeding, mainly between mid March and early August. Especially obstreperous in the early hours before dawn and till about 9 a.m., and again from about dusk till far into or even throughout the night, particularly if moonlit. Noisy during daytime in cloudy overcast weather. Also calls on the wing during courtship chase of female.

FOOD. Hairy and other caterpillars, and various insects. Sometimes descends to the ground, hopping about awkwardly to pick them up from among the littered leaves. Among stomach contents of specimens, *Gryllotalpa africana*, *Sphex lobatus*, and other hymenopteran remains have been specifically identified.

VOICE and CALLS. Very distinctive and diagnostic. The 'song' is a loud and far-carrying 4-syllabled fluty whistle capable of a wide range of local onomatopoeic renderings, *Kyphāl-pāka*, *Bo-kōtāko*, *Orange-peloe*, *Crossword puzzle*, *What's your trouble*, being some. The key and timbre is often individually variable. The calls may be iterated continuously every two seconds or so for 5 minutes or more at a stretch, monotonously and with unvarying cadence, in intermittent runs for hours on end; timed at 23 calls per minute and 43 in two minutes. A warbling call aptly described as 'water-bubbling' uttered by the female, chiefly in flight, is almost identical with similar calls of female *C. canorus* and *C. saturatus*. There is also a rapid twice- or thrice-repeated *quik* occasionally given by the female (?). While serenading a nearby female the wings are drooped, the tail often spread out and erected, and the bird pivots from side to side.

BREEDING. Brood-parasitic, reportedly in the main on the drongos *Dicurus adsimilis* and *D. leucophaeus*. Other species in whose nests putative eggs of this cuckoo are claimed to have been found, or which have been observed feeding its young, are Paradise Flycatcher (*Terpsiphone paradisi*), Streaked Spiderhunter (*Arachnothera magna*), and Ceylon Blackheaded Oriole (*Oriolus x. ceylonensis*). However, the available data on the breeding biology of this and other parasitic cuckoos in India are, by and large, meagre, and of dubious authenticity. Most accounts are vague, largely conjectural and often contradictory. The whole subject calls for a more methodical *de novo* re-investigation. Oviduct eggs from females of this species are reported as of two types: (1) whitish with reddish brown stippling closely matching drongos' eggs, and (2) pale greyish blue, resembling the eggs of some of the Turdinae. They measure c. 25 × 19 mm.

In Amurland (U.S.S.R.) whence we possess fuller information, the principal fosterer is the Amur Brown Shrike (*Lanius cristatus confusus* Stegmann) whose eggs closely match those of this cuckoo. The incubation

CUCULIFORMES

208

GENERAL HABITS, FOOD, VOICE and CALLS. As in 578.

BREEDING. Extralimital. May possibly breed in Baluchistan, but unknown with certainty.

MUSEUM DIAGNOSIS. Differs from both 578 and 579 in being much paler coloured on head, neck, and breast, and in having fewer, finer, and less blackish cross-bars on the underparts; also in being smaller, with wings sometimes down to c. 180 mm.

MEASUREMENTS

Wing ♂ 204-220, ♀ 184-216 mm. (Portenko, 1931, Mitt. Zool. Mus. Berlin 17: 417-22).

COLOURS OF BARE PARTS. As in 578.

578. Cuckoo. *Cuculus canorus canorus* Linnaeus

Cuculus canorus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 110

(Europa = Sweden, ex Fn. Succ.)

Cuculus telephonus Heine, 1863, Jour. f. Orn. 11: 352 (Japan)

Baker, FBI No. 1451, Vol. 4: 135

Plate 51, fig. 11

LOCAL NAMES. *Phūphū*, *Kūpūh* (Kumaon); *Kūkhū* (Lepcha); *Akkū* (Bhutea); *Hār kūk*, *Shākūk*, *Kikū*, *Kūkil* (Kashmir).

SIZE. Pigeon ±; slenderer. Length c. 33 cm. (13 in.).

FIELD CHARACTERS. General effect, shape of wings and manner of flight reminiscent of sparrow-hawk. Unmistakable oft-repeated *cūck-koo* call.

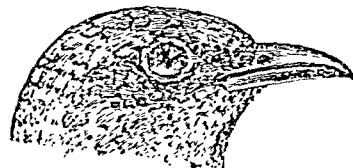
Male (adult). Above, dark ashy grey; tail blackish brown, spotted and tipped with white and without the subterminal black band of Indian Cuckoo. Below, chin, foreneck and breast pale ashy; rest of underparts white, narrowly cross-banded with blackish.

Adult Female has a rufous tinge on upper breast and sometimes on throat and sides of neck. Also has a hepatic phase with the entire upperparts barred chestnut and blackish brown. Below, as in normal female but chin, throat and upper breast barred pale chestnut and blackish, and lower breast and abdomen tinged with rufous.

Juvenile hepatic female duller, with white fringes to feathers of upperparts. Fledgeling distinguished from fledgelings of *C. saturatus* and *C. poliocephalus* by almost invariable presence of a conspicuous white nuchal spot.

STATUS, DISTRIBUTION and HABITAT. Resident, nomadic, and seasonal local migrant—possibly also translimital as in the Palaearctic Region.¹ Common in the Himalayas in summer, arriving c. mid March and leaving again in July/August, from the Afghan frontier through Gilgit, Kashmir (the commonest cuckoo), Ladakh, Himachal Pradesh, Garhwal, Kumaon, and Nepal to Sikkim (?), breeding at between c. 600 and 4100 metres altitude. Highest occurrence recorded at Shaksam, Kashmir, 5250 m.

¹ On winter status and probable winter quarters see Deshayes, M., 1974, JBNHS 71: 145-6.



× c. 1

Between early August and mid March both this race and the next (*C. c. bakeri*) are dispersed practically throughout the Peninsula south to Kerala. Rare vagrant in Ceylon and Andaman Is. Maldives Is. (sight record, Phillips, JBNHS 60: 579). There is good circumstantial evidence (persistent 'singing' by males, enlarged gonads of dissected specimens, and fledglings being tended by fosterers) that some birds also breed in the Peninsula, e.g. in Madhya Pradesh (Mhow, Saugor, Kamptee), Maharashtra (Chikaldia), Gujarat (Mt Abu, Deesa, Kutch), Chota Nagpur, and possibly in the south Indian hills and elsewhere between May and July/August, during the SW. monsoon. However, the ecology and breeding biology of Indian parasitic cuckoos, and their varying status from locality to locality and season to season, are as yet very imperfectly known. Their unobtrusive habits, the superficial resemblance of many species to one another, and likelihood of misidentification particularly when not calling, renders definitive observations difficult and often unreliable. Many of the mysteries can only be solved through large-scale ringing of fledgling cuckoos.

Extralimital. Breeds in Europe and Asia from the British Isles eastward through Scandinavia and N. Russia, to NE. Siberia and Kamchatka; southward to the Pyrenees, the Mediterranean, Asia Minor and N. Iran; east to Manchuria, Korea, Japan, and the Kurile Is. Winters in Africa, Malaysia to New Guinea.

GENERAL HABITS. Chiefly arboreal, keeping singly to leafy tree-tops or seen flying about hawk-like above the canopy in well-wooded country. Occasionally descends to the ground and walks about to pick caterpillars and other insects from amongst littered leaves, or to investigate eligible nests of pipits and chats for laying in. Mostly silent and unobtrusive in non-breeding season, then apt to be easily overlooked. Very obstreperous when breeding, the males singing lustily from tree-tops all day (chiefly early morning and around sunset) and often far into or even throughout the night. While calling under excitement of a female's proximity the throat is inflated or 'goitred' out like a pigeon, the body held horizontal with wings drooping at the sides, tail spread out and partly cocked (sometimes vertical), the bird lightly oscillating or pivoting from side to side. At other times calls with tail depressed, rump-feathers fluffed out, and wings drooping at the sides. The call is also uttered on the wing during courtship chase of a female, or while in pursuit of an interloping rival.

FOOD. Insects and their larvae, particularly hairy caterpillars. The cicada *Geana sulphurea* Hope largely eaten in E. Himalayas (Stevens).

VOICE AND CALLS. 'Song' of the male, the well-known *cuck-koo* occasionally varied to *cuck-cuck-koo*, repeated persistently in long unbroken runs (once 170 counted) at the rate of about one call per second. These are interlarded with hoarse wheezy chuckles. The tempo of the calls varies with the degree of the prevailing excitement at the proximity of a female. The female utters a series of 'water-bubbling' notes *quik-quik quik-quik*, sometimes repeated rather slowly, and also an occasional harsh chuckle like the male's. Her bubbling notes are almost identical with those of *C. saturatus* and *C. micropterus*, and females of the three species cannot be satisfactorily differentiated by their calls.

FIELD CHARACTERS. As of 578, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Not properly worked out. Breeds in the Assam hills south of Brahmaputra river — Garo, Khasi, Jaintia, Cachar, etc. — probably also in Nagaland, Manipur, Mizo and East Pakistan. Occurs at one season or another (and may breed) in Sikkim, Bhutan (collected by Ludlow up to c. 3300 m. alt. in summer) and NEFA. May occasionally turn up in far-flung parts of the subcontinent, thus Ahmadnagar dist., Maharashtra (Abdulali, 1954, JBNHS 52: 210). Affects well-wooded country, orchards, etc.

Extralimital. 'Breeds from eastern Kokonor and SW. Kansu southward through W. Szechuan and W. Kansu (probably adjacent parts of E. Tibet) to Burma (Pegu Yomas) and the Shan States' (Peters). In winter to the Indochinese countries.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 578, q.v.

BREEDING. As in 578. *Season*, chiefly April/May to June/July. Principal fosterers over most of its range and also in the Khasi Hills, warblers of the genera *Cisticola* and *Sylvia* (= *Prinia*) which build fragile domed nests of grass with a small lateral entrance-hole. Other members of the family Muscipidae, especially chats and small babblers, are also victimized. For method of the cuckoo's laying in domed and even less accessible nests see under 578. Eggs, broad blunt oval, as widely variable in size and coloration as in 578. Average size of 300 eggs 24.2 × 17.9 mm. (Baker).

MUSEUM DIAGNOSIS. Distinguished from nominate *canorus* by darker upperparts, often almost blackish slaty; barring on underparts broader, blacker and further apart. Female differs from male as in 578.

MEASUREMENTS

♂ ♀ Wing 208-240, mostly between 225-235 mm. (Baker). One very small ♀ has wing 198 mm. (Abdulali). Males usually somewhat larger.

COLOURS OF BARE PARTS. As in 578.

580. Himalayan Cuckoo: *Cuculus saturatus saturatus* Blyth

Cuculus saturatus Hodgson = Blyth, 1843, Jour. Asiat. Soc. Bengal 12 (2): 942 (Nepal)

Cuculus opisthus Gould, 1845, Proc. Zool. Soc. London: 18 (Port Essington, Northern Territory)

Baker, FBI No. 1454, Vol. 4: 140

LOCAL NAMES. *Tong ting tyong* (Lepcha); *Daa hoo hoo* (Cachar); *Hoo kaka* (Khasi).

SIZE. Pigeon —; slenderer. Length c. 31 cm. (12 in.).

FIELD CHARACTERS. Very similar to 579 and doubtfully distinguishable from it except by its distinctive 4-noted hoopoe-like call. At rest and on a good view perhaps also by the edge of the wing-shoulder being pure white r. barred brown and white (see Key and Museum Diagnosis). Female sometimes has a hepatic phase as in *C. canorus*.

STATUS, DISTRIBUTION AND HABITAT. Described as 'summer visitor' to the lower Himalayas, but probably resident. Like other Himalayan cuckoos vocal between March/April and July/August mostly when breeding, and much oftener heard than seen. Liable to be overlooked or misidentified in

BREEDING. Brood-parasitic on a wide range of hosts, pipits (Motacillidae), shrikes (Laniidae), but chiefly on babblers, flycatchers, warblers and chats (Muscicapidae). Female believed to be polyandrous or promiscuous in her sex relations. *Season*, March to August synchronizing locally with that of the fosterers. Eggs laid directly into nest of host. In the case of closed or globular nests the cuckoo clings on the outside in acrobatic postures with her vent against the tiny entrance-hole and projects the egg directly into it. In inaccessible nests, such as a chat's in a ground-hollow under a stone, the egg is first laid outside then inserted within with the bill. This process has been observed and authenticated in the case of the Khasi Hills race, *C. c. bakeri* (Livesey, 1937, JBNHS 39: 625-6). Eggs, broad blunt oval, widely variable in size and coloration, usually matching those of the fosterer; ranging from white with reddish brown streaks and stippling to uniform pale blue. Average size of 100 eggs picked at random from a large series 23.6 × 18.1 mm. (Baker). Incubation period also variable, the eggs of the cuckoo usually hatching a day or two earlier than the host's. The young cuckoo in the first 5 or 6 days of hatching possesses a curious sensitive patch or depression on its back, any contact with which produces an impulse to heave upwards. By means of this adaptation the impostor manages to jettison all the rightful hatchlings and unhatched eggs over the rim of the nest or out of the entrance-hole, thereafter monopolizing the attention of the fosterers and the entire food intended for their brood. The young cuckoo thus grows apace, and by the time it leaves the nest it is already several times the bulk and weight of some of the smaller fosterers like pipits and warblers who are often obliged to settle on its back in order to put the food down the cavernous gape of the insatiable monster!

MUSEUM DIAGNOSIS. No subterminal black band on tail; edge of wing mixed white and brown. For distinguishing from *C. c. bakeri* see Key to the Subspecies; for description of plumages, structure (and bionomics) Witherby, 1938, 2: 296-302.

MEASUREMENTS			
	Wing	Bill (from skull)	Tarsus
♂♂	209-243	26-29	c. 21-24
♀♀	213-230	c. 28	c. 23-24
For British examples Witherby gives:			
♂♂	216-228	24-28	18-24
♀♀	200-223	—	—
Weight 1 ♂ 90 gm. (GD).			
COLOURS OF BARE PARTS. Iris pale to deep yellow; eyelid yellow. Bill dark horn brown, paler and yellowish at base and on commissure, orange-yellow at gape. Legs and feet wax yellow; claws horny.			

579. Khasi Hills Cuckoo. *Cuculus canorus bakeri* Hartert

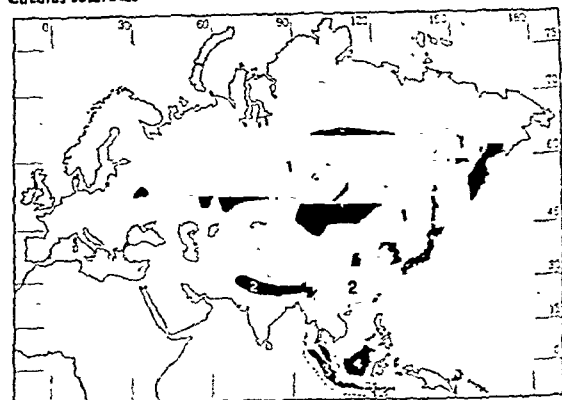
Cuculus canorus bakeri Hartert, 1912, Vög. pal. Fauna 2: 948 (Shillong, Assam)
Baker, FBI No. 1453, Vol. 4: 139

LOCAL NAME. Kākā (Khasi).

SIZE. Pigeon ±; slenderer. Length c. 33 cm. (13 in.).

silent period. Breeds from the Afghan frontier eastward through Gilgit, Kashmir, Ladakh, Himachal Pradesh, Garhwal, Kumaon, Nepal, Sikkim, Bhutan and NEFA between c. 1500 and 3300 m. altitude; also in the Assam hills south of the Brahmaputra river. Has been taken (rarely) in winter in the plains in N. India (Uttar Pradesh, Rajasthan, Bihar, Assam).

Cuculus saturatus



No authentic data for further south; possibly occurs as vagrant but unrecorded owing to difficulty of recognition when not calling. Davison's old record from Wynad, Kerala (SF 10: 359) probably mistaken as shown by Blanford (1893, PZS: 318). Not uncommon in the Andaman and Nicobar Is. 'in summer' (Butler 1899, JBNHS 12: 565). Affects hilly wooded country and orchards.

Extralimital. Burma, Thailand, S. China, Formosa (Taiwan).

GENERAL HABITS AND FOOD. By and large as in 578, q.v.

VOICE AND CALLS. Distinctive and diagnostic: a loud, far-carrying *ūp...ēēp-ēēp-ēēp* or *kūd-kūd-kūd-kūd*, the initial *ūp* a soft undertone audible only at close range. In the distance call confusable with hoopoe's, but characteristically 4-noted against hoopoe's 3. While calling from a tree-top throat inflated or 'goitred' out as in a pigeon, and wings drooped at the sides. Male also emits a medley of hoarse, almost ghoul-like, croaks and chuckles. Calls less persistently than Indian Cuckoo or 578, but at all times of day and night, especially moonlit nights. 'Water-bubbling' notes of female indistinguishable from those of 578, q.v.

BREEDING. Brood-parasitic commonly on flycatcher- and leaf warblers of the genera *Sericornis* and *Phylloscopus*, tiny birds less than one-third its own size; in Kashmir the Large Crowned Leaf Warbler (*Phylloscopus occipitalis*) most frequently victimized. *Season*, principally May-June,

CUCKOOS

213

synchronizing with that of the hosts. Eggs, long ellipses, greatly variable in size, often inconspicuously small for the cuckoo. Coloration also variable, mainly pale skim-milk blue or white with faint minute dark stippling, usually matching the eggs of the host. Average size of 40 eggs c. 20×13.5 mm. (Baker). Fellow-nestlings and unhatched eggs ejected from nest presumably in same way as by 578.

MUSEUM DIAGNOSIS. Similar to 578, q.v., but with the edge of the wing-shoulder pure white, without any brown barring. Black bars on underparts bolder and wider apart. For description of hepatic female, juvenile, and nestling see Biswas, 1960, JBNHS 57 (3): 542.

MEASUREMENTS

Nepal specimens give

	Wing	Bill	Tail
14 ♂♀	179-192	27-30 (from skull)	144-159 mm. (BB)

2 ♂♂ from Sikkim, wing 185, 188 mm. (Schäfer).

Thus it is evident that Baker's measurements loc. cit. (♂♀ Wing 208-226; bill (from feathers) c. 20-22; tail 151-176 mm.) do not relate to Himalayan birds.

Weight 1 ♂ 105; 1 ♀ 72 gm. (GD).

COLOURS OF BARE PARTS. Iris reddish brown or orange-red; eyerim yellow. Bill dark horny green, yellowish at gape. Legs and feet wax yellow to bright yellow. (For details see Biswas, loc. cit.)

580a. **Horsfield's Cuckoo.** *Cuculus saturatus horsfieldi* Moore
See Appendix

581. **Small Cuckoo.** *Cuculus poliocephalus poliocephalus* Latham

Cuculus poliocephalus Latham, 1790, Index Orn. 1: 214 (India)

Cuculus poliocephalus assamicus Koelz, 1952, Jour. Zool. Soc. India 4: 45
(Kohima, Naga Hills)

Baker, FBI No. 1455, Vol. 4: 142

Plate 51, fig. 9

LOCAL NAMES. *Dang-hlem* (Lepcha); *Pichu gipzu* (Bhutea); *Deo pia pihu* (Chachar).
SIZE. Myna +, with a longer tail. Length c. 26 cm. (10 in.).

FIELD CHARACTERS. Smaller than 579 but otherwise very similar: slaty grey above, black-barred white below, the underparts suffused with buff. Sexes more or less alike, but ♀ has also a hepatic phase. Most satisfactorily recognized by its distinctive husky chattering call, *That's your choky pepper* (accent on *choky*).

STATUS, DISTRIBUTION and HABITAT. Locally common and breeding in summer (April/May to July/August) in the Himalayas between c. 1500 and 3200 m. alt. (possibly to c. 4000 m.) from the Afghan frontier, Gilgit and Kashmir eastward, through Nepal, Sikkim, Bhutan, and NEFA. Also in Assam hills south of the Brahmaputra, Nagaland, and Manipur (?). Migrates in winter to lower elevations and the northern plains, wandering widely in the Peninsula south to Kerala (Cannanore). Recorded thus from Madhya Pradesh (Nagpur), Gujarat (Surat Dangs), Maharashtra (Dhulia, Ahmadnagar, Khandala), Mysore (Coorg, Belgaum), Tamil Nadu (Nilgiris),

CUCKOOS

215

variably coloured, white to terracotta red, usually matching the eggs of the normal local hosts. The egg is remarkably large for the size of the layer, and in the white phase almost indistinguishable from that of *C. saturatus*, a bird at least one-third larger. Average size of 30 eggs 21.0×14.2 mm. (Baker).

MUSEUM DIAGNOSIS. Smaller than *C. saturatus* and with edge of wing ashy. For description of immature plumages see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♀	142-162	24-25 (from skull)	17-19	126-137 mm. (Various)

Baker's lower limits for wing (152 mm.) and tail (132 mm.) are misleading.

Weight 2 ♂♂ (Nepal, May), 48, 54 gm. — GD; 6 oo? (Pt Calimere, October) 32-44 gm. — SA.

COLOURS OF BARE PARTS. Iris brown; eyerim yellow. Bill blackish horny; base of both mandibles, commissure and gape yellow. Legs and feet wax yellow.

Genus CACOMANTIS S. Müller

Cacomantis S. Müller, 1843, Verh. Nat. Gesch. Ned. Land-en Volkenk., pt. 6: 177, note. Type, by subsequent designation, *Cuculus florus* Gmelin = *Cuculus merulinus* Scopoli

Penthorcyx Cabanis & Heine, 1863 (1862-63), Mus. Hein., Th. 4 (1): 16

Type, by monotypy, *Cuculus sonneratii* Latham

Contains small-sized cuckoos distinguished from *Cuculus* by shorter, more rounded wings with the primaries exceeding the secondaries by only about one-third length of wing. Tail as long as or longer than wing and well graduated.

Key to the Species

Page

- A Bill stout and not compressed; tail-feathers narrower posteriorly... *C. sonneratii* 215
B Bill compressed; tail-feathers of uniform width
1 Upperparts dark ashy; abdomen white or grey... *C. passerinus* 218
2 Upperparts ashy grey and brown; abdomen rufous... *C. merulinus* 220

CACOMANTIS SONNERATII (Latham)

Key to the Subspecies

- Upper plumage brighter and more rufous... *C. s. sonneratii*
Upper plumage darker and more brown... *C. s. tritii*

582. **Indian Baybanded Cuckoo.** *Cacomantis sonneratii sonneratii* (Latham)

Cuculus sonneratii Latham, 1790, Index Orn. 1: 215 (India)

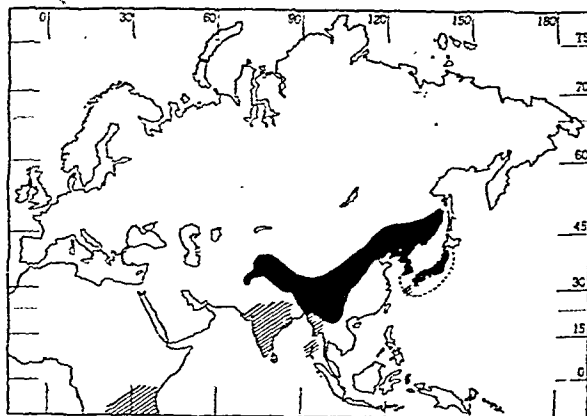
Baker, FBI No. 1464, Vol. 4: 157

Plate 51, fig. 6

LOCAL NAMES. *Bata kati pitta* (Telugu); *Chakkiyil* (Malayalam); *Pānādi lāl kiyel* (Gujarati).

214

CUCULIFORMES

Cuculus poliocephalus poliocephalus

Breeding range

Winter

Andhra Pradesh (Nellore, Seshachalam Hills), and Andaman Is. Scarce visitor to Ceylon. Doubtless more generally dispersed but unrecorded owing to difficulty in identification when silent (in non-breeding season). Affects well-wooded country.

Extralimital. Breeds also in W. and C. China, Manchuria, and Japan from Hondo to Kiusiu. Recorded as migrant or straggler from E. China, the Bonin Is., Formosa (Taiwan), Ryukyu Is., S. Vietnam, etc. (Peters). Apparently scarce and local in the higher hills of Burma (Smythies).

MIGRATION. No ring recoveries. Passes through Pt Calimere ($10^{\circ}18' N.$, $79^{\circ}51' E.$) in numbers during October, presumably en route to Ceylon.

GENERAL HABITS and FOOD. Not significantly different from other members of the genus, qq.v. Very noisy in the breeding season, calling as much during the day, especially in cloudy weather, as at night; from a perch as well as on the wing.

VOICE and CALLS. A curious unmusical rattling, or chattering, cry of 5 or 6 notes, the first half going up in scale, the second coming down; well rendered as *That's your choky pepper... choky pepper* (accent on first *choky*). Uttered several times in quick succession, each repetition somewhat lower than the preceding. Timbre rather bulbul-like, but harsh and husky; pattern of call vaguely reminiscent of the *brain-feet* shrieks of *Cuculus varius* (573).

BREEDING. Brood-parasitic chiefly on small ground-nesting passerines of the family Muscicapidae, e.g. leaf warblers (*Phylloscopus*), wren-babblers (*Phoenicoglaea*) and shortwings (*Brachypteryx*). Season, May, June, July synchronizing with that of the hosts at various altitudes. Eggs, short, broad, elliptical;

216

CUCULIFORMES

SIZE. Myna +; slenderer. Length c. 24 cm. ($9\frac{1}{2}$ in.).

FIELD CHARACTERS. A small slim cuckoo: above, bright rufous or bay colour, conspicuously crossbarred with brown; below, including sides of head and neck, whitish with fine wavy brown cross-bars. Tail largely rufous, tipped with white and subtipped with black. Sexes alike. Easily confused with hepatic phase of female Plaintive Cuckoo (584, 585); see Museum Diagnosis.



x c. 1

Young (immature) similar to adult but with the rufous bars on the upperparts more pronounced, and the brown bars on the upperparts as well as the rufous on tail more extensive.

STATUS, DISTRIBUTION and HABITAT. Status unclear due to the bird being silent during non-breeding season when easily overlooked. Believed to be resident and nomadic as well as seasonal local migrant. Widely scattered in the monsoon season practically throughout India, sparse in the north, fairly common in the Deccan and southern India (excepting the areas of heaviest rainfall). Recorded from the lower Himalayas (up to c. 2400 m. alt.), foothills and plains, from Kumaon through Nepal, Sikkim and Bhutan to Assam (common in hills south of Brahmaputra R.), Gujarat, Madhya Pradesh, Orissa, W. Bengal. Commoner in southern Maharashtra, Andhra, Tamil Nadu, Mysore, Kerala, East Pakistan. Affects deciduous and evergreen lightly wooded country around cultivation, as well as fairly heavy forest.

Extralimital. Burma south to Tenasserim, Thailand, Vietnam.

GENERAL HABITS. Arboreal, usually keeping singly to bare tree-tops especially when calling, flying about from one to another. Sometimes springs up in the air to take a flying insect.

FOOD. Mainly caterpillars and bugs (Hemiptera). The red Silkcotton Bug (*Dysdercus singulatus*) is a favourite item with both this and the Plaintive Cuckoo.

VOICE and CALLS. A loud, rather pleasant 4-noted whistle *tee-ti-tee-ti* uttered with cuculine persistence and monotony from an exposed tree-top chiefly in the early morning and at dusk with tail depressed, rump-feathers fluffed out, and wings drooping at the sides; at all hours during overcast drizzly weather. The call is reminiscent of the *crossed-puzzle* calls of *Cuculus micropterus* (576) but is in a higher key and with a slightly different intonation. In addition has a sweet, clear whistling song of ventriloquial quality *tee-ti-tee-ti-tee-ti-tee-ti*?, rising in scale, ending interrogatively.

BREEDING. Brood-parasitic evidently on ioras (*Aegintha*), bulbuls (*Pyrenestes*), and small babblers (Timaliinae). Season, variable and prolonged (February to August), synchronizing locally with that of its hosts. Oviduct eggs broad oval in shape and variable in coloration. One common type is white or pinky white speckled with reddish- or purple-brown, usually resembling closely the eggs of the hosts. Average size c. 19.3×15.8 mm. (Baker).

CUCKOOS

217

MUSEUM DIAGNOSIS. Distinguished from the very similar hepatic female of Plaintive Cuckoo (584) by the tail-feathers being a little narrower towards their tips instead of uniformly broad throughout. Bill stouter and broader up to the tip, which is blunt seen from above.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	116-128	23-26	c. 17-18	112-118 mm. (SA)

COLOURS OF BARE PARTS. Iris brown. Bill horny black, olive-grey at base of lower mandible. Legs and feet greyish green; claws horny brown.

583. Ceylon Baybanded Cuckoo. *Cacomantis sonneratii waiti* (Baker)

Penthoceryx sonneratii waiti Baker, 1919, Bull. Brit. Orn. Cl. 39: 47 (Ceylon)
Baker, FBI No. 1466, Vol. 4: 159

LOCAL NAMES. *Kōhā* (Sinhala); *Kūyil* (Tamil).

SIZE. Myna +; slenderer. Length c. 24 cm. (9½ in.).

FIELD CHARACTERS. As of 582, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Race peculiar to Ceylon. Resident in all zones. Very local but moderately plentiful in many districts in the lowlands and lower hills to c. 750 m.; in winter (NE. monsoon season) visiting the Uva hills to over 1200 m. (Phillips). Affects borders of forest, chenas (shifting cultivation), and open jungle, preferably in the intermediate belt of country between the Wet and Dry zones (Henry).

GENERAL HABITS and FOOD. As in 582.

VOICE and CALLS. As in the Indian race. 'In the breeding season it utters a different note, a whistled *whew, whew, whu-u-u, whu-u-u, whu-u-u* — each stanza higher pitched than the last, the call ending abruptly as if the bird had reached the top of its compass — or run out of breath' (Henry). Most noisy in the mornings and evenings during the first quarter of the year, when presumably breeding.

BREEDING. 'Practically unknown. Victimizes the Orange Minivet (*Pericrocotus flammeus*) occasionally, if not regularly; and also the Little Minivet (*P. peregrinus ceylonensis*). Young observed in June and October' (Phillips).

MUSEUM DIAGNOSIS. Differs from the Indian bird in being much darker and browner above rather than rufous.

MEASUREMENTS. Baker gives Wing 121-126 mm.; bill (from feathers) 19-20 mm. Two specimens from Ceylon in the American Museum of Natural History, New York, measure:

	Wing	Bill (from feathers)	Tail
♂	129	20	111 mm.
♀	125	21	110 mm. (SDR)

COLOURS OF BARE PARTS. As in 582.

CUCKOOS

219

liability to be misidentified in the field or overlooked during the silent (non-breeding) period: resident in some parts of the country, nomadic or local migrant in others; from its calls perhaps most widely dispersed during the monsoons. Affects light open forest, gardens, groves of trees in village environs, shade trees in tea plantations, and the like.

GENERAL HABITS. General appearance and behaviour reminiscent of Dark Grey Cuckoo-Shrike. Keeps singly to foliage canopy of trees and bushes, mounting to their exposed tops for calling. Active and restless, constantly flying across swiftly from tree-top to tree-top over a wide area (its territory?) to call from different vantage points. Occasionally launches short flycatcher-like aerial sallies to capture flying bugs, or descends to the ground and hops a few steps to pick up caterpillars. When calling the tail is depressed, the rump arched (feathers fluffed out), and the wings drooped loosely at the sides.

FOOD. Hairy caterpillars (those of the moth *Nepita conferta* identified), bugs (*Dysdercus cingulatus* and others), and various soft-bodied insects.

VOICE and CALLS. Various. One commonly heard and quite diagnostic of the species is a rather plaintive single whistle *pileer* or *kiver* frequently repeated at short intervals. Another call is clearly of the Indian Cuckoo's *crossword-puzzle* pattern but in a higher key: *weeli-teeti* or *peter-peter*. The song proper is a clear lilting whistle of several notes ending interrogatively: *pee-pipee-pee*, *pipee-pee?* or its variant *pee-pipee-peepee*, *pipee-peepee?* ascending in scale and slightly higher pitched with each repetition. The calling bird turns its head this way and that, producing a marked ventriloquial effect. Most noisy in the mornings and evenings in the breeding season, but at all times of the day in cloudy, drizzly weather. Calls also during nights, whether dark or moonlit.

BREEDING. Brood-parasitic on warblers (Sylviinae) principally of the genera *Prinia*, *Cisticola* and *Orthotomus*. All these build more or less closed nests with narrow entrance-holes in which it is difficult to conceive the cuckoo introducing its egg in any way other than with the bill. The actual process needs determining. *Season* overall June to September, synchronizing locally with that of its hosts. *Eggs* long narrow ovals, appreciably smaller at one end. Coloration variable, usually matching those of the hosts. Average size of eggs 19.9 × 14.0 mm. (Baker). A remarkable case of adaptive selection has been revealed by Prof. R. K. Burnett in Andhra. He found that in Hyderabad city the Plaintive Cuckoo habitually laid in the nests of the locally abundant Ashy Wren-Warbler (*Prinia socialis*) which lays a uniform brick-red egg, whereas a few miles out in the surrounding country the principal host is the Tailor Bird (*Orthotomus sutorius*) whose eggs are reddish or bluish white spotted with brownish red. The eggs of the cuckoo in the respective areas 'mimic' those of the host in a convincing way. This would imply the evolution of remarkable plasticity in egg production, the urban population of the cuckoo being so strictly adapted as to lay an egg different from that of the population in the surrounding countryside. Whether the hatchling cuckoo evicts its rightful nestmates, as observed in the genus *Cacomantis* elsewhere, not known.

An extraordinary instance, fairly reliably reported from Poona (30 August 1944), of a chick of this cuckoo in the nest of a Purple Sunbird

218

CUCULIFORMES

584. Indian Plaintive Cuckoo. *Cacomantis passerinus* (Vahl)¹

Cuculus passerinus Vahl, 1797, Skriv. Naturhist.-Selsk., Kjobenhavn, 4(1): 57 (Tranquebar)

Baker, FBI No. 1462, Vol. 4: 154

Plate 41, fig. 7

LOCAL NAMES. *Pousya* (Marathi); *Chinna katte pitta* (Telugu); *Kōhā* (Sinhala); *Kūyil* (Tamil); *Cherūkūyil* (Malayalam); *Nāni rākhodi kōyāl* (Gujarati).

SIZE. Myna ±; slenderer. Length c. 23 cm. (9 in.).

FIELD CHARACTERS. A small slim cuckoo: *above*, dark grey and brown; *below*, chin, throat and breast grey, paling on abdomen and to whitish on vent. Tail blackish with a white tip and with the outer rectrices obliquely barred white. Occasional examples dark ashy throughout, and these easily confused with Dark Grey Cuckoo-Shrike (*Coracina melaschistos*, No. 1077).

A white patch on underside of wings (at base of primaries) conspicuous in flight. Sexes alike, but female dimorphic; in the hepatic (red) phase easily confused with Baybanded Cuckoo (582): bright chestnut-bay above and on throat, crossbarred with black on back, and with finely black-barred white underparts.

Young (immature) superficially similar to hepatic female: *above*, bright chestnut barred with black; *below*, chin, throat and breast suffused with chestnut with a few black bars; rest of underparts white finely and wavily barred with blackish. Tail-feathers marked longitudinally with black along the shafts. Some females moult from this dress direct into adult hepatic plumage.

STATUS, DISTRIBUTION and HABITAT. Throughout the well-wooded parts of the subcontinent including Nepal, Sikkim and Bhutan; up to c. 2700 m. altitude in the Himalayas; to c. 1800 in the Nilgiris and peninsular hills. Largely absent in W. Pakistan, western Rajasthan, northern Gujarat, and Kutch; not recorded from the Andaman and Nicobar Is. Occurs also in E. Pakistan, Ceylon ('winter visitor'), and Maldives Is. As in Baybanded Cuckoo (582), status evidently variable, but unclear chiefly because of

¹ Biswas (*Ibis* 93: 596, 1951) has shown that both *passerinus* and *merulinus* occur side by side in the breeding season without any intergrades. Therefore treated here as full species.

¹ Biswas (*Ibis* 93: 596, 1951) has shown that both *passerinus* and *merulinus* occur side by side in the breeding season without any intergrades. Therefore treated here as full species.

220

CUCULIFORMES

(*Nectarinia asiatica*) being fed in turns by the fosterers and by Tailor Birds (*Orthotomus sutorius*)! (M. F. Suter, JBNHS 45: 235).

MUSEUM DIAGNOSIS. For details of plumages see Whistler, H., 1944, *Spolia Zoolonica* 23 (3 & 4): 213-14.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	113-120	22-23	c. 17-19	105-115 mm. (SA, BB, HW)

COLOURS OF BARE PARTS. Iris brown. Bill horny brown, paler at chin and basal portion of lower mandible; mouth bright orange-brick colour. Legs and feet brownish yellow; claws horny brown.

585. Rufousbellied or Burmese Plaintive Cuckoo. *Cacomantis merulinus* Heine

Cacomantis querulus Heine, 1863, Jour. f. Orn. 11: 352, New name for *Polyphasia tenuirostris* Jerdon, not *Cuculus tenuirostris* Gray, 1834, which = *Cacomantis passerinus* (Vahl) (Lower Bengal, Assam, Sylhet, Burma, and China)

Baker, FBI No. 1463, Vol. 4: 156

Plate 51, fig. 5

LOCAL NAME. *Chhōta bhāru* (Bengal).

SIZE. Same as 584; length c. 23 cm. (9 in.).

FIELD CHARACTERS. A small, slim, ashy grey and brown cuckoo with white-tipped and barred blackish tail. Very similar to 584 (q.v.) but with the underparts, from breast down, rufous-buff to rusty red instead of white.

Female dimorphic, with a hepatic phase as in the Indian race.

Young (immature). Confusable with Baybanded Cuckoo on a superficial view. *Above*, barred brown and dull chestnut, including wings and tail. *Below*, chin, throat and foreneck chestnut, streaked with blackish; rest of underparts white, variably suffused with rufous and narrowly barred with dark brown.

STATUS, DISTRIBUTION and HABITAT. Status uncertain: locally resident, nomadic and migratory. Assam, Manipur, East Pakistan, West Bengal, the lower Himalayas to c. 2000 m. (also duars and terai) in NEFA and westward through Bhutan, Sikkim and Nepal. Has been taken in winter in eastern peninsular India west to c. 81°E. (Raipur, Madhya Pradesh) and south to c. 15°N. (Cumbum, Andhra Pradesh).

Affects well-wooded country — gardens, groves, shade trees in tea plantations, light open forest, and scrub jungle.

Extralimital. Eastward through Yunnan to Fukien, south through Burma, Thailand and the Indochinese countries to the northern Malay States; Hainan (Peters).

¹ This may be a juvenal *passerinus* fide Biswas (JBNHS 37: 520).

CUCKOOS

221

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 584.

BREEDING. Brood-parasitic on warblers—in the Assam hills chiefly on *Prinia* (*criniger*, *atrogularis*, *hodgsonii*), *Cisticola cuspis*, and *Orthotomus sutorius*. Season, April to August. Eggs varying in colour from pure white to pale blue, spotted and blotched with reddish brown, generally matching those of the hosts, only larger. Average size of 30 eggs taken at random 19.8 × 13.8 mm. (Baker).

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	109-119	15-17	17-18	112-125 mm. (Baker)

COLOURS OF BARE PARTS. As in 584.

Genus CHALCITES Lesson

Chalcites Lesson, 1830, *Traité d'Orn.*, livr. 2: 152. Type, by tautonymy, *Cuculus chalcites* Illiger, i.e. Lichtenstein, 1818 (Temminck, 1821, Pl. col., livr. 17, pl. 102, f. 2) = *Cuculus plagiator* Latham.

Small cuckoos of brilliant metallic plumage. Sexually dimorphic. Tail short and slightly rounded; wings long and pointed, the primaries exceeding the secondaries by more than one-third the length of the closed wing. Tarsus feathered almost throughout.

The genus extends through the Malay Peninsula and Indochinese countries to New Guinea; represented by two species in our limits.

Key to the Species

	Page
Upperparts glossy violet..... <i>C. xanthorhynchus</i> (♂)	223
Upperparts brilliant green..... <i>C. maculatus</i> (♂)	221
Upperparts light coppery green..... <i>C. xanthorhynchus</i> (♀)	223
Upperparts green, crown rufous..... <i>C. maculatus</i> (♀)	221

586. Emerald Cuckoo. *Chalcites maculatus* (Gmelin)

Trogon maculatus Gmelin, 1788, *Syst. Nat.* 1 (1): 404 (Ceylon)

Baker, FBI No. 1468, Vol. 4: 162

Plate 51, fig. 4

LOCAL NAMES. *Ang pha* (Lepcha); *Dao pu pip* (Cachar).

SIZE. Sparrow +; length c. 18 cm. (7 in.).

FIELD CHARACTERS. A diminutive resplendent-plumaged cuckoo.

Male (adult). Above, head, neck, and upperparts brilliant glossy green with golden bronze reflections. A white patch at base of primaries conspicuous in flight. Rectrices tipped white, the outermost pair with three irregular white bars. Below, chin, throat, and upper breast glossy green like back; rest of underparts white, barred with metallic bronze-green. Under tail-coverts metallic green, barred with white.

Female. Above, glistening emerald green with golden rufous crown and nape, these parts reminiscent of Little Green Bee-eater (*Merops orientalis*):

CUCKOOS

223

COLOURS OF BARE PARTS. Iris reddish brown to crimson; eyelids crimson. Bill bright orange-yellow tipped with black. Legs and feet dark brownish green.

587. Violet Cuckoo. *Chalcites xanthorhynchus xanthorhynchus* (Horsfield)

Cuculus xanthorhynchus Horsfield, 1821, *Trans. Linn. Soc. London* 13 (1): 179 (Java)

Baker, FBI No. 1467, Vol. 4: 160

Plate 51, fig. 7

LOCAL NAME. *Daopin-pip* (Cachar).

SIZE. Sparrow +; length c. 17 cm. (6½ in.).

FIELD CHARACTERS. A diminutive resplendent-plumaged cuckoo.

Male (adult). Above, head, neck and upperparts glistening metallic violet. Tail blackish, all the feathers tipped white, the outermost pair barred with same. Below, chin, throat, foreneck, and upper breast glistening violet; rest of underparts, including wing-lining, banded with broad white and violet (or green) bands.

Female. Above greenish bronze with a coppery tinge, and sometimes a little white on forehead; tips of primaries and rectrices greener. Tail banded green and chestnut and tipped white on all except the central pair of feathers. Below, including sides of head and neck, alternately banded with white and bronze-green, the bands narrowest on chin and throat, broadest on vent.

Young (immature). Above, barred rufous and brown. Below white, barred with brown.

Young males moult direct from the barred rufous stage into that of the adult and are never like the female (Baker).

Fledgeling. Like immature but with the entire head and neck (all round) streaked with black instead of banded.

STATUS, DISTRIBUTION AND HABITAT. Status uncertain; possibly various—resident, nomadic, and local migrant like 586 and other cuckoos. Assam, NEFA (?), Nagaland, Manipur, Tripura, East Pakistan (and possibly adjoining eastern W. Bengal); plains and up to c. 1500 m. alt. in the hills. Has been taken in the Andaman Is. in March, May, July and August; once at Perambur near Madras (season?—Whistler, JBNHS 37: 521). 'Winter status in India quite unknown' (Desfayes, M., 1974, JBNHS 71: 146). Affects secondary evergreen forest, keeping to clumps of trees, orchards, etc. and difficult to observe or detect unless calling.

EXTRALIMITAL. SW. Yunnan and central Vietnam, south to Malay Peninsula, Thailand, and S. Vietnam. Sumatra; Lingga Archipelago; Java; Borneo.

GENERAL HABITS AND FOOD. Very little known; presumably as of the Emerald Cuckoo.

VOICE AND CALLS. Not recorded in India. 'A shrill high-pitched trilling call resembling that of the nuthatch and barred woodpeckers' (D. M. Batchelor, 1963, *Sarawak Museum Journal* 21-2 N.S.: 278).

BREEDING. Brood-parasitic putatively on yellowbacked sunbirds (*Aethopyga*) and spiderhunters (*Arachnothera*) in the main. But since the supposed eggs taken in these nests are exactly like those of the Emerald Cuckoo and no oviduct eggs of this species are available for confirmation, the evidence remains only circumstantial. Average size of 7 of these supposed eggs 17.2 × 12.5 mm. (Baker).

222

CUCULIFORMES

tail barred chestnut and black, tipped with white. Below, white, tinged with rufous on throat and flanks and barred with bronze-brown, narrowest on throat, broader and wider apart on abdomen.

Young (fledgling ex nest). Above, barred rufous and brown, the marks on head elongate instead of across. Below, chin, throat and foreneck dull rufous streaked with black; rest of underparts barred alternately with dull white and brown.

STATUS, DISTRIBUTION AND HABITAT. Status uncertain. Possibly resident but subject to nomadism and local migration like other cuckoos. Occurs in the Himalayas (terai, bhabar, duars and foothills) up to c. 1000 m.—rarely to 1500 m. alt.—from Garhwal through Kumaon, Nepal, Sikkim, N. Bengal, Bhutan, and NEFA. Also Assam, Manipur, and East Pakistan. Once recorded from Ceylon, the type, possibly a stray. A straggler obtained at Adyar, a few miles south of Madras on 6 March 1878 (W. F. Digue, SF 9: 298); a specimen from Palni Hills in BNHS collection. Andaman and Nicobar Is. Affects evergreen jungle, chiefly secondary growth.

EXTRALIMITAL. Breeds in SE. Tibet and Szechuan to Hupeh, south to Burma, Yunnan and central Vietnam. Has occurred in winter or as a wanderer in Hainan, S. Vietnam, Malay Peninsula and Sumatra (Peters).

GENERAL HABITS. Keeps singly or in small parties of 4 to 6 to the higher branches in the foliage canopy of forest trees, and is difficult to observe except when flying across from tree to tree. Is unusually active for a cuckoo, constantly flitting from one bough to another or making aerial sorties after winged insects. In the breeding season is very vociferous, calling at intervals throughout the day and often far into the night, or all through if moonlit. Has a characteristic crouching stance when perched on a branch, along rather than across it, the tips of the closed wings projecting beyond the tail. Flight swift, reminiscent of a lorikeet.

FOOD. Ants, caterpillars, bugs (Hemiptera), and other soft-bodied insects, often taken on the wing.

VOICE AND CALLS. 'A very fine clear loud whistling call of 3 notes rapidly uttered' (Hume). 'A constantly uttered trill not unlike that of the lorikeet' (Bets). 'A quick high-pitched rattle of 5 or 6 notes descending slightly in pitch' (Smythies). 'A sweet twittering' (Stevens). 'A shrill but not unmusical succession of three notes in an ascending scale' (Baker).

BREEDING. Brood-parasitic chiefly on yellowbacked sunbirds (*Aethopyga* spp.), and spiderhunters (*Arachnothera* spp.). Season, 'middle April to end July' (Baker). Eggs, broad obtuse ovals usually white in ground colour, blotched and smudged with light brown or reddish brown, being passable replicas of those of the hosts, but larger. Average size of 17 eggs 16.9 × 12.3 mm. (Baker). Though not yet observed in the hatchlings of either this species or *C. xanthorhynchus*, other members of the genus (extralimital) are known to evict their rightful nest-mates from the nest.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	105-114	14-15	c. 15	63-70 mm. (Baker)

CUCULIFORMES

224

MUSEUM DIAGNOSIS. See Key.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	95-105	16-17	14-15	64-72 mm. (Baker)

COLOURS OF BARE PARTS. Iris red; eyelids green with a red rim. Bill ♂ orange-yellow or bright yellow; ♀ dull yellow, dusky on culmen and base. Legs and feet brownish green; claws yellow.

Genus SURNICULUS Lesson

Surniculus Lesson, 1830, *Traité d'Orn.*, livr. 2: 151. Type, by subsequent designation, *Cuculus lugubris* Horsfield

Genus remarkable for its extraordinary superficial resemblance to the Black Drongo (*Dicrurus adsimilis*) in shape, proportions and coloration. Differs from all other cuckoos in the tail being long and forked, the central pair of rectrices falling short of the outermost pair by about one-third the length of the tail. Bill as in *Camomantis*.

SURNICULUS LUGUBRIS (Horsfield)

Key to the Subspecies

Larger.....	<i>S. l. dicruroides</i>
Smaller.....	<i>S. l. stewarti</i>

588. Indian Drongo-Cuckoo. *Surniculus lugubris dicruroides* (Hodgson)

Pseudornis dicruroides Hodgson, 1839, *Jour. Asiat. Soc. Bengal* 8: 136 and pl. (Mountains of Nepal)

Baker, FBI No. 1470, Vol. 4: 165

Plate 67, fig. 11

LOCAL NAMES. *Kario-tyem* (Lepcha); *Kakkālamparātti kūyil* (Malayalam).

SIZE. Same as of the Black Drongo. Myna ±; slimmer, with longer forked tail. Length c. 25 cm. (10 in.).

FIELD CHARACTERS. Overall glossy metallic black. General appearance, size, and forked tail deceptively like Black Drongo, but under tail-coverts and outermost tail-feathers near their base nearly always barred with white. Calls entirely diagnostic (see below). Sexes alike.

Young (immature) has the plumage unglossed, the feathers of the head, back and breast with many terminal white spots; wing-coverts tipped with white; more white on tail and under tail-coverts.

Fledgeling dull black speckled all over with white.

STATUS, DISTRIBUTION AND HABITAT. The lower Himalayas up to c. 2000 m. alt. and submontane tracts (terai, bhabar, and duars) from Punjab and Himachal Pradesh through Garhwal, Kumaon, Nepal, Sikkim, Bhutan, and NEFA. Also Assam, Nagaland, Manipur and East Pakistan. Occurs at one time or another, chiefly detected during the monsoons when vocal (June to October/November), practically throughout the better wooded parts of the Peninsula (plains and up to at least 1500 m. in the hills) south

CUCKOOS

225

to Tamil Nadu and southern Kerala. But status south of the Himalayas unclear and difficult to determine due to possible confusion with Black Drongo unless verified by specimens or by its diagnostic calls which are 'on the air' only during breeding season. Status probably varies from locality to locality between breeding, nomadism, and local migration. Affects open secondary forest, plantations, orchards, etc.; sometimes dense evergreen jungle.

Extralimital. Eastward across to southern China (north to southern Yunnan and central Fukien), southward to Tenasserim, Thailand, the Indochinese countries and Hainan I. Recorded from Sumatra apparently as a migrant (Peters).

GENERAL HABITS. Superficial appearance deceptively like Black Drongo but is comparatively sluggish and less alert. Entirely arboreal. Keeps singly to the foliage canopy of trees and shrubs, mounting to the exposed bare branches for calling. Where available, snags of the fronds of palms, e.g. palmyra (*Borassus*), form favourite singing posts. Normal perching stance upright, when the resemblance to Black Drongo is heightened; while calling assumes a more horizontal axis, rather 'humped up' and with the wings slightly drooped at the sides. Flight cuckoo-like and noticeably different from drongo's. Sometimes springs up in the air to capture a flying insect very like a Bronzed or Ashy drongo, or clings to a vertical tree-trunk to pick off a caterpillar. Apparently disperses widely during the monsoon, its distinctive calls announcing its arrival and presence in a locality. In the breeding season calls persistently in the mornings and evenings; at all hours of the day in overcast, drizzly weather. Often also throughout the night. Like other cuckoos, silent in non-breeding season, making its local status difficult to determine.

FOOD. Hairy and other caterpillars, soft-bodied insects, and occasionally fruit, e.g. banyan and peepul figs (*Ficus* spp.).

VOICE AND CALLS. 'Song', a run of 5 or 6 (sometimes up to 7 or 8) evenly spaced high-pitched musical whistling notes *pip-pip-pip-pip-pip* (exactly as if the bird was counting 1-2-3-4-5-6 or practising the musical scale), rising in pitch with each *pip* and breaking off abruptly to be reiterated afresh after a few seconds, with monotonous persistency. Another call, mostly heard late in the season, is like a shrill version of the beginning of the *brain fever* shrieks of the Hawk-Cuckoo and is 'accompanied by a lifting of both wings to touch above the back' (Mrs Wright, 1957, JBNHS 54: 653). The significance of this call is not understood.

BREEDING. Very imperfectly known. Brood-parasitic reportedly on drongos (*Dicrurus*), forktails (*Enicurus*), minivets (*Pericrocotus*), and Black-headed Babbler (*Rhopocichla atriceps*). Season presumably March to October (January to March in Kerala?) when most widely vocal and gonads of specimens in breeding condition. Eggs. Dependable data lacking. An oviduct egg was 'heavily spotted purplish around ends' (Biswas).

MUSEUM DIAGNOSIS. In the hand the exposed round nostril, shape of bill, and structure of foot (zygodactyle) immediately distinguishes it from the black drongo (*Dicrurus adsimilis*). In the latter the bill is shrike-like hook-tipped, and it has the characteristic perching foot with three toes in front and one behind. For distinguishing from the Ceylon race see Key.

CUCKOOS

227

EUDYNAMYS SCOLOPACEA (Linnaeus)
Key to the Indian Subspecies

	Page
A Smaller: wing c. 185-198 mm.....	<i>E. s. scolopacea</i> 227
B Larger: wing c. 199-235 mm.....	1
1 Wing-tail index ¹ smaller: Male, wing c. 203-235 mm.; tail 189-221 mm.; female, wing c. 201-216 mm.; tail 184-197 mm. Plumage of female darker, more buffy spotted above and below.....	<i>E. s. dolosa</i> 230
Wing-tail index larger: Male, wing c. 203-218 mm.; tail 194-208 mm.; female, wing c. 199-221 mm.; tail 190-210 mm. Plumage of females paler above and below.....	<i>E. s. malayana</i> 229

590. Indian Koel. *Eudynamys scolopacea scolopacea* (Linnaeus)

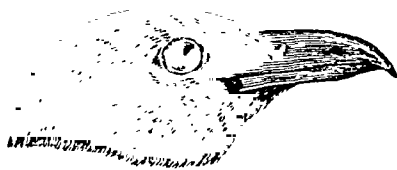
Cuculus scolopaceus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 111 (Malabar)
Baker, FBI No. 1475, Vol. 4: 172

r¹late 70, fig. 1

LOCAL NAMES. Koel (Hindi); Kōkil, Kōkila (Bengal, Marāthi); Nalla kōvēla ♂, Poda kōvēla ♀ (Telugu); Kūyil, Pūlikūyil, Kākkākūyil (Malayalam); Kōhā, Gomerā kōhā (Sinhala); Kūyil (Tamil); Karlu koel ♂, Dindin koel ♀ (Maldivé Is.).

SIZE. House Crow±; slimmer and with longer tail. Length c. 43 cm. (17 in.).

FIELD CHARACTERS. Male (adult) glistening metallic black all over, with yellowish green bill and crimson eyes. Distinctive shrieking crescendo calls: *kūoo, kūoo*, etc.



♂, x c. 1

Female. Above, dark brown, profusely white-spotted and barred. Tail-feathers and wing-quills barred with white. Below, white; spotted on chin, throat and foreneck, barred on rest of underparts with blackish.

Fledgeling (in nest). More or less like adult, sex for sex, but female far darker and more sooty above with blackish head, throat and breast; thus closer in the character of its plumage, especially upperparts, to male rather than to adult female as is the norm in birds. This adaptation is presumably of some survival value amidst the black nestlings of its normal fosterers, the House and Jungle crows. Bill black not green as in adult.

STATUS, DISTRIBUTION AND HABITAT. Resident, nomadic, and local

¹A figure derived by dividing the smaller (tail) measurement by the larger (wing) measurement.

226

CUCULIFORMES

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂ ♀	135-148	23-26	128-152 mm. (BB, SA, SDR)

Tarsus c. 19 mm. (Baker).

COLOURS OF BARE PARTS. Iris dark brown or reddish brown. Bill brownish black. Legs and feet bluish slaty or pinkish plumbeous; claws horny brown.

589. Ceylon Drongo-Cuckoo. *Surniculus lugubris stewarti* Baker

Surniculus lugubris stewarti Baker, 1919, Nov. Zool. 26: 293 (Ceylon)
Baker, FBI No. 1471, Vol. 4: 166

LOCAL NAMES. Kāūdā kōhā (Sinhala); Irattāi-rālan kūyil (Tamil).

SIZE. Same as 588; Black Drongo.

FIELD CHARACTERS. Deceptively drongo-like. See under 588, also for immature and fledgeling.

STATUS, DISTRIBUTION AND HABITAT. Race peculiar to Ceylon. 'Widely but locally distributed and resident, in small numbers, in forest areas throughout the lowlands; visits the hills to 4000 ft. [c. 1200 m.] when not breeding' (Phillips). Frequents shade trees in tea plantations etc.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the Indian bird, 588, q.v.

BREEDING. Little known. Brood-parasitic supposedly on Iora (*Argithina tiphia*) and Blackheaded Babbler (*Rhopocichla atriceps*); possibly also other species. Season probably from December to May.

MUSEUM DIAGNOSIS. Somewhat smaller in wing and bill but otherwise identical with the Indian *dicruroides* in colour and wing formula (*contra* Baker); doubtfully meriting separation. Baker gives for Ceylon birds Wing ♂ ♀ 123-131 (av. 126.5) mm.; tail 136-146 mm.

3 ♂♂ measured by HW and SDR have Wing 127-128; bill (from skull) 23 (1), (from feathers) 20-20.5 mm.; tail 136-146 mm. 1 ♀ Wing 130; bill (from feathers) 19; tarsus c. 16-18 mm.; tail 141 mm.

COLOURS OF BARE PARTS. As in 588.

Genus EUDYNAMYS Vigors & Horsfield

Eudynamys Vigors & Horsfield, 1826, Trans. Linn. Soc. London 15 (1): 303. Type, by subsequent designation, *Cuculus orientalis* Linnaeus

No crest. Bill stout, the culmen rounded and much curved. Wing and tail more or less equal in length, the latter moderately graduated and with broad rectrices. Tarsus stout, strongly scutellate in front, only feathered at extreme upper end. Sexes dimorphic.

Ranges throughout the Oriental Region to New Guinea and Australia. Only 1 species with 3-races occurs within our limits. Numerous other extralimital races extend the species through SE. Asia to Australia.

228

CUCULIFORMES

migrant throughout the subcontinent excepting Assam and East Pakistan (see under 591). Described as summer visitor in many localities in north and peninsular India, and as winter visitor in the south. However, its silence and retiring behaviour during the non-breeding period is apt to convey a misleading impression regarding its local status, and these dicta must be treated with reserve. Rare or absent in the more arid tracts of W. Pakistan, western Rajasthan and northern Gujarat, but spreading gradually in the wake of advancing colonization and its inseparable concomitant the House Crow. Common resident in Ceylon, and the Maldivé and Laccadive Is. (status?). Occurs locally up to c. 1000 m. in the peninsular hills, and to c. 1800 m. in the outer Himalayas from Punjab and Kashmir across to NEFA, including Nepal, Sikkim, and Bhutan. Occurrence and local abundance everywhere closely linked with its principal fosterers the House and Jungle crows (*Corvus splendens* and *C. macrorhynchos*). Affects lightly wooded country — gardens, mango orchards, and groves of trees in and around cultivation and towns and villages.

MIGRATION. See Appendix

GENERAL HABITS. Arboreal, the bird usually keeping to the seclusion of leafy trees and shrubs, thus apt to be easily overlooked. Normally silent and unobtrusive, seldom showing itself except while it dashes across, almost fugitively, from one tree to another in short hurried flight. However, with the approach of the hot weather and its breeding season, coincident with that of its principal hosts the House and Jungle crows, waxes aggravatingly vociferous, shrieking its shrill crescendo calls chiefly in the morning and late afternoon, but often all through the day and far into the night. It is then one of the first bird voices of the dawn, commonly heard while still quite dark, and long before its early-rising dupes, the crows, are up and astir. Flight swift and direct with rapid wing-beats — rather hawk-like.

FOOD. Largely fruits and berries, some commonly recorded species being banyan and peepul figs (*Ficus bengalensis* and *F. religiosa*), ber (*Zizyphus*), mulberry (*Morus*), sandalwood (*Santalum album*), *Cinnamomum camphora*, *Cephalandra indica*, and nuts of the Fishtail palm (*Caryota urens*). Poisonous fruits of *Thevetia nerifolia* also freely eaten. Other items: hairy caterpillars, bugs (Hemiptera) and various insects, terrestrial snails, eggs of small birds, e.g. oriole and bulbul, filched from nests, and flower nectar, e.g. of *Erythrina indica*.

VOICE AND CALLS. The calls commonly heard are:

1. A loud, continuous, rollicking *Urūk-keo-keo-keo-keo-keo-keo* (6 or 7 times repeated) without change of pitch but varying in insistence and shrillness, uttered by the male at earliest dawn as the first call of the day evidently to announce himself or as a challenge to other cocks in the neighbourhood. These soon answered similarly by another male (or males) in the distance and repeated by each at intervals of a minute or so, sometimes assuming the form of an uneven duet. Later in the morning the calls usually settle down to the characteristic 'song'.

2. Song, a loud shrill shrieking whistle *kūoo, kūoo*, etc. rising in scale with each repetition to frantic pitch at the 7th or 8th, then breaking off abruptly. The bird soon commences it all over again, and so on and on *ad nauseam*.

CUCKOOS

229

3. Normal call of female a shrill, quick-repeated *kik-kik-kik-kik* etc. as she dashes from tree to tree in courtship chase by male, or hops amongst the branches ostensibly to escape his ardour.

In addition various croaks, gurgles, and chuckles uttered by both sexes under different provocations. Flying fledgeling emits a loud harsh *kaaa* — a passable imitation of young crow.

BREEDING. Brood-parasitic almost exclusively on House and Jungle crows (*Corvus splendens* and *C. macrorhynchos*) combining strategem, cunning, and opportunism to lay in their nests. (For details of the process, and breeding biology, see D. Dewar, 1907, JBNHS 17: 765 et seq.; B. S. Lamba, 1963, JBNHS 60: 130-3; 1966, *ibid.* 63: 750-1.) Exceptionally, eggs have been found in nests of *Oriolus o. kundoo* (D'Abreu, JBNHS 31: 1032) and *Acridotheres tristis* (Inglis, *ibid.* 18: 682). Season everywhere synchronous with that of its hosts, overall March to August, chiefly May to July but varying locally. Eggs very similar in appearance to crows' only smaller — greenish grey in ground colour, profusely blotched and speckled with reddish brown. Average size of 100 eggs 31.0 × 23.6 mm. (Baker). As many as 11 eggs once found in a single crow's nest, evidently the product of several females. Eggs of host and parasite frequently found together in the same nest, and also young of both. Unlike cuckoo (*C. canorus*) koel hatchling does not eject contents of fosterer's nest, but in this case the shorter incubation period (13-14 days v. 16-17 in House Crow and 18-20 in Jungle Crow) gives it sufficient advantage to monopolize the food brought by the fosterers and gradually to starve out its lawful nest companions. Thus koel and crow fledgelings from the same nest seldom seen together though not unknown. Feeding of koel fledgeling outside the nest by adult female koel has been frequently observed.

MUSEUM DIAGNOSIS. See Key.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	182-205	29-34	32-35	186-205 mm.
♀♀	179-203	30-34	31-35	171-189 mm.

(SA, HW, SDR, BB)

Weight 10 ♂♀ 136-190 (av. 167) gm. — BNHS.

COLOURS OF BARE PARTS. Iris crimson. Bill apple green or yellowish green, blackish at base and dusky round nostrils. Legs and feet plumbeous; claws horny; pads of sole whitish.

591. Malay Koel. *Eudynamis scolopacea malayana* Cabanis & Heine

Eudynamis malayana Cabanis & Heine, 1863 (1862-63). Mus. Hein., Th. 4 (1): 52 (Sunda Islands and Sumatra)
Baker, FBI No. 1476, Vol. 4: 174

LOCAL NAMES. *Kakil* (Bengal); *Kakil sôrai* (Assam); *Kili* (Nowgong dist., Assam).

SIZE. House Crow ±; slimmer and with longer tail. Length c. 43 cm. (17 in.).

FIELD CHARACTERS. As for the Indian Koel (590), q.v. See Museum Diagnosis.

CUCKOOS

231

The genus ranges almost throughout the Oriental Region; represented by two species within our limits.

Key to the Species

	Page
Larger; wing c. 152-180 mm.; orbital skin red.....	<i>R. tristis</i> 231
Smaller; wing c. 131-142 mm.; orbital skin blue.....	<i>R. viridirostris</i> 233

RHOPODYTES TRISTIS (Lesson)

Key to the Subspecies

Smaller; nape and mantle grey.....	<i>R. t. saliens</i>
Larger; nape and mantle paler grey.....	<i>R. t. tristis</i>

593. Large Greenbilled Malkoha. *Rhopodytes tristis tristis* (Lesson)

Milias tristis Lesson, 1830, *Traité d'Orn.*, livr. 2: 132 (Sumatra, *errata* = Bengal)
Baker, FBI No. 1479, Vol. 4: 178
Plate 52, fig. 4

LOCAL NAMES. *Bon kakil* (Bengal); *Bemura* (Assam); *Sanku* (Lepcha).

SIZE. Pigeon ± with tail c. 38 cm. long. Overall length c. 51 cm. (23 in.).

FIELD CHARACTERS. A long-tailed cuckoo with naked crimson orbital patch and yellowish green bill. Sexes alike. Long graduated rectrices with broad white tips very conspicuous in flight, especially when tail spread before alighting.

Adult. Above, forehead grey with shiny bristly black shafts to the feathers. Upperparts dark ashy grey with deep green gloss. Tail green-glossed black, long, broad, steeply graduated, the rectrices cross-rayed darker and broadly tipped with white. Below, chin, throat and sides of head yellowish ashy grey, darkening to blackish on lower abdomen and vent. Feathers of chin, throat, and breast with black bristly shafts.

Young (immature) undescribed.

Fledgeling (1 ♂ taken in central Nepal, June 1). Coloration similar to that of adult birds; the tail proportionately very small (Biswas, 1960).

STATUS, DISTRIBUTION AND HABITAT. The outer Himalayas from the terai, bhabar and duars up to c. 700 m. altitude (commonly) and to c. 1800 m., from Garhwal eastward through Kumaon, Nepal, Sikkim and Bhutan to NEFA where it intergrades with *saliens* (594) in the Mishmi Hills. Also Assam (Lakhimpur, Sibsagar, Cachar Hill dists.), Nagaland, Manipur, Tripura, W. Bengal (duars and Sunderbans) and E. Pakistan (Dacca and Chittagong dists.). South through Chota Nagpur (Manbhum and Hazaribagh dists.) and eastern Madhya Pradesh (Bastar dist.) to c. 18°50'N. Affects dense thickets and shrubbery in evergreen jungle.

GENERAL HABITS. Rather sluggish, skulking, and silent. Keeps to the seclusion of impenetrable thickets, creeping its way through the dense cover with remarkable celerity, and is seldom seen except in short flight from one thicket to another. Usually works low down in the bushy tangles, sometimes mounting into thickly foliated saplings and forest trees, diving into the undergrowth on alarm. When shooting down a hillside thus, looks very like tree pie in the distance. Hops its way up gracefully, almost gliding from

230

CUCULIFORMES

STATUS, DISTRIBUTION AND HABITAT. Assam, southern NEFA, Nagaland, Manipur, Mizo (?), Tripura, East Pakistan.

Extralimital. Burma, Thailand, Malaysia, Indonesia.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 590.

BREEDING. Nothing recorded as specifically different from the Indian bird. **MUSEUM DIAGNOSIS.** Slightly larger than the nominate race and with a larger bill. Male often indistinguishable from the Indian bird; female much more rufescent above and below.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	190-221	32-34	c. 35-37	181-203 mm. (Baker)

COLOURS OF BARE PARTS. As in 590.

592. Andaman Koel. *Eudynamis scolopacea dolosa* Ripley

Eudynamis scolopacea dolosa Ripley, 1946, Auk 63: 241 (Barren Island, Andamans)
Not in Baker, FBI

LOCAL NAME. Koel (Hindi).

SIZE. House Crow ±; slimmer and with a longer tail. Length c. 43 cm. (17 in.).

FIELD CHARACTERS. As for the Indian Koel (590), q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Andaman and Nicobar Islands.

Formerly recorded (Osmaston, 1905, 1906, JBNHS 16: 621; 17: 487) only as a common winter visitor September-April, as it apparently still is to Narcondam and the Nicobars; but present status needs checking.

Frequents jungle and trees around the settlements.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the Indian bird (590), q.v.

BREEDING. Unrecorded.

MUSEUM DIAGNOSIS. Larger than nominate *scolopacea*. Upperparts of female more blackish, and conspicuously spotted with rufous-buff. Rufous wash extends over all the white parts including chin, lower abdomen, and under tail-coverts. Wing/tail index smaller than in *E. s. malayana*. See Key.

MEASUREMENTS

	Wing	Tail
♂♂	203-235	189-221 mm.
♀♀	201-216	184-197 mm.

(SDR)

Bill (from feathers) ♂♀ 27-34 mm. (HA).

COLOURS OF BARE PARTS. As in 590.

Genus RHOPODYTES Cabanis & Heine

Rhopodytes Cabanis & Heine, 1863 (1862-63), Mus. Hein., Th. 4(1): 61. Type, by subsequent designation, *R. diardi* = *Melias diardi* Lesson

Bill deep, compressed, pale green or apple-green in colour; nostril small, round or oval, and oblique. A large naked space round orbit, blue or crimson, separated from bill by a narrow band of feathers. No bristly eyelashes as in *Taccoua*, q.v.

232

CUCULIFORMES

branch to branch with occasional flicks of the long tail. Flight weak, laboured and ill sustained.

FOOD. Large caterpillars and insects, e.g. grasshoppers, mantids, and crickets; also lizards, and probably other small animals.

VOICE AND CALLS. A very peculiar low croaking *ko, ko, ko* uttered at intervals of a few seconds. 'A peculiar cat-like chuckle' when flushed in dense cover (Davison).

BREEDING. A non-parasitic cuckoo. Season, April to August, varying somewhat locally. Nest, very small for size of the bird; a rather flimsy cup like a dove's, of twigs and rootlets lined with green leaves; sometimes formed by a mere interlacing and twining of the surrounding green leaves and tendrils. Placed between c. 3 and 7 m. up, in tangled masses of creepers smothering a sapling or bamboo clump, in heavy jungle with no special effort at concealment. Eggs, 2 to 4, most commonly 3, chalky white varying in shape from elliptical to longish oval. Average size of fifty eggs 33.8 × 25.8 mm.; incubation by both sexes (Baker). Period undetermined.

MUSEUM DIAGNOSIS. Differs from the Burmese race *saliens* (594) chiefly in having a larger wing. See Key.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	165-176	36-37	40-43	375-385 mm.
♀♀	164-173	36-40	40-43	345-425 mm. (SA, BB, SDR)

Tail moult in the species centripetal (Biswas).

Weight 1 ♂ juv. 116; 1 ♀ juv. 114 gm. (GD).

NOTE. In 1949 SA collected a ♂ and ♀ in Bastar dist., M.P. which, apart from being the smallest so far examined (W. 157 and 146 mm. respectively) also represent the most southerly point in the distribution within our limits.

COLOURS OF BARE PARTS. Adult. Iris brown (rarely crimson); orbital skin deep crimson. Bill dark green with red on the base and around nostrils. Legs and feet greenish slaty; claws horny; sole pads white. Fledgeling. Iris brown; orbital skin dark brown. Bill: upper mandible slaty horn, lower mandible greenish horn. Legs and feet pale plumbeous; claws dark horny; sole pads white (BB).

594. Burmese Large Greenbilled Malkoha. *Rhopodytes tristis saliens* Mayr

Rhopodytes tristis saliens Mayr, 1938, Ibis: 306 (Chapa, Tonkin)
Not in Baker, FBI

LOCAL NAMES. Unrecorded.

SIZE. Pigeon ± with tail c. 38 cm. long. Overall length c. 51 cm. (23 in.).

FIELD CHARACTERS. As for 593, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Mishmi Hills, NEFA, where it intergrades with the nominate race (593). Birds from Nagaland approach this race, but less closely than the virtual intermediates of the Mishmis.

Extralimital. Bhamo and the Upper Chindwin dist. of Burma, SW. Yunnan and Tonkin [N. Vietnam], southward to the mountains of N. Siam, N. Laos and N. Annam [C. Vietnam] — Peters.

CUCKOOS

233

GENERAL HABITS, FOOD, VOICE and CALLS. Not different from 593.
BREEDING. Not recorded in our limits.
MUSEUM DIAGNOSIS. See Key. * Smaller than *tristis*. Wing 152-163 (av. 155.4); tail 364-394 (av. 377.9), once 347; underparts not very much washed with ochraceous; crown, back, and underparts rather dark; white on forehead and superciliary not extensive; gloss on wings and tail rather bluish; white tips on tail feathers narrow; . . . (Mayr, loc. cit.).
2 ♀♀ from the Mishmi Hills (intermediate) measure 'Wing 164-167; culmen 34-37; tail 330-372 mm. The wing measurement agrees with *tristis*, but the tail with *saliens*. The upperparts are darker than in *tristis*' (SDR).
COLOURS OF BARE PARTS. As in 593.

595. Small Greenbilled Malkoha. *Rhopodytes viridirostris* (Jerdon)

Zanclostomus viridirostris Jerdon, 1840, Madras Jour. Lit. Sci. 11: 223 (bottom of the Coonoor Pass)
Baker, FBI No. 1478, Vol. 4: 177 Plate 52, fig. 1

LOCAL NAMES. *Kappra*, *Pohiya* (Hindi); *Wāmanā kākī* (Telugu); *Kalahā kōhā*, *Pūnchi māl kōhā* (Sinhala); *Kūyil* (Tamil); *Pācha chūdān* (Malayalam).

SIZE. House Crow —; slimmer and with a longer tail. Overall length c. 39 cm. (15½ in.).

FIELD CHARACTERS. An untidy looking greenish ashy-grey cuckoo, suffused with rufous on the underparts. Bright green bill, naked blue patch round eye, and long, broad, graduated tail with conspicuous white tips to the feathers, are diagnostic pointers. Sexes alike.

Young (immature). Undescribed, but see Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; locally common. Ceylon (low-country Wet and Dry zones), and peninsular India roughly north to lat. 20°N.; northernmost record on the western side Baroda (Gujarat, c. 22°20'N.), on the eastern Cuttack (Orissa, c. 22°25'N.). Affects deciduous and semi-evergreen scrub-and-bush terrain with euphorbia and lantana brakes, and open secondary jungle — plains and broken foothills country up to c. 1000 m. alt.

GENERAL HABITS. Keeps singly or in pairs to low bushes and thorn scrub, skulking its way through the thickets and clambering about actively among the branches. Seldom if ever descends to the ground, but habits and behaviour otherwise clearly reminiscent of the Crow-Pheasant. Is a poor flier, rarely seen on the wing except in short laboured flight from one thicket to another; normally preferring to creep away through the tangled shrubbery on alarm.

FOOD. Caterpillars and large insects such as grasshoppers and mantises. Also lizards and other small animals, and probably berries.

VOICE and CALLS. Very silent and seldom heard: a low croak, sounding like *kraa*.

BREEDING. Non-parasitic. Season ill defined; breeds practically all the year, perhaps more specially between March and May. Nest, an untidy saucer of thorny twigs, rather like a dove's, placed in a thorn bush or euphorbia brake or bamboo clump a metre or two above the ground. Eggs, almost

CUCKOOS

235

FIELD CHARACTERS. An obvious relation of the crow-pheasant and malkohas. A heavy-tailed earthy brown and rufous cuckoo with fine glistening black shaft-streaks to the head and breast feathers, and a stout bright



× c. 1

cherry-red and yellow bill. Broad white tips to the graduated cross-rayed blackish tail-feathers conspicuous in flight. Sexes alike.

Fledgeling. Feathers of back, scapulars, and wing-coverts edged with pale rufous; feathers of head dully centred blackish; of chin, throat, breast, flanks and upper abdomen boldly streaked with black (Baker).

STATUS, DISTRIBUTION and HABITAT. Resident. West Pakistan (Sind, Punjab) and NW. India — Himachal Pradesh, Garhwal, parts of southern Uttar Pradesh, western Madhya Pradesh, and ? eastern Maharashtra (Nagpur area); Rajasthan, Gujarat (including Kutch and Saurashtra) south to about Cambay, c. 22°20'N. lat. Precise limits undefinable as the populations intergrade over extensive areas.

Was practically unknown in Sind till the early thirties of the present century, but has established itself since, and is steadily expanding its range consequent on the opening up of desert areas by the perennial canal system of the Sukkur Barrage (N. H. Menesse, 1939, JBNHS 41: 172-3).

Affects deciduous tangled thorn and grass jungle, particularly in stony, broken ravine country, often semi-desert.

GENERAL HABITS. Largely terrestrial; usually keeps singly or in pairs, stalking along on the ground or threading its way through the thickets in search of food. Sometimes mounts into shrubs or saplings clambering amongst the twigs or hopping upward actively from branch to branch in the manner of a crow-pheasant. Flight weak and laboured: is loth to take wing unless deliberately beaten out of the undergrowth or almost trod upon in tall grass. Prefers to trust to its legs for escape when disturbed, sprinting swiftly over loose stones and rough ground with head ducked and tail horizontal, dodging deftly in and out of thickets, then looking singularly like a mongoose in the distance.

Courtship display consists of a ludicrous repeated bowing (or bobbing) by one bird of a pair (in one case verified as female) before the other, with its plumage fluffed out and tail cocked and expanded like a rounded fan, the white tips of the rectrices showing up as a conspicuous band. At other times both birds partake in these antics with equal enthusiasm, puffing out their plumage, fanning and erecting the tails, and repeatedly bowing low

234

CUCULIFORMES

invariably 2, exceptionally 3, chalky white, roundish. Average size of 6 eggs 29.4 × 24.8 mm. (Baker). Share of the sexes in nest building and incubation, and incubation period, undetermined.

MUSEUM DIAGNOSIS. Feathers of chin and throat bifurcate, a character absent in *tristis*, the bifurcated portion yellowish, giving a streaked appearance.

Ceylon birds have a larger extent of white on the outer web at the tips of the 2nd and 3rd tail-feathers (counting from outside) than those from the Peninsula; S. Kerala birds are closer to Ceylon in this respect. (For details see Whistler, 1934, JBNHS 37: 525.) Ceylon birds moreover have a somewhat heavier bill.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	131-143	29-33	32-36	202-246 mm.
♀♀	129-140	28-34	32-34	218-240 mm.
		(from skull)		(SA, HW)

Weight 21 ♂ ♀ 52-82 (av. 67) gm. — BNHS.

COLOURS OF BARE PARTS. Iris, fine outer ring white, inner claret; crinkled warty circumorbital skin pale blue. Bill greyish green; mouth brownish black or slaty black. Legs and feet olive-slate; claws dusky.

Genus TACCOCUA Lesson

Taccocua Lesson, 1830, *Traité d'Orn.*, livr. 2: 143. Type, by monotypy, *Taccocua leschenaultii* Lesson

Bill shorter and deeper than in *Rhopodytes*; upper mandible distinctly festooned near base. Wings short and rounded. Tail long, broad, and graduated; upper tail-coverts more than half length of tail. Plumage of head, neck, upper back, and breast spinous; shafts of the forehead-feathers projecting. A row of coarse bristles (like eyelashes) nearly surrounding the eye except behind. Tarsus stout; claws short and curved.

A single species, peculiar to and widely distributed in India and Ceylon.

TACCOCUA LESCHENAUTII Lesson

Key to the Subspecies

	Page
Darkest in colour.....	<i>T. l. infusca</i> 236
Intermediate.....	<i>T. l. leschenaultii</i> 237
Palest.....	<i>T. l. sirkee</i> 234

596. Western Sirkeer Cuckoo. *Taccocua leschenaultii sirkee* (J. E. Gray)

Centropus sirkee J. E. Gray, 1831, in Hardwicke's Ill. Ind. Zool. 1 (6), pl. 28 (No locality = Cawnpore)

Taccocua leschenaultii oventyni Koelz, 1954, *Contrib. Inst. Regional Exploration*, No. 1: 24 (Sasan, Junagadh, Saurashtra)
Baker, FBI No. 1487, Vol. 4: 187

LOCAL NAME. *Jāngli tōā* (Hindi).

SIZE. House Crow ± with longer broader tail; overall length c. 42-44 cm. (16½-17¼ in.).

CUCULIFORMES

236

to each other with beaks wide open, each bow commencing with the head thrust high into the air.

FOOD. Caterpillars, locusts, grasshoppers, termites, and other insects; fallen fruits and berries; lizards.

VOICE and CALLS. Normally silent. Occasionally a sharp *kek-kek-kek-kerek-kerek-kerek* or *kik-kik-kik* of the tone quality of the Roseringed Parakeet's shrieks; in a way reminiscent also of some of the Barred Jungle Owlet's calls.

BREEDING. Non-parasitic. Season, chiefly June to August. Nest, very similar to the malkohas', an untidy saucer of twigs lined with green leaves, roughly wedged into the fork of a 'cactus' (*Euphorbia*) or branching shrub up to about 6 metres from the ground, normally between two and three. Not deliberately concealed, but easily overlooked. Eggs, 2, rarely 3 (once 4, Currie, JBNHS 24: 604), chalky white, unmarked. Average size of 12 eggs 36.2 × 27.3 mm. (Baker). Both sexes incubate. Period of incubation undetermined.

MUSEUM DIAGNOSIS. See Key. * Upperparts much as in *leschenaultii* [q.v.]; lower parts paler and more rufescent and also more uniform, the foreneck and breast being more or less concolorous with the belly' (Whistler).

MEASUREMENTS

24 ♂♀ Wing (once 148) 153-168; bill (from skull) 30-34 mm. (HW).

COLOURS OF BARE PARTS. Iris brown. Bill magenta-crimson or cherry-red, yellow at tips of both mandibles and brown along commissure; mouth slaty black. Legs and feet slaty; claws horny brown.

597. Eastern Sirkeer Cuckoo. *Taccocua leschenaultii infusca* Blyth

Taccocua infusca Blyth, 1845, *Jour. Asiat. Soc. Bengal* 14 (1): 200 (Sub-Himalayan region; type from the terai region near Darjeeling)

Taccocua affinis Blyth, 1846, *Jour. Asiat. Soc. Bengal* 15: 19 (Rajmahal and Monghyr Hills)
Baker, FBI Nos. 1488, 1489, Vol. 4: 187, 188

LOCAL NAME. *Jāngli tōā* (Hindi).

SIZE. As 596, House Crow ± with longer, broader tail.

FIELD CHARACTERS. As of 596, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. The sub-Himalayan terai and duars (and locally up to c. 2100 m. alt.) from Kumaon eastward through Nepal, W. Bengal, Bhutan and western NEFA; western Assam and E. Pakistan. South through Bihar, Orissa, eastern Madhya Pradesh (Bastar dist.), northern Andhra, and Maharashtra (Marathwada) to c. 18°N. lat. Affects dry deciduous sparsely wooded or scrub-and-bush covered hillsides and broken stony country.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 596.

BREEDING. Season, chiefly April to July but struggling over other months as well. Nest and eggs as in 596; normal clutch reported to be of 3 eggs. Average size c. 35 × 27 mm.

MUSEUM DIAGNOSIS. The darkest of the three races.

CUCKOOS

237

MEASUREMENTS

	Wing	Bill (from skull)
27 ♂♀	148-167	31-35 mm. (HW)

COLOURS OF BARE PARTS. As in 596.

598. Southern Sirkeer Cuckoo: *Taccocua leschenaultii leschenaultii* Lesson

Taccocua Leschenaultii Lesson, 1830, *Traité d'Orn.*, livr. 2: 144 (India = Madras)
Ba. r, FBI No. 1486, Vol. 4: 185
Plate 52, fig. 5

LOCAL NAMES. *Jāngli tūtā* (Hindi); *Adāvi chiluka*, *Poti* (or *Pūtta*) *chiluka* (Telugu);
Kālli kīrīl (Malayalam); *Pūthāng atti-kukkūlā* (Sinhala).

SIZE. As 596, House Crow ± with longer, broader tail.

FIELD CHARACTERS. As of 596, q.v. See *Museum Diagnosis*.

STATUS, DISTRIBUTION and HABITAT. Resident. Ceylon and peninsular India (Kerala, Tamil Nadu, Andhra, Maharashtra), north approximately to between 18° and 20° N. lat. Affects dry deciduous secondary forest and scrub-and-bush jungle, stony *Euphorbia*-covered hillsides, etc. Plains and foothills, locally up to c. 1000 m. altitude.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 596, q.v.

BREEDING. Season, c. July in Ceylon; chiefly March to June in peninsular India. Nest and eggs as in 596; normally 2. Average size of 20 eggs 33.9 × 26.1 mm. (Baker).

MUSEUM DIAGNOSIS. 'Upperparts brown, washed with dusky green. Throat whitish, foreneck and breast more or less ashy, contrasting with the ferruginous colour of the belly. The entire head often has a distinctly ashy cast' (Whistler).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	147-162	30-34	38-40	c. 214-230 mm. (HW, SA)

COLOURS OF BARE PARTS. As in 596.

Genus *PHAENICOPHAEUS* Stephens

Phaenicopterus Stephens, 1815, in Shaw's *Gen. Zool.* 9 (1): 58

Type, by subsequent designation, *Cuculus pyrrhocephalus* Pennant

Cf. Whistler, H., 1936, *JBNHS* 39: 7

Bill stout, wide at base, compressed anteriorly; culmen curved throughout; upper mandible very high; nostril a narrow horizontal slit close to commissure and parallel with it. Sides of head naked and papillose, the bare skin extending across forehead all round base of upper mandible. No eyelashes. Wing rounded. Tail long, broad, and graduated. Feathers of crown and throat with stiff bristly shafts as in *Rhopodytes*. Sexes alike, differing only in colour of iris.

Only a single species.

CUCKOOS

239

more than a 'hop' from one thicket to another. 'In flight the wings produce a musical hum' (Henry).

FOOD. Recorded as mainly berries of forest trees.

VOICE and CALLS. Usually very silent. Sometimes utters 'short, single yelping whistles; a note like *kok*, imitated by a sucking action of the tongue; and a low, petulant-sounding *kra*' (Henry).

BREEDING. Season, in Ceylon January, April, and May; from mature gonads of specimens evidently also breeds in August-September (or continuingly?). In Kerala April and May (Stewart in Baker). Nest, typical of the malkohas, a shallow saucer of roughly put-together twigs, grass and roots, placed in shrubs in forest with dense undergrowth. Eggs, 2 or 3, chalky white; rounded oval, practically equal at both ends. Average size of 12 eggs 35.8 × 27.0 mm. (Baker). Share of the sexes in the domestic chores, and incubation period, unrecorded.

MUSEUM DIAGNOSIS. As for the genus, q.v. *supra*.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂♂	148-156	34-38	c. 30-40	249-286 mm.
4 ♀♀	153-159	34-38	c. 35-36	265-274 mm. (HW, SDR)

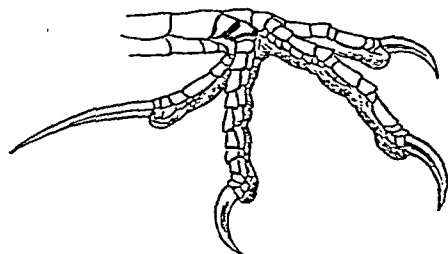
COLOURS OF BARE PARTS. Iris ♂ brown, ♀ white. Bill light green or apple-green, dusky at base and about the nostrils. Legs and feet bluish or bluish green.

Genus *CENTROPUS* Illiger

Centropus Illiger, 1811, *Prodromus*: 205. Type, by subsequent designation,

Cuculus aegyptius Gmelin

Genus distinguished from all others of the family Cuculidae in having on the hallux a long, nearly straight hindclaw very much like a lark's (whence sometimes known as Larkheaded Cuckoos); other claws also little curved. Tarsus strong and naked, and longer than normal in the family. Bill deep, moderately large, with

Foot of *C. s. sinensis* (600), × c. 1

culmen much curved. Nostrils partly covered by a membrane. A row of bristles like eyelashes above eye. Wing short and rounded with the primaries scarcely exceeding the secondaries in length. Tail long, broad, and graduated. Feathers of head, neck, and breast stiff and bristly. Sexes alike.

238

CUCULIFORMES

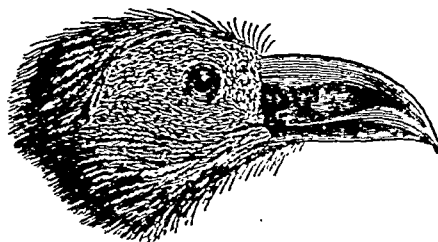
599. Redfaced Malkoha. *Phaenicopterus pyrrhocephalus* (Pennant)

Cuculus pyrrhocephalus Pennant, 1769, *Ind. Zool.*: 6, pl. 6 (Ceylon)
Baker, FBI No. 1484, Vol. 4: 182
Plate 52, fig. 7

LOCAL NAMES. *Māl kōhā*, *Māl kandettā* (Sinhala).

SIZE. Crow-Pheasant ±; somewhat slimmer, with a proportionately longer, graduated tail. Overall length c. 46 cm. (18 in.).

FIELD CHARACTERS. A long and broad graduated-tailed cuckoo similar to the greenbilled malkohas, with a bare crimson-red face.



× c. 1

Adult. Above, black, glossed with metallic green and blue, the crown, nape, and neck flecked with white. Tail-feathers more bronze-green, with white terminal bands. Below, throat and breast black; rest of underparts white. Its most diagnostic features are the bare red face and heavy apple-green bill. Sexes alike.

Young (immature). Bare patch on face brick-red and confined only to round the eye; crown streaked with dull grey. Tail-feathers shorter and less broadly tipped with white. Below, the black feathers on chin and throat streaked with white.

STATUS, DISTRIBUTION and HABITAT. Resident in Ceylon and south Kerala; rare and local. Was long regarded as peculiar to the Island, and reports of its occurrence (and breeding) in south Travancore by J. Stewart (in Baker, 1932-4) were discredited. However, since then the species has been reliably observed at the foot of High Wavy Mountains in the adjoining Tamil Nadu district of Madurai (C. H. Biddulph, 1956, *JBNHS* 53: 697-8) therefore previous doubts probably unjustified. Must undoubtedly be one of the rarest Indian birds. Affects heavy forest, chiefly evergreen, but scattered colonies also found in the Dry zone in Ceylon, low country and hills up to c. 1700 m. Avoids cultivation. Its existence on the Island is seriously threatened by the relentless encroachment upon its native forest habitat for cultivation.

GENERAL HABITS. Similar to *Rhopodytes* (593, 595) qq.v. Keeps singly, or in pairs or small parties to the foliage canopy of trees and shrubs in heavy forest, threading its way deftly through the tangles of leaves and draping twines and disappearing on alarm. Flight feeble and laboured, usually no

240

CUCULIFORMES

Represented in the Ethiopian, Oriental, and Australasian regions; by four species within our limits.

Key to the Species

	Page
A Under wing-coverts chestnut..... <i>C. toulou</i>	246
B Under wing-coverts never chestnut ¹ 1	
1 Various barred above and below..... a	
Unbarred above and below..... b	
a Tail oily green..... <i>C. sinensis</i> (juv.)	240
Tail brown..... <i>C. andamanensis</i> (juv.)	244
b Bill green or yellow..... <i>C. chlororhynchus</i> (ad.)	245
Bill black..... I	
I Head and body black, glossed with purple-blue..... <i>C. sinensis</i> (ad.)	240
Head and body brown and buff..... <i>C. andamanensis</i> (ad.)	244

CENTROPUS SINENSIS (Stephens)

Key to the Subspecies

A Interscapulars chestnut..... 1	
Interscapulars black..... <i>C. s. parroti</i>	243
1 Larger: Male, wing over 200; female, over 219 mm..... <i>C. s. sinensis</i>	240
Smaller: Male, wing under 200; female, under 219 mm. <i>C. s. intermedius</i>	242

600. Common Crow-Pheasant or Concal. *Centropus sinensis sinensis* (Stephens)

Poelophilus sinensis Stephens, 1815, in Shaw's *Gen. Zool.* 9 (1): 51 ('Said to inhabit China' = Ning Po, China, by designation of Stresemann, 1913, *Nov. Zool.* 20: 321)
Baker, FBI No. 1490, Vol. 4: 189
Plate 52, fig. 8

LOCAL NAMES. *Māhākā* (Hindi); *Kūā* (Bengal); *Kūko srai* (Assam), *Kūkūā*, *Dābhi kūkūā* (Assam, Nowgong dist.); *Heakā* (Gulf of Kutch).

SIZE. Jungle Crow ± with long broad graduated tail. Overall length c. 48 cm. (19 in.).

FIELD CHARACTERS. A clumsy glossy black bird with conspicuous chestnut wings, and long, broad, graduated black tail. Sexes alike; female slightly larger.

Young (immature). Variable; some similar to adult, others as follows: Above, barred dark brown and rufous with pale, glistening shafts to the feathers; rump barred blackish brown and pale fulvous; tail black, glossed

¹ This must be used with caution since some examples, especially of *C. s. parroti*, do show a variable amount of chestnut intermixed with the black.

CUCKOOS

241

with green and barred with dull grey or greyish fulvous. *Below*, from chin to under tail-coverts dark brown narrowly barred with dull white. Iris grey, glaucous blue-grey or dull brown.

Juvenile plumage in this species apparently of racial significance since the young of *C. s. sinensis* and *C. s. intermedius* are barred (as above) while those of *C. s. parroti* are not (Humayun Abdullahi, 1956, JBNHS 54: 183-5).

STATUS, DISTRIBUTION and HABITAT. Resident. West Pakistan (Sind, Punjab) and northern India from Kashmir eastward through the Himalayas (terai, duns and foothills, locally up to c. 2100 m. alt.) and the Gangetic Plain to Assam north of Brahmaputra river. Also the duars of Bengal and Sikkim, and foothills of Bhutan. Affects deciduous scrub jungle and tall grassland, and shrubbery in and about cultivation and habitations, freely entering groves, orchards and urban gardens. Flooded tamarisk jungle on riverbanks, irrigated sugarcane fields, and bamboo jungle are also favourite haunts.

Extralimital. Southern China, in provinces of Kwangsi, Chekiang, and Fukien.

GENERAL HABITS. Sedentary, parochial, and largely terrestrial. Keeps singly or in pairs, skulking its way through low undergrowth or stalking along the ground like a pheasant, tail held horizontally, opened and shut from time to time, occasionally cocked and thrown forward right over the back. Works thus in and out of the thickets methodically searching for food. Sometimes suddenly flicks open wings bringing them forward almost to the head — obviously a manoeuvre to stampede lurking prey. Often springs up a foot or more in the air to seize a grasshopper or lizard from an overhanging weed-stem or twig. Walks and runs strongly but is a poor flier, reluctant to leave cover unless pressed, then making a short clumsy flight to the nearest thicket. Clammers with 'hand over hand' action along inclined branches, or ascends into the foliage canopy of trees, hopping with agility from branch to branch and hunting systematically. Volplanes down into undergrowth on alarm.

Pre-copulatory sexual play consists of male strutting grotesquely and chasing female on the ground, and in and out through shrubbery, the latter pretending to flee with tail depressed, wings drooped and occasionally vibrated to the accompaniment of a frequent harsh *cheetaw* or *ske-e-tee-aw*. Sometimes the chase and its culmination take place up in the branches of trees.

FOOD. Predominantly animal. Items commonly recorded are baby mice, bats (occasional), geckos (*Hemidactylus* spp.), skinks (*Mabuya* spp.), 'blood-sucker' lizards (*Calotes* spp.), snakes (*Dryophis mycterizans*), stranded fish, frogs, crustaceans, molluscs, insects, spiders. Highly destructive to eggs and nestlings, especially of ground- and bush-nesting birds (also to small birds caught in low mist nets!). Among insect items the following identified at Pusa Agricultural Research Institute, Bihar: cutworms (*Agrotis* spp. larvae), *Brachytrypes achatinus*, *Opatrum depressum*, *Asystes lateralis*, besides various bugs (Hemiptera), ants (*Camponotus* and *Oecophylla*), grasshoppers and locusts. Occasionally some vegetable matter (grass, leaves, etc.) also found in stomachs (Mason & Lefroy, 1912).

VOICE and CALLS. A deep, resonant *coop-coop-coop-coop* etc. in runs of 6 or 7 (often up to 20 or 30) quickly repeated at the rate of 2 or 3 *coops* per

CUCKOOS

243

SIZE. Jungle Crow \pm with long broad graduated tail. Overall length c. 48 cm. (19 in.).

FIELD CHARACTERS. As of 600, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. Assam south of Brahmaputra river, Cachar, Nagaland, Manipur, Mizo (?), Tripura; East Pakistan (Sylhet, Tippera, Chittagong Hill Tracts); up to c. 1200 m. altitude. Affects scrub-and-bush jungle and tall grassland.

Extralimital. Burma north to the Chin Hills, and S. Yunnan south to peninsular Thailand and the Indochinese countries; Hainan I.

GENERAL HABITS, FOOD, VOICE and CALLS. Not significantly different from 600, q.v.

BREEDING. Season, principally mid June to end August. Nest, as of 600, globular, of twigs and grass. Eggs, 3 or 4, chalky white, elliptical. Average size of 50 eggs 35.7 \times 28.6 mm. (Baker). Fledgelings said to leave nest when about a month old.

MUSEUM DIAGNOSIS. Differs from the nominate race (600) only in being smaller.

MEASUREMENTS			
Wing	Bill (from feathers)	Tarsus	Tail
σ^7 ♀ 183-204	30-34	c. 56-60	215-265 mm. (Baker)

COLOURS OF BARE PARTS. As in 600.

602. Southern Crow-Pheasant. *Centropus sinensis parroti* Stresemann

Centropus sinensis parroti Stresemann, 1913, Nov. Zool. 20: 323 (Ceylon)
Baker, FBI No. 1492, Vol. 4: 192

LOCAL NAMES. *Māhikā* (Hindi); *Jemudu kiki*, *Chemara kiki* (Telugu); *Kalli kaka*, *Chempakam* (Tamil); *Atti kukkula*, *Bū kukkula* (Sinhala); *Uppan*, *Chemboth* (Malayalam); *Kimbhār kōla* (Marathi); *Hokka*, *Chōyāra* (Gujarati); *Hokka* (Gulf of Kutch).

SIZE. Jungle Crow \pm with long broad graduated tail. Overall length c. 48 cm. (19 in.).

FIELD CHARACTERS. As of 600, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. Peninsular India south of the range of *C. s. sinensis* (south of the Gangetic Plain) from N. Gujarat, Kutch, and Saurashtra east through Madhya Pradesh, Andhra and Orissa, south through Maharashtra, Mysore, Tamil Nadu and Kerala. Plains and hills, locally to c. 2220 m. altitude. Ceylon (all zones). Affects light forest, scrub-and-bush jungle, grassland, plantations, cultivation and the neighbourhood of habitations.

GENERAL HABITS and FOOD. As in 600, q.v. In addition, recorded feeding on fruits of Yellow Oleander, *Thevetia nerifolia* (Sanjeeva Raj, JBNHS 60: 457).

BREEDING. Season, in peninsular India practically all year, chiefly November to May; in Ceylon chiefly February to April and August-September. Nest and eggs (2 to 4) similar to the northern race (600), but in

242

CUCULIFORMES

second. Usually in duets: as soon as one bird begins calling another within earshot (its mate?) almost invariably joins in. Single calls or short runs reminiscent of langur monkey's *whoop* in distance. Calling most persistent during the breeding season, often commencing at early dawn and sometimes kept up at night. An occasional quick repeated *kūi-kūi-kūi-kūi*, of about half-minute's duration sounding like the oil engine of a village flour mill has been heard, the significance of or provocation for which is not known. During courtship (also when annoyed) utters a medley of harsh, weird croaks and chuckles.

BREEDING. A non-parasitic cuckoo. Season, chiefly June to September. Nest, a large untidy globular structure like a Rugby football, c. 45 \times 35 cm., of twigs and leaves, or mainly leaves of elephant grass or bamboo, with a lateral entrance; sometimes a deep cup with the dome formed by intertwining the surrounding living foliage and creeper stems. Placed within a thick bush or bamboo clump or among the branches of a thorny tree, at moderate heights, usually well concealed amongst tangled vines. Eggs, 3 or 4 (exceptionally 5 and even 6 recorded), broad ellipses, chalky white, becoming yellow-stained as incubation proceeds. Average size of 50 eggs 35.9 \times 28.0 mm. (Baker). Nest-building and incubation by both sexes; incubation period and other details of breeding biology unknown.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for subspecies, Key.

MEASUREMENTS				
	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	205-232 (one 195, one 239, one 242)	33-37	58-66	220-262 mm. (Baker)
5 ♂ ♀	from Nepal 193-210	(from skull) 38-41	—	222-254 mm. (BB)

5 σ^7 ♀ from Sindh (in British Museum) Wing 225-239 mm. (Titchhurst).
Weight 1 σ^7 362 gm. (SA).

There is considerable individual variation in size, but in most cases females are larger than males. The significance of this disparity needs to be studied.

COLOURS OF BARE PARTS. Iris bright crimson. Bill, legs and feet black.

MISCELLANEOUS. Flesh of the coucal is relished as an epicurean delicacy in many parts of the country, and widely believed to be a panacea for consumption, asthma and other pulmonary ailments.

601. East Pakistan Crow-Pheasant. *Centropus sinensis intermedius* (Hume)

Centropus intermedius A. O. H. (= Hume), 1873, Stray Feathers 1: 454, in text (Dhooon, Dacca, and Thayetmyo)
Baker, FBI No. 1491, Vol. 4: 192

LOCAL NAMES. *Dao di dai* (Cachar); *Kēkū* (Bengal, E. Pakistan); *Kēkū vōdi* (Assam); *Nongkoubi* (Manipur).

CUCULIFORMES

244

Ceylon the normal clutch is of 2 or 3 eggs only. Average size of 30 eggs 36.2 \times 26.3 mm. (Baker).

VOICE and CALLS. 'The scold-note used when the bird mobs a lurking snake or owl etc., is an explosive *k'wiss*; and, in courtship, a curious sound is produced — *djoont* — like a stone dropped into deep water, or a tight cork drawn from an empty bottle' (Henry).

MUSEUM DIAGNOSIS. Differs from 600 and 601 in having the interscapulars black instead of chestnut (but see Whistler, 1934, JBNHS 37: 528). Forehead and forehead paler and brownish with little or no gloss; sheen of head, back, and underparts more blue or blue-green than rich purple-blue as in the other two. These characters however show considerable individual variation.

MEASUREMENTS				
	Wing	Bill (from skull)	Tarsus	Tail
♂♂	173-195	37-45	42-57	197-265 mm.
♀♀	178-210	38-45	46-58	223-310 mm. (SA, HW)

Weight 1 σ^7 230 gm. (Rensch).

COLOURS OF BARE PARTS. As in 600.

MISCELLANEOUS. There is a curious folk-belief common to such far-flung parts of the country as Saurashtra and South Kanara (possibly more general) that the crow-pheasant's nest is lined with some particularly valuable (and that the crow-pheasant's nest is lined with some particularly valuable ('life-giving magical') kind of 'grass' known in Kanara as *sānjivānā kāddi* ('life-giving herb') — which can be separated from the rest of the material by throwing it into a stream, whereupon the former will flow against the current!

603. Andaman Crow-Pheasant. *Centropus (sinensis) andamanensis* Beavan

Centropus andamanensis 'Tyler' = Beavan, 1867, Ibis: 321 (Andaman Islands)
Baker, FBI No. 1494, Vol. 4: 194
Plate 52, fig. 10

LOCAL NAMES. None recorded.

SIZE. Jungle Crow \pm , with long broad graduated tail. Overall length c. 48 cm. (19 in.).

FIELD CHARACTERS. Like Common Crow-Pheasant (600) with chestnut wings, but whole head, body and tail brown instead of glistening black. Sexes alike. See Museum Diagnosis.

Young (immature). Above, traces of barring on head, neck, and upper back. Below, barred from chin to vent with pale brown and pale dusky ochre.

STATUS, DISTRIBUTION and HABITAT. Andamans (North, Middle, and South), Great and Little Coco, and Table islands. Nicobars? To what extent, if at all, moving from island to island not known. Affects outskirts of forest, gardens, and cultivated tracts especially sugarcane. Partial to newly ploughed paddyfields and mangrove swamps.

GENERAL HABITS. As of Common Crow-Pheasant (600), q.v. Commonly walks about on the ooze of mangrove swamps in search of food (A. L. Butler, JBNHS 12: 566).

FOOD, VOICE and CALLS. Presumably as in 600; nothing recorded as specifically different.

CUCKOOS

245

BREEDING. Season, mainly mid May to end July, but as in other races not well defined. Nest and site as in Indian birds. Eggs, 2 or 3 — occasionally 4 — also similar. Average size of 30 eggs 34.7 × 28.0 mm. (Baker).

MUSEUM DIAGNOSIS. Whole head and body greyish brown, darker and browner on lower back, rump, vent and under tail-coverts. Tail darker brown towards tip, and conspicuously black-shafted. Scapulars, interscapulars, and wings rich deep chestnut-bay (of variable intensity), the tips of the quills more dusky brown.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	173-195	29-35	52-56	235-242 mm. (Baker)
		(from skull)		
9 ♂ ♀	180-198	30-40	—	228-261 mm. (HA)

COLOURS OF BARE PARTS. As in 600 and other races.

604. Ceylon Coucal. *Centropus chlororhynchus* Blyth

Centropus chlororhynchus Blyth, 1849, Jour. Asiat. Soc. Bengal 18 (2): 805 (Ceylon) Baker, FBI No. 1493, Vol. 4: 193

Plate 52, fig. 9

LOCAL NAMES. Bātū āti-kukkūā, Wāl āti-kukkūā (Sinhala); Chempakam (Tamil).

SIZE. House Crow ± with long broad graduated tail. Overall length c. 43 cm. (17 in.).

FIELD CHARACTERS. Like Common Coucal (600), q.v., but smaller; readily distinguished by pale apple-green (v. black) bill. Sexes alike.

Young (immature) has no distinct plumage (Wait, 1931).

STATUS, DISTRIBUTION and HABITAT. Species peculiar to Ceylon. 'Resident, in moderate numbers, in and confined to the dense scrub jungles and cane brakes of the Wet zone and neighbouring intermediate tracts, to 2500 ft. [c. 750 m.] on the SW. slopes of the hills' (Phillips, 1953). Affects high humid forest with dense undergrowth of dwarf bamboo and other luxuriant herbage.

GENERAL HABITS and FOOD. Similar to Crow-Pheasant (600), q.v., but very shy and elusive and oftener heard than seen. Its existence now endangered by the rapid destruction of its specialized habitats for agriculture.

VOICE and CALLS. Similar in character to Common Crow-Pheasant's but apparently quite distinctive and unmistakable with it: 'usually only two- or three-syllabled, deeper, and with a sonorous, mournful quality — hoo-poop, hoo-poop-poop — the poop being lower-pitched than the hoo' (Henry).

BREEDING. Season, January to July. Nest, globular or domed, of twigs, roots and grass, lined with green leaves and supple green twigs. Placed in a thorny bush c. 1½ to 2 m. from the ground, inside deep evergreen forest. Eggs, 2 or 3, chalky white, typical of the crow-pheasants. Average size of 9 eggs 34.7 × 27.0 mm. (Baker).

MUSEUM DIAGNOSIS. Head, body, and tail black, glossed with purple, passing on the neck, upper back, and breast into coppery bronze. Wing-coverts, scapulars, and interscapulars deep chestnut-bay; tips of quills dusky; wing-lining blackish.

CUCKOOS

247

VOICE and CALLS. A double series of notes, *whooh*, *whooh*, *whooh*, *whooh* followed by a pause of 4 or 5 seconds, then *kurook*, *kurook*, *kurook*, *kurook*; the *whooh*s decidedly ventriloquistic. Therefore, 'When searching for the caller one must take no notice of the *whooh* but wait for the *kurook*' (J. A. Gammie, 1877, SF 5: 385). Apparently both sexes call from bush-tops. The neck and body are drawn together, the body-feathers slightly fluffed out raising or arching the back, and the tail is depressed. At every *whooh* the body throbs violently as if in agony; but the bill remains closed and hardly any movement of the throat is perceptible. After the *whooh*s the bird seems greatly relieved; it stretches itself out, the feathers are sleeked, and it utters the *kurook* notes with open bill and throbbing throat, with no suggestion of ventriloquism (Gammie).

BREEDING. Season, May to September, chiefly after onset of rains in June. Nest, similar to that of Common Coucal but smaller; a domed, oval structure like a Rugby football in shape, c. 25 × 20 cm. with a lateral entrance-hole; of twigs, grasses, and leaves with the living grass blades of the substrate often worked into the dome; occasionally lined with green leaves. Usually placed less than 1½ metres or so above the ground in a dense bush standing in grassland, or among tussocks of grass or reeds. Eggs, 3 or 4, chalky white, smaller replicas of those of the Common Coucal. Average size of 50 eggs 28.2 × 23.8 mm. (Baker). Both sexes take part in nest-building, incubation, and tending the young. Incubation period and other details unknown.

MUSEUM DIAGNOSIS. See Key. Tail black glossed with green, tipped narrowly with white or rufous and faintly cross-rayed. Scapulars, interscapulars and wings chestnut, the tips of the quills, and the tertiaries, darker and browner, highlighting the paler chestnut shafts by contrast.

For details of juvenile plumage and description of nestling see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	137-174	22-26	36-37	156-211 mm. (Baker)

Specimens recently collected in Nepal give:

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂ ♂	137-148	25-27	—	163-181 + mm. (3 msd.)
5 ♀ ♀	161-169	28-31	—	180-200 mm. (2 msd.) (BB)

More material is needed from SW. India to verify that the race there is in fact *bengalensis* as presumed. 5 unsexed and 1 ♀ from 'Travancore' in the British Museum collection, and 1 ♀ recently collected there, measure:

	Wing	Bill (from skull)	Tarsus	Tail
	168-173	27-30	43 (1)	205-209 mm. (3 msd.) (HW)

COLOURS OF BARE PARTS. Iris crimson. Bill black. Legs and feet slaty black to black.

246

CUCULIFORMES

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	160-172	38-44	45-47	215-240 mm. (Baker)
♀ ♀	174-182			
		(from skull)		
1 ♂	179	48.5	48	225 mm.
1 ♀	160	43	45	223 mm. (HW)

COLOURS OF BARE PARTS. Iris deep red to crimson. Bill apple-green, blackish at base and about nostrils. Legs and feet black; claws dusky.

605. Lesser Coucal. *Centropus loulou bengalensis* (Gmelin)

Cuculus bengalensis Gmelin, 1788, Syst. Nat., 1 (1): 412 (Bengal)

Cf. Whistler, H. & Kinnear, N. B., 1935, JBNHS 37: 528

Baker, FBI No. 1495, Vol. 4: 194

Plate 52, fig. 6

LOCAL NAMES. Chhōto-kūkō (Bengal); Ūlū kūkūhā (Assam); Nyong (Lepcha); Kynk-hyok (Bhutea); Yāri ūppān (Malayalam).

SIZE. House Crow —; with a long broad graduated tail. Overall length ♂ c. 33 cm. (13 in.), ♀ c. 37 cm. (14½ in.).

FIELD CHARACTERS. Similar to the Common Crow-Pheasant (600), glistening blue-black with chestnut wings, but conspicuously smaller and with the tail-feathers tipped whitish. Sexes alike; female larger.

Young (immature) in one stage, dark brown above, mottled and barred with rufous on wings and tail. Below, rufescent white with dusky bars. On a casual sighting young bird could be confused with Sirkeer Cuckoo, but absence of latter's cherry-red bill always diagnostic.

STATUS, DISTRIBUTION and HABITAT. The submontane tracts of the Himalayas — terai, bhabar, duns, and duars — and locally up to c. 1500 metres, from about Dehra Dun eastward through Nepal, Sikkim, Bhutan to Assam north and south of the Brahmaputra, Nagaland, Manipur, Mizo (?); East Pakistan. Widely but locally distributed in the Peninsula from the Gangetic Plain (Uttar Pradesh, Bihar, West Bengal) southward through Mysore, Kerala, and Tamil Nadu. Confined to a specialized habitat — stretches of tall grassland and dense scrub jungle bordering forest, and reed-beds and 'seas' of elephant grass on the edge of swamps and jheels and in flood plains; thus absent from large tracts of country. In some areas has been presumed to be migratory, but not proven. Occurrence in Ceylon doubtful.

Extralimital. Burma, S. Yunnan, south to Tenasserim, Thailand, and the Indochinese countries; Hainan I.

GENERAL HABITS and FOOD. Not significantly different from the Common Crow-Pheasant (600), q.v. Flight weak, laboured, and ill-sustained — several rapid wing-beats followed by a glide. 'Feeds almost exclusively on grasshoppers' (Gammie; Sikkim).

248

STRIGIFORMES

Order STRIGIFORMES

For morphological details see Stresemann, E., 1927-34, *Aves*: 824-6; Witherby et al., 1938, 2: 308-9; Baker, 1927, FBI 4: 283. For a general account see Voous, K. H., 1964, article 'Owl' in Thomson, A. L. (ed.), *New Dict. Birds*, London and New York.

Family STRIGIDAE

Characters as in the Order.

Key to the Genera

	Page
A Middle claw pectinate on inner side.....	1
B Middle claw not pectinate.....	2
1 Ruff around eyes meets at forehead.....	Tyto 249
Ruff around eyes separated at forehead.....	Phodilus 253
2 Ear-tufts present.....	a
Ear-tufts absent.....	b
a Wing exceeding 350 mm.....	Bubo 271
Wing 280 to 330 mm.....	Asio 312
Wing under 250 mm.....	Otus 255
b Wing 245 mm. and above.....	I
Wing 240 mm. and below.....	II
I Plumage almost entirely white or white barred with sepia.....	Nyctea 284
Plumage not as above.....	Strix 303
II Plumage uniform above.....	Ninox 292
Plumage barred above.....	Glaucidium 284
Plumage spotted above.....	a ¹
a ¹ Facial disc wide and distinct.....	Agelastes 316
Facial disc narrow, indistinct; ear-coverts brown.....	Atene 257

Key to Owl Calls

Barn Owl (606)	Discordant shrieks, chuckles, snores and hisses.
Bay Owl (609)	Loud 3-noted whistle like man calling dog.
Spotted Scops Owl (611, 612)	Metallic double cowbell-like whistle <i>tsak</i> .. <i>tsak</i> .
Andaman Scops Owl (613)	A rapidly jerked-out <i>hoot!</i> <i>hoot-crooo!</i>
Striated Scops Owl (614)	Short, monotonous <i>boo-boo</i> resembling stock dove's call.
Eastern Scops Owl (615)	Like tinkling of small brass bell.
North Indian Scops (616)	Monotonous 3-noted song <i>kikak-tok</i> or <i>wik-tak-tak</i> or <i>wik-ching-ching</i> somewhat resembling barbet's call.
Ceylon Scops (618)	<i>Tik, tik tok</i> ... <i>tik, tik tok</i> .
Collared Scops (619-623)	Interrogative <i>wā?</i> repeated every 3 seconds or so.
Burmese Scops (624)	Mellow single hoot every 15-20 seconds.
Horned or Eagle Owl (627)	Deep hollow <i>kū-bo</i> , or solemn <i>du-goo</i> or <i>to-whooh</i> .

BARN OWLS

249

Forest Eagle-Owl (628)
Ceylon Eagle-Owl (629)
Dusky Horned Owl (630)
Brown Fish Owl (631)
Tawny Fish Owl (633)
Collared Pygmy Owlet (635)

Barred Jungle Owlet (636, 637)

Chestnutbacked Barred Owlet (638)
Barred Owlet (639-641)

Hawk-Owl (642-645)

Hutton's Owlet (648)

Spotted Owlet (650-652)

Hume's Wood Owl (654)

Mottled Wood Owl (655-657)

Brown Wood Owl (658-660)

Ceylon Brown Owl (660a)

Himalayan Wood Owl (661, 662)

Low deep moaning hoot.

Very deep mumble or human-sounding snore.

Deep resonant *WO, Wo, wo, wo-o-o-o-o* like pingpong ball bouncing to silence.

Deep, hollow-sounding *boom-o-boom*.

Deep *whoa-hoo*, and curious mewing.

4-noted bell-like whistle *toot... toot... toot*.

Kūo, kūo, kōo-kūk, kōo-kūk, kōo-kūk, etc.

like distant crow of Red Junglecock.

Far-carrying *kraw, kraw, kraw*, etc.

A continuous bubbling musical whistle

woowooowooowooowoo or *woioioioioio*...

kek, like a variant of 636.

Soft, musical *oo... ūk; oo... ūk, oo... ūk*.

Shrill, plaintive *piu* repeated every few seconds.

Harsh screechy *chirurr-chirurr-chirurr*, and variants.

Clear long-drawn *huu* at intervals, and variants.

Loud quavering *ceric chūhua-aa* (breeding) and mellow metallic single hoot (non-breeding).

Mellow, musical, hollow-sounding *tok...*

tū-hoo (*tok* in undertone).

Sonorous hoot *hūhū-hōōō*.

Loud *hoo... hoo... hoo-ho-ho-hoo*.

Subfamily TYTONINAE: Barn Owls

Genus TYTO Billberg

Tyto Billberg, 1828, Syn. Faun. Scand. 1, pt. 2, tab. A. Type, by monotypy,

Strix flammea auct. = *Strix alba* Scopoli

No ear-tufts. Facial disc well developed and large, entirely surrounded by a ruff of stiff feathers. Bill straight at base, compressed and comparatively weak. Nostrils oval. Legs long, the upper part of the tarsus covered with feathers which pass into bristles on lower tarsus and upper surface of toes. Middle toe scarcely longer than inner, with the claw expanded and pectinate on the inner side. Wings very long and pointed, exceeding tail in length: 2nd primary (as.) longest, first subequal. Tail moderately long.

Key to the Species

Upper surface speckled; tarsus less than 75 mm.	<i>T. alba</i>	249
Upper surface spotted; tarsus over 75 mm.	<i>T. capensis</i>	252

TYTO ALBA (Scopoli)

Key to the Subspecies

Wing over 270 mm.; general colour paler	<i>T. a. stertens</i>
Wing under 270 mm.; general colour deeper	<i>T. a. deroepstorffi</i>

BARN OWLS

251

FOOD. Small birds like house sparrows, bats, etc. but predominantly rats and mice; thus, as a species, highly beneficial to agricultural economy.

VOICE AND CALLS. A variety of discordant long-drawn shrieks and chuckles, and weird snoring and hissing notes; a castanet-like bill-snapping when angry. Particularly noisy in the breeding season.

BREEDING. Season, undefined, covering practically the entire year, the peak periods varying locally. Nest, none built; occasionally the eggs deposited on a layer of, or amongst, cast-up pellets and bony debris of victims—in holes or niches in ruins, in the space between ceiling and roof of a building whether deserted or occupied, in hollows in ancient tree-trunks, and the like. The same sites are used in successive years, and if left undisturbed tend to become traditional. Eggs, 4 to 7, white, fine-textured and smooth; short, broad ellipses, somewhat less rounded than most other owls' eggs. Average size of 38 eggs 40.7 × 32.5 mm. (Baker). Laid at about 48-hour intervals, incubation often commencing with first egg, thus great disparity noticeable among young of the same brood. Incubation evidently by female alone; period elsewhere recorded as 32-34 days. Both parents tend the young.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for plumages and structure (also bionomics), Witherby, 1938, 2: 343-6 (for nominate race).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	275-322	30-32	c. 68-77	119-127 mm. (Baker)
		(from skull)		
10 ♂♂	262-303	34-37	70 (1)	111-123 mm.
5 ♀♀	278-315	35-37	60-70	114-125 mm. (HW, SA)

COLOURS OF BARE PARTS. Iris deep brown, hazel, or black. Bill fleshy white to fleshy horny; cere more flesh coloured. Legs and feet pale fleshy brown; claws darker.

607. Andaman Barn Owl. *Tyto alba deroepstorffi* (Hume)

Strix DeRoepstorffi Anonymous = Hume, 1875, Stray Feathers 3: 390 (Aberdeen, South Andaman Is.)

Baker, FBI No. 1637, Vol. 4: 386

LOCAL NAMES. None recorded.

SIZE. House Crow —; length c. 36 cm. (14 in.).

FIELD CHARACTERS. As of 606, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Evidently a very scarce resident in the Andaman Is. (Port Blair; a specimen collected on South Cinque island (Abdulali, 1971, JBNHS 68: 403); not recorded from the Nicobars.

GENERAL HABITS, FOOD, VOICE AND CALLS. As of the Indian bird (606) q.v.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Much darker overall than *stertens*. Facial disc very rufescent; grey of upperparts replaced by dark brown, and ochre by rich rufous. Some grey stippling retained on the tips of wing- and tail-quills. Underparts, axillaries and under wing-coverts deep brownish rufous.

250

STRIGIFORMES

606. Indian Barn Owl. *Tyto alba stertens* Hartert

Tyto alba stertens Hartert, 1929, Nov. Zool. 35: 98 (Cachar)

Tyto alba crypta Koelz, 1939, Proc. Biol. Soc. Washington 52: 80

(Londa, Bombay Presidency)

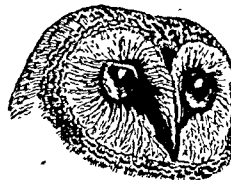
Baker, FBI No. 1636, Vol. 4: 385

Plate 54, fig. 16

LOCAL NAMES. *Kuraya*, *Kareil*, *Būri churi* (Hindi); *Lakshmi pechi* (Bengal); *Chēdd* or *Chūdd* (Marathi); *Rici deri* (Gujarati); *Chāru kūrūri* (Tamil); *Chaoa pitta* (Telugu); *Bakamūnā* (Sinhala); *Veli munga* (Malayalam); *Madoosa* (Bihar); *Chūghū* (Damoh, Madhya Pradesh).

SIZE. House Crow —; length c. 36 cm. (14 in.).

FIELD CHARACTERS. A typical owl with large round head and a conspicuous ruff of stiff feathers surrounding a



× c. 1/2

comically pinched (heart-shaped) white monkey-like facial disc. Above, golden buff and grey, finely stippled with black and white. Much yellowish brown about the shoulders and on wings. Below, silky white, more or less tinged with buff and usually spotted dark brown. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident.

West Pakistan (Baluchistan, Sind, Punjab) and all India from Jammu east-

ward through the Gangetic Plain to Bengal,

Assam, Nagaland and Manipur, south throughout the Peninsula to Kanyakumari; East Pakistan; Ceylon (rare, and restricted to Jaffna and Aripo districts on the NW. coast). Recorded from Nepal in c. 1879 (Scully, SF 8: 229) but not met there by recent investigators, nor in Sikkim or Bhutan. Affects the neighbourhood of cultivation and human habitations chiefly in the plains and peninsular hills to c. 1000 m.—ruins of ancient forts, crumbling archaeological structures, caves, disused wells, and buildings both deserted and occupied in towns and city suburbs.

Extralimital. Probably northern Burma, where the limits of this form and the prevailing *javanica* not known. The species in numerous races has an almost global distribution.

GENERAL HABITS. Largely crepuscular and nocturnal, less because of inability to withstand the glare than to escape the persecution invariably meted out by crows and other birds as soon as it shows itself in daytime. Is capable of flying in broad sunlight without apparent discomfort and has even been observed hunting on a sunny morning, flying purposefully to and fro 3 or 4 metres above a grass field, hovering for up to 30 seconds like a Blackwinged Kite (*Elanus*), before pouncing on ground prey. Usually spends the day standing upright, dozing with shut eyes, singly or in pairs, in a dark hollow in some ruin or ancient tree, or under the eaves or roof of a building, sallying forth at dusk to feed heralded by a harsh prolonged screech. The ground under such diurnal roosts is usually strewn with cast-up pellets of undigested skulls and bones of its victims. Often seen flying ghost-like over the blaze of a city's illumination after dark, uttering its distinctive screech from time to time.

252

STRIGIFORMES

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	250-264	c. 32	c. 61	c. 113 mm. (Baker)

COLOURS OF BARE PARTS. Unrecorded.

608. Grass Owl. *Tyto capensis longimembris* (Jerdon)

Strix longimembris Jerdon, 1839, Madras Jour. Lit. Sci. 10: 86 (Neilgherries, India)

Baker, FBI No. 1638, Vol. 4: 387

Plate 54, fig. 17

LOCAL NAME. *Sun ūlū sorūi* (Assam).

SIZE. House Crow —; length c. 36 cm. (14 in.).

FIELD CHARACTERS. An unmistakable first cousin of the Barn Owl, found only in tall grassland habitats. Above, dark brown minutely spotted with white; below, white with scattered brown spots. Facial disc white or pinkish rusty white bordered by a dark brown ruff; a prominent blackish spot in front of each eye. Tail largely white and buff, cross-banded with brown. Tarsus very long, slender, and tightly feathered, as though clad in underpants or *churidar pajamas*! In flight the bird looks very white overall with brownish patches. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident. The submontane tracts of the Himalayas from at least Dehra Dun eastward through the terai and duars and Gangetic Plain to Bengal, and Assam (north and south of Brahmaputra river), hills and plains. Probably also Manipur and East Pakistan, and in appropriate grassland biotopes in the terai and duars of Nepal, Sikkim, and Bhutan. Recorded from several localities in the Peninsula, e.g. Chota Nagpur, Madhya Pradesh (Balaghat, Raipur), and in south India (up to c. 1800 m. in the hills) from Tamil Nadu (Nellore, Nilgiris, Palni), Mysore (Brahmagiris), and Kerala (Munnar, High Range). Not Ceylon. Affects tall grass jungle, open grassland on flood-plains (swamp deer and florican country) and in depressions among low rolling hilltops.

Extralimital. Burma, North Vietnam (D. Amadon, 1959, JBNHS 56: 344-5).

GENERAL HABITS. Crepuscular and nocturnal. Almost entirely terrestrial; spends the daytime standing bolt upright and dozing in some small opening amidst tall grass, flying a short distance when disturbed and dropping into the cover again. Hunts silently and ghost-like at night, presumably hovering like Barn Owl to spy prey among the heavy grass. Usually keeps singly or in pairs, but as many as six on the wing at the same time have been observed in northern Uttar Pradesh when florican shooting (A. Anderson, 1876, SF 4: 253).

FOOD. Chiefly field mice; in addition, as shown by cast-up pellets, locusts, grasshoppers and cicadas; once a bustard quail (*Turnix*). Doubtless feeds regularly on small ground birds as well as reptiles.

VOICE AND CALLS. Not specifically recorded; according to Baker weird screeches similar to Barn Owl's.

BREEDING. Season, overall October to March (chiefly October to December) in N. India and Kerala; once July in Cachar (Baker). Nest, a

BARN OWLS

253

pad or mat of flattened-down grass amidst tall grassland, canopied by the arching surrounding growth. Eggs, 4 to 6, pure white with a smooth matt surface, indistinguishable from eggs of Barn Owl. Average size of forty 39.9 × 32.7 mm. (Baker). Period of incubation, and share of the sexes in the domestic chores, unknown.

MUSEUM DIAGNOSIS. See Key; for details of plumage Baker, loc. cit.

Chick (in down) 'Fulvous-rufous' (Baker).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	305-348	c. 36	86-94	114-125 mm. (Baker)

COLOURS OF BARE PARTS. Iris hazel to deep brown. Bill fleshy white to fleshy horny; cere pinkish. Legs and feet dark fleshy brown to almost blackish brown; claws horny brown.

Genus PHODILUS G. St-Hilaire

Phodilus Geoffroy Saint-Hilaire, 1830, Ann. Sci. Nat. 21: 199. Type, by original designation and monotypy, *Strix badius* Horsfield

Facial disc distinct but incomplete above the eyes. Bill weak and compressed. Ear orifice of fair size but smaller than eye; no operculum. Wings rounded; 4th and 5th primaries (as.) subequal and longest. Tail short. Tarsus feathered throughout; inner toe longer than middle toe; middle claw pectinate as in *Tyto*.

Contains a single Oriental species of which two races occur within our limits.

PHODILUS BADIUS (Horsfield)

Key to the Subspecies

	Page
Upperparts chestnut, sparsely speckled; inner webs of primaries chestnut, barred black.....	<i>P. b. saturatus</i> 253
Upperparts dark brown, speckled; inner webs of primaries brown, barred black.....	<i>P. b. assimilis</i> 255
Upperparts chocolate-brown, finely stippled; inner webs of primaries vinous, barred dark brown.....	<i>P. b. ripleyi</i> 321

609. Sikkim Bay Owl. *Phodilus badius saturatus* Robinson

Phodilus badius saturatus Robinson, 1927, Bull. Brit. Orn. Cl. 47: 121 (Native Sikkim) Baker, FBI No. 1640, Vol. 4: 390

Plate 54, fig. 15

LOCAL NAMES. None recorded.

SIZE. Pigeon—; length c. 29 cm. (11½ in.).

FIELD CHARACTERS. A small, dainty chestnut-bay owl with short ear-like tufts projecting above sides of head. Above, chestnut, spotted with black and buff. Outer webs of first two primaries barred white and black. Tail chestnut, barred with black. A broad frontal tract (forehead) and facial disc vinous-pink surrounded by a white-ruff tipped black and chestnut. The patch of chestnut feathers round each eye is a striking feature. Below, vinous-pink

OWLS

255

610. Ceylon Bay Owl. *Phodilus badius assimilis* Hume

Phodilus assimilis Hume, 1877, Stray Feathers 5: 138 (Ceylon) Baker, FBI No. 1641, Vol. 4: 391

LOCAL NAMES. *Bassā* (Sinhala; a general term for all small owls); *Anāai* (Tamil).

SIZE. Pigeon—; length c. 29 cm. (11½ in.).

FIELD CHARACTERS. As of 609, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Race peculiar to Ceylon. A very scarce resident in the low-country Wet zone and Hill zone to c. 1200 m. Less than a dozen specimens have so far been taken in the Island.

GENERAL HABITS, FOOD, VOICE and CALLS. Even less known than of 609.

BREEDING. Three young birds once taken from a nest in a tree-hole, in November (1876), exhibited great disparity in size indicating that as with some other owls the eggs had been laid at intervals of several days and incubation had probably commenced from the first egg (Henry).

MUSEUM DIAGNOSIS. Differs from 609 in being much darker, almost chestnut-brown, above and more freely marked with black. Below, the black spots are double, one behind the other along the shaft, divided by, and edged with, whitish.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	197-203	c. 30	c. 47	81-89 mm. (Baker)

COLOURS OF BARE PARTS. Iris dark brown. Bill greenish white. Feet pale whitish green; claws pale ash (Whyte).

610a. Peninsular Bay Owl. *Phodilus badius ripleyi* Hussain & Khan

See Appendix

Subfamily STRIGINAE: Owls

Genus OTUS Pennant

Otus Pennant, 1769, Ind. Zool.: 3. Type, by monotypy, *Otus bakkamoena* Pennant

Contains small owls of extremely beautiful vermiculated and speckled grey, brown, and rufous plumage, with well developed agrettes or ear-tufts. Head proportionately large. Bill rather small; nostrils round, pierced in the anterior margin of the cere. Wing long but of variable shape. Tail moderate, rounded at the ends. Tarsus fully feathered or nearly so. Sexes alike, but juvenile plumage different from adult.

Cf. Delacour, J., 1941, *Zoologica* 26: 133-42; Deignan, H. G., 1950, *Auk* 67: 189-201.

Key to the Species

	Page
A Fourth or fifth quill longest; first primary much shorter than eighth.....	1
B Third quill longest; first longer than eighth.....	2
1 A distinct pale collar on hindneck.....	<i>O. bakkamoena</i> 266
No distinct collar on hindneck.....	<i>O. spilocephalus</i> 256
2 Tarsus feathered to base of toes.....	<i>O. spilocephalus</i> 256
Lower third of tarsus bare.....	<i>O. balli</i> 258
3 Feathers of tarsus extending on to base of toes.....	<i>O. brucei</i> 259
Feathers of tarsus not extending on to base of toes.....	<i>O. scops</i> 261

254

STRIGIFORMES

spotted with black and white except on foreneck and down centre of abdomen to under tail-coverts. Legs fully feathered. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident; apparently very rare. Nepal, Sikkim, Bhutan (?), Assam north and south of Brahmaputra river, Nagaland, Manipur. Confined to heavy evergreen forest in the submontane tracts and foothills, locally up to c. 1500 metres alt.

Extralimital. N. Burma, N. Thailand, N. and S. Vietnam (Peters).

GENERAL HABITS. Very little known as the bird is strictly nocturnal and seldom seen. Is greatly incommoded by, and practically helpless in day-light; spends the daytime lurking in dark holes and hollows in tree-trunks etc. '... hunts from a perch, but sharpens its gaze by rocking the head rhythmically from side to side [like a pendulum] over a small amplitude (almost hypnotic to the observer), and it flies for its captures through dense stands of young trees beneath the forest canopy. Uniquely short, rounded wings facilitate this rapid flight by which the bird threads its way easily through the maze of vertical stems.' Perches sideways on stems of saplings, its huge feet enabling the vertical stalk to be grasped in the manner of a tit clinging to an upright twig (J. T. Marshall, Jr., 1966, *The Natural History Bulletin of the Siam Society* 21 (3-4): 238).

FOOD. On evidence of cast-up pellets, mainly small mammals, birds, lizards, frogs, and beetles and other large insects. An example picked up dead in heavy forest disclosed the cause to be the wing bone of a bat it had swallowed protruding through the stomach! (Hume, SF 11: 19).

VOICE and CALLS. Very imperfectly known. According to Baker a single soft hoot; also much noisy caterwauling during the breeding season, and a hissing when approached at nest. 'A loud 3-noted whistle reminiscent of someone calling his dog, the birds answering each other in the forest' (H. Elliott McClure in *epist.*, for nominate race).

An entirely different call, also of the nominate race, described by another observer as 'kwankwit-kwankwit-kek-kek-kek heard most when flying in complete darkness' (J. Cairns, 1955, *Malayan Nature Journal*, Vol. 10).

BREEDING. Season, March to May. Nest, an unlined hollow in a tree-trunk or a rotten stump between c. 2 and 5 metres up; the same site used year after year, the hollow becoming littered with cast-up food pellets. Eggs, 3 or 4, sometimes 5, pure white roundish ovals with a smooth matt surface, typical of the owls. Average size of 30 eggs 34.5 × 30.0 mm. (Baker). Incubation period, share of the sexes in the reproductive chores, and other points concerning breeding biology completely unknown.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for subspecies, Key.

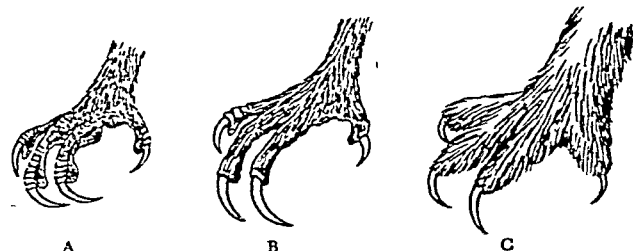
MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	214-237	30-32	47-48	92-97 mm. (Baker)

COLOURS OF BARE PARTS. Deep brown or black. Bill creamy yellow. Legs and feet clay-brown or yellowish brown, claws paler.

256

STRIGIFORMES



Foot of A. Scops Owl (617), B. Little Owl (648), C. Tengmalm's Owl (665)

OTUS SPILLOCEPHALUS (Blyth)

Key to the Subspecies

General tone of colour rufous brown.....	<i>O. s. spilocephalus</i>
General tone grey- or fulvous brown.....	<i>O. s. huttoni</i>

611. Western Spotted Scops Owl. *Otus spilocephalus huttoni* (Hume)

Ephialtes Huttoni Hume, 1870, Rough Notes, pt. 1, no. 2: 393 (Near Mussoorie, Garhwal and below Simla, i.e. Jerripani, Mussoorie) Baker, FBI No. 1673, Vol. 4: 429

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 18-20 cm. (7-8 in.).

FIELD CHARACTERS. A pretty little nocturnal greyish brown 'eared' forest owl, hardly ever seen except by flashlight after dark, and then rather difficult to distinguish from the many other similar species. Recognized mainly by its distinctive calls, q.v.

Adult. Above, speckled greyish brown, conspicuously marked on crown and nape with twin spots of black and white. Wing- and tail-quills brown with numerous pale bands. Face whitish brown indistinctly barred, surrounded by a buff coloured ruff. Below, speckled brown on white with indistinct paler stippling on breast and abdomen. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident in the western Himalayas from about Murree in W. Pakistan eastward through Himachal Pradesh, Garhwal and Kumaon to central Nepal, where intergrading with the nominate race (612) occurs. Affects oak, rhododendron, blue pine and deodar forest between c. 600 and 2600 metres alt.

MUSEUM DIAGONOMI. Spots on scapulars buff; tarsus fully feathered.

OWLS

261

General aspect of plumage pale grey streaked with black, more boldly above; hardly ever with any rufous tint as almost always the case in *O. scops scops* and *O. s. pulchellus*. For details see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	150-161	17-18 (from feathers)	c. 34	78-82 mm. (Baker)

Weight 1 ♂ (December) 110 gm. — BNHS.

COLOURS OF BARE PARTS. Iris bright yellow. Bill horny yellow; culmen and tip darker, lower mandible paler. Feet grey; claws dark horny; soles paler.

OTUS SCOOPS (Linnaeus)

Key to the Subspecies*

	Page
A Third primary (as.) longest; first primary equal to sixth, or between fifth and sixth or sixth and seventh.....	<i>O. s. pulchellus</i> 261
B Fourth primary longest or subequal to third; first primary between eighth and ninth.....	<i>O. s. modestus</i> 265
C Fourth primary longest; first primary sometimes equal to sixth but usually between sixth and seventh or seventh and eighth.....	1
1 Upperparts dark.....	<i>O. s. sunia</i> 262
Upperparts darker.....	<i>O. s. rufipennis</i> 263
Upperparts darkest.....	<i>O. s. leggeri</i> 264

* Modified from Delacour, 1941, *Zoologica*: 135-40. Cf. Ticehurst, C. B., 1923, *Ibis*: 241-2.

615. Eastern Scops Owl. *Otus scops pulchellus* (Pallas)

Strix pulchella Pallas, 1801, *Reise Russ. Reichs* 1: 456 ('Copiosius in australioribus ad Volgam, Samaram: laicum')
Baker, FBI No. 1677, Vol. 4: 433

LOCAL NAMES. None recorded.

SIZE. Myna —; length c. 19 cm. (7½ in.).

FIELD CHARACTERS. A small slim owl, delicately vermiculated greyish brown, with feathered legs and ear-tufts, more conspicuous when erected. Sexes alike. See Keys to the species and subspecies, and Museum Diagnosis.

Individuals of the different forms difficult to identify except in the hand, and even then not always with confidence. Many have dark and light phases (rufous and grey) which tend to add to the uncertainty. Calls also somewhat variable, and in many cases identical; thus not completely dependable as pointers.

STATUS, DISTRIBUTION AND HABITAT. Possibly only a winter straggler to Sind (Karachi, Hyderabad). Summer visitor (or resident?) in some numbers in northern Baluchistan (Loralai — March); breeding for certain in the juniper forest at Ziarat (c. 2500 m.), and doubtless elsewhere (Ticehurst, JBNHS 34: 474).

Vagrants have twice been taken in Bombay City, in September (1891) and October (1925), the latter perched on a hat-peg within a living room! (SA & HA, JBNHS 40: 368).

OWLS

263

(?), chiefly the submontane tracts; locally up to c. 1500 m. The Gangetic Plain south to Madhya Pradesh and Orissa (to c. 19°N.), east to Assam north and south of Brahmaputra river; Nagaland (?), Manipur, East Pakistan. Affects forest (deciduous and evergreen), orchards, groves of densely foliated trees around cultivation, etc.

GENERAL HABITS AND FOOD. As in 614 and 615, q.v.

VOICE AND CALLS. A monotonous 3-noted 'song' variously described as *kirrok-look*, *witk-tuk-tah*, and *witk-chug-chug* somewhat resembling a barbet's call, repeated at short intervals endlessly 'in a very regular and rhythmic manner, like the swinging of a giant pendulum or the working of a pump engine' and audible several hundred metres away (Osmaston, Whistler). 'Sings' after dark, all through the night; noisier in the breeding season.

BREEDING. Season, c. mid February to April-May. Nest, a hollow in a tree-trunk or hole in a ruined wall, at moderate heights. Eggs, 3 or 4 (occasionally 5?), white, smooth-textured, roundish ovals. Average size of 10 eggs 32.8 × 27.0 mm. (Baker). Share of the sexes in the reproductive chores, and incubation period, unknown.

During the breeding season both sexes fly quickly into the air off some elevated perch and then fly round in circles with wings stiffly extended, both birds being sometimes in the air together, squawking softly in a note I have heard at no other time' (Baker).

MUSEUM DIAGNOSIS. Very similar to *O. s. pulchellus* (615) but browner and with a different wing formula: 1st primary (as.) equal to 8th or between 7th and 8th. Above, more finely vermiculated with fewer central streaks; these sometimes absent except on forehead and crown. Below, also less streaked and rather more barred. The rufous phase varies from a mere rufescence overall to almost bright cinnamon-bay with no vermiculations on the upperparts and only a few black streaks on forehead and crown. For details of the rufous plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	137-154	(from feathers) 16-17	25-26	61-71 mm. (Baker)

Wing ♂ ♀ 132-158 mm. (Ticehurst).

Weight 1 ♂ 79 gm. (SDR).

COLOURS OF BARE PARTS. Iris pale yellow, golden yellow, or dark brown (age?). Bill horny green or horny yellow, tipped blackish. Feet dingy yellowish flesh or fleshy grey.

617. Peninsular Scops Owl. *Otus scops rufipennis* (Sharpe)

Scops rufipennis Sharpe, 1875, *Cat. Bds. Brit. Mus.* 2: 60 (Eastern Ghats, Madras)
Baker, FBI No. 1678, Vol. 4: 434
Plate 54, fig. 3

LOCAL NAMES. *Chius gubā*, *Terrā chius gubā* (Telugu); *Nāthi* (Malayalam).

SIZE. Myna —; length c. 19 cm. (7½ in.).

FIELD CHARACTERS. As for *O. s. sunia* (616). See Keys and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Peninsular India south of the range of *sunia* (616) from northern Maharashtra (Khandesh, c. 21°N.),

262

STRIGIFORMES

Extralimital. 'Breeds in Russia east of long. 35°E. and lat. 56°N.; Caucasus; SW. Asia north to the upper Irtysh, east to Krasnoyarsk and south to the Kirghiz Steppe, Ferghana, Tarbagatai and the Altai. Winters in the upper Nile Valleys...' (Peters).

GENERAL HABITS. As common to all scops owls, e.g. 614. Entirely nocturnal, retiring during daytime into hollows in tree-trunks and thickly foliated branches, standing upright and attenuated with sleeked plumage and half-shut eyes. Emerges at dusk when almost dark and withdraws into seclusion again in the twilight of dawn. Thus seldom seen, and its habits remain largely unknown. In Europe (nominate race) has been observed bringing an ortolan bunting to nest young in sunny midday (Deshayes, in *épist.*). Calls intermittently throughout the night.

FOOD. Beetles, grasshoppers, and other insects; also mice, small birds, lizards, etc.

VOICE AND CALLS. See under 614. Another observer (Cheeseman, Iraq) says the call resembles 'the tinkling of a small brass bell and, as the birds seldom have exactly the same note, the combined effect of several is like an erratic peal of small bells'.

BREEDING. No details from Baluchistan. Elsewhere season April to June. Nest, holes in trees, old walls and buildings, etc. Eggs, 3 to 6 white, roundish ovals. Average size of 44 eggs 31.32 × 27.02 mm. (Jourdain in Baker, FBI).

MUSEUM DIAGNOSIS. Alleged to average a trifle larger and to be more deeply coloured than nominate *scops* of Europe and W. Asia, but is in fact doubtfully distinguishable from it. For description of plumages and structure (also bionomics) of *O. s. scops* see Witherby, 1938, 2: 335-8.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	150-158	(from feathers) 16-17	c. 26	66-71 mm. (Baker)

COLOURS OF BARE PARTS. Iris pale to deep golden yellow. Bill dusky greenish yellow, darker on culmen and tip. Feet pale fleshy or fleshy grey.

616. North Indian Scops Owl. *Otus scops sunia* (Hodgson)

Scops sunia Hodgson, 1836, *Asiat. Res.* 19: 175 (Nepal)
Otus sunia khasiensis Koelz, 1954, *Contrib. Inst. Regional Exploration*, No. 1: 27 (Mawphlang, Khasi Hills)
Baker, FBI No. 1680, Vol. 4: 435

LOCAL NAMES. *Chaghād kūriāl*, *Sūyā kūriāl* (Nepal); *Dundul* (Himachal Pradesh).

SIZE. Myna —; length c. 19 cm. (7½ in.).

FIELD CHARACTERS. A small, slim, 'eared' owl, very like 615 but browner; highly variable with dark, rufous, and greyish phases. Sexes alike. Sight records not reliable. See Keys and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. The lower Himalayas (from the Afghan frontier in West Pakistan eastward through Chitral, Kashmir, Himachal Pradesh, Garhwal, Kumaon, Nepal, Sikkim, Bhutan and NEFA

264

STRIGIFORMES

southeast at least to Madras (northern limit in Andhra Pradesh undetermined), including Mysore and Kerala; chiefly the ghats and associated hill ranges. Affects forest (deciduous and evergreen), and groves of trees around hill cultivation and settlements etc.

GENERAL HABITS, FOOD. As in *O. s. sunia* (616), q.v.

VOICE AND CALLS. Not specifically described; presumably the same as *sunia*'s, with which also the call of the Ceylon race *leggeri* is identical.

BREEDING. Not recorded.

MUSEUM DIAGNOSIS. Differs from *O. s. sunia* in being smaller, and with a different wing formula: 1st primary equal to or longer than 5th. Coloration very variable; cannot be separated on this character from *sunia*, and like it also has a cinnamon-bay phase.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	122-135	(from feathers) 17-18	25-26	52-62 mm. (Baker)

Wing ♂ ♀ (123, 124) 129-135 mm. (Ticehurst).

COLOURS OF BARE PARTS. As in 616.

618. Ceylon Scops Owl. *Otus scops leggeri* Ticehurst

Otus sunia leggeri Ticehurst, 1923, *Ibis*: 242 (Ceylon). New name for
Scops minutus Legge, preoccupied
Baker, FBI No. 1679, Vol. 4: 434

LOCAL NAMES. *Pēnchi kussā* (Sinhala); *Sinnā d-dai*, *Nāthi* (Tamil).

SIZE. Myna —; length c. 18 cm. (7 in.).

FIELD CHARACTERS. As for *O. s. sunia* (616), q.v. See Keys and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Race peculiar to Ceylon. Scattered, in small numbers, throughout the lowlands and lower hills to c. 1350 m.; more plentiful in the jungle districts of the Eastern Province than elsewhere (Phillips).

GENERAL HABITS. Little known; chiefly as in *O. s. sunia* (616) q.v. 'It is strictly a forest bird, spending the day roosting in some dense tangle of creepers, dark foliage, etc. If alarmed by the approach of an intruder it erects its ear-tufts, contracts its plumage until it assumes the semblance of a snag of wood, and watches the enemy through nearly closed eyes; in this pose it is almost indistinguishable as an inanimate object' (Henry).

FOOD. Mainly beetles and other insects.

VOICE AND CALLS. 'A loud monotonously repeated *tēk*, *toē toēk* . . . *tēk*, *toē toēk*, etc. [*Wōok*, *toēk-toēroo* . . . *toēk*, *toēk-toēroo*, etc. — Phillips] (the first syllable *tēk* being much less loud than the others) which continues for long periods at night' (Henry). The call is in fact identical with that of both *sunia* and *rufipennis*.

BREEDING. Season March-April. No other details recorded; presumably not different from Indian birds.

OWLS

265

MUSEUM DIAGNOSIS. Wing formula as in *rufipennis*. The smallest and darkest of the Indian forms; like them it also has a cinnamon-bay phase.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	119-127	17-18	20-21	49-54 mm. (Baker)

Wing ♂ ♀ 118-127 mm. (Ticehurst).

COLOURS OF BARE PARTS. As in 616 and the other races.

618a. Andaman Scops Owl. *Otus scops modestus* (Walden)

Scops modestus Walden, 1874, Ann. & Mag. Nat. Hist. (4), 13: 123
(Port Blair, South Andaman Island)
Baker, FBI No. 1681, Vol. 4: 437

LOCAL NAMES. None recorded.

SIZE. Myna —; length c. 18 cm. (7 in.).

FIELD CHARACTERS. As for *O. s. sunia* (616), q.v. See Keys and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Very little known. Apart from the type there is one other specimen (in the U.S. National Museum) and 5 in American Mus. of Nat. Hist., New York all collected at Port Blair in the Andamans, May, September, December. 'Doubtfully distinct from *O. s. malayanus* [of Malay Peninsula] — Peters. More specimens are needed to settle the status of the Andaman population.

GENERAL HABITS, FOOD, VOICE and CALLS. Nothing specifically recorded.

BREEDING. Not described.

MUSEUM DIAGNOSIS. Differs from other races in having the 4th primary (as.) longest or subequal to 3rd; first primary between 8th and 9th. Above, cinnamon-brown, only faintly spotted and vermiculated. Scapulars with pure white markings on outer edges. Below, throat and chest greyer than in other races. Belly with considerable white, closest to *sunia* in this respect. Tarsus feathered for three-quarters its length.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
1 ♂	143	—	—	— mm.
4 ♀ ♀	140-142	16 (1)	22 (1)	62 (1) mm. (SDR)

COLOURS OF BARE PARTS. As in 616 and the other races.

618b. Nicobar Scops Owl. *Otus scops nicobaricus* (Hume)

See Appendix

OWLS

267

BREEDING. Season, chiefly April-May. Nest, a tree-hollow at moderate height. Eggs, 3 to 5, white, roundish, smooth-textured, as typical of owls. Hume's measurements for his eggs average c. 32.2 × 28.0 mm.; average size of 12 eggs from the Punjab Himalayas (Murree) and Kumaon (Simla and Naini Tal) 28.4 × 23.7 mm. (Baker).

MUSEUM DIAGNOSIS. For wing formula see under the Species (above). The only Indian race with feathering on toes extending to the subterminal phalanx. As large as the eastern *lettia* (624), but slightly darker brown and less rufescent above — though rather variable in this.

MEASUREMENTS

♂ ♀ Wing 162-182 mm. (47 measured) — Ticehurst. Bill (from feathers) 22-24 mm. — Baker.

COLOURS OF BARE PARTS. As in the nominate and other Indian races.

620. West Pakistan Collared Scops Owl. *Otus bakkamoena deserticolor* Ticehurst

Otus bakkamoena deserticolor Ticehurst, 1922, Bull. Brit. Orn. Cl. 42: 57
(Hyderabad, Hyderabad dist., Sind Province, India)
Baker, FBI No. 1670, Vol. 4: 426

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 23-25 cm. (9-10 in.).

FIELD CHARACTERS. As of 619, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; not uncommon. West Pakistan (Baluchistan and Sind). This is possibly also the form that occurs in N. Gujarat. Affects forest and the better wooded parts. Partial to topes of trees in gardens, e.g. of Inspection Bungalows, and on canal banks and roadsides.

Extralimital. There are specimens in the Bombay Natural History Society's collection labelled Bushire (Persian Gulf) and Muscat (southern Arabia). No other information.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 619, q.v. Seldom seen in daytime when it hides up in thickly foliated trees; its presence only betrayed at night by its distinctive soft monosyllabic *wüt* . . . *wüt* call.

BREEDING. Season, March-April. Nest (tree-hole) and eggs (3 or 4 white, spherical) as in 619. Size of eggs c. 33 × 27 mm.

MUSEUM DIAGNOSIS. For wing formula see under the Species (above). A very pale race; ground colour pale grey-brown; underparts almost white, with practically no rufescent tinge; yellow-buff on the collar and scapulars very pale. Tarsus feathered only to base of toes.

MEASUREMENTS

♂ ♀ Wing 165-175 mm. (Ticehurst). Bill (from feathers) 20-22 mm. (Baker).

COLOURS OF BARE PARTS. As in the nominate and other Indian races.

266

STRIGIFORMES

OTUS BAKKAMOENA Pennant

The species differs from *Otus scops* in wing formula: 1st primary (as.) much shorter than 8th and about equal to shortest secondary; 2nd primary between 6th and 7th or 7th and 8th; 4th or 5th primary longest. Also in the possession of a distinct pale collar on hindneck.

Cf. Ticehurst, C.B., 1923, *Ibis*: 238-40.

Key to the Subspecies

	Page
A Smaller; wing 162 mm. or under.....	1
B Larger; wing 162 mm. or over.....	2
1 Darkest; wing 135 to 152 mm.....	<i>O. b. bakkamoena</i> 269
Intermediate in colour; wing 152 to 162 mm.....	<i>O. b. marathas</i> 268
Palest; wing 153 to 162, rarely up to 167 mm.....	<i>O. b. gangeticus</i> 268
2 Toes feathered to the subterminal phalanx.....	<i>O. b. plumipes</i> 266
Toes not feathered.....	a
a Very pale; wing 165 to 175 mm.....	<i>O. b. deserticolor</i> 267
Dark; wing 162 to 182 mm.....	<i>O. b. lettia</i> 270

619. Punjab Collared Scops Owl. *Otus bakkamoena plumipes* (Hume)

Ephialtes plumipes Hume, 1870, *Ibis*, ser. 2, 6 (July): 439 (India = Murree, Punjab)
Baker, FBI No. 1669, Vol. 4: 425

LOCAL NAME. *Tharkari choghād* (Hindi).

SIZE. Myna ±; length c. 23-25 cm. (9-10 in.).

FIELD CHARACTERS. A delightful little 'horned' or 'eared' owl, very similar to Scops; differentiated from it chiefly by presence of a prominent pale collar at base of hindneck (upper back). Sexes alike.

Adult. Above, grey-brown or rufous-brown, mottled and vermiculated with whitish. Below, chin and throat white or buff, the latter barred and stippled with black. Rest of underparts white to rich buff streaked with black, and with fine wavy bars of reddish brown.

STATUS, DISTRIBUTION and HABITAT. Resident. Western Himalayas between c. 900 metres (perhaps lower) and at least 2200 m. alt., from Murree eastward through Jammu and Kashmir (?), Himachal Pradesh, Garhwal, and Kumaon. Affects forest — sal, oak, pine, and deodar — and well-wooded country in the neighbourhood of hill cultivation.

GENERAL HABITS. Nocturnal; seldom seen by day, its presence in a locality being detected only by its distinctive calls at night. Spends the daytime lurking in some dark corner in a densely foliated branch standing upright and motionless, effectively disguised as a snag.

FOOD. Beetles, grasshoppers, and other insects, lizards, mice, and small birds.

VOICE and CALLS. A single mellow interrogative note *wüt?* jerked out unhurriedly and monotonously every three seconds or so, commencing at dark and continuing intermittently throughout the night, in runs of 10 to 15 minutes' duration or longer. The calling is resumed after a short break from a changed position in a different tree suggesting that the bird may be hunting for food in the interval. It is to be heard all through the year.

STRIGIFORMES

268

621. Gangetic Collared Scops Owl. *Otus bakkamoena gangeticus* Ticehurst

Otus bakkamoena gangeticus Ticehurst, 1922, Bull. Brit. Orn. Cl. 42: 122
(Fatehgarh, U.P.)

Otus bakkamoena stewartii Koelz, 1939, Proc. Biol. Soc. Washington 52: 80
(Bajinath Kangra, Punjab)
Baker, FBI No. 1668, Vol. 4: 425

LOCAL NAME. *Tharkari choghād* (Hindi).

SIZE. Myna ±; length c. 23-25 cm. (9-10 in.).

FIELD CHARACTERS. As of 619, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. Mt Abu and eastern Rajasthan through Uttar Pradesh, approximately to Allahabad. Eastern Nepal terai (Fleming, JBNHS 65: 328) and possibly N. Bihar. Precise limits undefinable. Affects wooded country, mango orchards, and gardens with densely foliated trees.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 619, 620, q.v.

BREEDING. Season, March and April with perhaps an extra week or two at either end. Nest, a hole or hollow in a tree-trunk in mango orchards or groves around villages. Eggs, normally 3 or 4, occasionally 5, white, spherical, as in the other races. Average size of 50 eggs 33.1 × 28.1 mm. (Baker).

MUSEUM DIAGNOSIS. Wing formula as in the Key to the Species, q.v. Tarsus feathered only to base of toes. General coloration paler and more yellowish grey than in Madhya Pradesh birds (*marathas*) but this readily seen only in series; single specimens and borderline cases often impossible to place.

MEASUREMENTS

♂ ♀ Wing 153-167, mostly 155-162 mm. (19 measured) — Ticehurst.
Bill (from feathers) 19-21 mm. — Baker.
Weight 1 ♂ 121 gm. (SA).

COLOURS OF BARE PARTS. As in the other races.

622. Central Indian Collared Scops Owl. *Otus bakkamoena marathas* Ticehurst

Otus bakkamoena marathas Ticehurst, 1922, Bull. Brit. Orn. Cl. 42: 122
(Raipur, Central Provinces)
Baker, FBI No. 1667, Vol. 4: 424

LOCAL NAME. *Tharkari choghād* (Hindi).

SIZE. Myna ±; length c. 23-25 cm. (9-10 in.).

FIELD CHARACTERS. As of 619, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. Approximately between lat. 20° and 24°N. from the Surat Dang (Gujarat) eastward through W. Bengal; precise limits not worked out. Affects forest, and groves & densely foliated trees in gardens, and about villages and cultivation.

GENERAL HABITS, FOOD, VOICE and CALLS. As in the other races, q.v.

BREEDING. Season, January to April. Nest and eggs as in 619, 620, q.v.

MUSEUM DIAGNOSIS. Wing formula as in the Key (p. 253). General coloration as in *plumipes*, and in a series darker than *gangeticus*. Size larger than nominate

OWLS

269

bakkamoena (623), smaller than *lettia* (524). Tarsus feathered only to base of toes as in 623.

MEASUREMENTS

♂ ♀ Wing 152-162, once 165, mm. (41 measured) — Ticehurst.

COLOURS OF BARE PARTS. As in the other races.

623. Ceylon Collared Scops Owl. *Otus bakkamoena bakkamoena* Pennant

Otus bakkamoena Pennant, 1769, Ind. Zool.: 3, pl. 3 (Ceylon)

Baker, FBI No. 1666, Vol. 4: 422

Plate 54, fig. 4

LOCAL NAMES. *Pedda chittā gūbā* (Telugu); *Pānchi bassā* (Sinhala); *Sīmā āndāi*, *Nethē* (Tamil, Malayalam).

SIZE. Myna ±; length c. 23-25 cm. (9-10 in.).

FIELD CHARACTERS. As of 619, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; widespread but local. Peninsular India south of the range of *marathae* (i.e. from c. 20°N. lat.)—Maharashtra, Madhya Pradesh, Andhra, Tamil Nadu, Mysore, and Kerala; also Ceylon (all zones). Plains and hills to at least 1200 m. altitude. Affects deciduous and semi-evergreen forest, and well-wooded country; partial to groves and orchards around villages and cultivation.

GENERAL HABITS, FOOD. As in 619, q.v.

VOICE and CALLS. In addition to the regularly spaced interrogative *wūt... wūt* (or *what? ... what?*) calls (q.v. 619), has an occasional series of slowly repeated *ack, ack, ack*, etc. in ascending scale strung out for five seconds or so; usually interposed between the normal notes but sometimes heard independently. This peculiar bubbling or chattering is common to the other races as well.

BREEDING. Season in peninsular India principally January and February; in Ceylon March and April; occasionally July (Phillips). *Nest*, as in 619 and other races, an unlined hole or hollow in a tree-trunk or bough c. 2 to 7 metres up, in Kerala and Ceylon frequently on the edge of tea and rubber plantations. Exceptional nesting in roofs of houses and holes in walls recorded in Kerala. *Eggs*, 3 to 5, white, smooth-textured, almost spherical. Average size of 27 eggs 31.8 × 27.0 mm. (Baker). Share of the sexes in incubation and other domestic chores, and period of incubation, unrecorded.

MUSEUM DIAGNOSIS. Wing formula as for the Species: 1st primary (as.) much shorter than 8th; 4th or 5th primary longest. The smallest and darkest of the Indian races. Warmer, darker brown and yellower than *marathae* (622). Has also a rufous grey phase in both adults and young. Tarsus feathered only to base of toes.

Young (immature). Pale grey or pale to warm fulvous narrowly barred all over with dusky brown bars, these covering even face and chin (Baker).



× c. 4

OWLS

271

COLOURS OF BARE PARTS. Iris yellowish brown. Bill greenish horn, paler at base, blacker near tip; lower mandible pale dusky yellow. Feet and claws fleshy grey to dusky olive; pads yellowish white.

Genus *BUBO* Dumeril

Bubo Dumeril, 1806, Zool. Analytique: 34. Type, by tautonymy, *Strix bubo* Linnaeus.

Ketupa Lesson, 1830, Traité d'Orn., livr. 2: 114. Type, by tautonymy, *Ketupa jaceensis* Lesson = *Strix ketupu* Horsfield.

Hubua Hodgson, 1836, Asiat. Res. 19: 171-4. Type, by original designation, *Bubo nipalensis* Hodgson.

Includes Horned Owls, Eagle-Owls, and Fish Owls, large powerful birds with long, pointed 'horns' or ear-tufts (aigrettes). Ear orifice not exceeding eye in size; no operculum. Facial disc generally ill defined and never extending as far above eye as below it; ruff nearly or quite obsolete.

Key to the Species

	Page
A Tarsus feathered throughout.....	1
B Tarsus partly or wholly naked.....	2
1 First quill longer than seventh; iris yellow.....	a
1 First quill shorter than seventh; iris brown.....	<i>B. nipalensis</i> 276
a General colour buff and blackish brown.....	<i>B. bubo</i> 271
a General colour greyish brown.....	<i>B. coromandus</i> 278
2 Tarsus naked behind and only feathered about one-third down in front.....	<i>B. zeylonensis</i> 280
Tarsus feathered about one-third behind and more than half-way down in front.....	<i>B. flavipes</i> 283

BUBO BUBO (Linnaeus)

Cf. Vaurie, C., 1963, American Mus. Novitates, No. 2132: 1-10.

Key to the Subspecies

A Darkest and most richly coloured; wing 370-433 mm.....	<i>B. b. bengalensis</i> 273
B Darker and more brown; wing 420-465 mm.....	<i>B. b. tibetanus</i> 272
C Paler and more grey; wing 435-513 mm.....	<i>B. b. turcomanus</i> 271
D Paler but with brown streaks sharper on the hind crown and nape; wing 433-508 mm.....	<i>B. b. himachalana</i> 273

625. Turkestan Horned or Eagle-Owl. *Bubo bubo turcomanus* (Eversmann)

Strix turcomanus Eversmann, 1835, Addenda. Pallas Zoogr. Rosso-Asiat., fasc. 1: 3 (Ust Urt Plateau, western Kazakhstan)

Baker, FBI No. 1658, Vol. 4: 413

LOCAL NAMES. *Boom* (Baluchistan); *Oğ-pa* (Ladakh).

SIZE. Pariah Kite +; stouter. Length c. 66 cm. (26 in.).

FIELD CHARACTERS. As of 627, q.v. A large brown owl, streaked and mottled tawny buff and black, with two prominent upstanding black 'horns' or ear-tufts above the head. Sexes alike. See Museum Diagnosis.

270

STRIGIFORMES

MEASUREMENTS

♂ ♀ Wing 135-152, once 154, mm. (38 measured) — Ticehurst.

Bill (from feathers) c. 20-22; tarsus 30-32; tail 64-67 mm. (Baker).

COLOURS OF BARE PARTS. Iris yellow, golden yellow, hazel or brown (age?). Bill greenish horny brown, paler on lower mandible darker at tip; cere dusky green; mouth pink. Feet brownish flesh to greenish yellow; claws pale horny brown.

624. Burmese Collared Scops Owl. *Otus bakkamoena lettia* (Hodgson)

Scops lettia Hodgson, 1836, Asiat. Res. 19: 176 (Nepal)

Otus bakkamoena manipurensis Roonwal & Nath, 1949, Rec. Ind. Mus. 46: 162

(6 miles north of Imphal, Manipur)

Otus bakkamoena alboniger Kock, 1952, Jour. Zool. Soc. India 4: 45

(Hmüntha, Lushai Hills)

Baker, FBI No. 1671, Vol. 4: 427

LOCAL NAME. *Lātyā kūyāl* (Nepal).

SIZE. Myna ±; length c. 23-25 cm. (9-10 in.).

FIELD CHARACTERS. As of 619, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, Eastern Himalayas from Nepal through Sikkim, Bhutan, and NEFA. Assam north and south of Brahmaputra river, Nagaland, Manipur, Mizo, and East Pakistan; from the plains and submontane tracts to c. 2400 metres. Affects forest—sal, oak, pine, deodar, etc.—around hill cultivation; also groves of trees and bamboos about habitations.

Extralimital. All Burma, northern Thailand.

GENERAL HABITS, FOOD. As in 619 and other races, qq.v.

VOICE and CALLS. In addition to the calls as under 619 and 623, SA records a short mellow single hoot, quite different from the normal *what?* or *wut?* and repeated at much longer intervals (15 to 20 seconds). A bird uttering this call when shot at 2.30 a.m. had its stomach crammed with a freshly ingested field mouse.

BREEDING. Season, February to April. *Nest*, a natural hollow or woodpecker hole in a tree-trunk or dead stump c. 2 to 5 metres up. *Eggs*, 3 or 4, rarely 5, white, roundish ovals as in the other races. Average size of 34 eggs 32.3 × 28.1 mm. (Baker). On circumstantial evidence both sexes share in incubation, but this needs proving. Period of incubation and other points of breeding biology unrecorded.

MUSEUM DIAGNOSIS. Wing formula as in the Species. Tarsus feathered only to base of toes. Larger than any of the Indian races except *plumipes* (619). Coloration as in nominate *bakkamoena* (623).

MEASUREMENTS

♂ ♀ Wing 162-182 mm. (40 measured) — Ticehurst.

Specimens recently collected in Nepal give:

	Wing	Bill	Tail
5 ♂♂	158-168	24-25	75-85 mm.
4 ♀♀	159-180	24-25	83-89 mm.
		(from skull)	(BB)

Weight 1 ♀ 170 gm. (BB).

272

STRIGIFORMES

General aspect in flight a stout yellowish tawny owl, heavily spotted and streaked with blackish, with broad rounded wings.

STATUS, DISTRIBUTION and HABITAT. Resident; sparsely scattered over extensive tracts of high mountain country chiefly between c. 1800 and 4500 metres: Gilgit, Chitral, Ladakh,¹ Kashmir. Affects open plateaux, steep mountainsides, bare rocky cliffs, and old ruined forts, etc.

Extralimital. 'Kazakhstan from the region between the lower Volga and the lower Ural rivers east across the southern Kirghiz Steppes to the regions of Semipalatinsk and Lake Balkhash, and south to Transcaspia and the basin of the Chu river...' (Vaurie, loc. cit.).

GENERAL HABITS. As in 627, q.v. but keeps to bare rocky hillsides.

FOOD. Largely rodents and game birds; hare (*Lepus*) and mouse-hare (*Ochotona*) among the former, and Snow Partridge (*Lerwa lerwa*), Ruddy Shelduck (*Tadorna ferruginea*) adults and ducklings, and Rock Pigeons (*Columba*) among the latter have been identified. Remains of fish (one of c. 1 + kg.) recorded from a nest with young.

VOICE and CALLS. Evidently as in 627.

BREEDING. Little recorded. Meinertzhagen found two nests (apparently disused ones of some diurnal raptor) in Ladakh¹ (Chimre c. 3600 m. and Shushal c. 4300 m. in May and June). *Nest* in both cases a pad of twigs c. 1 m. in diameter lined with smaller twigs, hare-fur and feathers (possibly left-overs from meals) and fine roots; one placed in a rock fissure, the other on a shelf with an overhanging ledge. *Eggs*, apparently only 2. Measurements not given, but the six large ones averaging 60.1 × 47.3 mm. taken by Osmaston in Kashmir (see under 627) presumably belong to this race.

MUSEUM DIAGNOSIS. A pale subspecies 'resembling *hemachalana* (626a) in general coloration, but duller, less variegated, and not so distinctly patterned'. Toes completely feathered, the feathers overhanging and concealing base of claws, *contra bengalensis* where last joint of toes naked.

MEASUREMENTS

Wing 12 ♂♂ 440-470 (av. 449.7); 21 ♀♀ 445-512 (482.4) mm. (Vaurie).

Bill (from feathers) 45-47; tarsus 77-81; tail 260-310 mm. (Baker).

COLOURS OF BARE PARTS. Iris golden yellow. Bill greenish black, slaty black to black. Toes dull greenish; claws greenish slate, darker at tips (Baker).

626. Tibetan Horned or Eagle-Owl. *Bubo bubo tibetanus* Bianchi

Bubo bubo tibetanus Bianchi, 1906, Bull. Brit. Orn. Cl. 16: 69

(Upper Yangtze River in southeastern Tibet)

Baker, FBI No. 1659, Vol. 4: 414

LOCAL NAMES. None recorded.

SIZE. Pariah Kite +; stouter. Length c. 66 cm. (26 in.).

FIELD CHARACTERS. As of 627, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Range within our limits hypothetical. According to Vaurie (1965: 587) 'probably also inhabits the eastern

¹ See footnote, p. 273.

Himalayas at high altitudes'. Thus may occur in northern Sikkim, and perhaps also N. Bhutan and NEFA, but no evidence of this as yet.¹

Extremities. Central and eastern Tibet (regions of Lhasa, Gyantse, and Khamba Dzong) eastward to central Kansu, and south to extreme NW. Yunnan (Vaurie).

GENERAL HABITS, FOOD, VOICE AND CALLS, BREEDING. Not recorded in Indian limits; presumably as in 625 and 627, q.v.

MUSEUM DIAGNOSIS. See Key to the Subspecies; also under 625 and 626a.

MEASUREMENTS

Wing 13 ♂♂ 450-485 (av. 461); 9 ♀♀ 490-505 (493.8) mm. (Vaurie).

COLOURS OF BARE PARTS. As in 625.

626a. Himalayan Horned or Eagle-Owl. *Bubo bubo himachalensis* Hume

B. (bubo) himachalensis A.O.H. (= Hume), 1873, *Stray Feathers* 1: 315

(Kulu, 12,000 feet, India)

Not in Baker, FBI

LOCAL NAME. *Borin* (Baluchistan).

SIZE. Pariah Kite \pm ; stouter. Length c. 66 cm. (26 in.).

FIELD CHARACTERS. As of 627, q.v. See *Museum Diagnosis*.

STATUS, DISTRIBUTION AND HABITAT. Northern Baluchistan (Kalat, Quetta) NW. Himalayas, Ladakh (see footnote under *tibetanus*), and Himachal Pradesh (Kulu, Lahul)—between c. 2000 and 4200 m. altitude. Status and range *vis-à-vis tibetanus* confusing.

Extremities. Western Tibet (perhaps Badakhshan in eastern Afghanistan), north to the western Kun Lun and the western Tian Shan in Chinese Turkistan (Vaurie).

GENERAL HABITS, FOOD, VOICE AND CALLS, BREEDING. See under *tibetanus* (625).

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

Wing 3 ♂♂ 450-472 (av. 462); 7 ♀♀ 470-505 (492.3) mm. (Vaurie).

COLOURS OF BARE PARTS. As in *tibetanus* (625).

627. Indian Great Horned or Eagle-Owl. *Bubo bubo bengalensis* (Franklin)

Otus Bengalensis Franklin, 1831 (1830-31), *Proc. Zool. Soc. London*: 115

(The Ganges between Calcutta and Benares and in the Vindhyan Hills

between the latter place and Gurra Mundela)

Baker, FBI No. 1660, Vol. 4: 414

Plate 53, fig. 1

LOCAL NAMES. *Ghaghā* (Hindi); *Gēg* (Sind); *Hāim pēhā* (Bengal); *Ghāhād* (Marathi); *Ghāhād* (Gujarati); *Terra gulla gulla* (Telugu); *Kemān āndai* (Tamil); *Kemān mēga* (Malayalam).

¹ Considerable uncertainty prevails in the records of the races of this variable owl along our northern borders due to the paucity of skins in collections and the fact that *bengalensis*, *himachalensis*, and *tibetanus* have been consistently confused. For example Meinertzhagen (*Ibis* 1927: 605) assigned his breeding birds from Ladakh to *tibetanus* (q.v.) whereas Vaurie, with the advantage of access to fuller material in Russian museums, states that all the specimens he has seen from Ladakh are *himachalensis*, into which 'tibetanus' probably grades in W. Tibet' (loc. cit.). The confusion is understandable since the differences between the populations are slight and only perceptible in a series which is not readily available to most workers.

BREEDING. Season, overall October/November to May, chiefly February to April, but peak periods vary locally. *Nest*, no structure; eggs laid on the bare soil in a saucer-like scrape, generally on a sheltered ledge of rock or in a recess in a clay-cliff flanking a ravine; sometimes on the ground under a bush or tree. Eggs, normally 4, sometimes only 2 or 3; white with a faint creamy tinge, broad roundish ovals, smooth-textured and often with a slight gloss. Average size of 40 eggs from Kashmir 58.1 × 46.0 mm. [of six 60.1 × 47.3 mm. (Osmaston)], of 100 from the Peninsula 53.6 × 43.8 mm. (Baker). Share of the sexes in incubation, and period, unrecorded. The considerable disparity in growth of young in the same brood suggests that eggs are laid at longer than 24-hour intervals and that incubation commences with the first egg. When a nest with chicks is approached the parents frequently resort to diversionary tactics, feigning wing injury 'by turning from side to side with their heads down and flapping their wings like a beheaded chicken, squealing at the same time' (Dharmakumarsinhji).

MUSEUM DIAGNOSIS. Tarsus fully feathered to toes. Feet exceptionally powerful; claws well curved, the inner or 2nd claw longest. Third primary (as-) longest, or 3rd and 4th subequal. Tail moderately long and slightly rounded. For details of plumage see Baker, loc. cit. This is a variable race with paler (more buff) and darker (more rufous) phases and a cline in size—largest in N. India, smaller in the south.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
7 ♂♂	364-390	42-47	69-76	185-195 mm.
3 ♀♀	375-425	44-46	70-75	205-227 mm. (SA, HW)

Wing 10 ♂♂ 358-391 (av. 370); 12 ♀♀ 376-403 (av. 387) mm.—Vaurie.

Weight 1 ♂ 1100 gm. (GD).

COLOURS OF BARE PARTS. Iris bright orange-yellow or reddish orange. Bill horny brown; mouth pink. Feet dirty greyish brown; claws horny black.

MISCELLANEOUS. In most parts of India the large owls are considered birds of ill omen, foreboding death to one of the inmates of a house on which one happens to settle at night and call. There is a great deal of folklore connected with these birds, and some fantastic beliefs and superstitions which command wide credulity. Here are two popular recipes:

1. Keep an owl without food for eight days. Thereafter beat it well with a stick when it will begin to talk fluently like a human (language unspecified!) and tell your fortune with infallible accuracy.

2. Keep an owl in a dark chamber; give it no food. Drive a nail in the centre of the room and tie the bird to this by one of its legs. Sit near the bird for an hour every day and chant the prescribed mantra (words not disclosed!). After 40 days put the dead bird in a sack and hang up from the ceiling of the room for a further 21 days. Thereafter separate the bones from the rest and go to the bank of a river where nobody must see you. Pick out the bones one by one and throw them in the water. The bone that swims like a snake, keep that; you will get your heart's desires for evermore!

BUBO NIPALENSIS Hodgson

Key to the Subspecies

A narrow pectoral band of brown with a golden tinge... *B. n. nipaleus*

No pectoral band as above... *B. n. blighi*

SIZE. Pariah Kite \pm ; stouter. Length c. 56 cm. (22 in.).

FIELD CHARACTERS. A large dark brown owl, streaked and mottled with tawny buff and black, with two prominent upstanding blackish 'horns' or ear-tufts (aigrettes) above the head, large round forwardly directed orange eyes, and fully feathered legs. Sexes alike.

'Large size and conspicuous ears make it look, when sitting motionless, more like a large cat than a bird' (Unwin, Kashmir).

On a good view may be distinguished from Brown Fish Owl by feathered r. naked legs, and more erect r. nearly horizontal 'horns'.

STATUS, DISTRIBUTION AND HABITAT. Resident in suitable biotopes throughout the subcontinent from c. 1500 m. (rarely c. 2400 m.) in the western Himalayas—Punjab (Kohat, Peshawar, Rawalpindi dists.), Kashmir, and eastward at least to west-central Nepal (possibly further east, but not yet recorded from Sikkim, Bhutan or NEFA). Sind, Rajasthan, and across the Gangetic Plain to Assam, Nagaland, Manipur, and East Pakistan; south throughout the Peninsula to Kanyakumari, plains and hills. Not in Ceylon, or Andaman and Nicobar Is. Affects bush-covered rocky hills and wooded country with outscoured ravines, and old mango orchards and groves of ancient trees in the neighbourhood of cultivation and villages; partial to steep earth banks and clay cliffs of dry nullahs and rivers. Not uncommon in eroded semi-desert thorn jungle, but avoids both pure desert tracts and humid evergreen forest.

Extremities. Arakan (Burma).

GENERAL HABITS. Largely nocturnal, but may frequently be seen perched on a pinnacle of rock or similar exposed situation well before sunset and till long after sunrise. Spends the daytime in the seclusion of a thickly foliated bough or in a fissure of rock, sheltered ledge on a clay-cliff flanking a ravine, or among ruined and deserted buildings. When flushed will fly considerable distances in open sunshine with no apparent discomfort, and has been observed pouncing on a bull frog in broad daylight (Magrath). Flies with slow deliberate flaps interspersed with long bouts of gliding on outstretched wings, usually fairly close to the ground. Refuge by day probably sought largely in order to escape the mobbing and chivvying which it invariably receives from all diurnal birds as soon as it shows itself. Issues forth at sundown heralded by a deep resounding double hoot.

FOOD. Predominantly field rats and mice. In the egg-shaped cast-up pellets freely littered below nests and daytime retreats, rodent fur, bones and skulls are almost invariably the chief component. Thus the bird is of major significance to agricultural economy. Also eats birds (remains of peafowl, partridge, and roller identified in stomach contents), reptiles, frogs, crabs, and large insects.

VOICE AND CALLS. A deep, resonant, hollow *hō-hō* (accent on second syllable which much prolonged) repeated at intervals; not particularly loud but with a curious penetrating and far-carrying quality. This call has also been rendered as a deep and solemn *hū-gūn* or *hū-tū-tū*. At nest, or when cornered, snaps mandibles loudly, producing a loud *tuck, tuck, tuck* (like the clicking of one's tongue against the palate), and hisses menacingly, fluffing its plumage and spreading out the wings at the sides.

628. Forest Eagle-Owl. *Bubo nipaleus nipaleus* Hodgson

Bubo nipaleus Hodgson, 1836, *Asiat. Res.* 19: 172 (Nepal)

Habua pectoralis Jerdon, 1840, *Madras Jour. Lit. Sci.* 10: 89 (Malabar)

Baker, FBI No. 1663, Vol. 4: 418

Plate 53, fig. 2

LOCAL NAMES. *Habū*, *Habū chel* (Nepal); *Migiri* (Bhutan); *Ureza*, *Kem mēga* (Malayalam); *Das ts gao chee* (Cachar).

SIZE. Pariah Kite \pm ; heavier built; length c. 63 cm. (25 in.).

FIELD CHARACTERS. A large, powerful, nocturnal brown owl with two outwardly slanting erect black-and-white 'horns' or ear-tufts above the head, fully feathered legs, and *brown* eyes (contra orange in Great Horned).

Adult. Above, dark brown scalloped with buff. Below, fulvous white, barred with blackish on throat and breast, the bars breaking up into chevron-like spots on abdomen. Sexes alike.

Young (immature) pale buff, whiter on head, barred above and below with dark brown. Tail and wings as in adult: dark brown with fulvous bars.

STATUS, DISTRIBUTION AND HABITAT. The submontane tracts and lower Himalayas up to c. 2100 m. (normally to c. 900-1200 m.) from Kumaon eastward through Nepal, Sikkim, Bhutan, and NEFA (?). Assam hills north and south of Brahmaputra river, Nagaland, Manipur, and East Pakistan. Peninsular India in the Western Ghats and associated hills from about Belgaum (c. 16°N. lat.) south through western Mysore and Kerala. Also Shevaroy Hills (southern Eastern Ghats). Affects dense evergreen and moist deciduous forest as in the tropical valleys, terai and duars in the north, and sholas in the southern hills.

Extremities. North and central Burma. Recorded also from Thailand, Laos and central Vietnam.

GENERAL HABITS. Largely nocturnal, spending the day dozing on some densely foliated bough in deep forest or shola; sometimes on the move and even hunting during daytime. At evening dusk moves up to the edge of clearings or streams in quest of prey, but is essentially a forest dweller and does most of its hunting within the forest. A bold and powerful owl, capable of overpowering such large birds as peafowl and junglefowl, pouncing on them while asleep at their nightly roosts in trees or bamboo clumps.

FOOD. Chiefly game birds like the above, and pheasants. Is reported to kill jackals, hare, and fawns of barking deer; also eats lizards, snakes and fish.

VOICE AND CALLS. 'A low, deep and far-sounding meaning hoot' (Jerdon). A long-drawn kite-like whistle, occasionally heard in forest at night, has circumstantially been attributed to this owl; likewise the diabolical blood-curdling shrieks as of a woman being strangled, which have suggested the name 'Devil Bird'. However, the true identity of the Devil Bird remains unproven.

BREEDING. Season, in the Himalayas February-March; in Kerala December-January. In N. Cachar Baker took an egg in June. *Nest*, a hollow in an ancient tree, or a deserted stick-nest of an eagle brought into commission. Sometimes the egg is laid on the bare soil in a cave or horizontal fissure in a rock scarp. Egg, a singleton, white, roundish oval with a smooth

OWLS

277

surface. Average size of 10 eggs 61.2 × 49.9 mm. (Baker). Share of the sexes in incubation, incubation period, and other facets of breeding biology unknown. Reported to be very fierce and aggressive in defence of its egg or nest-young.

MUSEUM DIAGNOSIS. For details of plumage, see Baker, loc. cit. Wing more rounded than in *Bubo bubo*: 4th and 5th primaries (as.) longest. Differs from that species also in the character of the juvenile plumage which is quite distinct from that of the adult.

Young (juvenile plumage). *Above*, including lesser and median coverts and tertiaries, white, washed with warm buff except on crown and hind nape; spotted or barred on the head, barred on the hindneck and rump, and crescent-barred with dark brown elsewhere. Face yellowish white. *Below*, white, washed with buff and barred with dark brown. Tail and wings as in adult: dark brown with fulvous bars (Whistler).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	425-470	52-54	c. 60-62	229-250 mm. (Baker)

South Indian birds smaller than Himalayan.

COLOURS OF BARE PARTS. Iris brown or hazel brown. Bill dull wax-yellow to yellow. Toes dusky yellow; claws pale horny, darker at tips.

629. Ceylon Forest Eagle-Owl. *Bubo nipalensis blighi* Legge

Bubo blighi Legge, 1878, Bds. Ceylon, pt. 1: 133 (Kandy district, Ceylon)
Not in Baker, FBI.

LOCAL NAMES. *Lotū baharūnā* (Sinhala); *Periya āndai* (Tamil).

SIZE. Pariah Kite ±, heavier built; length c. 63 cm. (25 in.).

FIELD CHARACTERS. As of 628, q.v. A large powerful owl, brown above, brown-barred whitish below, with two long ear-tufts, feathered legs, and brown eyes.

STATUS, DISTRIBUTION AND HABITAT. Race peculiar to Ceylon. Resident; 'Widely scattered, in very small numbers, throughout the larger forest tracts both in the lowlands and in the hills to over 6000 feet [c. 1800 m.]' — Phillips.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 628, q.v. Normal call 'a deep, deep mumble or human-sounding snore' (Phillips).

Identified as probably the authentic Devil Bird. Henry (1955: 197) believes that the dreadful shrieks and strangulating noises are merely its 'mating love-song', which would also account for their rare and periodic occurrence.

BREEDING. *Season*, April-May. *Nest*. The only authentic one described was a collection of debris in the hollow formed by the junction of large boughs, c. 6 metres up, in a big tree by a stream in heavy forest at c. 600 m. alt. (Phillips). It contained a single half-grown young bird on 29 May. Egg, undescribed; presumably as in 628.

OWLS

279

VOICE AND CALLS. A deep, resonant, hollow *WOO, WOO, woo, woo-o-o-o-o* reminiscent of a large pingpong ball dropped from a height and allowed to bounce itself to silence, the sounds getting fainter and quicker with each successive bounce. Uttered both day and night, the birds being most noisy during the rainy and cold seasons. A loud snapping *tuck-tuck* of the mandibles when annoyed.

BREEDING. *Season*, overall November to April; principally December-January in N. India; somewhat later in the south. *Nest*, of sticks, in the fork of the trunk or boughs of some large peepul (*Ficus*), kadam (*Stephogyne*), sheesham (*Dalbergia*) or similar tree, preferably standing in or near water, and not infrequently close to habitation. Old nests of kites, vultures, and eagles are often appropriated, sometimes lined with a few green leaves. Eggs, normally 2 — sometimes only a singleton — white, roundish oval, typical of owls' eggs. Average size of 40 eggs 59.3 × 48.2 mm. (Baker). Eggs evidently laid at intervals of several days, thus resulting in great disparity in the size of the two chicks in a nest and in only the larger and stronger one usually reaching maturity. Share of the sexes in incubation, incubation period, and other details of breeding biology unknown.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). When first hatched almost entirely covered with short pure white down. No tracts (Tiechurst).

Fledgeling. 'Overall rufous, with head and neck of a dirty grey colour, the whole plumage having a mealy appearance due to the longer down tips.'

'Lores clothed with a mixture of bristles and blackish sheath-encased feathers. Whole head and neck, excepting rufous ear-coverts, clothed with earthy coloured down with darker bases and greyish white tips, the whole having a somewhat barred appearance; this more pronounced on the head where the down is shorter. Whole body covered with *creamy rufous* down with a few dark shafts, the down of the legs somewhat lighter and ceasing at the toes which are sparsely covered with sprouting feathers tipped with down. The scapulars and wings bear feathers of the same tint, dark shafted, and vermiculated with dark brown. The quills are as yet confined in dark bluish cases, and only visible when the wing is lifted. The tail is merely represented by a tuft of down.'

'Iris bright yellow, pupil blue-black. Bill and cere bluish lead. Feet plumbeous, the soles lighter and the claws darker' (Whistler MS.).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	380-415	41-43	65-70	205-210 mm. (Baker)
4 specimens from Gujarat give		(from skull)		
2 ♂♂	390-402	42-43	60-61	195-208 mm.
2 ♀♀	403-412	46-49	55-67	198-210 mm.
and a recent breeding ♀ from Rajasthan:	435	47	71	224 mm. (SA)

COLOURS OF BARE PARTS. Iris bright yellow. Bill bluish ivory. Toes (unfeathered tips) pale brown; claws blackish brown.

278

STRIGIFORMES

MUSEUM DIAGNOSIS. Smaller than the Indian race; slightly darker above, and with narrower and fewer bars on the underparts. But the population doubtfully distinct from South Indian.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
3 ♂ ♀ (in B.M.)	370 (damaged) - 412	50.5-55.5	184-215 mm. (HW)

COLOURS OF BARE PARTS. As in 628.

630. Dusky Horned Owl. *Bubo coromandus coromandus* (Latham)

Strix coromanda Latham, 1790, Index Orn. 1: 53 (Coromandel Coast)
Baker, FBI No. 1661, Vol. 4: 416
Plate 53, fig. 3

LOCAL NAMES. *Gūg* (Sind); *Jūngli ghūghū* (Lucknow, U.P.); *Rādīyo ghūrd* (Gujarat).

SIZE. Pariah Kite ±; heavier built. Length c. 58 cm. (23 in.).

FIELD CHARACTERS. A large horned owl, similar to 627 but more grey or sooty-washed rather than tawny, and with paler yellow eyes (*contra* deep orange-yellow). When perched, the horns stand erect close to each other like twin spires. Sexes alike.

Adult. Overall, including ear-tufts, greyish brown finely mottled and vermiculated with whitish, especially on underparts, with dark shaft-strips to the feathers. A few buff and white spots about the shoulders. Wing- and tail-feathers brown with pale cross-bands and tips.

STATUS, DISTRIBUTION AND HABITAT. Resident; widely distributed in well-wooded, well-watered tracts throughout the subcontinent south of the Himalayas: Sind, Rajasthan, Punjab, Uttar Pradesh east through the terai and duars of Nepal, Sikkim (?), and Bhutan (?) to Assam south of Brahmaputra river, Manipur, and East Pakistan. South through the entire Peninsula to Mysore and the Nilgiris; no record further south. Affects old mango topos, and groves and roadside avenues of ancient tamarind and other densely foliated trees, in the neighbourhood of water and habitations — normally in the plains.

GENERAL HABITS. Usually keeps in pairs. Very parochial, pairs often inhabiting the same grove year after year. By no means entirely nocturnal, though usually spends the daytime in the seclusion of some shady bough, issuing forth an hour or so before sunset. Not particularly handicapped by daylight, may frequently be heard calling at all hours of the day, and seen on the move, even hunting, especially in cloudy drizzling weather.

FOOD. Small mammals, birds, reptiles, large insects, and doubtless frogs and fish. Among items identified in stomachs and from remains of food brought for nest-young, are hare, rats, striped squirrels, coots, pond herons, redwattled lapwings, once a shikra, rollers, ring doves, parakeets, house and jungle crows (very popular!). Also water beetles (*Dytiscus* sp.). The larger victims are evidently decapitated at site of capture as their heads are never found in the pellets, and only exceptionally (of smaller prey) with the headless bodies in the eyrie.

280

STRIGIFORMES

BUBO ZEYLONENSIS (Gmelin)

Key to the Subspecies

Smaller and darker; wing c. 355-385 mm. *B. z. zeylonensis*
Larger and paler; wing c. 375-445 mm. *B. z. leschenaulti*

631. Brown Fish Owl. *Bubo zeylonensis leschenaulti* (Temminck)

Strix leschenaulti Temminck, 1820, Pl. col., livr. 4, pl. 20
(Eastern provinces of India = Chandernagore)
Strix hardwickii Griffith, 1829, Anim. Kingd., Aves, 1: 77, ex Gray MS. (Futtegghur)
Baker, FBI Nos. 1653, 1654, Vol. 4: 408, 409
Plate 53, fig. 8

LOCAL NAMES. *Amrāi kī ghūghū*, *Ūllā* (Hindi); *Bhoatom pechā* (in imitation of its call. Bengal and East Pakistan); *Heedoo* (Assam); *Māchhimār ghūrd* (Gujarat); *Oomān* (Malayalam).

SIZE. Pariah Kite ±; stouter. Length c. 56 cm. (22 in.).

FIELD CHARACTERS. A large rufous-brown 'cared' owl, heavily streaked above with black. *Below*, whitish (pale fulvous) with fine wavy brown cross-bars and bold blackish streaks. A prominent large white patch on throat and foreneck. Eyes bright golden yellow. Legs naked (*contra* Eagle-Owl 627). Sexes alike.

Young (immature). *Above*, more rufescent with narrower and browner shaft-streaks. *Below*, paler and duller, with the shaft-streaks narrower, and merely a trace of the white throat-patch.

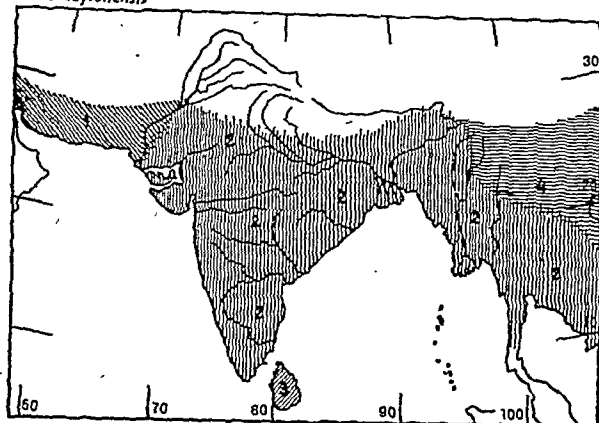
'Birds in the second year are duller and paler than birds in their third year' (Baker).

STATUS, DISTRIBUTION AND HABITAT. Resident. Submontane Himalayas (terai, bhabar, duns and duars) locally to c. 1500 m. alt. including Nepal, Sikkim, and Bhutan; the entire Indian Union and both Pakistans from Punjab (Kohat and Sialkot dists.), Jammu, western U.P., Rajasthan and Sind, eastward through the Gangetic Plain, Bengal, and Assam south of Brahmaputra river, Manipur and Eastern Pakistan (Dacca etc.). South throughout the Peninsula; chiefly plains, but locally up to c. 1400 m., e.g. in sholas in the Nilgiri, Palni and other hills. Affects well-wooded well-watered country; partial to old mango topos, roadside and canal avenues and densely foliated trees along forest streams and tanks; commonly near human habitations. Overgrown eroded ravines and steep riverbanks are favourite haunts.

GENERAL HABITS. Similar to the Dusky Horned Owl (630) both in partiality for the neighbourhood of water and its semi-diurnal habits. Keeps in pairs, usually roosting on some sheltered bough in a leafy tree, bamboo clump, or in an overgrown ravine, but frequently seen abroad in daylight and even hunting, especially in cloudy weather. Issues from its diurnal retreat well before sunset, announced by its deep booming calls. The bird takes up a position on a stump overlooking a pool, or on a rock in the middle or on the edge of a stream to keep a look-out for prey, often flying up and down in the quest, at times almost skimming the water. Fish are scooped up from near the surface, not caught by plunging like the Osprey.

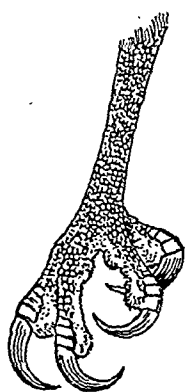
OWLS

281

Bubo zeylonensis

Distributional range 1 *B. z. semenowi* (RE), 2 *B. z. lichenaulti* (631), 3 *B. z. zeylonensis* (632), 4 *B. z. orientalis* (RE).

It is fond of bathing and will waddle into the shallows at the edge, shuffling itself in the normal manner of birds, thereafter drying and carefully preening the plumage.



× c. 1

FOOD. Mainly fish, frogs, and crabs; also rodents, birds and reptiles (once a *Varanus* 28+ cm.). Has been observed feeding on the putrefying carcass of a crocodile.

VOICE AND CALLS. A deep, hollow-sounding boom-boom or boom-a-boom with a peculiar reverberating ventriloquistic quality, repeated at intervals. Suddenly 'exploding' in the stillness of the forest, the call has a distinctly eerie effect.

BREEDING. Season overall November to March; chiefly January–February in N. India, December to March in the Peninsula. Nest a cradle in the fork of the trunk or boughs of an ancient tree such as mango or *Ficus*, on a ledge or in a cleft in a rocky bank, or in an old derelict mausoleum or similar ruin; sometimes lined with a few twigs. Height above ground moderate and variable, but never far from water. Occasionally an old eagle's nest is appropriated. The same site is occupied year after year. Vicinity of nest always littered with cast-up food pellets and remains of its various victims.

Eggs, 1 or 2, white, roundish, with a smooth surface. Average size of 10 eggs 58.4 × 48.9 mm. Eggs of northern birds may be slightly larger (Baker).

OWLS

283

633. Tawny Fish Owl. *Bubo flavipes* (Hodgson)

Caltrunguis Flavipes Hodgson, 1836, Jour. Asiat. Soc. Bengal 5: 364, pl. 26 (Nepal) Baker, FBI No. 1657, Vol. 4: 411

Plate 53, fig. 11

LOCAL NAMES. Lak kyo-o ming ('the kyo-o calling devil' — Lepcha); Dao hao ho ho, Dao bu gao (Cachar).

SIZE. Pariah Kite ±; stouter. Length c. 61 cm. (24 in.).

FIELD CHARACTERS. As of 631, but above rich orange-rufous or tawny with broad blackish shaft-stripes. Much buff on scapulars and wing-coverts. Wing- and tail-quills dark brown, with buff bars and tips. Below, rich orange-rufous with dark brown shaft-stripes, broadest on breast; usually a white throat-patch. Sexes alike. For young (immature) see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. The outer Himalayas (up to c. 1500 m.) from Kashmir (?) eastward through Himachal Pradesh, Garhwal, Kumaon, Nepal, Sikkim, Bhutan and NEFA (?). Assam hills north and south of Brahmaputra river, Nagaland, Manipur, Mizo, and East Pakistan (hill tracts). Affects forested banks of hill streams.

Extralimital. W. China, N. Burma; lower Yangtze Valley; Formosa; Indochinese countries — Peters.

GENERAL HABITS. Similar to Brown Fish Owl. Crepuscular and partially diurnal; often on the move and even hunting during daylight apparently with no discomfort. Perches on high trees overlooking water and swoops down to capture prey from near the surface in the manner of the fish eagles.

FOOD. Chiefly fish, crabs, lizards and large insects. Also rodents ('once remains of a small porcupine about a nest' — Baker) and game birds as large as junglefowl and pheasants.

VOICE AND CALLS. Seldom recorded. A deep whoo-hoo; as also in *B. zeylonensis*, has a curious mewling call, very like that of a cat — Baker.

BREEDING. Little known. Season (in Assam) December, January, and February. Nest, sometimes eggs laid in a hollow in a ravine- or river bank, but mostly (in Cachar, vide Baker) in old dilapidated nests of fish eagles, quite high up in trees, with no attempt to repair them. Eggs, normally 2, sometimes only a singleton, white, roundish ovals, very similar to those of 631. Average size of 10 eggs 57.1 × 46.9 mm. (Baker). Share of the sexes in incubation, and incubation period, imperfectly known. The birds, female in particular, said to be very bold and truculent in defence of the nest.

MUSEUM DIAGNOSIS. Tarsi feathered for about one-third of their length behind, and for about two-thirds in front and at the sides. For details of plumage see Baker, loc. cit.

Young (immature). A ♂ and a ♀ taken in Nepal, described as follows: 'Compared with adult birds, the juv. ♀ (18 May) has the upper plumage with distinct spots, and narrower and browner streaks; its under plumage is downy, chin white, and the streaks finer and paler; and its tarsi are covered with down up to about 24 mm. above the base of the middle toe. The juv. ♂ (June 2) is very similar to it, but without spots on the upper plumage' (Biswas).

MEASUREMENTS			
Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀ 410-455	c. 48-50	60-67	215-227 mm. (Baker)

282

STRIGIFORMES

Share of the sexes in incubation uncertain; incubation period 'approximately 5 weeks' (Baker).

MUSEUM DIAGNOSIS. Aigrettes long and pointed; facial disc ill-defined, especially above. Tarsus naked behind and usually more than half way up in front; naked portion granular, much as in Osprey; likewise soles of feet covered with prickly scales. Claws large, well curved, each with a sharp cutting edge beneath; middle claw with also a sharp keel on the side. Wings rounded, not reaching end of tail; 4th primary (as.) generally longest, 3rd and 5th subequal. Tail moderate. For details of plumage see Baker, loc. cit.

MEASUREMENTS			
	Wing	Bill (from skull)	Tarsus
6 ♂ ♂	379-443	49-54	71-90
7 ♀ ♀	392-430	50-54	71-86 (4 mud.)
			186-210 mm. 190-207 mm.

Weight 1 ♀ 1105 gm. (GD).

(SA, HW, BB)

Northern birds are larger than southern peninsular ones.

COLOURS OF BARE PARTS. Iris golden yellow. Bill pale greenish grey, dusky on culmen and tip. Legs and feet dusky yellow; claws horny brown.

632. Ceylon Brown Fish Owl. *Bubo zeylonensis zeylonensis* (Gmelin)

Strix zeylonensis Gmelin, 1788, Syst. Nat. 1(1): 287 (Ceylon) Baker, FBI No. 1652, Vol. 4: 406

LOCAL NAMES. Bakamuna (Sinhala); Periya andai, Umdain andai (Tamil).

SIZE. Pariah Kite ±; stouter. Length c. 56 cm. (22 in.).

FIELD CHARACTERS. As for 631; q.v. Ear-tufts shorter than in Eagle Owl (629); irides yellow v. brown; legs unfeathered. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Race peculiar to Ceylon; the commonest owl on the island. Resident and plentiful throughout the lowlands, and occurs in the hills to over 6000 feet [c. 1800 m.] — Phillips. Affects forest and groves of trees near water — tanks, and streams with rock pools.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 631. Henry describes the calls as 'doleful, and almost human-sounding moans, oomp-ooo-oo answered by its mate with an assenting oo'.

BREEDING. Season chiefly January to May; occasionally July. Nest and eggs as in the Indian race (631). Average size of 8 eggs 58.7 × 48.0 mm. (Baker).

MUSEUM DIAGNOSIS. Differs from the peninsular Indian population in its darker coloration and smaller size.

MEASUREMENTS

♂ ♀ Wing 365-383 mm. (as compared with *leschenaulti* from South India ♂ ♂ 379-405, ♀ ♀ 392-417 mm.) — Whistler.

COLOURS OF BARE PARTS. As in 631.

284

STRIGIFORMES

COLOURS OF BARE PARTS. Iris yellow. Bill horny black, sometimes yellowish at extreme tip; cere dingy green. Legs and feet yellowish grey, dingy greenish or slaty green; claws horny black.

Genus NYCTEA Stephens

Nyctea Stephens, 1826 (1825), in Shaw's Gen. Zool. 13 (2): 62. Type, by tautonymy and monotypy, *Strix erminia* Shaw = *Strix nyctea* Linnaeus = *Strix scandiaca* Linnaeus. Aigrettes very small, hardly visible; feathers of face and legs extremely long and hairy, almost concealing the bill and toes. Under tail-coverts very long, reaching almost to end of tail; otherwise wings and tail as in *Bubo*.

Contains a single Holarctic breeding species, accidental to our area.

634. Snowy Owl. *Nyctea scandiaca* (Linnaeus)

Strix scandiaca Linnaeus, 1758, Syst. Nat., ed. 10, 1: 92 ('Habitat in Alpihus Lapponiae' ex Fn. Suec., Aves, no. 46, there based on a drawing by Rudebeck) Baker, FBI No. 1665, Vol. 4: 420

LOCAL NAMES. None recorded.

SIZE. Pariah Kite ±; stouter. Length c. 61 cm. (24 in.).

FIELD CHARACTERS. A large pure white round-headed owl, more or less flecked and barred with sepia brown, with densely feathered legs. Unique and unmistakable. Sexes alike, but female considerably larger.

STATUS, DISTRIBUTION AND HABITAT. A specimen once taken (March 3, c. 1876) at Mardan in W. Pakistan (c. 34°14'N., 72°5'E.) and several other examples claimed to be seen by shikari at the same time. Evidently an accidental waif during an 'exodus year' when the species, presumably owing to food-scarcity cycles, intrudes enormous distances south of its normal range. No subsequent record.

Extralimital. Breeds in the northern parts of the Holarctic region. In Eurasia, migrates south in winter to central Europe and central Asia.

GENERAL HABITS. A powerful diurnal owl with buzzard-like flight, sometimes chasing birds and striking them down in the air like a falcon. Lives largely on rodents and other small mammals.

MUSEUM DIAGNOSIS. For bionomics, structure, plumages, and other details see Witherby, 1938, 2: 309-12.

MEASUREMENTS			
	Wing	Bill (from base of feathers)	Tarsus
♂ ♂	398-415	30-38	55-65
♀ ♀	425-460	—	—
			195-225 mm. (Witherby)

COLOURS OF BARE PARTS. Iris golden. Bill and claws blackish horn.

Genus GLAUCIDIUM Boie

Glaucidium Boie, 1826, Isis von Oken, Bd. 2, col. 970. Type, by subsequent designation, *Strix passerina* Linnaeus (Gray, 1840, List Gen. Bds.: 6) Cf. Ripley, S. D., 1948, *Zoologica* 33: 193-202

No ear-tufts or aigrettes. Differs from *Athene* (q.v.) in having the upper plumage barred instead of spotted. Cere swollen; nostrils tubular. Tarsus feathered; toes

OWLS

285

covered above with bristles. Wing more rounded than in *Athene*: 1st primary (as.) very short; 3rd, 4th or 5th quill longest or the three subequal.

Genus represented throughout the Old World, and also in C. and S. America.

Key to the Species

	Page
A A distinct collar; wing under 105 mm.....	<i>G. brodiei</i> 285
B No collar; wing over 110 mm.....	1
1 Primaries barred dark brown and whitish.....	<i>G. cuculoides</i> 289
Primaries barred black and rufous.....	<i>G. radiatum</i> 286

635. Collared Pygmy Owllet. *Glaucidium brodiei brodiei* (Burton)

Noctua Brodiei Burton, 1836 (1835), Proc. Zool. Soc. London: 152 (Himalayas, restricted to Simla by Baker, 1927, Fauna 4: 450)

Noctua tubiger Hodgson, 1836, Asiat. Res. 19: 175 (Nepal)

Glaucidium brodiei garoense Koelz, 1952, Jour. Zool. Soc. India 4: 45 (Tura)

Baker, FBI No. 1696, Vol. 4: 450

Plate 54, fig. 7

LOCAL NAME. *Dao whit-tshit* (Cachar).

SIZE. Quail \pm ; length c. 17 cm. (6½ in.).

FIELD CHARACTERS. A charming diminutive owl, a passable miniature of the better known Barred Owllet (639). Overall, barred grey-brown with a prominent white supercilium, rufous half-collar on upper back, and white patch on throat. Also has a dimorphic rufous or chestnut phase. Sexes alike.

From behind, the hind collar together with a black spot on each side of nape look deceptively like a staring owl's face!

STATUS, DISTRIBUTION and HABITAT. The Himalayas from Chitral through Punjab, Kashmir, Himachal Pradesh, Garhwal, Kumaon, Nepal, Sikkim, Bhutan, and NEFA. Assam hills south of Brahmaputra river, Nagaland, Manipur, Mizo, East Pakistan hill tracts (?). From the submontane terai and duars up to c. 3200 metres altitude. Affects open hill forest of oak, rhododendron, fir, deodar, etc.

Extralimital. Extends to S. China (north to Anwei), south to the Malay Peninsula and northern Vietnam; Hainan I. (Peters).

GENERAL HABITS. A very diurnal little owl, usually seen singly perched close to the trunk on some thinly foliated branch in a tall forest tree. Flies about freely in open sunshine, even hunting and calling persistently at midday. Is also crepuscular, but far less nocturnal than many other owls. Flight, a series of rapid wing-beats punctuated by pauses. Suffers ceaseless mobbing and chivvying from small birds during daytime, whence it has been pertinently suggested that the peculiar staring face-like markings on the hindhead may be of value in discouraging attacks from the rear. So great is the animosity for it among tits and other birds that a mixed rabble can often be decoyed by imitating its calls. Extremely bold and fierce for its size, sometimes pouncing on birds almost as large as itself, and carrying them off to a perch in its talons. The victim is pinned under foot and torn up and devoured with vicious upward pulls of the bill.

OWLS

287

Pradesh (Dalhousie, c. 76°E.) eastward through Garhwal, Kumaon, Nepal and Sikkim to Bhutan. South throughout the Peninsula in appropriate biotopes (locally up to c. 2000 m. in the Nilgiris etc.), roughly east and south of a line from Almora (Kumaon) to Baroda (Gujarat), with a western extension to the Aravalli Range (Mt Abu area). Replaced in the Malabar coastal strip from c. 16°N. (S. Konkan) southward through Kerala by the race *malabaricum*, q.v.; resident in Ceylon — in the low-country Dry zone and Hill zone to c. 1100 m. Occurrence in Assam doubtful. Baker recorded it as 'occurring in small numbers everywhere' in N. Cachar (1897, JBNHS 11: 230), but omits it both from the *Fauna* and *Nidification*. Affects mixed moist-deciduous forest and secondary jungle; in the Peninsula, especially partial to the teak-and-bamboo facies in foothills country.

GENERAL HABITS. Keeps singly or in pairs. Largely crepuscular; most active an hour or so before dusk and likewise till after sunrise; but is also on the move during the night, and flies about freely — and even hunts — in daytime, especially in cloudy, drizzling weather. Normally retires during the day to some leafy branch or a tree hollow, perhaps more in order to escape the chivvying it invariably receives from small diurnal birds than from any handicap due to sunshine. Gives itself away by fussily dashing out from its retreat on the approach of a human, with rapid wing-flaps punctuated by pauses; settles in another tree a short way off, sitting upright and motionless with its head screwed round to stare at the intruder, looking deceptively like the snag of a dead branch. Over most of its range almost invariably found in the same facies and in loose association with tree pies (*Dendrocitta vagabunda*) and racket-tailed drongos (*Dicrurus paradiseus*).

FOOD. Locusts, grasshoppers, cicadas and other large insects; molluscs, lizards, small birds, mice.

VOICE and CALLS. Pleasant, distinctive, rather like distant crow of Red Junglecock to the uninitiated. Begins with a loud and slow *kāo* repeated 2 or 3 times, followed by *kāo-kūk* (or *kookūk*), *kāo-kūk*, *kāo-kūk*, *kāo-kūk* etc. of about five seconds' duration, quickening in tempo and fading off at the end. The head is slightly lowered while calling, giving the bird a hunchback profile, and the tail is wagged laterally or swung from side to side. Nuptial (?) song: a soft, musical, rather ventriloquistic, *cū-cū-cū-cū-cū* (4½ times), fading towards end. Uttered (in moonlight only?) monotonously for 15-4 minutes, with short pauses. Also has an occasional pleasant bubbling continuous *woioioioioioi*... *kek*, the final *kek* in a much higher key. Significance of this call not understood.

BREEDING. Season, March to May; in Ceylon unknown. Nest, a natural tree hollow, or deserted woodpecker or barbet's nest-hole in the trunk or branch of a tree standing in open forest, between 3 and 8 metres from the ground. Eggs, 3 or 4, white, roundish, typical. Average size of 28 eggs 31.5 × 26.8 mm. (Baker). Share of the sexes in incubation, and incubation period, unknown.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Some examples are much greyer than others, more particularly on lower back and tail. This apparently unconnected with provenance but in the nature of individual variation, presumably representing the grey phase found in most owls.

286

STRIGIFORMES

FOOD. Small birds, mice, lizards, cicadas, grasshoppers, beetles, and other large insects.

VOICE and CALLS. A pleasant 4-noted bell-like whistle *toot . . . tootoot . . . toot* uttered in runs of 3 or 4, repeated at intervals. The call often ends incompletely with only the *tootoot*. The calling bird bobs its head from side to side, producing a marked ventriloquial effect.

BREEDING. Season, March to June, mainly April-May. Nest, an unlined natural hollow, sometimes a very large one, or an old or forcibly appropriated barbet- or woodpecker hole, 2 to 10 metres up in a tree-trunk standing in fairly open oak or other hill forest. Eggs, normally 4, sometimes 3 or 5, white, roundish, typical of owls' eggs. Size c. 29 × 24 mm. Share of the sexes in incubation uncertain; incubation period undetermined.

MUSEUM DIAGNOSIS. In fresh plumage the white throat, white portions of underparts, and underwing, are strongly suffused with primrose yellow. For notes on the species, and break-up of over 100 skins in the Brit. Mus. collection into 6 colour groups irrespective of provenance, see Kinnear, *Ibis* 1937: 490-1.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	88-101	14-15	21-23	57-66 mm.
		(from skull)		(SA, BB, Baker)

Weight 2 ♂♂ 52, 53, 1 ♀ 63 gm. (SA, SDR).

COLOURS OF BARE PARTS. Iris bright lemon-yellow. Bill greenish yellow; cere and gape bluish. Legs and feet pale greenish yellow to olive-grey; claws dark horny.

GLAUCIDIUM RADIATUM (Tickell)

Key to the Subspecies

	Page
A Abdomen longitudinally striated.....	<i>G. r. castanonotum</i> 288
B Abdomen barred transversely.....	1
1 General tone distinctly rufous.....	<i>G. r. malabaricum</i> 288
General tone not rufous.....	<i>G. r. radiatum</i> 286

636. Barred Jungle Owllet. *Glaucidium radiatum radiatum* (Tickell)

Strix Radiata Tickell, 1833, Jour. Asiat. Soc. Bengal 2: 572

(Jungles of Borabhum and Dholbhum)

Baker, FBI 1694, Vol. 4: 448

Plate 54, fig. 8

LOCAL NAMES. *Jāngli choghād* (Hindi); *Kālā khūsāt* (U.P.); *Chhōtā kālpēcha* (Bengal); *Pānchi bassā* (Sinhala); *Sinna āndai* (Tamil); *Adāci pēgēdigāntē* (Telugu).

SIZE. Myna \pm ; length c. 20 cm. (8 in.).

FIELD CHARACTERS. A small squat, round-headed owl without ear-tufts. Above, dark brown conspicuously barred with pale rufous. Below, chin, moustachial streak, middle of breast, and abdomen white; rest of underparts barred dark olive-brown and white or rufous-white. Sexes alike.

A fulvous or rufous patch on underwing conspicuous in flight. Call diagnostic, q.v.

STATUS, DISTRIBUTION and HABITAT. The submontane Himalayas (terai, bhabar, duns and duars), locally up to c. 2000 m. in the hills, from Himachal

288

STRIGIFORMES

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
		(from skull)		
17 ♂♂	124-134	18-21	22-28	66-80 mm.
22 ♀♀	126-136	17-21	22-29	63-84 mm.
				(SA, HW, BB)

Weight 2 ♂♂ 114, 114 gm. (GD).

COLOURS OF BARE PARTS. Iris bright lemon-yellow. Bill plumbeous to greenish yellow. Feet dirty greenish lemon-yellow; claws horny brown.

637. Malabar Barred Jungle Owllet. *Glaucidium radiatum malabaricum* (Blyth)

Athene malabaricus Blyth, 1846, Jour. Asiat. Soc. Bengal 15: 280

(Malabar Coast and Travancore)

Baker, FBI No. 1695, Vol. 4: 449

LOCAL NAMES. *Pānchi bassā* (Sinhala); *Sinna āndai* (Tamil); *Chembān nāthē* (Malayalam).

SIZE. Myna \pm ; length c. 20 cm. (8 in.).

FIELD CHARACTERS. A small, squat, round-headed barred owl without ear-tufts, very like 636 q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; Malabar coastal strip from southern Konkan (c. 16°N.) southward through Goa, W. Mysore and Kerala. Moist deciduous biotope; chiefly low-country and foothills — locally to c. 1500 m. altitude. Affects mixed teak-and-bamboo and similar open forest.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 636, q.v.

BREEDING. Season, March to May. Nest and eggs as in the nominate race but 3 rather than 4 eggs reported to form the normal clutch. Average size of 30 eggs 30.4 × 26.4 mm. (Baker).

MUSEUM DIAGNOSIS. Differs from nominate *radiatum* (636) in being much darker and more rufous — practically bright chestnut in some specimens — especially on the upperparts, wings, breast and flanks.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
		(from skull)		
4 ♂♂	128-135	19-22	c. 22	65-69 mm.
5 ♀♀	124-134	19-21	20-22	62-68 mm.
				(SA)

COLOURS OF BARE PARTS. As in 636.

638. Chestnutbacked Barred Owllet. *Glaucidium radiatum castanonotum* (Blyth)

Athene castanonota Blyth, 1852, Cat. Bds. Mus. Asiat. Soc. 1: 39 (Ceylon)

Baker, FBI No. 1693, Vol. 4: 447

Plate 54, fig. 5

LOCAL NAMES. *Pānchi bassā* (Sinhala); *Sinna āndai* (Tamil).

SIZE. Myna —; length c. 19 cm. (7½ in.).

OWLS

289

FIELD CHARACTERS. As of 636, q.v., also without ear-tufts, but upperparts chestnut, narrowly cross-banded with blackish. *Below*, white, longitudinally streaked with olive-brown on abdomen instead of barred. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident; race peculiar to Ceylon. Widely distributed in small numbers throughout the dense forests of the Wet zone and western aspects of the hills to 6300 ft [c. 1950 m.] — Phillips. Its range reported to be dwindling owing to clearance of forests for plantations etc.

GENERAL HABITS. Frequents the tops of tall trees, usually on steep hill-sides. Very diurnal in habits, often hunting and calling in broad daylight, but very shy and wary, and seldom seen (Henry).

FOOD. Mainly insects; also mice, small birds, lizards, etc.

VOICE and CALLS. 'A curious note like *krax krax krax krax* (the *r* accentuated) which carries a long distance' (Henry).

BREEDING. *Season*, March-May. *Nest* and *eggs* as in 636 and 637, but normal clutch of 2 eggs, measuring c. 35 × 28 mm.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	122-132	17-18	25-28	56-65 mm (Baker)
1 ♀ (moulting)	157	15	—	64 mm (SDR)

COLOURS of BARE PARTS. Iris yellow. Bill yellowish or greenish horny; cere dusky greenish. Feet greenish olive; soles paler and more yellow.

GLAUCIDIUM CUCULOIDES (Vigors)

Key to the Subspecies

A	Upperparts dark rufous-brown.....	<i>G. a. eastern</i>	291
B	Upperparts blackish brown.....	<i>G. a. cuculoides</i>	299
C	Upperparts more pure brown, less rufous than <i>eastern</i> but more rufous than <i>cuculoides</i>	<i>G. a. reflexus</i>	291

639. West Himalayan Barred Owlet. *Glaucidium cuculoides cuculoides* (Vigors)

Ninox cuculoides Vigors, 1831, Proc. Zool. Soc. London: 8

(Himalayas, i.e. Simla-Almora district)

Baker, FBI No. 1629, Vol. 4: 444

Plate 54, fig. 6

LOCAL NAMES. *Bēḍi dāḍi* (Hindi); *Tayḥar* (Lepcha).

SIZE. *Myra* ±; length c. 23 cm. (9 in.).

FIELD CHARACTERS. Resembles Barred Jungle Owlet (636) but is larger. A dumpy 'hornless' dark brown (or olive-brown) owlet, closely barred with whitish above and below. Abdomen whitish with longitudinal dark striations. A prominent white throat-patch. Sexes alike.

19

OWLS

291

Weight 2 ♂♂ 159, 169 gm. (GD).

COLOURS of BARE PARTS. Iris lemon-yellow. Bill yellowish green; cere greenish horny. Feet greyish olive-yellow or dull horny green; claws horny brown; pads chrome yellow.

640. East Himalayan Barred Owlet. *Glaucidium cuculoides eastern* Ripley

Glaucidium cuculoides eastern Ripley, 1948, Zoologica 33: 200 (Terai, Mahabhi Hills)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. *Myra* ±; length c. 23 cm. (9 in.).

FIELD CHARACTERS. As of 639, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Eastern Sikkim, Bhutan, NEFA, Nagaland, from the submontane tract up to c. 2700 m. altitude. Affects open forest of pine, oak, rhododendron, etc.; also subtropical and tropical evergreen jungle in the foothills and dunes.

Extralimital. NW. Burma (Hkakawng Valley).

GENERAL HABITS, FOOD, VOICES and CALLS. As in 639, q.v.

BREEDING. *Season*, *Nest*, *Eggs* as in 639.

MUSEUM DIAGNOSIS. Differs from the nominate western population (639) in being darker and more rufous, i.e. altogether very rufous-brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	150-154	20-22	26-29	{ 82-92 mm. 86-94 mm. (SDR, SA)
♀♀	156-162			
Weight ♂♂	150-176 gm.			

COLOURS of BARE PARTS. As in 639.

641. Burmese Barred Owlet. *Glaucidium cuculoides reflexus* Baker

Glaucidium cuculoides reflexus Baker, 1926, Bull. Brit. Orn. Cl. 47: 59

(Nocog-mi-ban = lat. 24°48'N., long. 93°12'E., Manipur)

Baker, FBI No. 1690, Vol. 4: 445

LOCAL NAME. *Doḥ-kā-sā-rā* (Cachar).

SIZE. *Myra* ±; length c. 23 cm. (9 in.).

FIELD CHARACTERS. As of 639, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Assam hills south of Brahmaputra river (Cachar, Khasi, etc.), Manipur, Mizo (?), Tripura, East Pakistan (Syhet, Chittagong); from the foothills to c. 1300 m. altitude, occasionally to c. 1900 m. Affects open hill forest and tropical evergreen jungle.

Extralimital. N. Burma, N. Laos, N. Vietnam.

290

STRIGIFORMES

Young (immature). Barred only on wings and tail. Generally more rufous, with the head and nape spotted with pale rufous, and underparts streaked.

STATUS, DISTRIBUTION and HABITAT. The entire Himalayas from about Murree in W. Pakistan eastward through Kashmir, Himachal Pradesh, Garhwal, Kumaon, Nepal, and W. Sikkim; from the foothills up to c. 2100 m. — locally to c. 2700 m.; possibly seasonal altitudinal migrant. Affects open forest of pine, oak, rhododendron, etc.; also subtropical and tropical evergreen jungle at the lower elevations.

GENERAL HABITS. Common and largely diurnal; often found sitting out on bare branches or dead tree-stumps in broad sunlight, and hunting freely at all hours of the day. Has been observed perching on a quail (*Gallus chinensis*) flying past, and catching it in the air like a hawk (Dudgen, JBNHS 15: 530). Subjected to relentless chivvying by bullocks, etc., and other small birds as soon as its presence is detected. Six status-like under their mobbing attacks, betraying its agitation only by swinging in tail laterally (from side to side) — for many minutes at a time. Flight, as of other small owls, wavy and dipping — a series of rapid flaps followed by a pause with the wings closed.

FOOD. Beetles, grasshoppers, cicadas, and other large insects; Earth, mice, small birds.

VOICE and CALLS. Heard at all hours during daytime, but is more noisy at dawn and till a couple of hours after sunrise. Normal call, a crescendo of harsh squawks sounding 'as if the bird was trying to rise to some great effort which ends suddenly and unexpectedly' (Osmaston). In the breeding season a continuous bubbling musical whistle *meow-meow-meow* etc. of c. 4 to 7 seconds' duration, reminiscent of the opening notes in the call of the Green Barbet (*Megalaima virens*). Also occasionally a variant of this, *meow-meow*... *teet* as in Barred Jungle Owlet (636).

BREEDING. *Season*, April-May. *Nest*, an unlined natural hollow in a tree-trunk, or a disused or forcibly appropriated barbet- or woodpecker hole. *Eggs*, normally 4, white, round, typical of owls'. Average size of 30 eggs 35.8 × 30.4 mm. (Baker). Presumably both sexes incubate; period and other details unrecorded.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Less dark and rufous than *eastern* (640), slight intergrading with which is already apparent in eastern central Nepal.

CHICK. Clothed with short white down all over when first hatched (Titchell).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	145-162	c. 19-22	c. 24-25	75-90 mm. (Baker)

Birds from Nepal and Sikkim give:

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂♂	143-155	19-21	—	75-85 mm.
9 ♀♀	143-162	19-22	23-30 (2 mod.)	77-88 mm. (53, SA)

292

STRIGIFORMES

GENERAL HABITS, FOOD, VOICES and CALLS. As in 639, q.v. In Assam often frequents bamboo jungle feeding on a species of mouse which also lives in such places (Baker).

BREEDING. *Season*, late March to early June; mainly April-May. *Nest* and *eggs* as in 639 and 640. Normal clutch 4, but frequently 3 and 5 eggs laid. Average size of 46 eggs 36.5 × 30.5 mm. (Baker).

MUSEUM DIAGNOSIS. Much richer rufous-brown than *eastern*; particularly rich rufous on underparts. Breast more streaked, less barred.

MEASUREMENTS

♂ ♀ Wing 141-162 mm. (Baker).

COLOURS of BARE PARTS. As in 639.

Genus *Ninox* Hodgson

Ninox Hodgson, 1837, Madras Jour. Lit. Sci. 5: 23. Type by monotypy.

Ninox *spilargus* Hodgson = *Spilargus* Titchell.

The most hawk-like of all the owls owing to the rufous and facial disc being quite obsolete. Cere swollen and non-tubular; nostril placed close to its anterior margin. Wing long and more pointed than in *Glaucidium* or *Adonia*; 1st and 4th primaries (an.) longest; 1st about = 7th. Tail moderately long; rounded at tip. Tarsus feathered; upper surface of toes thinly covered with bristles.

Genus found throughout the Oriental Region, the greater part of the Australian Region, New Zealand, and Madagascar. Two species within Indian fauna.

Key to the Species

		Page
A	Spotting of underparts tawny to chocolate-brown.....	<i>N. ninox</i> 293
B	Spotting of underparts bright rufous brown.....	<i>N. spiliotis</i> 293

Ninox *scutulata* (Raffles)

Key to the Subspecies

A	Lower plumage almost entirely brown; quills not barred.....	<i>N. n. ninox</i> 293
B	Lower plumage white; partly brown or rufous; quills barred.....	1
1	Wing usually under c. 206 mm.....	<i>N. n. ninox</i> 293
2	Wing usually over c. 206 mm.....	2
3	Darker: the head more brown and as dark as, or darker than, the back.....	<i>N. n. ninox</i> 294
4	Paler: with a much greyer head, this being paler and more grey than the back.....	<i>N. n. spiliotis</i> 293

642. Indian Brown Hawk-Owl. *Ninox scutulata spilargus* (Titchell)

Spilargus Titchell, 1933, Jour. Asia Soc. Bengal 2: 577

(Dumraon, Dhanu, Bengal)

Baker, FBI No. 1698, Vol. 4: 454

Plate 54, fig. 14

LOCAL NAMES. *Chūḥḥī* *Niḥ* (Hindi); *Kūḥ* *phūḥ* (Bengali); *Mūḥ* *niḥ* (Assam); *Tayḥar* *phūḥ* (Lepcha).

SIZE. *Myra* ±; length c. 32 cm. (12½ in.).

OWLS

293

FIELD CHARACTERS. A very hawk-like owl, dark greyish brown above, with whitish forehead and irregular white patches about the shoulders.



x c. 1/2

Below, throat and foreneck fulvous, streaked with brown; rest of underparts white with large drops of reddish brown forming broken bars. Tail barred with black and tipped with white. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident. The outer Himalayas and submontane tracts from about Murree in W. Pakistan eastward through Nepal, Sikkim, and Bhutan

to NEFA and Assam north of Brahmaputra river. Southward, excepting the arid tracts in the northwest (Sind, Rajasthan, N. Gujarat), widely but locally distributed through northern and central India, east to Bengal, Orissa, and N. Andhra. Southern limit uncertain: an example collected in Greater Bombay (c. 19°N. lat.) is intermediate between this and *hirsuta*, while 2 specimens from Madras (c. 13°N. lat.) in the B.M. seem referable to this paler northern race. Has been recorded in the past from Mt. Abu, but no recent confirmation thence; may occur in Gir forest, Saurashtra. Affects forest, well-wooded country, and groves of trees, particularly in the neighbourhood of water and lining forest streams and nullahs — often close to habitation.

GENERAL HABITS. Crepuscular and nocturnal. Keeps singly or in pairs which spend the daytime cuddled close together up in the seclusion of a shady branch often thickly smothered with creepers. But when disturbed will readily fly out to another tree through the dappled sunshine without any apparent discomfort. Flight (rapid wing-beats and glides), and manner of alighting at the end of it — sweeping upward to settle on a branch — characteristically hawk-like. Is normally not abroad before darkening dusk, but may sometimes be on the move during daytime in cloudy weather. Perches upright on a post or tree-stump at dusk — usually the same, night after night — keeping a look-out for prey, from time to time springing up vertically a metre or more in the air to take a passing insect in its claws, and diving back to the perch in the manner of a bulbul catching winged termites. Also flies about in the gathering dusk like a nightjar, hawking beetles in the air.

FOOD. Large insects such as beetles and grasshoppers; frogs, lizards, small birds, mice, and occasionally (or regularly?) small bats.

VOICE AND CALLS. Very distinctive and diagnostic. A rather soft and pleasant, almost musical, *oo . . uk, oo . . uk, oo . . uk*, etc. in runs of 6 to 20 calls (mostly 9 to 13) at the rate of about one per second, with a pause of a few seconds between each run. Very vocal during the breeding season, calling more or less continuously for hours on end, particularly during moonlit nights. Two birds (♂ and ♀?) will join in irregular duets, or several birds in the distance will answer one another from all directions. Has a specially noisy round of calling in the twilight of dawn before retiring for the day. In cloudy weather occasionally also calls in daytime.

OWLS

295

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	206-222	c. 21-22 (from feathers)	c. 24-25	128-134 mm. (Baker)

COLOURS OF BARE PARTS. As in 642.

644. South Indian Brown Hawk-Owl. *Ninox scutulata hirsuta* (Temminck)

Strix hirsuta Temminck, 1824, Pl. col., livr. 49, pl. 289 (Ceylon)
Baker, FBI No. 1702, Vol. 4: 457

LOCAL NAMES. *Chāghād bāra* (Hindi); *Pāḍḍigānta vestam* (Telugu); *Pūnchi bayā* (Sinhala); *Sirna āndai* (Tamil); *Pillundhē* (Malayalam).

SIZE. Pigeon ±; length c. 32 cm. (12½ in.).

FIELD CHARACTERS. As of 642, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Southern India from about the latitude of Bombay (c. 19°N.) through Maharashtra, Goa, Mysore, western Tamil Nadu and Kerala. How far east needs to be determined since two specimens from Madras city in the British Museum appear to belong to the northern form *lugubris*! Resident in all zones in Ceylon; locally and sparsely distributed throughout the lowlands and up to c. 1300 m. in the hills. Affects forest and well-wooded country, and kampongs around habitations, e.g. in Kerala.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 642 and 643, qq.v.

BREEDING. Season, January to May; in Ceylon March–April and also in November. *Nest and eggs* (2 or 3) as in 642.

MUSEUM DIAGNOSIS. Very like *burmanica* (643) but still darker. Head always darker than back and more slaty brown, less red-brown. *Below*, very richly coloured; under wing-coverts and axillaries profusely barred with dark brown.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	190-212	22-24 (from skull)	24-28	112-122 mm. (SA, HW)

Weight c. 8 oz. (227 gm.). — Hume.
COLOURS OF BARE PARTS. As in 642.

645. Hume's Brown Hawk-Owl. *Ninox scutulata obscura* Hume

Ninox obscura Hume, 1872, Stray Feathers 1: 11 (Camorta, Nicobars)
Baker, FBI No. 1703, Vol. 4: 457
Plate 54, fig. 13

LOCAL NAMES. None recorded.

SIZE. Pigeon —; length c. 31 cm. (12 in.).

FIELD CHARACTERS. As of 642, q.v., but overall deep chocolate-brown. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Andaman and Nicobar Islands. Affects forest about the settlements, and rubber plantations, etc.

294

STRIGIFORMES

BREEDING. Curiously enough almost nothing known concerning this race beyond that Osmaston once found its eggs 'in a large hole in a mango tree c. 8 ft. up in a compound in Dehra Dun' on 1 July. The 4 eggs measured c. 36 × 31 mm.

MUSEUM DIAGNOSIS. See Key to the Subspecies; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	215-227	c. 21-22	c. 24	124-135 mm. (Baker)
Nepal birds give				
		(from skull)		
4 ♂♂	207-225	22-24	—	115-140 mm.
2 ♀♀	218-219	21-24	—	126-133 mm. (BB)

Weight 1 ♀ 186 gm. (GD).

COLOURS OF BARE PARTS. Iris bright golden yellow. Bill horny slate or bluish black, paler at tip; cere dull green or greenish brown. Feet dull yellow or yellowish green.

643. Burmese Brown Hawk-Owl. *Ninox scutulata burmanica* Hume

Ninox burmanica Hume, 1876, Stray Feathers 4: 285 (Pegu and Tenasserim)
Baker, FBI No. 1699, Vol. 4: 455

LOCAL NAME. *Māh sorāi* (Assam).

SIZE. Pigeon ±; length c. 32 cm. (12½ in.).

FIELD CHARACTERS. As of 642, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Assam south of Brahmaputra river, Nagaland, Manipur, Mizo, Tripura, East Pakistan; from the lowlands to c. 1700 m. Affects forest and well-wooded country, and kampongs around habitations; often groves of trees in jungly gardens within urban limits.

Extralimital. Southern Yunnan, south to the Malay Peninsula, Thailand, and all the Indo-Chinese countries.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 642. Captures the fast and erratically flying pipistrelle bats on the wing, going through all manner of agile aerial contortions in the chase (McCann, JBNHS 36: 1002). 'Flight something similar to a woodcock's; often come across when beating patches of jungle for that bird' (Wickham, ibid. 34: 63).

BREEDING. Season, end March to early June. *Nest*, a natural hollow in a tree-trunk, unlined but usually littered with cast-up food pellets. *Eggs*, 3 or 4, exceptionally 5, white, roundish, typical. Average size of 50 eggs 35.1 × 29.5 mm. (Baker). Both sexes believed to incubate; incubation period in one case 24 days.

MUSEUM DIAGNOSIS. Differs from *lugubris* (642) in being darker both above and below. Head as dark as or darker than back, and much less grey. *Below*, dark markings usually richer and larger, but this subject to considerable individual variation.

296

STRIGIFORMES

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 642 and the other races, qq.v. Beetles and grasshoppers mentioned as the two chief food items.

BREEDING. Little recorded beyond that B. B. Osmaston had a young one brought to him on 30 May.

MUSEUM DIAGNOSIS. Differs from the other races in being dark chocolate-brown, somewhat paler and rufous on abdomen. Forehead mixed black and white; head and primary coverts generally darker and blacker than rest of upperparts. A few small whitish spots and bars on flanks and abdomen (visible only on lifting the overlying feathers).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	197-220	c. 22-23	c. 28	120-126 mm. (Baker)

COLOURS OF BARE PARTS. As in 642 and other races.

NINOX AFFINIS Beavan

Key to the Subspecies

Wing under c. 170 mm.	<i>N. a. affinis</i>
Wing over c. 180 mm.	<i>N. a. isolata</i>

646. Andaman Brown Hawk-Owl. *Ninox affinis affinis* Beavan

Ninox affinis 'Tyler' = Beavan, 1867, Ibis: 316
(Aberdeen Point, Port Blair, Andaman Islands)
Baker, FBI No. 1700, Vol. 4: 456

LOCAL NAMES. None recorded.

SIZE. Pigeon —; length c. 28 cm. (11 in.).

FIELD CHARACTERS. Overall as of 642, q.v. but smaller and very brown, with distinctive bright rufous-brown spotting on the underparts. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; Andaman Islands. Distribution within the group not worked out.

GENERAL HABITS, FOOD, VOICE AND CALLS. Nothing specifically recorded; presumably habits largely as in the species *scutulata*, but call described by A. L. Butler (*vide* Blanford, 4: 485) as 'a loud *craw* something like a *Glauclidium*'s note and quite different from that of *N. scutulata* in Ceylon which is a soft fluty disyllable, as is also that of *N. obscura*'.¹

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Under wing-coverts and axillaries normally almost unspotted orange-rufous, but occasionally the former more or less barred.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	167-169	c. 20	c. 27-28	102-106 mm. (Baker)

COLOURS OF BARE PARTS. Iris yellow. Bill blackish, paler and greenish on culmen and tip; cere dull green. Feet yellowish; claws black.

¹ This, if correct, is another good reason for treating *obscura* as a race of *scutulata* and *affinis* as a distinct species, as has here been done.

647. Nicobar Brown Hawk-Owl. *Ninox affinis isolata* Baker

Ninox scutulata isolata Baker, 1926, Bull. Brit. Orn. Cl. 47: 60 (Car Nicobar)
Baker, FBI No. 1701, Vol. 4: 456

LOCAL NAMES. None recorded.

SIZE. Pigeon —; length c. 28 cm. (11 in.).

FIELD CHARACTERS. As of 646, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; Nicobar Islands. So far known from Car Nicobar, Trinkat, and Camorta. Great Nicobar (?).

GENERAL HABITS, FOOD, VOICE and CALLS. Nothing specifically recorded beyond that Davison observed and shot a specimen hawking moths like a nightjar in low secondary jungle late in the evening.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Similar to 646 but distinctly larger and browner, less ashy on the upperparts.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	185-205	c. 22 (from feathers)	c. 27-28	118-130 mm. (Baker)

COLOURS OF BARE PARTS. As in 646.

Genus *ATHENE* Boie

Athene Boie, 1822, Isis von Oken, Bd. 1, col. 549. Type, by subsequent designation, *A. noctua* (Retz.) Boie, Pl. enl. 439. *Str. pastarina* auct. = *Strix noctua* Scopoli
Heteroglaux Anonymous = Hume, 1873, Stray Feathers 1: 467. Type, by monotypy, *Heteroglaux blewitti* Hume

Contains small owls without ear-tufts with the upper plumage more or less spotted with white. No distinct facial disc or ruff. Cere swollen; nostril a round orifice near its anterior margin. Wing rounded; 3rd primary (as.) longest; 1st primary between 5th and 8th. Tail moderate. Tarsus feathered to the toes which are also covered above with feathers and bristles.

Genus found throughout central Europe, N. Africa, and south and central Asia to China.

Key to the Species

	Page
A Abdomen longitudinally streaked..... <i>A. noctua</i>	297
B Abdomen transversely barred.....1	
1 Crown distinctly spotted; back widely interspersed with subterminal spots; tail narrowly banded with white, less than 5 mm. in width; collar-band broken below; white throat-patch smaller; 1st primary (as.) longer than 6th; skull and feet smaller..... <i>A. brama</i>	299
2 Crown unspotted or faintly spotted on the feather shafts; back plain, spotting much reduced; tail broadly banded with white, more than 5 mm. in width; collar-band continuous; white throat-patch larger, extending to centre of abdomen; 1st primary (as.) equals 7th or shorter than 8th; skull and feet more massive..... <i>A. blewitti</i>	302

ATHENE NOCTUA (Scopoli)

Key to the Subspecies

Paler and smaller; wing c. 156-168 mm..... <i>A. n. bactriana</i>
Darker and larger; wing c. 169-173 mm..... <i>A. n. ludlowi</i>

649. Tibet Owllet. *Athene noctua ludlowi* Baker

Athene noctua ludlowi Baker, 1926, Bull. Brit. Orn. Cl. 47: 58
(Dochon, 15,000 ft., Rhamto Lake, Tibet)
Baker, FBI No. 1688, Vol. 4: 443

LOCAL NAME. *Ugpa* (Tibet).

SIZE. Myna; squatter, with shorter tail. Length c. 23 cm. (9 in.).

FIELD CHARACTERS. As of 648, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Ladakh (ssp.?) eastward probably through the Tibetan plateau facies of N. Sikkim, N. Bhutan, and northern NEFA, from c. 3000 to 4600 m. alt. Affects clay cliffs and bluffs of rivers and outscoured watercourses, stone walls of ruins, etc.

Extralimital. Tibet.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 648, q.v.

BREEDING. Not recorded within our limits. Ludlow took 2 eggs from a nest in a hole under the eaves of an inhabited Tibetan house near Gyantse (at c. 3750 m.) on 9 May, measuring c. 37 × 29 mm.

MUSEUM DIAGNOSIS. Differs from *A. n. bactriana* (648) in being darker and larger.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
		(from feathers)		
♂ ♀	169-173	18-20	31-32	88-96 mm. (Baker)

COLOURS OF BARE PARTS. Iris yellow. Bill bright yellow. Feet grey; soles yellow (F. M. Bailey).

ATHENE BRAMA (Temminck)

Key to the Subspecies

	Page
A Upperparts earthy brown spotted with white..... <i>A. b. indica</i>	299
B Upperparts darker.....a	
a Spotted with white..... <i>A. b. brama</i>	302
Spotting considerably reduced..... <i>A. b. ultra</i>	301

650. Northern Spotted Owllet. *Athene brama indica* (Franklin)

Noctua indica Franklin, 1831, Proc. Zool. Soc. London: 115 (Banks of the Ganges and in the mountain chain of upper Hindoostan, i.e. Uttar Pradesh)
Baker, FBI No. 1684, Vol. 4: 440

LOCAL NAMES. Ooloo, *Khākūwāi*, *Khūāthia*, *Chūghād* (Hindi); *Pēncha* (Bihar); *Kūhīrā pēncha* (Bengal); *Dang tang pum* (Lepcha); *Chibīrā* (Sind).

SIZE. Myna ±; length c. 21 cm. (8 in.).

648. Hutton's Owllet. *Athene noctua bactriana* Blyth

Athene bactriana Blyth, 1848, in Hutton, Jour. Asiat. Soc. Bengal 16 (2): 776
(Old Kandahar, Afghanistan)
Baker, FBI No. 1687, Vol. 4: 442
Plate 54, fig. 10

LOCAL NAMES. None recorded.

SIZE. Myna; squatter, with shorter tail. Length c. 23 cm. (9 in.).

FIELD CHARACTERS. A small, squat, round-headed owl.

Adult. Above, sandy brown spotted with white; face 'pepper-and-salt' with pure white supercilia; a conspicuous white collar on hindneck; wings and tail broadly banded with white. Below, white, longitudinally streaked with reddish brown on breast and abdomen; a pale brown collar across throat. Sexes alike.

Young (immature). Paler than adult and more streaked with white above and on wings.

STATUS, DISTRIBUTION and HABITAT. Resident and fairly common: Baluchistan (Makran (?), Kalat, Chagai, Quetta, Chaman, etc.) and northward along the Afghan frontier (Thal, Kohat, etc.) from plains level to c. 3000 m. altitude. Affects bare, open semi-desert country living in bleak places in holes in earth-cliffs and high bluffs of rivers, rocks, and ruined walls, etc. Also visits gardens in cantonments (Quetta, Christison).

Extralimital. Transcaspia eastward to the plains of the Syr Darya, and southward to Iraq, Iran, Afghanistan.

GENERAL HABITS. Very similar to those of the commoner and more familiar Spotted Owllet (650), q.v. Usually keeps in pairs, or family parties of 3 or 4. Largely crepuscular and nocturnal, but quite wide awake during daytime, sitting about on posts and telegraph wires and flying—even hunting—in the heat and glare of broad sunshine without any apparent discomfort.

FOOD. Beetles and other insects, lizards, small birds, and mice, etc.

VOICE and CALLS. A shrill but not unpleasant, rather plaintive *peep*, repeated every few seconds. Presumably also other calls, but not recorded.

BREEDING. Season (in Baluchistan) March to June. Nests in holes in earth-cliffs, rocks, crumbling walls, or trees. Eggs, 3 to 5 or 6, white, round, typical of owls, c. 32 × 28 mm.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Presents a wide range of individual variation, the colour ranging from the normal greyish or sandy brown to dark brown or dark reddish brown, partly but not entirely due to freshness or wear. Feathering on toes also very variable: in freshly moulted birds always more feathered, in worn ones more bristly.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
		(from feathers)		
♂ ♀	156-168	c. 18-20	c. 32	84-87 mm. (Baker)

Paludan (1959) gives for Afghan birds: Wing 8 ♂♂ 157-170; 3 ♀♀ 169-174 mm. Weight 138-172 gm.

COLOURS OF BARE PARTS. Iris pure sulphur-yellow. Bill greenish yellow; cere pale greenish white. Feet greenish; claws horny black (Stoliczka).

FIELD CHARACTERS. A familiar squat, white-spotted greyish brown little owl with the typical large round head (no ear-tufts) and yellow forwardly directed staring eyes. Sexes alike.

Young (immature). Above, much more marked with white, the spots running into definite bars. Below, from breast down the dark markings are longitudinal.

STATUS, DISTRIBUTION and HABITAT. Resident and generally common. From the Afghan frontier (Kohat and Peshawar dists.) eastward through

Punjab and Jammu in the plains and along the Himalayan submontane tract (terai, duns — locally up to c. 1400 m.) through Nepal, Sikkim, Bhutan to Assam north and south of Brahmaputra river (excepting Lakhimpur dist.); Manipur, East Pakistan (Chittagong and Dacca dists.); Makran, Baluchistan (Sibi and Quetta dists.), Sind, Rajasthan, and east through the entire Gangetic Plain. Kutch, N. Gujarat, and all continental India south to the 20th parallel, the boundary arbitrarily fixed for convenience. Affects the neighbourhood of villages and cultivation, mango topes, groves of ancient trees, and ruins. Avoids heavy forest. In semi-desert areas where suitable trees are scarce, appropriates cavities in the sides of ravines and earth-cliffs, like *Athene noctua*.

Extralimital. Southeastern Iran (Bampur).

GENERAL HABITS. Keeps in pairs or family parties of 3 or 4. Largely crepuscular and nocturnal, but is frequently abroad — and even hunting — in the full glare of noonday. The nocturnal habit is evidently not so much because of intolerance to sunlight as in order to escape the merciless mobbing and chivvying it receives from all diurnal birds the moment it is discovered. Normally retires at sunrise to the seclusion of a tree-hollow or some leafy branch, the pair sitting cuddled closely together. In some localities almost every venerable banyan, tamarind or mango tree will hold a resident pair or two of these little owls, and one has but to tap on the trunk to bring up an inquiring and surprised little staring face to the entrance of a hollow, or dislodge a pair from some shady recess. The birds betray their presence by dashing out fustily to a neighbouring branch whence they bob and stare at the intruder in clownish fashion, with the head often screwed completely round.

Issues from its retreat at dusk to perch on fence-posts, telegraph wires and other points of vantage to look out for prey, pouncing from time to time on some unwary insect, or flying noiselessly across from 'pillar to post'. Will occasionally launch ungainly aerial sallies to catch winged termites in its claws, and sometimes even hover clumsily for a few seconds to spy creeping prey. Commonly uses street lamps as hunting bases, hawking the beetles and moths attracted to the light as they flutter in the circle of illumination, and returning to the perch. Here the quarry is dismembered and devoured, the bird raising one foot to its bill and dealing with the insect as a parakeet does with a nut. Flight, as of other small owls, deeply



OWLS

301

undulating, consisting of a few rapid flaps followed by a dip with the wings pressed to the sides.

FOOD. Chiefly beetles, moths, locusts, and other insects; also earthworms, lizards, mice, and small birds. Among insects the following are some that have been identified at Pusa Agricultural Research Institute: *Chrotogonus* spp., *Brachytrypus achatinus*, *Cryllotalpa africana*, *Cathartus sabaeus*, *Onthophagus spissifer*, and various coprids and carabids (Mason & Lefroy, 1912).

VOICE AND CALLS. A harsh screechy *chirurr-chirurr-chirurr* etc. followed by or alternated with *cheevak, cheevak, cheevak*, and a variety of equally discordant screeches and chuckles. Particularly noisy in breeding season.

BREEDING. *Season*, February to April. *Nest*, a natural hollow in a tree-trunk, a hole in a dilapidated wall, or between the ceiling and roof of deserted as well as occupied dwellings — sometimes lined with a little grass, tow, and feathers. *Eggs*, 3 or 4, occasionally 5, white, roundish ovals. Average size of 50 eggs 32.2 × 27.1 mm. (Baker). Both sexes share in lining the nest, incubation, and tending the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Chick (in down). 'Pure white, short and very soft pre-pennae cover body, except apterions of lateral neck, lateral body in front, and each side of spinal tract above. Some preplumulae of same type of down on lateral apteria in front' (Ticehurst).

Moult. Post-nuptial moult complete and no spring moult. Post-juvénal moult apparently does not include wings and tail.

MEASUREMENTS of a series from Punjab and Nepal:

	Wing	Bill (from skull)	Tail
18 ♂♂	153-169	19-22	75-84 mm.
8 ♀♀	159-171	18-23	74-84 mm. (HW, RB)

Tarsus 4 ♂ 30-32 mm.; middle toe (without claw) 16.5-18 mm. (SDR).
Weight 1 ♂ 114 gm. (GD).

COLOURS OF BARE PARTS. Iris pale to deep golden yellow. Bill greenish horny, sometimes darker sometimes more yellow on culmen; cere dusky green or greenish brown. Feet dirty yellowish green; claws dark horny; sole pads yellowish white.

651. East Assam Spotted Owllet. *Athene brama ultra* Ripley

Athene brama ultra Ripley, 1948, Proc. Biol. Soc. Washington 61: 100
(Chabua, N. Lakhimpur dist., NE. Assam)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 21 cm. (8 in.).

FIELD CHARACTERS. As of 650, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Lakhimpur dist., NE. Assam north and south of Brahmaputra and Lohit rivers. Affects groves of ancient trees in and about towns and villages.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 650. 'Call distinctly harsher and more high-pitched than either *A. b. brama* or *A. b. indica*' (SDR).

OWLS

303

FIELD CHARACTERS. Very like Spotted Owllet (650) but larger though with shorter wings.

Adult. *Above*, whole head, back sides of neck, scapulars, and interscapular region unspotted dark earthy brown; hind collar of white spots ill defined. *Below*, a strongly marked dark brown bar across throat; underparts more brown less white; breast brown with merely white fringes to the feathers. *Sexes* alike. (For details see Ripley, S.D., 1976, JBNHS 73: 1-4.)

STATUS, DISTRIBUTION AND HABITAT. Rare but apparently extending all along the Satpura mountain trend for over 1100 km. from Surat Dangs and W. Khandesh to eastern Madhya Pradesh and the Sambalpur area in Orissa. Since first described in 1873 less than a dozen specimens have been collected, the latest in October 1914 at Mandvi on Tapti river (21°16'N., 73°22'E.), c. 220 km. north of Bombay, by Meinertzhagen. Affects heavy moist deciduous jungle and groves of wild mango; partial to the neighbourhood of streams.

GENERAL HABITS. Very little known. Evidently a fairly diurnal and shy forest representative of the Spotted Owllet. Some of the specimens were shot in heavy jungle below the Satpuras late in the morning while sitting alone on the exposed tops of thin trees. 'Not uncommon in this dense jungle' (West Khandesh — J. Davidson, SF 10: 292).

FOOD, VOICE AND CALLS, BREEDING. Not recorded.

MUSEUM DIAGNOSIS. See Key to the Species. Tarsus feathered; upper surface of toes with soft feathers, the barbs of which wear away, leaving the shafts only in some specimens (Blanford).

	Wing	Bill (from cere)	Tarsus	Tail	Middle toe (without claw)
3 ♂♂	145-154	14-15	33-35	68-72.5	20-23 mm.
2 ♀♀	147.5, 148	15.5, 16	34.5, 37	63, 70	21, 21 mm. (SDR)

Weight of one ♂ 8½ oz. (241 gm.) — Blanford.

COLOURS OF BARE PARTS. Iris bright yellow. Rest not recorded.

Genus *STRIX* Linnaeus

Strix Linnaeus, 1758, Syst. Nat., ed. 10, 1: 92. Type, by tautonymy, *Strix stridula* Linnaeus (*Strix*, prebinomial specific name in synonymy) = *Strix aluco* Linnaeus. No ear-tufts (aigrettes); ear furnished with an operculum. Bill stout. Tarsus thickly feathered throughout; toes feathered above to base of last phalanx; claws strong. Ruff narrow, incomplete above; facial disc well developed, extending almost as far above eyes as below. Wings rounded: 3rd, 4th, and 5th primaries (as) longest. Tail of moderate length, rounded. Irides always dark.

Genus represented over the greater part of the world; within our limits by four species.

Key to the Species

	Page
A Lower plumage with longitudinal streaks and transverse bars... <i>S. aluco</i>	310
B Lower surface streaked only... <i>S. butleri</i>	304
C Lower surface with bars only... 1	
1 A dark brown patch running back from the eye on either side of the neck... <i>S. ocellata</i>	304
No dark brown patch running back from the eye... <i>S. leucogrammus</i>	307

302

STRIGIFORMES

BREEDING. Unrecorded. Presumably not different from 650.

MUSEUM DIAGNOSIS. Differs from *indica* by somewhat larger size and darker coloration, with the white spotting considerably reduced.

MEASUREMENTS

2 ♂♂ Wing 164-167; bill (from cere) 15-16; tail 83-93 mm. (SDR).

COLOURS OF BARE PARTS. As in 650.

652. Southern Spotted Owllet. *Athene brama brama* (Temminck)

Strix brama Temminck, 1821, Pl. col., livr. 12, pl. 68

(Pondicherry and west coast of India)

Carina brama fryi Baker, 1919, Bull. Brit. Orn. Cl. 40: 60

(Rameswaram, Madras, India)

Baker, FBI No. 1683, Vol. 4: 439

Plate 54, fig. 12

LOCAL NAMES. *Pāḍḍigani* (Telugu); *Pūllī Endā* (Tamil); *Pingā* (Marathi); *Chibri* (Gujarati).

SIZE. Myna ±; length c. 21 cm. (8 in.).

FIELD CHARACTERS. As of 650, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Peninsular India south of 20°N. lat., the boundary fixed for convenience between the northern and southern populations which intergrade around this parallel. Affects ruins, mango topes and groves of ancient trees, etc. in and around towns, villages and cultivation.

Curiously enough not found in Ceylon though occurring on Rameswaram I. only c. 30 km. from its northern tip!

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 650, q.v.

BREEDING. *Season*, chiefly November to March. *Nest* and *eggs* (3 or 4) as in the northern form. Average size of 40 eggs 31.6 × 27.4 mm. (Baker). Eggs apparently laid at irregular intervals, and incubation starts from the first egg, resulting in considerable disparity in the growth of nestlings in the same brood, and mortality amongst the youngest and weakest.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Differs from the northern race *indica* in being considerably darker and smaller.

MEASUREMENTS of a series from South India (Kerala, Mysore, Tamil Nadu):

	Wing	Bill (from skull)	Tail
12 ♂♂	141-158	19-21	66-72 mm.
12 ♀♀	151-157	20-22	68-74 mm. (HW, SA)

Tarsus c. 27-28 mm.

COLOURS OF BARE PARTS. As in 650.

653. Forest Spotted Owllet. *Athene blewitti* (Hume)

Heteroglaux Blewitti Anonymous = Hume, 1873, Stray Feathers 1: 468

(Buznah, Phooljan State, India) [= Phuljhar, c. 21°N., 83°E., Madhya Pradesh]

Baker, FBI No. 1651, Vol. 4: 441

Plate 54, fig. 11

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 23 cm. (9 in.).

STRIGIFORMES

304

654. Hume's Wood Owl. *Strix butleri* (Hume)

Asio butleri Anonymous = Hume, 1878, Stray Feathers 7: 316

(Omara, [= Ormara], Mekran Coast, southern Baluchistan)

Baker, FBI No. 1651, Vol. 4: 404

Plate 53, fig. 10

LOCAL NAMES. None recorded.

SIZE. Pigeon +; length c. 36 cm. (14 in.).

FIELD CHARACTERS. Like a small Himalayan Wood Owl (662), but conspicuously paler and less streaked on the underparts.

Adult. *Above*, no ear-tufts; facial disc tawny white; ruff greyish brown finely stippled with buff. Upperparts chiefly brown irregularly banded and splodged with brownish buff; a distinct golden buff collar on upper back. *Below*, creamy white, the feathers edged at tip with rufous brown; narrow brown shaft-streaks on breast and upper abdomen. *Sexes* alike.

STATUS, DISTRIBUTION AND HABITAT. Very rare. Only a single record (the type) from Ormara, Makran coast, W. Pakistan.

Extralimital. Known only from individual specimens from Sinai Peninsula, SE. Palestine, and Arabia (Mahd Dhahab, c. 400 km. NNE. of Jiddah). Evidently very rare everywhere.

GENERAL HABITS, FOOD. Not described.

VOICE AND CALLS. 'An unmistakable clear long-drawn *huu* uttered at intervals, sometimes varied by a tremulous and more throaty hoot as in *Strix aluco*' (Meinertzhagen).

BREEDING. Unknown.

MUSEUM DIAGNOSIS. 3rd primary (as) longest; 4th very little shorter. Slender tarsi and small feet and claws striking. For details of plumage see Baker, loc. cit.

MEASUREMENTS. Wing 5 ♂ 251-257 mm. (Meinertzhagen). Bill (from feathers) 28; tarsus 57; tail 144 mm. (of the type specimen) — Baker.

COLOURS OF BARE PARTS. Not recorded.

STRIX OCELLATA (Lesson)

Key to the Subspecies

A Paler above; wing in male c. 338-346 mm. <i>S. o. griseus</i>	1
B Darker above	1
1 Wing in male c. 333-338 mm. <i>S. o. ocellata</i>	
Wing in male c. 360-372 mm. <i>S. o. grandis</i>	

655. Saurashtra Mottled Wood Owl. *Strix ocellata grandis* Koelz

Strix ocellata grandis Koelz, 1950, Amer. Mus. Novit., No. 1452: 4

(Sasan, Junagadh, Kathiawar, W. India)

Baker, FBI No. 1649 (part), Vol. 4: 402

LOCAL NAME. *Girāri ghārd* (Gujarati).

SIZE. Pariah Kite ±; dumper and with shorter tail. Length c. 48 cm. (19 in.).

FIELD CHARACTERS. As of 657, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Saurashtra peninsula, Gujarat. Affects mango topes, and groves of ancient tamarind trees, etc. near villages and cultivation.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 657, q.v.

BREEDING. Season, nest, and eggs as in 657.

MUSEUM DIAGNOSIS. 'Differs from nominate *ocellata* (657) in being much larger; similar in coloration, but averaging greyer above; size of black areas on back and nape reduced' (Koelz).

MEASUREMENTS

2 ♂♂ Wing 360, 372; tail 197, 203 mm. (Koelz).

COLOURS OF BARE PARTS. As in 657.

656. Northern Mottled Wood Owl. *Strix ocellata grisescens* Koelz

Strix ocellata grisescens Koelz, 1950, Amer. Mus. Novit., No. 1452: 4

(Nichlaul, U.P. (NE. of Gorakhpur), N. India)

Baker, FBI No. 1649 (part), Vol. 4: 402

LOCAL NAMES. None recorded.

SIZE. Pariah Kite ±; dumper and with shorter tail. Length c. 48 cm. (19 in.).

FIELD CHARACTERS. As of 657, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident and widely distributed. The northern part of the subcontinent from the base of the Himalayas south to an undetermined boundary; from c. 74°E. long. in the Punjab (Lahore), and Jammu, south through Rajasthan, eastward across the Gangetic Plain (Uttar Pradesh, Bihar, W. Bengal). Not Assam or East Pakistan (?). Affects mango topes, groves of ancient banyan, tamarind, and suchlike densely foliated trees about village homesteads and cultivation.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 657, q.v.

BREEDING. Season, chiefly February and March. Nest and eggs as in the nominate race (657). Eggs not measured separately from those of *ocellata*.

MUSEUM DIAGNOSIS. 'Differs from *ocellata* by slightly larger size and lighter coloration of the upperparts. Black bars on scapulars, wing- and tail-feathers narrower; the black and white spots in the rufous area of the neck mostly white, while they are largely black in *ocellata*; rufous parts of plumage often paler' (Koelz).

MEASUREMENTS

Wing ♂♂ 338-346 mm. (Koelz).

COLOURS OF BARE PARTS. As in 657.

657. Southern Mottled Wood Owl. *Strix ocellata ocellata* (Lesson)

Syrnium ocellatum Lesson, 1839, Rev. Zool.: 289 (Pondicherry)

Baker, FBI No. 1649 (part), Vol. 4: 402

Plate 53, fig. 5

LOCAL NAME. Kollikkūraṇ (Malayalam).

SIZE. Pariah Kite ±; dumper and with shorter tail. Length c. 48 cm. (19 in.).

COLOURS OF BARE PARTS. Iris dark brown; eyelids (fine rim) dusky pink or dull coral-red. Bill horny black, paler at tip; mouth pale yellowish pink. Feet brownish flesh or dirty yellowish brown; claws horny black; soles yellow.

STRIX LEPTOGRAMMICA Temminck

Key to the Subspecies

	Page
Facial disc rufous; wing c. 291-348 mm.....	<i>S. l. indranee</i> 308
Facial disc white; wing c. 382-412 mm.....	<i>S. l. newarensis</i> 307

658. Himalayan Brown Wood Owl. *Strix leptogrammica newarensis* (Hodgson)

Uluia newarensis Hodgson, 1836, Asiat. Res. 19: 168 (Nepal)

Baker, FBI No. 1647, Vol. 4: 400

LOCAL NAMES. Būlākā (Nepal); Mik dab bru (Lepcha).

SIZE. Pariah Kite —; dumper. Length c. 53 cm. (21 in.).

FIELD CHARACTERS. A large brown owl with close-barred underparts, whitish facial disc framed with brown, and no ear-tufts. A prominent white supercilium.

Adult. Above, chocolate-brown; scapulars, wings and upper tail-coverts barred with white. Tail brown, barred with fulvous and tipped with white. Below, chin mixed chocolate and white; a pure white patch on throat. Rest of lower plumage pale fulvous or buffy white suffused with brownish on breast, and closely barred with dark brown. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident throughout the Himalayas from W. Pakistan (Punjab) through Himachal Pradesh, Garhwal, Kumaon, Nepal, Sikkim, Bhutan (?) and NEFA (?) from c. 750 to 2450 m. alt. (recorded from c. as high as 4000 m.). Also Garo, Khasi, Cachar, Naga and Manipur hills. Affects deep forest.

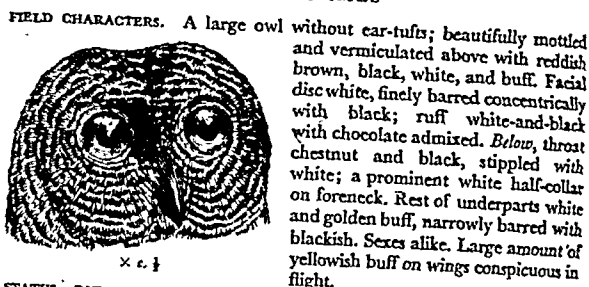
Extralimital. N. and C. Burma, N. Thailand (evidently this race).

GENERAL HABITS, FOOD, VOICE and CALLS. Nocturnal. Keeps in pairs within heavy forest during daytime; this perhaps more to escape mobbing by diurnal birds than from any disability caused by sunshine. Very shy; easily disturbed at its daytime retreat by the faintest footfall, flying away swiftly and noiselessly from the intruder, threading its way through the welter of tree-trunks and branches with ease, and moving on further at longer and longer distances if followed.

FOOD. As in 659. Rat, dove and jungle myna identified among stomach contents.

VOICE and CALLS. 'A low double hoot tu-whoo' (S. L. Whympers). '(1) Very much like that of a male domestic pigeon, (2) a low sonorous squawk, possibly an alarm note, (3) a loud snapping of the bill when annoyed' (A. E. Jones). Sometimes calls also during daytime.

BREEDING. Season, January to March. Nest, of a few sticks and feathers in the hollow of a forking tree-trunk, on a shelf in a cliff-face, or shallow



× c. 1

STATUS, DISTRIBUTION and HABITAT. Resident and widely distributed throughout peninsular India from southern Kerala and Tamil Nadu northward through Mysore, Andhra, Maharashtra, Gujarat, Madhya Pradesh, Orissa; zone of diffusion with the northern population (*grisescens*) undetermined. Does not occur in Ceylon. Affects lightly wooded plains country; partial to mango topes, groves of ancient tamarind, banyan, and suchlike densely foliated trees on the outskirts of villages, homesteads, and cultivation.

GENERAL HABITS. Largely nocturnal. Pairs spend the day sitting together and dozing on some secluded branch hidden in the foliage. But when disturbed will fly long distances in bright sunlight without any apparent discomfort. At the end of the flight sweeps upwards to settle well within the seclusion of the foliage canopy, unlike *Bubo* which prefers to alight on the peripheral branches.

FOOD. Rats, mice, and other rodents; birds up to size of blue rock pigeon; lizards, crabs, beetles and other large insects. In one stomach was found a large scorpion (*Buthus*?) complete with sting!

VOICE and CALLS. In the breeding season, particularly, a loud quavering eerie *chūhū-aa* uttered regularly as the birds emerge from their daytime retreat, and again before retiring at dawn; also from time to time during the night, but not very frequently. At other seasons mostly a single mellow, metallic hoot. An occasional harsh screech similar to the Barn Owl's.

BREEDING. Season, November to April. Nest, a natural tree-hollow, practically unlined. Has been recorded building a stick nest like Dusky Horned Owl (630); but this very unusual. Eggs, normally 2, occasionally 3, creamy white, roundish. Average size of 18 eggs 51.1 × 42.6 mm. (Baker). Share of the sexes in incubation, incubation period, and other details unknown.

MUSEUM DIAGNOSIS. Characterized by a dark brown patch running back from the eye on either side of the neck. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀ 320-345		36-39	54-56	174-201 mm. (Baker)
6 recent specimens from Gujarat and S. India give				
♂♀ 333-357		38-42 (from skull)	61-65	177-193 mm. (SA, HW)

scrape in the bare ground at the foot of a rock or large tree in some shady ravine. Eggs, normally 2, sometimes only a singleton, white, roundish oval. Average size of 16 eggs 56.2 × 45.9 mm. (Baker). Share of the sexes in the domestic chores, incubation period, and other details unknown.

MUSEUM DIAGNOSIS. Differs from the peninsular race *indranee* (659) in being much larger, with the facial disc whitish or only faintly fulvous; supercilium a purer white; terminal band on tail-feathers generally more white; underparts less fulvous, more white.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀ 382-412		c. 40-45	c. 53-56	229-335 mm. (Baker)

COLOURS OF BARE PARTS. As in 659.

659, 660, 660a. Brown Wood Owl. *Strix leptogrammica indranee* Sykes

Strix indranee Sykes, 1832, Proc. Zool. Soc. London: 82

(The Ghauts = Lonauli, Western Ghats)

Syrnium ochrogenys Hume, 1873, Stray Feathers 1: 431, in text (Ceylon)

Strix leptogrammica connectens Koelz, 1950, Amer. Mus. Novit., No. 1452: 3

(Amravati [sic] = Amravati, Bastar, Central Provinces)

CE Ripley, S. D., 1977, JBNHS 73: 1-4

Baker, FBI No. 1646, Vol. 4: 399

Plate 53, fig. 4

LOCAL NAME. Kollikkūraṇ (Malayalam).

SIZE. Pariah Kite —; dumper. Length c. 47 cm. (18½ in.).

FIELD CHARACTERS. As of 658, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident in the heavy evergreen and moist-deciduous forests of the Western and Eastern Ghats and their associated hill ranges in peninsular India roughly south of Mahabaleshwar (c. 18°N.) in Maharashtra, Madhya Pradesh (Bastar dist.), Orissa (Russekonda), and south along the Eastern Ghats to the Shevaroy Hills and Kerala, and Ceylon. Also NE, India in Assam, Meghalaya, Nagaland and Manipur. Lowlands and up to c. 1800 m in the Nilgiris and Palnis, and 2100 m in Ceylon.

GENERAL HABITS. As in *newarensis* (658), q.v.

FOOD. Rodents, birds, reptiles, and reportedly fish.

VOICE and CALLS. A mellow, musical, hollow-sounding *tek...tek...tek* repeated every few seconds. The initial *tek* (sometimes twice) is a low undertone and audible only at close range. Birds particularly vocal during moonlight nights, and in the breeding season. Also utters a variety of weird, eerie shrieks and chuckles, in addition to the loud bill-snapping.

BREEDING. Season, January to March. Nest and eggs also as in 658. Average size of 9 eggs 49.9 × 44.1 mm. (Baker).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Differs from the Himalayan race *newarensis* (658) in being much smaller, with the facial disc as a rule distinctly more ochreous or fulvous; supercilium less pure white; crown darker, nape paler. Birds from the Assam hills approach South Indian examples in colour, but are much larger.

Young (immature). Feathers with broad whitish edges, especially on crown and upper back. Wing-coverts pale dull rufous, barred with pale buff and broadly tipped with white. Underparts white at first, gradually assuming the barring.

OWLS

309

MEASUREMENTS

Wing	Bill (from cere)	Tarsus	Tail
♂ ♀ 291-360	c. 42	52-58	186-197 mm. (Various)

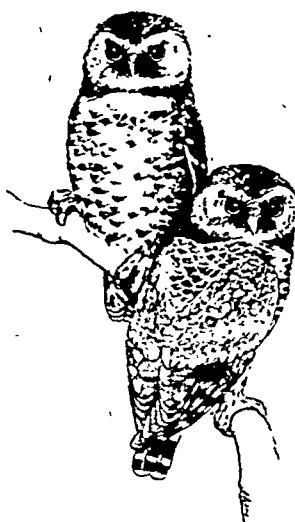
Bill from feathers 48-50 mm. (Baker)

COLOURS OF BARE PARTS. Iris brown ('rarely golden yellow' — Baker). Bill greenish horny, bluish near base; cere plumbeous. Feet pale leaden; claws dusky plumbeous.

MISCELLANEOUS. Was introduced in the Laccadive in the 1870s under a har-brained governmental plan for combating a plague of rats (*Rattus rufescens*). The grossly incompatible ecological conditions on these unforested coral islands, which the planners seem to have overlooked, soon brought an end to the birds but not to the rats! For an amusing account of this venture see Hume, SF 4: 433-4.



Athene brama
Spotted Owllet (650)



Athene blewitti,
Forest Spotted Owllet (653)

OWLS

311

dozing with eyes half closed, looking deceptively like a dead snag; often in a low bush or even on the ground in a shady ravine. Very parochial, pairs — presumably the same — occupying restricted territories and using the same nesting and roosting sites year after year if undisturbed.

FOOD. Rats and other small mammals, especially voles (*Alticola* spp.), birds (bulbul, blackbird), lizards, beetles, etc.

VOICE AND CALLS. A loud hoo . . . hoo . . . hoo-ho-ho-hoo, the final hoo being somewhat drawn out. There is a pause of about four seconds after the initial hoo, and half a second between the second and the rest of the concluding rolling note. 'The notes are not unlike those of the Turtle Dove' (Bates). Other calls sometimes heard are a loud quack, and a soft coo 'very similar to the call of the Ring Dove' (Osmaston). The calling begins an hour or so after sunset, generally from some exposed tree-top and is repeated often for 10 minutes at a time, a pair or number of birds calling and answering one another. When flying about at night a note repeatedly uttered sounding like *kha-wak*; occasionally also when perched (Magrath).

BREEDING. Season, apparently March to May probably varying somewhat with altitude. Nest, an unlined natural hollow in a tree-trunk, often quite low down and in close proximity to an occupied village hut (Kashmir). Sometimes in a recess or fissure under a large rock. Eggs, usually 2, rarely 3, white, roundish ovals. Average size of 5 eggs 50.6 × 43.3 mm. Share of the sexes in incubation, and incubation period, undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Tone of upper plumage paler and greyer than in *niricola*, without any rufous tinge; longitudinally streaked as well as barred v. barred only in 662.

MEASUREMENTS

Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀ 285-335	c. 33-35	50-51	191-210 mm (Baker)

Wing 6 ♂♂ 283-320; 6 ♀♀ 318-341 mm. *S. a. niricola* ♀♀ rarely exceed 310 mm. (Meinertzhagen, 1927, *Ibis*: 606).

COLOURS OF BARE PARTS. Iris dark brown. Bill greenish, yellow at tip; cere olive. Toes pale green; claws horny black, slaty at base.

662. Himalayan Wood Owl. *Strix aluco niricola* (Blyth)

Syrnium niriculum 'Hodgson' = Blyth, 1845, Jour. Asiat. Soc. Bengal 14 (1): 185 ('Himalaya', i.e. Nepal)

Strix niricola chitreni Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 27 (Blue Mountain, Lushai Hills)
Baker, FBI No. 1645, Vol. 4: 393
Plate 53, fig. 9

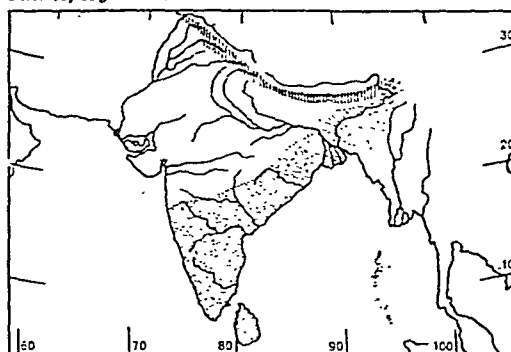
LOCAL NAMES. *Keshi ep tak fann* (Lepcha); *Uko* (Bhutans).

SIZE. Jungle Crow ±; dumpier. Length c. 45 cm. (c. 17½ in.).

FIELD CHARACTERS. A large brown owl with whitish facial disc, no ear-tufts, and close-barred and streaked underparts. Similar to 661, but see Museum Diagnosis.

310

STRIGIFORMES

Strix leptogrammica

niricola (658) *indranee* (659)

STRIX ALUCO Linnaeus

Key to the Subspecies

Upper plumage streaked as well as barred *S. a. biddulphi*
Upper plumage not streaked but barred only *S. a. niricola*

661. Scully's Wood Owl. *Strix aluco biddulphi* Scully

Strix biddulphi Scully, 1881, Ibis: 423, pl. 14 (Gilgit)-

Baker, FBI No. 1644, Vol. 4: 397

LOCAL NAMES. *Rātā mogūl*, *Rāt monglū* (Kashmir).

SIZE. Jungle Crow ±; dumpier. Length c. 47 cm. (c. 18½ in.).

FIELD CHARACTERS. A large brown owl with whitish facial disc and no ear-tufts.

Adult. Above, pale grey-brown streaked and barred with dark brown and mottled with whitish. Below, white; close-barred on chin and throat, streaked and narrowly barred on rest of underparts. Eyes dark brown; call diagnostic. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, moving down from the highest levels in winter. Northern Baluchistan and northward along the Afghan border to Chitral, Gilgit, Baltistan, and Kashmir, between c. 1500 and 3800 m. occasionally nesting above tree line. Common in all wooded areas in Kashmir, in the main and side valleys. Partial to forests of oak, pine, and fir. Its status *vis-à-vis* *niricola* in the region of southern Kashmir and Himachal Pradesh unclear. Generally replaces *niricola* north of Simla and Mussooree.

Extralimital. Afghanistan.

GENERAL HABITS. Nocturnal, perhaps largely because of the merciless mobbing and chivvying it invariably suffers from crows, and other diurnal birds as soon as discovered in daytime. Spends the day standing upright and motionless on a branch close to the trunk, partially concealed by foliage,

312

STRIGIFORMES

Young (immature). Above, marked with narrow whitish, or fulvous, and broad dark brown bars; below, with equally broad bars of dull brown and pale or rich fulvous. Tail and wings as in adult.

STATUS, DISTRIBUTION AND HABITAT. Resident. The Himalayas between c. 1200 and 4250 m. altitude, from Murree in W. Pakistan eastward through Himachal Pradesh (race?), Garhwal, Kumaon, Nepal, Sikkim, Bhutan, and NEFA. Assam hills north and south of Brahmaputra river, Nagaland, Manipur, Mizo. Affects oak, pine, and fir forest.

Extralimital. Probably N. Burma. 'Shan States; China in provinces of Kansu, Szechuan, Yunnan, Hupeh, Kwangtung and Kweichow' (Peters).

GENERAL HABITS, FOOD. As in 661, q.v.

VOICE AND CALLS. As in 661, but two other calls described besides the normal treble hoot: a 'hurried deep low hu-hoo' (Whistler), and 'a note which could be produced by placing a blade of grass between the two thumbs and then blowing through these sharply' (? cf. *kharak* under 661). This possibly a nuptial call uttered (during courtship display?) 'usually on the wing as the bird soars up vertically for a few yards and descends for some distance with wings closed, gradually opening its wings and finally settling on the nearest suitable point of vantage' (P. T. L. Dodsworth, JBNHS 22: 627)

BREEDING. Season, mainly mid January to end April. Nest and eggs (2 or 3) as in 661. Average size of 13 eggs 48.2 × 41.6 mm. (Baker).

MUSEUM DIAGNOSIS. Similar to *biddulphi* (661) but very much darker above, the general tone being dark brown rather than pale grey. Dark markings on upperparts in the nature of bars only; no longitudinal streaks. Both barring and streaking on lower plumage bolder and darker. In the eastern part of its range, i.e. from about Nepal eastwards, has two distinct phases: one very rufous, the other greyish rufous.

MEASUREMENTS

Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀ 282-312	c. 22-24	c. 45-48	168-175 mm. (Baker)

1 ♂ 303 33 62 180 mm.
(Bhutan) (SA)

Weight 2 ♂♂ 375, 392, 1 ♀ 380 gm. (SA, GD). 1 ♀ 470 gm. (BB).

COLOURS OF BARE PARTS. Iris brown. Bill pale yellowish flesh; cere olive-brown. Tarsus woolly; toes partially feathered, plumbeous at ends; claws horny brown.

Genus ASIO Brisson

Asio Brisson, 1760, Orn. 1: 28. Type, by tautonymy, *Asio Brisson* = *Strix etas* Linnaeus

Aigrettes or ear-tufts present but varying in size. Bill short and strong, the part covered by the cere longer than rest of culmen. Facial disc well marked, nearly as high above the eyes as below; ruff complete or nearly so. Wing long and pointed: 2nd primary (as.) longest; 3rd nearly equal to it. Tail moderate and rounded. Tarsus and upper part of toes thickly feathered. Iris yellow.

Represented within our limits by two migratory Palearctic species.

Key to the Species

Transverse as well as longitudinal markings on abdomen.....*A. otus*
 No transverse markings on abdomen.....*A. flammeus*

663. Longeared Owl. *Asio otus otus* (Linnaeus)

Strix Otus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 192 (Europa, restricted type locality = Sweden, ex Faun. Svec.)

Baker, FBI No. 1642, Vol. 4: 393

Plate 53, fig. 6

LOCAL NAMES. None recorded.

SIZE. Pigeon +; length c. 37 cm. (14½ in.).

FIELD CHARACTERS. A slim medium-sized owl, mottled grey-brown above, buff below, boldly streaked and barred with blackish. Two long, upstanding black-and-buff ear-tufts; yellow eyes. Sexes alike. When ears not prominent, may—on a good view—be distinguished from Shorteared Owl by heavily streaked v. plain unmarked-looking underparts.

STATUS, DISTRIBUTION and HABITAT. Within our limits recorded breeding once in Kashmir (Gurais—B. A. G. Shelley, 1895, JBNHS 10: 149) and once in N. Baluchistan (Quetta; A. F. P. Christison, MS., c. 1941). Mainly seasonal visitor to the northwestern parts—winter in the plains, summer (breeding?) at higher altitudes. Described variously as

vagrant, rare, and as locally not uncommon and even 'fairly plentiful' in some years: Sind, N. Baluchistan (Quetta dist.), Afghan frontier (Kohat dist.), Gilgit, Chitral, Kashmir, Baltistan, Himachal Pradesh (Chamba, Lahul); Punjab (Lahore, Rawalpindi (?), and Shahpur dists.), Delhi dist., Nepal, Gujarat (Kutch dist.); from plains level to c. 1800 m. alt. Affects semi-desert country—low jungle of stunted trees, poplar plantations, tall grass on waste land, etc. Bhutan (specimen. Biswas).

GENERAL HABITS. One of the most nocturnal owls, seldom seen except in the gathering dusk or at early dawn, or when flushed by chance. Usually keeps singly, but parties of 5 to 8 have been recorded (Punjab, Baluchistan) probably on migration passage. Roosts during daytime standing upright on a leafy branch close to the trunk with its plumage sleeked and body elongated or attenuated, making itself remarkably inconspicuous; thus doubtless often escaping observation. Sometimes rests on the ground under a bush or grass-tussock.

Extralimital. More or less throughout Europe and palaearctic Asia north to between c. 58° and 66°N. lat., and NW. Africa (see map).

FOOD. Rats, mice, and other small mammals; birds, lizards, beetles, etc. VOICE and CALLS. Not recorded in India. Elsewhere 'the most characteristic note is the "song", a long drawn, low *ōō. ōō. ōō* . . . , a cooing moan



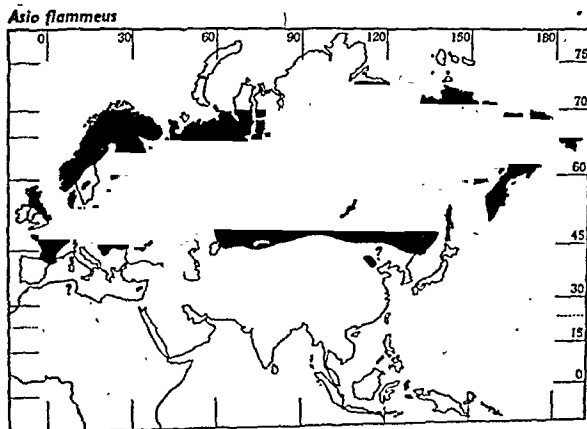
× c. ½

SIZE. Pigeon +; length c. 38 cm. (15 in.).

FIELD CHARACTERS. A slim medium-sized owl, overall pale buff, heavily streaked with dark brown, and with a darker greyish head. Facial disc white with bristly black feathers intermixed, surrounded by a dark brown ruff. Two short blackish brown upstanding ear-tufts above the yellow eyes. Wings and tail barred rufous and black. Below, pale buff, longitudinally brown-streaked on breast. Sexes alike.

In flight the rufous on the upperside and the white underside of the pointed wings with a prominent dark bar across each, and blackish tips, are leading pointers to its identity.

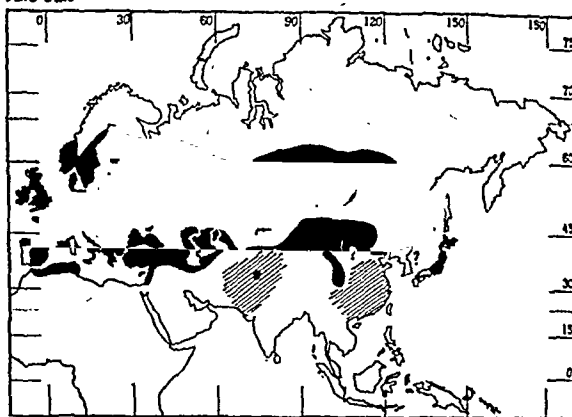
STATUS, DISTRIBUTION and HABITAT. Winter visitor (September/October to March/April) and/or passage migrant (the latter chiefly in northern mountainous portions, e.g. Gilgit, NW. Afghan frontier region). Practically throughout the subcontinent including both Pakistans, the entire Indian Union together with Nepal, Sikkim, Bhutan (?) to eastern Assam and Manipur. Also occasionally to Ceylon and Maldives Is. Not recorded in the



■ Palaearctic breeding range

Andamans or Nicobars. Plains and hills, normally to c. 1400 m., in appropriate facies. Local occurrences irregular, and abundance variable year to year; occasionally 'invasions'. Affects open, undulating grassy country

Asio otus



■ Breeding range ■ Winter

rather than a hoot, with the notes spaced at regular intervals of about one every third second, and audible as much as half a mile' (C. B. Moffat in Witherby, where some other notes also described).

BREEDING. Season in Europe mid March to early May. Of the two cases authenticated within our limits the first nest with 4 highly incubated eggs was found on 4 June 1895 (above Gurais, Kashmir), the second in Galbraith Spinney, Quetta (date not mentioned). Nest, in the first case a dilapidated nest, probably crow's, c. 4 m. up in a sycamore tree; in the second case an old magpie's nest was used. Eggs, elsewhere usually 4 or 5, broad white ovals, slightly glossy. Average size of 100 British eggs 40.94 × 32.7 mm. (Witherby).

MUSEUM DIAGNOSIS. For description of plumages and structure (also bionomics), see Witherby, 1938, 2: 327-31.

MEASUREMENTS

	Wing	Tarsus	Tail
♂ ♀	285-305*	c. 40	140-155 mm.

*Rarely as small as 280 mm. or as large as 310 mm.

(Hartert)

*Culmen c. 28-29 mm.; cere c. 6-8 mm. (Baker).

Weight 1 ♀ 8.75 oz. (c. 250 gm.).—Biddulph. 1 ♀ 290 gm.—BB.

COLOURS OF BARE PARTS. Iris bright golden orange. Bill blackish horn, greyish flesh at tip. Claws blackish horn (Witherby).

664. Shorteared Owl. *Asio flammeus flammeus* (Pontoppidan)

Strix Flammea Pontoppidan, 1763, Dansk. Atlas 1: 617, pl. 25 (Sweden)

Baker, FBI No. 1643, Vol. 4: 394

Plate 53, fig. 7

LOCAL NAMES. *Pūcha mūnga* (Malayalam); *Bassā* (Sinhala); *Āndai* (Tamil); *Būkhāomnu* (Maldivian).

dotted with bushes, sparsely scrubbed hillsides, tall grassland on the margin of jheels; also in semi-desert.

Extralimital. Breeds in Europe and Asia north to c. 70°N. lat., south to Italy, the Balkan Peninsula, Caucasus, Turkestan, N. Mongolia, SE. Manchuria, and Sakhalin I. Also in N. America. In the Old World winters south to the Mediterranean, N. Africa, Palestine, Ethiopia and Aden, besides India. (For details of range see Vaurie, 1965: 595-6.)

GENERAL HABITS. In winter met with singly, in loose parties of 5 or 6, or scattered flocks ('swarms') of 20 or more birds. Very diurnal and terrestrial; frequently put up in scrubby grassland while walking up quail or partridge, or seen flying about and hunting in broad sunshine—hawking insects. Often flushed from the ground in daytime while at rest, standing upright at the base of a diminutive bush practically in the open, or sunning itself sprawled belly to ground with the wings outspread. Flies with leisurely-looking deliberate full wing-strokes, rather reminiscent of a Houbara bustard from the rear. But flight irregular, rather rolling and wandering, punctuated with glides. Either flops into the herbage again after a hundred metres or so or covers long distances before alighting, sometimes rising very high up in the air and flying in wide circles, especially when mobbed by crows and other birds. Has been observed miles out at sea between Kutch and Bombay coming from the west flying eastward towards land, evidently on migration (from ?), at times flying high above the observer's ship, at others skimming the water's surface like a gull (McCann, JBNHS 38: 624).

FOOD. Field rats and mice, small birds, grasshoppers, locusts, beetles, etc.

VOICE and CALLS. Very silent in its winter quarters; no calls recorded in India.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for plumages and structure (also bionomics), Witherby, 1938, 2: 334-5.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	290-325	29-31	43-48	139-150 mm. (SA, HW)

The sexes do not differ appreciably in size.

COLOURS OF BARE PARTS. Iris bright lemon-yellow. Bill slaty black; mouth lined pink. Toes (exposed portion) dark brown; soles dirty pale flesh colour; claws horny black.

Genus *AEOLIS* Kaup

Argolius Kaup, 1829, Skizz. Entw.-Gesch. Eur. Thierw.: 34. Type, by monotypy, *Strix tenguismi* Gmelin = *Strix fuscus* Linnaeus, 1758

Contains small owls with large rounded head; no ear-tufts but faint indications of them. 4th and 5th primaries (as.) equal and longest. Two outermost visible primaries only notched (emarginated) on inner webs, and rather near to tip. Tail slightly rounded. Tarsus and toes very thickly clothed in feathers.

Genus northern Holarctic.

OWLS

317

665. Tengmalm's Owl. *Aegolius funereus caucasicus* (Buturlin)

Nyctala Caucasica Buturlin, Psov. i Ruzheinaia Okhota. 13, No. 6: 87 (Kislovodsk, northern Caucasus)

Cryptoglaux tengmalmi transvolgensis Buturlin, 1910, Nasha Okhota 4: 11 (Governments of Kazan, Perm and Orenburg)

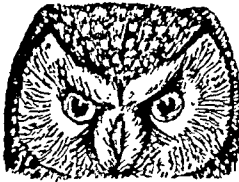
Aegolius funereus juniperi Kozelz, 1939, Proc. Biol. Soc. Wash. 52: 80 (Kyzylang, Lahul, Punjab)

Not in Baker, FBI Plate 54, fig. 9

LOCAL NAMES. None recorded.

SIZE. Spotted Owlet +; length c. 25 cm. (10 in.).

FIELD CHARACTERS. More or less like Spotted Owlet (650) but larger, chocolate-brown, and with a wide and distinct facial disc. Legs and feet thickly feathered to tips of toes. See figure, p. 256.



x c. 1

STATUS, DISTRIBUTION and HABITAT. Species previously unknown within Indian limits. A single breeding female together with a feathered juvenile collected at Kyzylang (32°33'N., 77°03'E.) in Lahul dist. of Himachal Pradesh.

Extralimital. Europe and C. Asia south to the Himalayas.

MUSEUM DIAGNOSIS. For description of plumages and structure (also bionomics) see Witherby, 1938, 2: 320-2.

MEASUREMENTS

	Wing	Bill (from base of feathers)	Tarsus	Tail
♂ ♂	160-170	18-21	20-23	95-106 mm.
♀ ♀	165-180	—	—	—

(Witherby)

More specimens of Tengmalm's owl from the NW. Himalayas are needed to settle the status of the population here.

COLOURS OF BARE PARTS. Iris yellow. Bill yellow. Claws brownish black (Witherby).

APPENDIX

p. 29

452a. Great Blackbacked Gull. *Larus marinus* Linnacus

Larus marinus Linnacus, 1758, Syst. Nat., ed. 10, 1: 136 (Gotland, Sweden)

SIZE. Same as 453.

FIELD CHARACTERS. A dark-mantled maritime gull, distinguished from Lesser Blackback (452) chiefly by larger size and pale pink or greyish pink

APPENDIX

319

Hodgson's Hawk-Cuckoo (575)	Sibilant, insistent <i>gee-whizz</i> repeated up to 20 times. Rather like 572 but shriller and thinner.
Brainfever Bird (573, 574)	Loud, shrieking, high-pitched <i>wee-pitchit</i> or <i>brain-fever</i> in crescendo runs of 4-6 broken off abruptly. Repeated endlessly.
Indian Cuckoo (576)	Loud, far-carrying 4-syllabled flutey whistles <i>bo-kotko</i> or <i>orange-pekeo</i> or <i>crossword puzzle</i> repeated endlessly.
Cuckoo (577, 578, 579)	The well-known <i>cick-ko</i> repeated persistently in long unbroken runs.
Himalayan Cuckoo (580)	Loud, far-carrying (<i>tip</i>) <i>-oep-oep-oep-oep</i> , very like hoopoe's but 4-noted instead of 3.
Small Cuckoo (581)	Unmusical chattering cry of 5 or 6 notes <i>that's your choky pepper</i> ... <i>choky pepper</i> (accent on first <i>choky</i>). Quickly repeated.

p. 213

580a. Horsfield's Cuckoo. *Cuculus saturatus horsfieldi* Moore

Cuculus horsfieldi Moore, 1857, in Horsfield & Moore, Cat. Birds Mus. East India Co. 2: 703 (Java)

Cf. Wells, D. R., 1972, JBNHS 69: 179-85

Passage migrant in N. India (Uttar Pradesh, Bihar, Meghalaya) straying to Rajasthan and Maharashtra (Solapur). But see Abdulali, H., JBNHS 74: 172-3.

p. 228

MIGRATION. Large numbers pass through Pt Calimere (coastal Tamil Nadu) at commencement of NE. monsoon, c. October *en route* to Sri Lanka, whence recoveries of Indian-ringed kuels reported.

p. 255

610a. Peninsular Bay Owl. *Phodilus badius riplei* Hussain & Khan

Phodilus badius riplei Hussain & Khan, 1978, Jour. Bom. Nat. Hist. Soc. 74: 335 (Nelliampathy Hills, Kerala)

SIZE. Pigeon —.

FIELD CHARACTERS. Like 610, slightly smaller and darker than 609 of eastern Himalayas.

STATUS, DISTRIBUTION and HABITAT. Solo taken at Periasolai in the southern section of Nelliampathy Hills (south of the Palghat Gap) in heavy wet evergreen biotope. Apparently very rare. Unrecorded previously from peninsular India.

MUSEUM DIAGNOSIS. See Key to the Subspecies (p. 253).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
1 ♀	208	33	51	81 mm. (Hussain)

COLOURS OF BARE PARTS. As in 610.

318

APPENDIX

legs *v.* yellow. Primaries black, tipped with white. Hind border (trailing edge) of wing white. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Vagrant. A single specimen shot by Col. R. Meinertzhagen at a tank at Deoli (Nasirabad dist., Rajasthan) 16.xi.1899 (JBNHS 13: 374). No other record since. Its occurrence so far inland noteworthy.

Extralimital. Breeds in northern Europe and eastern N. America.

HABITS etc. Broadly as of other gulls.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	485-510	61-70	76-84	180-200 mm.
♀ ♀	457-470	55-61	—	— mm. (Witherby)

p. 161

544a. Nicobar Emerald Dove. *Chalcophaps indica augusta* Bonaparte *Chalcophaps augusta* Bonaparte, 1855, Compt. Rend. Acad. Sci. Paris 40, no. 5: 209 ('... sa provenance... est... certainement asiatique ou océanique' = Nicobars *ex Blyth*), vide Bonaparte, 1857, Consp. Gen. Av. 2: 92

Cf. Mukherjee, A. K. & J. M. Dasgupta, 1975 (1976), Proc. Zool. Soc. Calcutta 28: 133-5

LOCAL NAMES. Unrecorded.

FIELD CHARACTERS. As 542. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Race peculiar to the Nicobar islands. Common resident in appropriate forest biotope.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 542.

BREEDING. Season. Some specimens collected in February and April had mature gonads and were evidently breeding (Mukherjee & Dasgupta).

MUSEUM DIAGNOSIS. Deeper and richer in colour than 542 and 544. Grey absent on under tail-coverts. Light vermiculations of abdomen extending to breast.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
2 ♂ ♂	152, 153	23, 23	90 (1) mm.
3 ♀ ♀	144-150	22(3)	82-90 mm. (Mukherjee & Dasgupta)

COLOURS OF BARE PARTS. As in 542.

p. 198

Key to the Calls

Large Hawk-Cuckoo (572)

Loud, shrill, musical, screaming crescendo whistles *pipetah* or *pipee*, in monotonously persistent runs of 5 or six.

320

REFERENCES

p. 265

618b. Nicobar Scops Owl. *Otus scops nicobaricus* (Hume)

Ephialtes nicobaricus Hume, 1876, Stray Feathers 4: 283 (Nicobars = Camorta I.)

FIELD CHARACTERS. As for the Andaman subspecies (618a), but significantly larger.

STATUS, DISTRIBUTION and HABITAT. Resident. Nicobar Is. A breeding male collected in March 1964 at Campbell Bay, Great Nicobar (Abdulali, H., JBNHS 69: 106).

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Order CAPRIMULGIFORMES

For morphological details etc. see Stresemann, E., 1927-34, *Aves*: 826-8.

Family PODARGIDAE: Frogmouths

Bill very wide at gape as in Nightjars but much larger; powerful, hard, curved, hooked at tip. Base of bill overhung by bristly feathers concealing the nostrils, which are narrow slits protected by membranes. For further details see Van Tyne, J. & Berger, A. J., 1959: 461; Serventy, D. L., 1964, Article 'Frogmouth' in Thomson, A. L. (ed.), *New Dict. Birds*, London & New York.

Genus BATRACHOSTOMUS Gould

Batrachostomus Gould, 1838, *Icones Avium*, pt. 2, pl. (17) and text.

Type, by monotypy, *Podargus auritus* J. E. Gray

Gape even wider than in Nightjars, with the corners swollen and enlarged. Nostrils concealed by conspicuous bristles projecting from the feathers at base of bill; tufts of similar feathers in front of the eyes, and ear-tufts. Wings rounded and short: 4th and 5th primaries (as.) subequal and longest, occasionally the 5th. Tarsus short; feet small and feeble with middle toe greatly elongated. No oil gland; a powder-down patch on either side of rump. Sexes dimorphic in coloration.

Genus Oriental and Australasian; represented in our area by two species with the same remarkable widely discontinuous Indo-Malayan distribution as e.g. the Lizard Hawks (*Aviceda*) cf. Ind. Hb. 1: 215, 218.

Key to the Species

Scapulars with broad white patches; no white spots on wing-coverts *B. hodgsoni*
Scapulars without any white; round white spots on wing-coverts *B. moniliger*

666. Ceylon Frogmouth. *Batrachostomus moniliger* Blyth

Batrachostomus moniliger 'Layard' = Blyth, 1846, *Jour. Asiat. Soc. Bengal* 18: 806 (Ceylon)

Baker, FBI No. 1635, Vol. 4: 381

Plate 55, fig. 1

LOCAL NAMES. *Gembi-kata-bassā* (Sinhala); *Makkāchikkāta* (Malayalam).

SIZE. Myna \pm ; length c. 23 cm (9 in.).

FIELD CHARACTERS. An obliteratively coloured nightjar-like bird with absurdly wide gape and broad, swollen, horny bill aptly suggestive of the name Frogmouth, and completely diagnostic.

Male (adult) grey-brown, vermiculated and mottled with white, buff, brown, black, and chestnut.

1

1

FROGMOUTHS

3

resembling the screech of a fishing reel running out fairly slowly' (Henry).

BREEDING. Season, apparently straggling, chiefly January to April; in Ceylon also September. Nest, a small pad, c. 6 cm in diameter, of moss, leaves, and twigs felted with down from the bird's underplumage, and camouflaged on the outside with bits of lichen and bark. Placed in the fork of a small tree or on a horizontal branch c. 2 to 5 metres off the ground. Egg, a singleton, large for the size of the layer, white, elliptical, fine-textured. Average size of 30 eggs 29.9 × 20.6 mm (Baker). Both sexes share in incubation, the male chiefly sitting during daytime. Period of incubation and other facets of breeding biology unknown.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Tarsus fully feathered in male; c. two-thirds in female.

Nestling covered with pure white down (T. R. Bell).

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂ ♀	119-127	21-23	100-110 mm (HW, SA)

Tarsus c. 15; width of gape 32-34 mm (Baker).

COLOURS OF BARE PARTS. Iris pale khaki or brownish buff ('yellow, or marbled yellow and grey'—Baker). Bill pale horny, yellowish at gape and chin; mouth sulphur yellow; gullet pink. Feet dusky yellow; claws brownish.

667. Hodgson's Frogmouth. *Batrachostomus hodgsoni hodgsoni* (G. R. Gray)

Otothrix hodgsoni G. R. Gray, 1859, *Proc. Zool. Soc. London*: 101, pl. 152, *Aves* (Northern India = Darjeeling)

Batrachostomus hodgsoni rupchandi Koelz, 1954, *Contrib. Inst. Regional Exploration*, No. 1: 27 (Karong, Manipur)
Baker, FBI No. 1633, Vol. 4: 378

Plate 55, fig. 2

LOCAL NAME. *Sūmbong* (Manipur Naga).

SIZE. Myna +; length c. 27 cm (10½ in.).

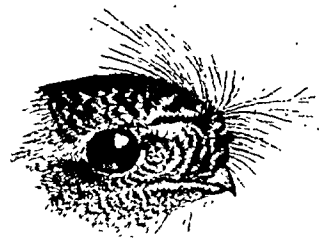
FIELD CHARACTERS. As for 666, q.v. See Key.

Young (immature). Like adult female but duller blackish brown; signs of the collar show very early. Iris dull brown; bill horny grey, pinkish above (Baker).

STATUS, DISTRIBUTION and HABITAT. Resident. Apparently rare. Sikkim (from extreme eastern Nepal?),

Bhutan, Assam hills north and south of Brahmaputra river, Nagaland, Manipur, Mirzo(?), East Pakistan (Tippera and Chittagong Hill Tracts), between c. 300 and 1800 m. Affects sub-tropical evergreen forest.

Extralimital. Hill of N. Burma (Chin, Kachin, etc.).



Head, ♂ x 1

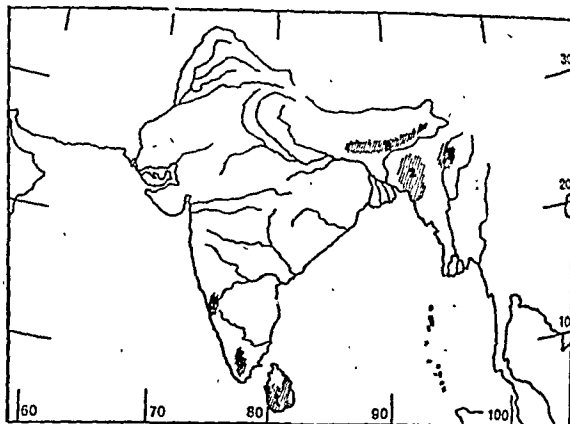
2

CAPRIMULGIFORMES

Female dull rufous overall; upper wing-coverts boldly spotted with black-edged white spots.

Young (immature). Narrowly barred above with brown.

STATUS, DISTRIBUTION and HABITAT. Resident. Apparently rare. The southern heavy-rainfall tracts of the Western Ghats from c. 15°N. lat. in N. Kanāra dist. (Mysore) south to Trivandrum dist. (Kerala) up to c. 1200 m; Ceylon, throughout the forest areas up to c. 1800 m. Affects dense evergreen forest and secondary jungle with cane brakes etc.

Batrachostomus

Known distribution 1 *B. moniliger* (666). 2 *B. h. hodgsoni* (667).

GENERAL HABITS. Little known. Nocturnal; seldom seen in daytime unless flushed by chance. Spends the day in dense jungle perched across a branch (like a passerine bird) body tilted at a slight angle with the tail pointing downward, simulating a broken stump. On alarm stretches neck and head upwards, bill and rictal bristles pointing to sky, eyes closed to slits, thereby heightening its resemblance to a lichen-covered snag. Eludes detection further by remaining completely immobile even on very close approach by observer, while following his movements by almost imperceptibly screwing the head round as in an owl. Wide gape and surrounding bristles suggest adaptation for hawking winged insects, but reported to take them chiefly on the ground or from branches.

FOOD. Moths, beetles, grasshoppers, etc.

VOICE and CALLS. Uncertain. Circumstantially described as commencing considerably after dark and variously as 'a soft, rapid *kooroo, kooroo, kooroo*' (Butler), 'a series of 10-15 low but rather rapid *whoo, whoo, whoo, whoo* notes' (Phillips), 'a fairly loud liquid chuckle *ahwoo* repeated monotonously every 2 or 3 seconds for 30 minutes or more at a stretch' (Sālim Ali). 'A bird which was kept under observation by C. E. Norris uttered a call

4

CAPRIMULGIFORMES

GENERAL HABITS, FOOD, VOICE and CALLS. More or less as in 666, but imperfectly known.

BREEDING. Season, April to July. Nest and site, as in 666. Eggs, normally 2 sometimes a singleton, white, elliptical. Average size of 30 eggs 26.5 × 17.6 mm (Baker). Both sexes incubate, the male mostly during daytime. According to Baker both birds assist in making the nest, pulling the down from their lower plumage and welding it into the branch and then into the nest itself.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Nestling covered with bright rufous down.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	126-141	17-18 width at gape 29-32	c. 15-16	131-143 mm (Baker)

COLOURS OF BARE PARTS. Iris variegated grey, brown and yellow. Bill fleshy pink or yellowish horn. Feet pinkish flesh.

Family CAPRIMULGIDAE: Nightjars or Goatsuckers

For morphological details etc. see Stresemann, E., 1927-34, *Aves*: 827; Witherby et al., 1938, 2: 251; Baker, 1927, 4: 358; Junge, G. C. A., 1964, Article 'Nightjar' in Thomson, A. L. (ed.), *New Dict. Birds*, London & New York.

Bill short, weak, flexible and with an enormous gape. Nostrils tubular. Wing long: 2nd primary (as.) generally longest. Family represented throughout the tropical and temperate regions of the world.

Key to the Genera

	Page
No ear-tufts; strong rictal bristles present.....	<i>Caprimulgus</i> 7
Well developed erect ear-tufts; no rictal bristles.....	<i>Eurosto podus</i> 4

Genus EUROSTOPODUS Gould

Eurosto podus Gould, 1838, April, *Syn. Bds. Austr.*, app., (4): 1. Type, by subsequent designation, *Caprimulgus guttatus* Vigors & Horsfield

Lyneornis Gould, 1838, *Icones Avium*, (2), pl. 14. Type, by monotypy, *Lyneornis cerniceps* Gould

Distinguished from *Caprimulgus* by absence of rictal bristles and presence of ear-tufts or aigrettes consisting of a few elongated, erectile feathers just above and behind ear-coverts. Sexes alike. Represented by one species with two races within our limits.

EUROSTOPODUS MACROTIS (Vigors): GREAT EARED NIGHTJAR

Key to the Subspecies

Wing over 290 mm	<i>E. m. cerniceps</i>
Wing under 290 mm	<i>E. m. bowdlerii</i>

NIGHTJARS

5

668. *Eurostopodus macrotis cerviniceps* (Gould)

Lyncornis cerviniceps Gould, 1838, *Icones Avium*, (2), pl. 14 and text ('Said to be a native of China or the adjacent islands' = Trang, Peninsular Siam by designation of Robinson & Kloss, 1923, *Jour. Nat. Hist. Soc. Siam* 5: 140) Baker, FBI No. 1631, Vol. 4: 374

LOCAL NAME. *Din koo nah* (Assam).

SIZE. House Crow —; length c. 41 cm (16 in.).

FIELD CHARACTERS. A very large and handsome dark coloured nightjar with the characteristic mottled and vermiculated plumage of the family — grey, black, buff, and chestnut. Two prominent erectile ear-tufts on sides of head behind the eyes, and distinctive whistling call diagnostic. Sexes alike.

In overhead flight large size, long tail, and stately wing-beats particularly striking.

STATUS, DISTRIBUTION and HABITAT. Resident. Possibly local migrant in some areas: thus in NE. Cachar 'appears about beginning of August; very plentiful in August and September; disappears at the end of the rains' (James Inglis, 1877, SF 5: 17). Assam east and south of Brahmaputra river, Nagaland, Manipur, Mizo, East Pakistan (Tippera and Chittagong Hill Tracts). Affects evergreen and moist-deciduous biotope, from plains level to c. 1000 m alt.; commonest in foothills country.

EXTRALIMITAL. Southern Yunnan south through Burma and Malay Peninsula and Penang; SE. Thailand, South Vietnam.

GENERAL HABITS. Crepuscular and nocturnal. Roosts during daytime squatting belly to ground, or on a fallen log amongst scrubby undergrowth in a ravine; also in caves (Tenasserim, Burma). Issues forth at sundown heralded by the distinctive clear whistling calls, circling high above the forest tree-tops with the leisurely deliberate wing-beats of an owl. Descends lower as the dusk deepens, sailing swiftly a metre or two above ground on motionless wings like a harrier to hawk winged insects in a forest clearing; sometimes a loose party of 7 or 8 birds criss-crossing one another at different levels in the air.

FOOD. Moths, bugs, beetles, flying termites, and other insects captured on the wing.

VOICE and CALLS. In general pattern similar to 669 of Kerala; described by A. F. P. Christison as 'Pee-whoeeoo-whoeeoo-whoeeoo repeated a variable number of times, followed by a protracted quavering whistle ending in a cadence'. Uttered chiefly on the wing; sometimes repeated for several minutes while squatted on a tree-stump like a nightjar, the head shot forward with a jerk at each call.

BREEDING. Season, mainly January to April as far as known. Nest, none built. Egg, a singleton laid on the bare ground in thin forest or bamboo jungle under shelter of a bamboo clump or thick bush. Broad to long ellipse in shape, typical of the nightjars, pale yellowish cream to deepish rosy salmon (when fresh), variably marbled with pale grey and occasionally pale bright reddish. Average size of 6 eggs 42.1 × 30.5 mm (Baker). Share of the sexes in the domestic chores, and incubation period, unknown.

NIGHTJARS

7

MUSEUM DIAGNOSIS. Doubtfully distinguishable from 668 except by smaller size. Perhaps a little darker with less buff and more grey on the wings and upper-parts.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
		(from skull)		
♂ ♀	274-285	20-22	c. 21	162-203 mm (HW, SA, Baker)

COLOURS OF BARE PARTS. Iris brown. Bill pinkish brown, nostrils and tips of both mandibles blackish brown. Legs pale pink; toes dusky; claws horny brown.

NOTE. Possibly some form of *Eurostopodus* occurs in the Andaman group of islands. It is claimed to have been seen on Southern Jolly Boy Island by a party including two competent and dependable observers, Dr Stoliczka and Mr Ball (Hume, 1874, SF 2: 162), but no specimen was collected, nor has been since.

Genus CAPRIMULGUS Linnaeus

Caprimulgus Linnaeus, 1758, *Syst. Nat.*, ed. 10, 1: 193. Type, by tautonymy,

Caprimulgus europaeus Linnaeus

Wing long and pointed: 2nd primary (as.) longest, 1st and 3rd slightly shorter. Tail long, graduated. Rectal bristles strong and numerous, generally white at base. Tarsus feathered in some species, naked in others. Sexes alike except that in some species the white patches in the wings and tail of the male are buff or rufous in the female.

Nightjars are soft-plumaged, long-winged, crepuscular and nocturnal birds with longish tails, very short legs and short soft bills with enormous gapes. Plumage overall mottled, vermiculated, barred and streaked with brownish buff, grey, rufous, black and white, blended in a remarkably obliterative or camouflaging pattern. The different species are usually difficult to identify in the field except by their calls chiefly heard in the breeding season, which are distinctive and specifically diagnostic. See Key to the Calls.

Key to the Species

Page

- A Greater part or whole of tarsus feathered; back with black streaks and spots 1
- B Tarsus almost naked 2
- 1 Four outer pairs of tail-feathers with subterminal white spots in male *C. indicus* 8
- Two outer pairs of tail-feathers tipped white in male a
- a A white spot on first three primaries in male; tarsi three-quarters feathered *C. europaeus* 12
- A white spot on first four primaries in male; tarsi feathered all over *C. macrotis* 16
- 2 Distinct but narrow black streaks on back *C. asiaticus* 21
- No distinct black streaks on back b
- b Outer tail-feathers tipped white in male, buff in female *C. malabaricus* 14
- Outer tail-feathers all white except at tip in male; mottled throughout in female *C. affinis* 23

6

CAPRIMULGIFORMES

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
		(from feathers)		
♂ ♀	292-317	c. 10-11	21-22	207-225 mm (Baker)

COLOURS OF BARE PARTS. Iris hazel to dark brown. Bill pale pinkish horny to pinkish brown, tip and culmen darker; gape flesh-coloured. Legs and feet fleshy brown to pale brown.

669. *Eurostopodus macrotis bourdilloni* (Hume)

Lyncornis Bourdilloni Anonymous = Hume, 1875, *Stray Feathers* 3: 302 (Kalland, Khauni, Travancore) Baker, FBI No. 1632, Vol. 4: 375 Plate 55, fig. 10

LOCAL NAME. *Sāndhī māzhākki* (Malayalam).

SIZE. House Crow —; length c. 40 cm (15½ in.).

FIELD CHARACTERS. As of 668, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Range curiously discontinuous and restricted [cf. *Batrachostomus moniliger* (666)] but absent in Ceylon. Known only from Kerala (Kottayam, Quilon, and Trivandrum dists.) and Goa (Valpoi?, JBNHS 73: 45). Sedentary and local; not uncommon where occurring.

Confining to evergreen and moist deciduous biotope, chiefly foothills jungle and up to c. 1000 metres.

GENERAL HABITS and FOOD. As in 668, q.v.

VOICE and CALLS. A beautiful loud, clear, rather supercilious-sounding ('wailing') double- or 3-noted whistle, *whi-whoeeew* uttered chiefly on the wing — the first syllable short and abrupt, the second very long and drawn-out. A third short undertone note preceding the call is often audible at close range. Heard mostly during the short interval between sunset and dark, and then again in a brief burst at earliest dawn before the birds retire for the day. Silent at night except for sporadic calls during moonlight. Several birds answer one another from different directions.

BREEDING. Season, January to May, chiefly February and March. No nest. Egg, a singleton, laid on the bare ground on a bush-covered broken hillside or in thin undergrowth in forest. The same site is said to be occupied year after year. Eggs very variable in colour and markings — from unmarked rich salmon-cream to the same blotched and speckled with chestnut; or cream, densely marbled with brown at one end and clouded with grey elsewhere. Average size of 40 eggs 40.0 × 28.8 mm (Baker).

CAPRIMULGIFORMES

Key to Nightjar Calls

	Page
Series of soft, rapid <i>kooroo</i> , <i>kooroo</i> , <i>kooroo</i> or <i>whoo</i> , <i>whoo</i> , <i>whoo</i> , <i>whoo</i>	1
.....Ceylon Frogmouth (666)	
Frequently repeated <i>pee-whoeeoo-whoeeoo-whoeeoo</i>	5
.....Burmese Great Eared Nightjar (668)	
Clear double- or 3-noted long-drawn whistle <i>whi-whoeeew</i>	6
.....Kerala Great Eared Nightjar (669)	
Long runs of quickly repeated loud <i>chuck-chuck-chuck</i> or <i>chuckoo-chuckoo-chuckoo</i> etc.	8
.....Himalayan Jungle Nightjar (670)	
As above, or alternatively runs of <i>Ok-krukroo</i>	10
.....Indian Jungle Nightjar (671)	
Off-repeated <i>chuk'm chuk'm chuk'm</i> 'like exhaust-note of small gas engine'.....	11
.....Ceylon Jungle Nightjar (672)	
Steady whirring notes, and quick-repeated subdued <i>chuck-chuck-chuck</i> as of House Gecko.....	12
.....Hume's European Nightjar (673)	
Soft, long-continued <i>prrrrrrrrr</i> like Bustard-Quail's drumming.....	14
.....Sykes's or Sind Nightjar (674)	
Loud, resonant <i>chaunk</i> , <i>chaunk</i> , <i>chaunk</i> like hammering on wooden plank.....	16
.....Longtailed Nightjar (675)	
<i>Chuck-chuck-chuck-chuck-r-r-r</i> , like pelted stone skidding over ice.....	21
.....Little Nightjar (680)	
Single, sharp, penetrating <i>sueesh</i> (or <i>choo-ee</i> or <i>chuees</i>) like sound of whiplash cutting air.....	23
.....Franklin's Nightjar (682)	

CAPRIMULGUS INDICUS Latham: INDIAN JUNGLE NIGHTJAR

Key to the Subspecies

- A Upperparts paler; wing c. 172 to 198 mm..... *C. i. indicus*
- B Upperparts darker 1
- 1 Smaller; wing c. 167 to 184 mm..... *C. i. kelaarti*
- Larger; wing c. 196 to 219 mm
- a More rufous, less grey *C. i. hazarae*
- b More grey, less rufous *C. i. jotaka*

670. *Caprimulgus indicus hazarae* Whistler & Kinnear

Caprimulgus indicus hazarae Whistler & Kinnear, 1935, *Jour. Bombay nat. Hist. Soc.* 38: 37 (Abbotabad, Hazara, Himalayas)

Caprimulgus indicus menziesi Koelz, 1954, *Contrib. Inst. Regional Exploration*, No. 1: 27 (Blue Mountain, Lushai Hills) Baker, FBI No. 1626 (part), Vol. 4: 367

LOCAL NAMES. *Chhippik*, *Chhāppī*, *Dābchiri*, *Dābnak* (for all nightjars — Hindi); *Tamor* (Lepcha); *Wahatshai* (all nightjars — Naga); *Deo chuk* (Cachari).

SIZE. Pigeon —; length c. 32 cm (12½ in.).

FIELD CHARACTERS. As for the Genus, q.v. Call diagnostic, see below; also keys to the Species and Subspecies, and Museum Diagnosis.

Female similar to male but tail-feathers mottled throughout and without the white tips. No white spots on primaries; these more or less indicated by smaller rufous spots or patches.

NIGHTJARS

9

STATUS, DISTRIBUTION and HABITAT. Resident, local and altitudinal migrant. The entire Himalayas from Hazara dist. in NW. Pakistan eastward to NEFA (including Nepal, Sikkim, Bhutan). Assam hills north and south of Brahmaputra river, Nagaland, Manipur, Mizo, and East Pakistan; from the foothills to c. 3300 metres. Affects forest glades, and sparsely scrubbed ravines and hillsides contiguous with jungle.

Extralimital. Yunnan, Burma, Malay Peninsula — Peters.

GENERAL HABITS. Insectivorous, crepuscular, and nocturnal. Roosts in some shady spot during daytime squatted lengthwise on a bough, or on the ground among dry leaves and stones where its coloration obliterates it in an astonishing way. Emerges soon after sunset to hawk winged insects, flying about and sailing erratically above the forest or close to the ground in glades and clearings, performing agile aerial contortions in pursuit of prey. Is fond of squatting in the middle of cross-country earth tracks after dusk, its eyes gleaming ruby in the headlights of an oncoming car, and is adept at dodging clear by flip-flap zigzags when within an ace of being run over. Flight completely silent as in the likewise soft-plumaged owls except for an occasional smack of the wing-tips during the lightning twists and turns. In spite of the very short legs, occasionally runs for short distances, e.g. at the nest site, with a shuffling, waddling gait, often with the wings raised almost vertically back to back.

FOOD. Moths, bugs, beetles, and other winged insects captured in the air.

VOICE and CALLS. Calling commences as soon as dusk deepens to darkness and, with short breaks, is sustained more or less continuously through the night, ceasing only at dawn. Particularly vocal during moonlight nights in the breeding season. Call normally of two types: (1) a quick-repeated *chuck* (or *tuck*)-*chuck-chuck* (at c. 5 *chucks* in 2 seconds) in unbroken runs of 50 or more, (2) a less rapid *chuckoo-chuckoo-chuckoo* in runs of 3 to 14 (at the rate of about 3 in 2 seconds), the runs repeated monotonously again and again for 3 to 5 minutes at a stretch with an occasional miss of a beat or a pause of a second or two. The *chuckoo* calls sometimes end in a pleasant hollow-sounding *wowowowowowow* fading off in a series of 'intake' whistles reminiscent of an oil-engine conking out. This, according to one observer (A. E. Jones), is while the calling male is chasing another bird, 'probably its mate'.

A third call, *ik-krükroo*, common in the nominate peninsular race (671, q.v.), has curiously enough not been recorded in the Himalayan bird.

BREEDING. Season, March to June, principally April and May. No nest. Eggs, 2, white, marbled with primary markings of dark grey or greyish brown, and secondary markings of pale grey; quite different from those of the two other races of *indicus*! Average size of 100 eggs 30.7 × 22.7 mm (Baker). Both sexes share incubation; incubation period *vide* Baker 16 to 17 days.

MUSEUM DIAGNOSIS. See Key to the Species; for details of plumage, Baker loc. cit. Separable from the nominate race (671), in a series, by the general tone of coloration being warmer and browner (less grey); markings on the back heavier; barring on the tail broader. Also, individuals tend to average larger in size.

NIGHTJARS

- 11

GENERAL HABITS and FOOD. As in 670, q.v.

VOICE and CALLS. In addition to the two calls described under 670, peninsular birds commonly have a third call—a pleasant though rather mournful *ik-krükroo*, monotonously repeated every two seconds or so, in unbroken runs of a quarter or half hour. It is resumed after a short pause, and continued thus more or less throughout the night, particularly in moonlight. Either the first two calls or the third are uttered at a time (by same or different individuals?); we have not heard one type of call being switched over to the other while a bird is calling. The significance of this alternative call in peninsular birds is not understood. In moonlight, in breeding season, calls all night in long unbroken runs — *chuck-chuck-chuck-chuck* etc. — at about two *chucks* per second, sounding in the distance singularly like the oil engine of a village flour mill.

BREEDING. Season, February to May, chiefly March and April. No nest. Eggs, 2, very similar to those of *C. m. atripennis* (676) and different from those of the Himalayan race; pale creamy to warm buff, spattered irregularly all over with blackish- or reddish brown spots. Laid on the bare ground on a stony hill slope, or in a ravine, sometimes but not always in the shade of a bush. Average size of 38 eggs 30.4 × 21.3 mm (Baker). Both sexes incubate; incubation period undetermined, presumably as in the Himalayan race (670) — 16 or 17 days.

MUSEUM DIAGNOSIS. See Key to the Species. Compared with *C. i. hazarae*, this race is greyer on the upperparts, more finely streaked on the back, and more narrowly barred on the tail. Juveniles are very different-looking, with much warm brick-rufous suffusion in the plumage.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	174-198	20-24	15-18	125-144 mm
♀♀	181-195	20-24	15-18	124-135 mm (SA, HW)

COLOURS OF BARE PARTS. Iris brown; fine circumorbital rim yellow. Bill horny brown, yellowish on commissure and gape. Feet pinkish brown; claws pale horny brown.

672. *Caprimulgus indicus kelaarti* Blyth

Caprimulgus kelaarti Blyth, 1852 (1851), Jour. Asiat. Soc. Bengal 20: 175 (Ceylon)
Baker, FBI No. 1627, Vol. 4: 368

LOCAL NAMES. *Bin bari* (Sinhala); *Pādukāi kūrāi* (Tamil).

SIZE. Myna +; length c. 27 cm (10½ in.).

FIELD CHARACTERS. As for the Genus, q.v. See keys to the Species and Subspecies, and Museum Diagnosis.

Female differs from male as in 670.

STATUS, DISTRIBUTION and HABITAT. Race peculiar to Ceylon. Resident in the Hill Zone; locally distributed throughout the hills to over 6000 ft [c. 1800 m]. More common on the eastern or Uva aspects where the climate is drier (Phillips).

10

CAPRIMULGIFORMES

MEASUREMENTS

	Wing	Tail
♂♂	200-215	124-146 mm
♀♀	187-203	126-137 mm (HW, BB, SA)

COLOURS OF BARE PARTS. Iris deep brown. Bill pinkish brown, paler at base and gape. Feet fleshy brown.

671. *Caprimulgus indicus indicus* Latham

Caprimulgus indicus Latham, 1790, Index Orn. 2: 588 (India)
Baker, FBI No. 1625, Vol. 4: 366

Plate 55, fig. 6

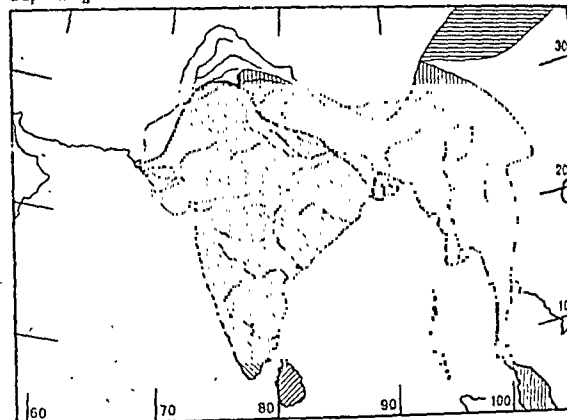
LOCAL NAMES. Same as for 670 where applicable. *Kūpoo* (Adivasi Bhillā); *Et chukoo* (Malayalam); *Dibātā birdhani* (= God's carpenter—Oriya).

SIZE. Pigeon —; length c. 29 cm (11½ in.).

FIELD CHARACTERS. As for the Genus, q.v. See keys to the Species and Subspecies, and Museum Diagnosis.

Female differs from male as in 670.

STATUS, DISTRIBUTION and HABITAT. Resident and partial local migrant. Practically all India south of the Himalayas including Kerala. Absent in W. Rajasthan, Kutch, and sub-Himalayan W. Pakistan. Affects open scrub, and dry- and moist-deciduous jungle; from plains level up to c. 2300 m in the peninsular and S. Indian hills. Teak plantations and mixed bamboo forest are favourite haunts.

Caprimulgus indicus

	<i>C. i. hazarae</i> (670).		<i>C. i. indicus</i> (671).
	<i>C. i. kelaarti</i> (672).		<i>C. i. jolaka</i> (RE).

12

CAPRIMULGIFORMES

GENERAL HABITS and FOOD. As in 670, q.v.

VOICE and CALLS. Song described as far-carrying and reminiscent 'of the exhaust note of a small gas engine *chuk'm chuk'm chuk'm chuk'm*... repeated for many minutes at a time during the courting season. At close quarters this song has a curious resonant quality, the *chuk* being superimposed, as it were, upon a throbbing drone represented by the *m*. The courting male has also another note which sounds like *hōō hōō hōō hōōleter hōōleter*... uttered in flight with wings held high and steady, and tail widely expanded and canted to one side or the other, exposing the white tips of the four outer feathers' (Henry). Cf. *wowowowowowow* under 670.

BREEDING. Season, February/March to June/July. Eggs, 2, smaller replicas of those of the Indian bird (671); also laid without nest on bare stony ground in similar sites. Average size of 12 eggs 26.1 × 20.7 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Species. Smaller than the nominate race (671) with the tail perhaps darker and more heavily barred.

MEASUREMENTS	Wing	Tail
2 ♂♂	174-180	126 mm
1 ♀	174	116 mm (HW)

Weight 1 ♂ 69 g (SDR).

COLOURS OF BARE PARTS. As in 671.

672a. *Caprimulgus indicus jolaka* Temminck & Schlegel
(See Appendix, p. 257)

673. Hume's European Nightjar. *Caprimulgus europaeus uncinus* Hume
Caprimulgus uncinus Hume, 1871, Ibis: 406 (Agrora Valley and in the neighbourhood of Abbottabad. The specimens listed as types in the Cat. Bds. Brit. Mus. are from the former locality)

Baker, FBI No. 1619, Vol. 4: 359

Plate 55, fig. 4

LOCAL NAMES for all nightjars: *Chhippāk*, *Chhippā* (Hindi); *Chapāki* (Punjab Salt Range); *Patāk* (Rawalpindi dist.).

SIZE. Myna +; length c. 25 cm (10 in.).

FIELD CHARACTERS. As for the Genus, q.v. A small greyish brown nightjar. See keys to the Species and Calls, and Museum Diagnosis.

Female similar to male but with no white on the tail; the white wing-bar is replaced by buff, sometimes whitish in centre sometimes profusely marked with dark brown.

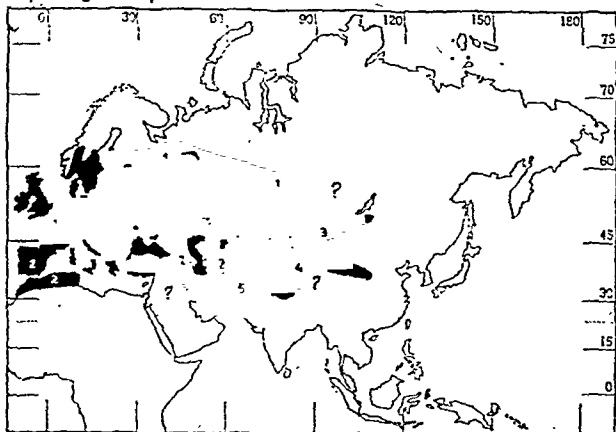
STATUS, DISTRIBUTION and HABITAT. Summer visitor and passage migrant (April/May to August/September) to West Pakistan, breeding in the lower hills and valleys of the mountain ranges, between c. 1600 and 2800 m, in C. and N. Baluchistan (Kalat, Quetta, Ziarat, Chaman, etc.) and in the Afghan frontier areas (Peshawar and Rawalpindi dists., Kurram Valley, Thal, etc.) north to Gilgit. Probably also in Kashmir, but no breeding record east of Murree. Obtained at Skardu, Baltistan by Meinertzhagen in August (status?). Fairly common and abundant as a transient on autumn passage (c. September) in southern Makran, Sind, and Kutch which lie on the easternmost fringe of the known migration route from Afghanistan.

NIGHTJARS

13

NW. Pakistan, etc. over Arabia to its winter quarters in Africa. The bulk evidently by-passes these areas on northward passage in spring (c. April) since the bird is rare in Sind at that season, and apparently absent in Kutch. Stragglers have been recorded in Jodhpur (Rajasthan) and Bombay City in October, and as far east as Gorakhpur in Uttar Pradesh (c. 83°E.) in January. Affects sparsely forested and open hillsides with *Dodonaea*, *Gymnosporia* and suchlike bushes.

Caprimulgus europaeus



■ Breeding range
 1, 2, 3, 4 extralimital races.

Extralimital. Breeds also from the eastern shores of the Caspian Sea east to Kuldja and the Khangai Mountains, south to Persia and probably S. Afghanistan. Winters in eastern Africa from the Sudan south to Natal.

GENERAL HABITS. As in 670, q.v. In summer (on breeding ground) met with singly or in pairs; on autumn migration passage sometimes in loose parties or flocks of 6 to 20 (or more) roosting on stony scrubland in daytime, flying about erratically hawking winged insects at dusk, freely perching on telegraph posts and wires where available. On account of its swift and agile zigzag flight when chased, apparently is (or was, in the heyday of falconry?) much prized by the local sporting gentry in the Punjab as a quarry for trained hawks.

FOOD. Moths, crickets, grasshoppers, dung beetles (Copridae) and other insects.

VOICE AND CALLS. In summer described as a steady whirring note uttered both on the ground and from a bush or tree; call on the wing as very similar to that of Franklin's Nightjar (*C. a. monticola*), a sharp *choo-ee* or *sweesh*. A low chuckle when flushed during daytime (H. W. Waite).

NIGHTJARS

15

Female similar to male but with the spots on primaries smaller and fulvous-tinged; tail-spots fulvous, often somewhat vermiculated with brown.

STATUS, DISTRIBUTION AND HABITAT. Resident in W. Pakistan (Sind, Baluchistan [including coastal and central Makran], Afghan frontier districts); apparently only summer visitor (breeding) in some parts, e.g. Punjab Salt Range; in the plains and at moderate elevations up to c. 500 m in the arid hills. Breeds in Kutch; possibly also Saurashtra, Rajasthan and N. Gujarat. Widely but sparsely distributed in winter, straggling to W. Khandesh, Deccan (Ahmadnagar, Nasik), Konkan (Kalyan, Ratnagiri), south to N. Mysore (Belgaum). Recorded also from Simla and Delhi; not farther east than c. 77°E.¹ Affects environs of semi-desert cultivation, and stony wasteland cut up by dry torrent beds—sometimes sand dunes in pure desert dotted with sparse xerophytic bushes (*Caparris aphylla*, *Salvadora oleoides*, etc.). In winter frequently flushed in daytime from foot of grass tussocks on dried-up borders of jheels.

Extralimital. Afghanistan, SE. Iran.

GENERAL HABITS. As in 670 and other nightjars. 'More crepuscular than others of the genus; never sits on a tree' (T. R. Bell, c. 1905, Sind MS.). Sometimes found right out in rolling sandy desert, roosting in daytime in the shelter of a scraggy thorn bush topping a wind-rippled dune. In Sind has been observed coming out from the desert at dusk to hawk over a grassy swamp.

FOOD. Melolonthid beetles and other dusk-flying insects.

VOICE AND CALLS. 'Very like that of a frog, heard after sunset' (Nicol Cumming, Baluchistan). 'A long-continued purr like that of a Bustard-Quail (*Turnix taigour*)—*prrrrrrrrrrr*—but in a higher key, and softer. Always uttered when settled on ground' (T. R. Bell, Sind). A low, soft chuckle—*cluck cluck*—when flushed during daytime.

BREEDING. Season, overall February to August, mainly March to May. No nest. Eggs, 2, laid on bare stony ground in arid hummocky country or on salt-encrusted *pais* or *kallar* in semi-desert in the shelter of a *Caparris* or suchlike bush; also on tamarisk-covered sandy aits in the Indus (in Sind). Ground colour greyish white mottled all over with dark grey or brownish grey, and with secondary clouds of pale grey. Readily distinguished from other nightjars' eggs by general pattern of coloration—densely mottled grey rather than definitely marked or spotted. Average size of 36 eggs 28.8 × 20.9 mm (Baker). Incubation evidently by both sexes; period undetermined.

MUSEUM DIAGNOSIS. See Key to the Species. For details of plumage see Baker, loc. cit. 'In females the white spots on the three outer primaries are smaller and more suffused with buff than in males, especially on the third feather; the two outer tail-feathers entirely lack the white tips of the male, and have a buffish spot on the outer feather, or the two outer feathers, or no spot at all' (Tiechurst).

Chick (in down). 'General colour whitish isabelline and so rather paler than *univini* [673]; dark marks less pronounced than in *univini*, but in the same positions' (Tiechurst).

¹ A. E. Osmaston's specimen from Gorakhpur, U.P. c. 83°E. (JENHS 32: 541) is really a juvenile of *C. a. monticola* (vide Whistler, *ibid.* 38: 38), and Baker's record of a straggler in 'Punjab, W. Bengal' cannot be verified.

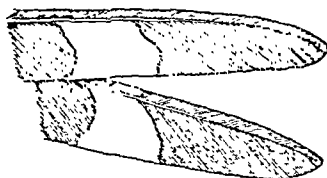
14

CAPRIMULGIFORMES

While a transient on passage, an occasional quick-repeated rather subdued *chuck-chuck-chuck-chuck* etc. of the quality and volume of a House Gecko's call (*Hemidactylus*), but faster (SA).

BREEDING. Season, May to July, principally June. No nest. Eggs, 2, laid on bare ground on the side of a stony hill or ravine, under shelter of a bush; somewhat variable, chiefly white or pinkish white, spotted with black all over the surface, with underlying secondary blotches, scrawls and smears of pale lavender-grey. Unconfusable with eggs of *C. a. monticola* or *C. maharattensis* often found in the same localities. Average size of 44 eggs 29.9 × 21.2 mm (Baker). Share of the sexes in the domestic chores, and incubation period, unrecorded.

MUSEUM DIAGNOSIS. See Key to the Species. Differs from the nominate race of Europe (for description of whose plumages etc. see Witherby, 1938, 2: 254-6) in being slightly paler and greyer. The white marks on the first three primaries of the male extend further, reaching the shaft of the feathers and often extending to the outer web. Female greyer and sandier than in *europaeus*.



1st and 2nd primaries of ♂, × c. 1
 (After Hartert)

Chick (in down). 'Almost completely clothed with down. General colour pale isabelline, paler than in *europaeus*; dark spots on head, wings and thighs black not brown as in *europaeus*' (Tiechurst).

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	172-192	c. 9-10	c. 16-17	(117) 125-144 mm (Baker, SA)

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet fleshy- or reddish brown.

673a. **Egyptian Nightjar.** *Caprimulgus aegyptius arenicolor* Severtzov
 (See Appendix, p. 258)

674. **Sykes's Nightjar.** *Caprimulgus maharattensis* Sykes

Caprimulgus Maharattensis Sykes, 1832, Proc. Zool. Soc. London: 83 (Maharattas [?])
 Baker, FBI No. 1628, Vol. 4: 369
 Plate 55, fig. 3

LOCAL NAMES. *Chhippāk*, *Chhāppa* (all nightjars—Hindi); *Shapter* (Baluchi).

SIZE. Myna ±; length c. 23 cm (9 in.).

FIELD CHARACTERS. As for the Genus, q.v. A small sandy grey semi-desert haunting nightjar, finely vermiculated above with wavy bars of light brown. See Key to the Species.

16

CAPRIMULGIFORMES

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	157-173	c. 18-20	c. 18-22	100-104 mm (Baker, SA)

Weight 1 ♂ 58, 1 ♀ 56 g (BNHS).

COLOURS OF BARE PARTS. Iris dark brown. Bill brown, pinkish at base, gape, and on commissure. Legs and feet pale fleshy brown; claws black.

CAPRIMULGUS MACRURUS Horsfield: LONGTAILED NIGHTJAR

Key to the Subspecies

	Page
Smaller; wing under 190 mm	1
Larger; wing over 190 mm	2
1 Black streaks on crown largely confined to centre	<i>C. m. atripennis</i> 18
Black streaks on crown more widely scattered	<i>C. m. andamanicus</i> 20
2 Upperparts paler	<i>C. m. albonotatus</i> 16
Upperparts darker	<i>C. m. bimaculatus</i> 19

cf. Mees, G. F., 1977, Zool. Verh., No. 155: 1-49

675. *Caprimulgus macrurus albonotatus* Tickell

Caprimulgus Albonotatus Tickell, 1833, Jour. Asiat. Soc. Bengal 2: 580
 (Dampara, Dholbhum, Bengal) [Now in Chaibasa dist., Bihar]

Caprimulgus nepalensis Hartert, 1892, Cat. Bds. Brit. Mus. 16: 540 (ex Hodgson MS., a *nomen nudum* cited in synonymy of *C. albonotatus* by Hodgson, 1844, in Zool. Misc.: 82)

Caprimulgus macrurus hodgsoni Baker, 1930, Fauna Brit. Ind., Bds., ed. 2, 7: 372.
 New name for *Caprimulgus nepalensis* Hartert, not available

Caprimulgus macrurus noctarigilis Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 26 (Bhadwar, Kangra dist., Punjab)
 Baker, FBI Nos. 1623-4, Vol. 4: 364-5
 Plate 55, fig. 9

LOCAL NAMES. *Its kholi* (Assam); *Doo chuck* (Cachari); *Chupla* (all nightjars—Bihar).

SIZE. Pigeon ±; slenderer. Length c. 33 cm (13 in.).

FIELD CHARACTERS. As for the Genus, q.v. A medium-sized brownish buff forest nightjar of remarkably camouflaging plumage. See keys to Species and Subspecies, and Calls.

Female. Similar to male but with tips of outer tail-feathers pale yellowish buff instead of white as in the races *atripennis* and *arguabilis* (676, 677).

STATUS, DISTRIBUTION AND HABITAT. Resident and partially migratory. The Himalayan foothills up to c. 1800 m altitude (locally to c. 2200 m) in summer, and the submontane tract (terai, bhalar, dun, and duar) from Punjab through Himachal Pradesh, Garhwal, Kumaon, Nepal, Sikkim, Bhutan, and NEFA; Assam north and south of Brahmaputra river, and northern Nagaland. Distribution on western side south of sub-Himalayan Punjab (N. Maharashtra etc.) uncertain. Occurs in appropriate

NIGHTJARS, GOATSUCKERS

17

biotope in the Gangetic Plain east through Bihar to W. Bengal and E. Pakistan, Orissa and northern Andhra (in the E. Ghats) south to c. 18°N. lat. (Anantgiri), the population hereabouts being largely intermediate with the southern *atripennis* (676). Affects shady wooded nullahs in sal and moist-deciduous forest.

GENERAL HABITS. Crepuscular and nocturnal. Normally keeps singly or in pairs, squatting in daytime amongst dry leaves and debris in a shady nullah; astonishingly camouflaged in such surroundings. Occasionally a dozen or more birds may be flushed from a favourite spot, or be seen hawking in a rabble at dusk, like swallows, over a forest glade or clearing. Perches freely on trees, across a twig as well as lengthwise along a thicker bough, commonly calling from such positions or from the tip of a bare upright stem, silhouetted against the moonlit sky. Habitually squats in the middle of paths and forest roads, flying up and sailing around every now and again to hawk over the adjacent clearings in agile zigzag aerobatics, and sailing back to the same spot after each sortie. Sometimes even hovers in the air momentarily, and is capable of shuffling rapidly on the ground for a few paces when occasion demands. Rises abruptly from almost under an observer's foot, flying with silent wing flaps in front and squatting in his path again a short way ahead; will often do this repeatedly as the stroller advances. The eyes of the squatting bird gleam crimson-pink in the headlights of an oncoming car; it is expert at dodging clear in the nick of time by swift flop-flap turns and twists on the wing, but occasionally comes to grief.

FOOD. Moths, beetles, and other dusk- and night-flying insects. Among stomach contents the following specifically identified: *Catharsius sabatus*, *Oritis philemon*, *Orthopagus bonus*, *Apogonia carinata*, *Asyrus lateralis*, *Torymecus* sp., *Vespa orientalis*, *Opatrum* sp., coprid and carabid beetles, and hemipteran bugs (Mason & Lefroy, 1912).

VOICE AND CALLS. A distinctive, loud and resonant *chaunk*, *chaunk*, *chaunk*, *chaunk*, etc. reminiscent in the distance of heavy blows of a hammer or adze on a wooden plank; uttered from ground or tree. The calls are prefaced by hoarse croaks like a bullfrog's (*Rana tigrina*), the initial runs being of 2 to 4 quickly repeated *chaunks*, as if the bird was tuning up. The calling soon settles down to sustained runs of 50 *chaunks* or more each at the rate of about 5 *chaunks* in 4 seconds. With brief pauses, it is kept up almost incessantly from soon after dusk to dawn, the birds being particularly noisy during the breeding season.

BREEDING. Season, principally March to May. No nest built. Eggs, normally 2, laid in a scrubby nullah on the bare ground or a few dry leaves scraped together: pale creamy to deep rich salmon-buff, speckled and spotted with ashy grey and dull reddish brown. Average size c. 32 × 23 mm. Both sexes share in incubation; period undetermined.

MUSEUM DIAGNOSIS. See keys to the Species and Subspecies. In freshly killed birds three white or whitish bands on upperside of wing formed by the tips of greater, median, and longest lesser coverts conspicuous; in museum skins where wing cannot be pulled open, these less prominent.

Young (described from a juv. ♂, Nepal). Throat rufous; bars on abdomen and vent finer; tips of outer tail-feathers white on inner web and rufous on outer; spots on the primaries rufous (Binwas).

NIGHTJARS

19

YOUNG (immature) like female but with primaries much more barred with rufous, the notches and bars almost entirely disappearing in old birds.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	168-189	20-24	16-19	121-133 mm (SA, HW, Koelz)

Weight 1 ♂ 74 g (SA).

COLOURS OF BARE PARTS. Iris brown; fine circumorbital ring yellow. Bill horny brown, yellowish on commissure and gape. Feet pinkish brown; claws pale horny brown.

678. *Caprimulgus macrurus bimaculatus* Peale

Caprimulgus bimaculatus Peale, 1848, U. S. Expl. Exped. 8: 170 (Singapore)
Caprimulgus macrurus ambiguus Hartert, 1896, Ibis: 373 (Malay Peninsula, Burma, Assam, and the eastern Himalayas. Restricted to southern Tenasserim by Kloss, 1918, Ibis: 95-6)

Caprimulgus macrurus silvanus Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 26 (Kohima, Naga Hills)
Baker, FBI No. 1621 (part), Vol. 4: 363

LOCAL NAMES. None recorded.

SIZE. Pigeon ±; slenderer. Length c. 33 cm (13 in.).

FIELD CHARACTERS. As for the Genus and 675, q.v. See Keys and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Southern Nagaland, Manipur, Mizo, and possibly the Chittagong Hill Tracts in E. Pakistan; from the foothills to c. 2400 m. Affects secondary scrub jungle, bamboo forest and open semi-cultivation.

18

CAPRIMULGIFORMES

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	207-228	20-24	19-21	146-179 mm (HW, SA, BB)

COLOURS OF BARE PARTS. Iris brown. Bill dark brown at tip, fleshy brown to reddish on base, commissure, and gape. Feet reddish to purplish brown; soles pinkish flesh.

676, 677. *Caprimulgus macrurus atripennis* Jerdon

Caprimulgus atripennis Jerdon, 1845, Ill. Ind. Orn., pl. 24

(Eastern Ghats to west of Nellore)

Caprimulgus macrurus aequabilis Ripley, 1915 Bull. Brit. Orn. Cl. 65: 40

(Trincomalee, NE. Ceylon)

Baker, FBI No. 1620, Vol. 4: 351

LOCAL NAMES. All nightjars: *Ashapprigadu* (Telugu); *Pādūkai kūrūci*, *Pādūngi* (Tamil); *Rā kili*, *Pā chawkan* (Malayalam).

SIZE. Pigeon —; slenderer. Length c. 28 cm (11 in.).

FIELD CHARACTERS. As for the Genus and 675, q.v. See Keys and Museum Diagnosis.

Female has tips of outer tail-feathers white as in male (contrast *albionotus*, q.v.).

STATUS, DISTRIBUTION AND HABITAT. Resident. Peninsular India (S. Maharashtra, Andhra, Mysore, Tamil Nadu, Kerala) roughly south of lat. 18°N., the northern and southern populations grading into one another. Affects evergreen and moist-deciduous biotope — partial to shady nullahs in mixed bamboo forest and secondary scrub jungle; chiefly foothills and up to c. 2000 m.

GENERAL HABITS AND FOOD. As in 675, q.v.

VOICE AND CALLS. A loud liquid chuckling *Avoo* or *Averoo* repeated every 2 seconds or so in runs of 15 minutes plus, throughout moonlit nights (SA). Rendered by Henry (in Sri Lanka) as 'a curious *grog*, *grogrog*' and the 'song' as 'a loud coughing bark *quaffrr* . . . *quaffrr* (!) repeated at intervals throughout the night, especially in moonlight'.

BREEDING. Season, overall March to July; mainly March and April. In Sri Lanka February to May, chiefly April, with a secondary season in August-September. Eggs, 2 typical of the nightjars' broad ellipse. Cream or pale salmon-coloured ('pale coffee' — Betts) boldly blotched and spotted with black. Laid on bare ground in a scrub-covered nullah. Size c. 30 × 22 mm (Baker). Both sexes incubate; period undetermined. Chick (clad in cinnamon down) capable of crawling away and hiding under leaves on alarm almost from the time of hatching.

MUSEUM DIAGNOSIS. See Keys; for details of plumage, Baker loc. cit.

20

CAPRIMULGIFORMES

Extralimital. Burma and southern Yunnan, south to Tenasserim, Thailand and the Indochinese countries.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 675 and other races, q.v. 'A chuckle resembling *Orch* . . . *orch*, *orch*, *orch* often precedes the usual *chaunking* call; another resembling *chock-a-chock* frequently uttered on the wing' (H. C. Smith, Burma).

BREEDING. Season, February to April, mainly March. Eggs, 2, normally pale yellowish creamy to warm pinkish buff, faintly blotched with lavender-grey or reddish grey. Average size of 60 eggs 31.3 × 22.6 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies. Size as in *albionotus* (675), but very dark in overall tone. Doubtfully distinct from *C. m. bimaculatus* of Malay Peninsula, Sumatra, etc.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	195-223	c. 9-10	c. 19-20	168-181 mm (Baker)

COLOURS OF BARE PARTS. As in 675.

679. *Caprimulgus macrurus andamanicus* Hume

Caprimulgus andamanicus Anonymous = Hume, 1873, Stray Feathers 1: 470
(Jolly Boys Island, Andaman Islands)
Baker, FBI No. 1622, Vol. 4: 363

LOCAL NAMES. None recorded.

SIZE. Pigeon —; slenderer. Length c. 28 cm (11 in.).

FIELD CHARACTERS. As for the Genus and 675, q.v. See Keys and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; common in Middle and South Andaman Is. Apparently not yet recorded south of Macpherson Strait.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 675 and other races, q.v. Roosts during daytime among leaves on the forest floor, flitting out at dusk to hawk over mangrove swamps (Abdulali, 1964, JBNHS 61: 536).

BREEDING. Season, chiefly March-April. Eggs, 2, yellowish buff to deep salmon, blotched and spotted with blackish. Average size of 32 eggs 28.8 × 21.9 mm (Baker). Incubation by both sexes. 'Brooding bird when disturbed flew a few yards and kept moving about, raising wings and opening mouth' (Osmaston). If eggs removed, lays a second time within a yard or two of the same spot in 3 or 4 weeks, but not a third time (P. F. Wickham).

MUSEUM DIAGNOSIS. See Key to the Subspecies. Very similar to *peninsular atripennis* (676) but with the longitudinal black spots on crown more widely scattered and not confined to the centre. Pale markings on the wings usually more rufous.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	172-186	c. 10-11	16-17	125-130 mm (Baker)

NIGHTJARS

21

COLOURS OF BARE PARTS. As in 676.

CAPRIMULGUS ASIATICUS Latham: INDIAN LITTLE NIGHTJAR

Key to the Subspecies

- Larger: wing c. 138 to 158 mm, tail c. 96 to 119 mm.....
C. a. asiaticus
 Smaller: wing c. 132 to 148 mm, tail c. 95 to 113 mm..C. a. eidos

680. *Caprimulgus asiaticus asiaticus* Latham

Caprimulgus asiaticus Latham, 1790, Index Orn. 2: 588 (India = Bombay)
Caprimulgus asiaticus gurgaoni Koelz, 1939, Proc. Biol. Soc. Washington 52: 80
 (Hattin, Gurgaon, Punjab [= Haryana])
 Baker, FBI No. 1630, Vol. 4: 372
 Plate 55, fig. 8

LOCAL NAMES. As for other nightjars generally, qq.v. *Chāpta* (Hindī); *Dāhi chāpta* (Gujarati).

SIZE. Myna ±; length c. 24 cm (9½ in.).

FIELD CHARACTERS. As for the Genus, q.v. A small-sized nightjar, narrowly but distinctly black-streaked above. Sexes alike. See Call; also Keys and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. The most abundant and widely diffused nightjar of our area. West Pakistan (Sind, Punjab, Waziristan) and the entire Indian Union south of the Himalayan submontane belt (Nepal terai, Sikkim and Bhutan duars?) throughout the Peninsula south to Kanyakumari and Rameswaram I., east to Assam (N. Cachar) and East Pakistan (Comilla). A specimen collected at Mipi in the Dibang Valley (c. 1500 m alt.), SE. Tibet, on 13.v.1913 by F. M. Bailey (JBNS 24: 76). Mainly resident;

seasonal visitor to some parts. Local movements not yet worked out, the absence of calling during non-breeding season adding to the difficulties of investigation. Largely restricted to dry deciduous biotope; plains and hummocky foothills country; locally up to c. 1500 m in the outer Himalayas and peninsular hill ranges. Affects thin scrub jungle and fallow land with euphorbia hedges and thickets, and stony nullahs — usually in the neighbourhood of cultivation. Young forest plantations (teak etc.), and rambling jungly gardens in rural localities, are also favourite haunts.

Extralimital. Plains of Burma, southern Thailand, and southern Indo-chinese countries.

GENERAL HABITS. As of other nightjars, qq.v. Crepuscular and nocturnal; keeping in pairs or loose family parties, emerging from daytime retreat at



x c. 1

NIGHTJARS

23

681. *Caprimulgus asiaticus eidos* Peters

Caprimulgus asiaticus eidos Peters, 1940, Checklist of Birds of the World, 4: 211. New name for *Caprimulgus asiaticus minor* Parrot, 1907, Orn. Monatsb. 15: 170 (Vavuniya, Northern Ceylon). Nec *Caprimulgus minor* J. R. Forster Baker, FBI No. 1630 (part), Vol. 4: 372

LOCAL NAMES. All nightjars: *Bā bassā* (Sinhala); *Pādūkāi kūrci*, *Kuruttu pākshi* (Tamil).

SIZE. Myna ±; length c. 24 cm (9½ in.).

FIELD CHARACTERS. As for the Genus q.v., and 680. See Key to the Subspecies.

STATUS, DISTRIBUTION and HABITAT. Doubtfully distinct from South Indian birds of the nominate race. 'Resident. Common and widely distributed in suitable scrub country throughout the Dry zone, but not so plentiful in the Wet zone. Ascends the hills to about 3000 ft (c. 1000 m) in some districts' (Phillips).

GENERAL HABITS, FOOD, VOICE and CALLS. As in 680, q.v.

BREEDING. Season, January to October, but chiefly March to May, and again in September (Phillips). Eggs, 2, as in 680; size c. 27 × 20 mm.

MUSEUM DIAGNOSIS. Differs from south Indian birds only in smaller size; doubtfully also in tint of upperparts which seem somewhat darker and browner and colder in tone. But race perhaps redundant.

MEASUREMENTS			
	Wing	Bill (from skull)	Tarsus
♂ ♀	132-148	18-19	18-22
			95-113 mm (HW)

COLOURS OF BARE PARTS. As in 680.

682. Franklin's, or Allied, Nightjar. *Caprimulgus affinis monticola* Franklin

Caprimulgus monticolus Franklin, 1831, Proc. Zool. Soc. London: 116
 (Ganges between Calcutta and Benares)
Caprimulgus monticolus burmanicus Baker, 1931, Bull. Brit. Orn. Cl. 51: 102
 (Upper Chindwin, Burma)
 Baker, FBI No. 1629, Vol. 4: 370
 Plate 55, fig. 7

LOCAL NAMES. For all nightjars: *Chhippāh*, *Chhāpta*, *Dāchiri* (Hindī); *Torā* (Lepcha).

SIZE. Myna ±; length c. 25 cm (c. 10 in.).

FIELD CHARACTERS. As for the Genus, q.v. See Key to the Species and Museum Diagnosis. When squatted, a buff-coloured V extending roughly from shoulders to half-way down back is conspicuous.

Female has no white on tail-feathers which are all barred throughout; spots in the middle of first four primaries rufous-buff *centra* white in male.

STATUS, DISTRIBUTION and HABITAT. Common and widely diffused, but rather local. The submontane Himalayas (terai, bhabar, duns, and duars) from W. Pakistan and Punjab eastward to Assam (including Nepal, Sikkim, and Bhutan), normally up to c. 1200 m alt. (Garhwal etc.), exceptionally

22

CAPRIMULGIFORMES

dusk, squatting in the middle of dusty cross-country roads or on milestones, fence posts and the like, and calling. Habitually squats in the middle of cart tracks and kutcha motor roads for dusting or as hunting bases.

FOOD. Moths (Heterocera), beetles (Coleoptera), bugs (Hemiptera) and other dusk-flying insects. Specifically recorded among stomach contents are dung beetles (*Onthophagus* spp.), water beetles (Dysticidae), and crickets (*Gryllus* spp.).

VOICE and CALLS. A familiar, rather ventriloquistic *chuck-chuck-chuck-r-r-r* usually uttered from some elevated perch such as a stake or stone. To those acquainted with icy conditions, call aptly reminiscent of a stone skipping along a frozen pond as in the game known as 'ducks and drakes'. Repeated monotonously with short breaks for hours on end, most vigorously after dusk and at early dawn, especially during the breeding season when two birds or more in the distance will frequently answer one another. Also particularly vocal during moonlight nights. While calling the whole bird 'vibrates' from head to tail. A low chuckle — *chūk-chūk* — during the silent (non-breeding) period, chiefly on the wing.

BREEDING. Season not well defined; chiefly between February and September, the peak periods variable locally. No nest built. Eggs, 2, laid on the bare ground in thin bamboo jungle or open scrub country — even in jungly compounds in mofussil towns; long cylindrical ovals, normally cream coloured or pale pink to salmon, spotted and blotched with reddish brown and inky purple. Average size of 100 eggs 26.5 × 19.9 mm (Baker). Evidently both sexes share incubation; period undetermined.

MUSEUM DIAGNOSIS. See Keys; for details of plumage Baker, loc. cit.

As noted by Whistler (JBNS 38: 38) there are at least three distinct colour phases — pale sandy, brown, and grey — apparently adapted ecologically, the pale sandy birds coming mostly from the north-west, the grey birds mostly from the Deccan, and the brown birds from other localities. The phases grade into each other, and there are so many exceptions besides that attributing subspecific significance to them is dubious. (Cf. Koelz's *C. a. gurgaoni* from the Punjab described by its author as 'very much paler throughout' than S. Indian birds.)

MEASUREMENTS			
	Wing	Bill (from skull)	Tarsus
♂ ♀	138-158	17-19	c. 20-22
			96-119 mm (Baker, HW, SA)

Weight 1 ♂ 46, 1 ♀ 42 g (SA).

COLOURS OF BARE PARTS. Iris brown; fine circumorbital ring yellow. Bill horny brown, yellowish on commissure and gape. Legs and feet pinkish brown; claws pale horny brown.



Left foot, x c. 1

24

CAPRIMULGIFORMES

c. 1800 to 2400 (Simla hills — Jones, JBNS 29: 286); also Assam south of Brahmaputra river, Nagaland, Manipur, Mizo and E. Pakistan. South through Rajasthan, Kutch, Saurashtra and Gujarat, eastward and southward throughout the peninsula to Bengal and Kerala. Mainly resident; described in many parts as summer visitor (April to July) or passage migrant (sometimes loose flocks of 7 or 8); thus in Rajasthan (Mt Abu), Punjab (Salt Range and Ambala dist.), Delhi State, Madhya Pradesh (Mhow neighbourhood), U.P. (Ghazipur dist.) and other localities. But local movements unclear, the absence of ringing data and of the bird's diagnostic calls during non-breeding season adding to the uncertainties. Affects bare, sparsely scrubbed hillsides cut up by nullahs with thorn scrub and stunted trees, and dry stony stream-beds interspersed with outcoursed aits covered with pampas grass and thorny bushes. Also light deciduous forest and grassland with outcrops of sheet rock here and there, and thin jungle in the neighbourhood of cultivation.

Extralimital. Burma, Thailand.

GENERAL HABITS and FOOD. Not significantly different from 670, 675, and other nightjars, qq.v. Crepuscular and nocturnal. Drinks regularly at forest pools on emergence from daytime retreat at sundown, flying over the water and dipping down to it like a swallow. Possibly water also conveyed to downy young by wetting underplumage in this way. Appears at dusk and flies high, sailing up and down over forest, cultivation, and dry water-courses, occasionally alighting on a tree-top or squatting on the ground.

VOICE and CALLS. Distinctive and diagnostic: a loud, sharp and penetrating single note *sceesh* (rendered also as *choo-ee* or *chees*) reminiscent of the sound of a whiplash cutting the air. Uttered at intervals of 4 or 5 seconds off and on all through the night from a perch as well as on the wing. The calls commence even before dark and often continue till after dawn in the breeding season; the birds particularly vocal on moonlight nights. A low chuckle when flushed during daytime. Another call, not heard by us or recorded by other observers, has been described by a reliable Madhya Pradesh ornithologist (E. A. D'Abreu, JBNS 28: 806) as *wakh*, *wakh*, *wakh wakh*, apparently uttered in the breeding season. This call needs verification.

BREEDING. Season, overall March to August, chiefly March, April and May but the peak periods vary with locality. No nest built. Eggs, 2, laid on the bare ground in the shelter of a grass tuft in dry watercourses or scanty deciduous forest, and in similar locations: pale salmon pink to rich deep salmon, spotted and blotched with deep red and red-brown, with underlying marks of lavender-pink. Average size of 40 eggs 30.2 × 22.1 mm (Baker). Both sexes share incubation; period undetermined.

MUSEUM DIAGNOSIS. See Key; for details of plumage Baker, loc. cit.

Chick (in down). Pinkish brown (H. W. Waite).

MEASUREMENTS			
	Wing	Bill (from skull)	Tarsus
17 ♂♂	181-205	19-20	18-21
23 ♀♀	179-202		
			108-124 mm (HW, SA, BB)

SWIFTS

25

COLOURS OF BARE PARTS. Iris dark brown; fine circumorbital ring dull yellow. Bill brownish black, paler at gape; mouth greyish pink. Legs and feet fleshy brown; claws black.

Order APODIFORMES

For morphology and characters see Stresemann, E., 1927-1934, *Aves*: 834-9 (Macrochires); Witherby *et al.*, 1938, 2: 242; Baker, 1927, 4: 322 (Suborder Cypseli); Van Tyne, J. & Berger, A. J., 1959: 465.

See also David Lack, 1956, 'A Review of the Genera and Nesting Habits of Swifts.' *Auk* 73: 1-32; and 1964: Article 'Swift' in Thomson, A. L. (ed.), *New Dict. Birds*, London & New York.

Family APODIDAE

Key to the Subfamilies

Wings extending beyond tail.....	Apodinae	Page 25
Wings not extending beyond tail.....	Hemiprocinae	58

Subfamily APODINAE: Swifts

Key to the Genera

A Shafts of tail-feathers spiny.....	<i>Chaetura</i>	33
B Shafts of tail-feathers not spiny		
1 Anterior toes with three phalanges each		
a All four toes directed forward, though first reversible.....	<i>Apus</i>	38
b Toes arranged in pairs, third and fourth outward, first and second (inner and hind) inward. Tail long and deeply forked.....	<i>Cypsiurus</i>	56
2 Second toe with 3, third toe with 4 and fourth toe with 5 phalanges	<i>Collocalia</i>	25

Genus COLLOCALIA G. R. Gray

Collocalia G. R. Gray, 1840, List Gen. Bds.: 8. Type, by original designation, *Hirundo esculenta* Linnaeus

For characters see Key (above). The genus contains the so-called 'Edible-nest Swiftlets' which build nests of inspissated saliva from the sublingual salivary glands which undergo a remarkable development during the nest-building season. The 'white' nests of certain species, which look like isinglass, are highly relished by the Chinese as an epicurean delicacy. As an article of commerce the best-quality ones fetch several times their weight in silver in eastern markets.

Many of the species and subspecies are very similar superficially and difficult to identify from museum skins alone. The group has been subjected to a succession of controversial taxonomical revisions and reshuffling adding in no small measure to the confusion and uncertainty in the prevailing and old published records. However, each species is believed to build a characteristic nest, and where more than one species inhabit the same cave it is claimed to be possible to differentiate them satisfactorily by the nests. See 'The Identification of Malaysian spp. of Swiftlets, *Collocalia*' by R. W. Sims (1961, *Ibis* 103a: 205-10) and 'The Identity of *Collocalia fusciphaea* (Thunberg)' by Lord Medway (1961, *ibid.*: 625-6); also 'Field characters

SWIFTS

27

insects high up over river valleys, defiles, etc. often in company with House Martins and other swifts. As characteristic of this genus the flight, which is rather slow for a swift, is punctuated from time to time by interludes of a pipistrelle-like fluttering. Roosts in enormous 'clusters', clinging like pipistrelles to the rough rock face inside caves and grottoes, or to old nests or their stubs, in a vertical position, head upwards. Din made by roosting birds also very reminiscent of the soft screeching of a colony of these small bats. The birds leave the roost well before dawn, often wandering considerable distances in the course of the day's foraging and making erratic appearances in far-flung areas. They do not return to the cave till well after dusk, except during the breeding season when rabbits constantly fly in and out all day long. The ease and suddenness with which the birds are evidently able to adapt their vision to the pitch-dark interior of a cave as they drop vertically from aloft and shoot in through a narrow fissure from the brilliant sunshine outside and find their way through dark caverns to their own nest among the hundreds of others, cheek by jowl, is quite astonishing, but this is no doubt largely effected by echo-location.

FOOD. Mainly dipterous and hymenopterous insects captured in the air. Drinks from surface of a pool by flying down to it at a tangent.

VOICE AND CALLS. Apart from the conversational twittering *chit-chit* uttered at roost, has a low rattle-like call as of a knitting needle drawn across a few teeth of a wooden comb. It is this rattle-like call that serves in echo-location in dark caves (Medway).

BREEDING. Season, April to June. *Nest*, a tiny, unlined cup of agglutinated moss with the rim slightly sloping down from the vertical rock-wall to which it is attached like a bracket with the bird's inspissated saliva. Built in colonies close to and often touching one another, haphazard and in rows in angle of ceiling, not clustered together in 'villages' (cf. House Swift), the nests pock-marking large areas of the rock face or ceiling within dark grottoes. Diameter of cup c. 6 cm, depth inside c. 2 cm, with a slightly tapering pedestal below, c. 5 cm thick. The side of the nest adhering to the wall projects upwards giving increased purchase. (For a very good account of a nesting cave in Chakrata dist., U.P. see E. A. Glennie, 1944, JBNHS 44: 593-7.) *Eggs*, 2, white, ellipsoid, narrowing slightly at one end. Average size of 8 eggs 21.8 × 14.6 mm (Baker). Share of the sexes in incubation, and period, undetermined.

Copulation, as in some other swifts (cf. Alpine Swift), has been observed in the air, as well as at nest.

MUSEUM DIAGNOSIS. See Key to the Species. Differs from S. Indian *C. unicolor* in being somewhat larger, darker and glossier on upperparts, and with paler rump.

MEASUREMENTS	Bill	Tarsus	Tail
Wing	(from skull)		central outer
♂ ♀ 120-133 ¹	8-9	[c. 8]	45-48 54-59 mm. (HW)

Wing 128-133, depth of tail fork 8-10 mm — Sims.

Weight (September) 2 ♂ 12.5, 13 g; 1 ♀ 12 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet brownish fleshy.

¹ In the great majority over 125 mm (Medway).

26

APODIFORMES

as a guide to the specific relations of swiftlets' by Lord Medway (1966, *Proc. Linn. Soc. London* 177 (2): 151-72).

For an admirable study of the ecology and breeding biology of certain *Collocalia* swiftlets in Sarawak see Lord Medway, 1962, *Ibis* 104: 45-66, 228-45.

Key to the Species

A Upperparts metallic blue-black; abdomen white; wing under 107 mm	<i>C. esculenta</i>	Page 32
B Upper plumage sooty brown; abdomen concolorous		
a Wing mostly over 125 mm; tarsus more or less feathered		
1 Tips of downy bases of mantle and rump feathers white; depth of tail fork 8-10 mm; tarsus sparsely feathered.....	<i>C. brevirostris</i>	26
2 Tips of downy bases of mantle and rump feathers mainly black; traces of white at top of downy area; tail almost square (depth of fork 2-3 mm); tarsus thickly feathered.....	<i>C. maxima</i>	23
b Wing mostly under 123 mm; tarsus bare; tips of downy bases of mantle and rump feathers white		
3 Rump concolorous with back; wing mostly under 115 mm.....	<i>C. unicolor</i>	29
4 Rump paler than back; wing mostly over 115 mm..	<i>C. fusciphaea</i>	31

COLLOCALIA BREVIROSTRIS (Horsfield): HIMALAYAN SWIFTLET

Key to the Subspecies

Smaller; wing c. 120-133 mm, mostly over 125 mm	<i>C. b. brevirostris</i>
Larger; wing c. 132-141 mm.....	<i>C. b. innominata</i>

683. *Collocalia brevirostris brevirostris* (Horsfield)

Hirundo brevirostris Horsfield, 1840, *Proc. Zool. Soc. London*: 155 (Assam) Baker, FBI No. 1609, Vol. 4: 348

Plate 56, fig. 2

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. A small, slender, slightly fork-tailed brown swift with narrow but rather swallow-like wings. *Above*, dark brown with a noticeably paler rump; *below*, uniformly greyish brown. Sexes alike. Usually distinguishable in the air from other swifts as a *Collocalia* by the occasional interludes of a seemingly laboured pipistrelle-like fluttering while in normal hawking flight.

STATUS, DISTRIBUTION AND HABITAT. Resident. The Himalayas from about 76°E. long. in Himachal Pradesh (Kangra, Dalhousie) eastward through Nepal, Sikkim and Bhutan to NEFA; also Assam hills north and south of Brahmaputra river, Nagaland, Manipur, Mizo, and E. Pakistan hills (?). From the foothills to c. 3600 m altitude.

Extralimital. Burma, Thailand.

GENERAL HABITS. Gregarious; living in large colonies in dark underground limestone caves, spending most of the day on the wing hawking

28

APODIFORMES

684. *Collocalia brevirostris innominata* Hume

Collocalia innominata Hume, 1873, *Stray Feathers* 1: 294 (Andaman Islands; type from Port Mout, S. Andaman I.)

Collocalia inopina Thayer & Bangs, 1909, *Bull. Mus. Comp. Zool.* 52: 139 (Maifuling, 5000 ft, Hupeh, China)

Collocalia fusciphaea [sic] *capitis* Thayer & Bangs, 1909, *Bull. Mus. Comp. Zool.* 52: 139 (Hupeh Prov., China) Baker, FBI No. 1610, Vol. 4: 349

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5¼ in.).

FIELD CHARACTERS. As for 683, q.v. Not distinguishable from it in the field, and only with difficulty in the hand. See Museum Diagnosis. Could be confused with Palm Swift (708) but is slightly larger and with a noticeable grey band across rump.

STATUS, DISTRIBUTION AND HABITAT. Probably a winter straggler to the Andaman Is., the type, collected at Port Mout in S. Andaman, being the only definite record. Observed on Narcondam (lat. 13°26'N.) and 'they probably breed in the caves along the south coast of the island' (Osmaston, 1905, JBNHS 16: 621).

Extralimital. Central China (Hupeh Prov.), SW. Thailand, Malay Peninsula, Sumatra, but subspecies equivocal (see Medway, 1966: 163).

GENERAL HABITS, FOOD. Presumably as in 683.

VOICE AND CALLS. Unrecorded.

BREEDING. *Extralimital.* Nests 'black', of agglutinated moss etc. as in 683 and likewise inedible.

MUSEUM DIAGNOSIS. *Above* blackish brown, the crown and nape still darker, sometimes forming a distinct cap; rump usually paler and more grey with dark shaft-stripes. *Below*, greyish brown, the feathers with darker shaft-stripes.

MEASUREMENTS	Wing	Bill	Tarsus	Tail
		(from feathers)		
♂ ♀ 125-132		c. 4	c. 8	52-55 mm (Baker)
Tail fork slight, 3-7 mm				
Wing 132-141; depth of tail fork 8-10 mm — Sims!				

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet brownish black.

684a. *Indomalayan* or 'Black-nest' Swiftlet. *Collocalia maxima maxima*¹ Hume

Collocalia maxima Hume, 1878, *Stray Feathers* 6: 49 (Tenasserim) Baker, FBI No. 1609, Vol. 4: 348 (*C. b. brevirostris*)

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As for *brevirostris* (683), q.v. Practically indistinguishable from it in the field, but slightly heavier build, proportionately broader wings and less forked tail suggestive. See Museum Diagnosis.

¹ Formerly *Collocalia leucorhynchos* Stresemann.

SWIFTS

29

STATUS, DISTRIBUTION and HABITAT. Eastern Bhutan and NEFA (?). Specimens (in British Museum) collected by F. Ludlow between c. 2100 and 3900 m alt.

Extralimital. East to Thailand, Vietnam, Malaya, Sumatra, Java, and Borneo.

GENERAL HABITS, FOOD, VOICE and CALLS. Not specifically recorded. Doubtless as in 683, by and large. Utters the rattle call for echo-location (Medway).

BREEDING. Data for our area lacking, but in Malaysia known to build 'black' nests, i.e. with an admixture of feathers in the cup of hardened white saliva, fixed to a cave wall.

MUSEUM DIAGNOSIS. Distinguishable from *C. b. brevirostris* (683) by proportionately broader wing, less deeply forked tail, and a thickly, *contra* sparingly, feathered tarsus.

MEASUREMENTS

	Wing	Tail
7 ♂♀	128-135	50-58 mm; furcation 11-15 per cent against 15-20 per cent in <i>brevirostris</i> (Medway, 1961, JBNHS 59: 149)

COLOURS OF BARE PARTS. As in 683.

685. Indian Edible-nest Swiftlet. *Collocalia unicolor* (Jerdon)

Hirundo unicolor Jerdon, 1840, Madras Jour. Lit. Sci. 11: 238 (Coonoor Pass)
Baker, FBI No. 1608, Vol. 4: 346

Plate 56, fig. 8

LOCAL NAMES. *Wihhi lhinija* (Sinhala); *Kudukarya* (Veddah); *Sārāpākshi* (Malayalam).

SIZE. Sparrow—; length c. 12 cm (4½ in.).

FIELD CHARACTERS. A tiny slender blackish brown swift with a slightly forked tail and the same peculiar rapidly-flapping pipistrelle-like flight as 683, q.v. Sexes alike. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. The coastal and Western Ghats strip from about Ratnagiri (c. 16°N. lat.) in S. Konkan (Maharashtra) southward through Goa, W. Mysore, W. Tamil Nadu, and Kerala, including the Nilgiri, Palni, Brahmagiri and associated hill ranges, and rocky offshore islets with natural caves and grottoes; from sea level to c. 2200 m altitude. Abundant also throughout Ceylon. Wandering over a considerable radius from its roosting and nesting caves during the day's foraging, making erratic appearances in distant localities.

GENERAL HABITS. As of 683, q.v. Huge colonies inhabit natural caves and grottoes in the cliffs of hills of the Western Ghats complex, and rocky islets on the Malabar coast. Swarms of the birds arrive in the gathering dusk, dropping from the sky like flurries of falling leaves and shooting in through the narrow fissures and 'skylights' leading into the underground caverns, with remarkable adroitness. They leave again in the darkness of early dawn announced only by the rush of wings, like waves on a sandy beach, as if to make way for the daytime occupants of the caves, the bats, just then returning from their nocturnal foraging.

SWIFTS

31

MISCELLANEOUS. Till about the turn of the century the right to collect the nests of this swiftlet for export to China was auctioned by the Government of Bombay, but the business was never considerable. From about Rs 200 to 250 per year around 1865, the realized fee dwindled to only Rs 41 in 1895. Thereafter the business appears to have faded out largely owing to decreasing returns, perhaps as a result of over-exploitation of the colonies, and the disproportionate risks and organization involved in collecting the nests. The main localities which supplied the nests were Vengurla Rocks (or Burnt Islands) off the Malvan coast (Maharashtra), and Pigeon Island (also known as Netrani or Nitrān) off the coast of North Kanara (now in Mysore).

686. Andaman Grey-rumped or 'White-nest' Swiftlet. *Collocalia fuciphaga inexpectata* Hume

Collocalia inexpectata Hume, 1873, Stray Feathers 1: 296, in text (Andaman Islands)
Baker, FBI No. 1612, Vol. 4: 350

LOCAL NAMES. None recorded.

SIZE. Sparrow—; length c. 12 cm (4½ in.).

FIELD CHARACTERS. As of 685, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident and common in the Andaman Islands; evidently less so in the Nicobars. Colonies nesting in rock-caves by the shore on South Buton, Neill, Chiriyā Tapu, S. Cinque and other islands. Also observed on Car Nicobar.

GENERAL HABITS. As in 683 and other swiftlets. Hawks all day over mangroves, rubber plantations, forest, and cultivation.

FOOD, VOICE and CALLS. Not specifically recorded.

BREEDING. *Season*, chiefly March and April. *Nest*, white, opaque and translucent, of clear inspissated saliva with little or no admixture of extraneous matter; thus of the best edible and commercial quality. More or less half-cup shaped, c. 6 cm across × 1.5 cm deep; attached bracketwise or close to one another to the rock wall in sea caves, in small colonies of a few nests to large ones of several hundred. Weight of each nest c. 14 g. Eggs, 2, white, long ovals with little or no gloss (Osmaston, 1906, JBNHS 17: 486). Average size of 48 eggs 20.2 × 13.6 mm (Baker). Incubation period and other details of breeding biology unrecorded.

MUSEUM DIAGNOSIS. *Above*, blackish brown, darkest on crown, wings, and tail. A paler but ill-defined (sometimes obsolete) rump-band. *Below*, pale greyish brown, the feathers often dark-shafted.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	113-121	c. 4-5	c. 9	49-53 mm (Baker, HA)

Depth of tail fork 6-8 mm (Sims).

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet dark brown.

MISCELLANEOUS. High medicinal, dietetic and tonic (also aphrodisiac) properties are ascribed to the nests by the Chinese. Analysis by C. J. House showed the clear saliva nests ('white' nests) to be highly nitrogenous

30

APODIFORMES

FOOD. Chiefly dipterous, hemipterous and hymenopterous insects. About 80 per cent of the stomach contents of four examples taken in the roosting cave on Vengurla Rocks in February comprised two species of the harmful jassid 'mango-hopper' (*Idiocerus nicosparus* and *I. atkinsoni*) obviously captured over the renowned mango orchards of Ratnagiri dist. on the opposite mainland. The rest of the food items included representatives of Hemiptera, Coleoptera, Odonata, Hymenoptera, Diptera and Trichoptera. (For a fuller list see Abdulali, 1942, JBNHS 43: 450.) In Ceylon, observed hawking insects at lights (over club house) and feeding its nestlings far into the night (E. Kershaw, June 1967, Ceylon Bird Club Newsletter).

VOICE and CALLS. As in 683, q.v. All through the night the roosting birds keep up a feeble but shrill clicking or twittering *chit-chit*, with distinct livelier choruses intermittently. 'Very harsh call-note, reminiscent of the Whiskered Tern' (R. S. P. Bates, MS.).

BREEDING. *Season*, chiefly March to June in South India; March to September in Ceylon. *Nest*, as in 683 but whitish and less mixed with extraneous matter such as grass, moss, and feathers, the attachment practically of pure coagulated saliva; thus of some gastronomic and commercial value. Often hundreds of nests clustered densely, 5 to 10 cm from one another in patches on the rock-wall or ceiling of dark grottoes. 'They look at a distance exactly like deep oyster shells with one side flattened, the saliva where it is smoothed down having a pearly appearance' (Vidal, 1881, SF 9: 44-8, q.v. for other details). The nests usually swarm with bugs, identified from the Vengurla colony as the Bed Bug, *Cimex rotundatus*. Eggs, 2, white, long blunt ovals. Average size of 80 eggs 20.9 × 13.5 mm (Baker).

MUSEUM DIAGNOSIS. Almost identical in coloration with Himalayan *C. b. brevirostris*, only a shade paler and less glossy on the upperparts and with rump colorous with back (not paler). Smaller in size.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail central outer
♂♀	113-117	c. 8-9	—	41-45 48-55 mm (HW, SA)

(*vide* Baker, Wing 105-115; tarsus c. 8.9 mm)

Weight 2 ♂♂ 11, 11g (SDR).

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet purplish black.

* The group of so-called 'cave swiftlets' is distinguished by echo-location, evidently being the only birds which build their nests in the dark, with no light orientation. (Baker, 1917: 497-503.)

* The sublingual salivary glands enlarge at nest-building time to provide the necessary cement and gradually regress to normal thereafter. It was believed, and still widely is, that the first built nest is comparatively free from admixture of grass, moss and feathers. The second, built after this one has been removed by the nest-gatherer, contains a greater quantity of extraneous matter and is less valuable, whereas the third (and sometimes fourth) is almost entirely of pure saliva. These facts, however, suggest however that actually the first or second or third.

32

APODIFORMES

material, containing nearly 50 per cent protein and 7½ per cent of mineral matter, mostly lime. [See article 'A description of the swifts (*Collocalia francica* [= *fuciphaga*] and *C. innominata*), the birds which build edible nests' by F. H. Giles, 1936, Jour. Siam nat. Hist. Soc. 10 (2), Supplement (November).]

687. Beavan's or Whitebellied Swiftlet. *Collocalia esculenta affinis* Beavan

Collocalia affinis 'Tytler' = Beavan, 1867, Ibis: 318
(Port Blair, South Andaman Island)
Baker, FBI No. 1614, Vol. 4: 352
Plate 56, fig. 3

LOCAL NAMES. None recorded.

SIZE. The smallest of our swiftlets. Length c. 10 cm (4 in.).

FIELD CHARACTERS. As of 683 and 685, qq.v., but distinguishable by smaller size, glossy blue-black upperparts and white belly. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident and common in the Andaman and Nicobar Islands.

GENERAL HABITS. Gregarious, abundant, and tame. Flies freely in and out of residential bungalows and office buildings in the settlements while hawking, unmindful of the human inmates. Roosts and nests in small numbers or vast colonies in factory sheds, tool houses and the like. The congregation keeps up a continual sharp bat-like clicking and twittering, often quite deafening at confined close quarters. The birds cling in clusters to old nests as well as those in occupation, and to roughnesses on walls and ceiling boards—upside down (back horizontal with the ground)—sometimes two or three individuals on the same foothold. Their bodies heave up and down as if panting heavily, but the birds are evidently quite comfortable in this position, at times even preening themselves. Others fluttering around in search of a foothold will hang on to the legs or wing-tips of those already settled, and thus may soon form a cluster of half a dozen or more. Nest material (moss, lichens, etc.) is plucked from the boughs of lofty trees, while the bird hovers momentarily in its flight through the mossy branches.

FOOD, VOICE and CALLS. Not specifically recorded as different from other swiftlets. Has no echo-locating calls.

BREEDING. *Season*, December to April, principally February and March. *Nest*, 'black', inedible, and of no commercial value; made entirely of vegetable matter, e.g. moss, lichens, casuarina needles, coconut fibre, agglutinated with the birds' saliva. Shallow, flat-bottomed half-cups (c. 7 × 5 cm in outside diameter and c. 2 cm deep) attached like brackets to the substrate with brownish saliva; usually vast colonies in sawmill sheds, etc. clustered densely along wall near angle with ceiling, the nests often touching and built partly upon one another in a disorderly jumble. Eggs, 2, white, long, elliptical. Average size of 100 eggs 17.5 × 11.2 mm (Baker). Both sexes incubate; period undetermined. The birds relieve each other at the nest by seemingly violent supplanting, the relief clinging to the nest, nudging, pushing, and blowing out the sitter and literally usurping its place. But the proceedings equivocal since sometimes two, and even three, birds will try to supplant a sitting bird in this way; then again, the relief

SWIFTS

33

on being repulsed from one nest will successfully dislodge a brooding bird on another nest nearby and usurp its place on the eggs!

MUSEUM DIAGNOSIS. Tarsus naked; tail unforked. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	91-100	c. 3-4	8-9	36-39 mm (Baker)

COLOURS OF BARE PARTS. Iris deep brown; bill, legs and feet black.

Genus CHAETURA Stephens

Chaetura Stephens, 1826, in Shaw's Gen. Zool. 13 (2): 76. Type, by subsequent designation, *Chaetura pelagica* Stevens (sic) = *Hirundo pelagica* Linnaeus

Rhaphidura Oates, 1883, Bds. Burma 2: 6. Type, by monotypy, *Acanthylis leucopygialis* Blyth

Indiepus Mathews, 1918, Bds. Austr. 7: 265. Type, by original designation and monotypy, *Acanthylis sylvatica* Tickell

Hirundo-opus Hodgson, 1837 (1836), Jour. Asiat. Soc. Bengal 5: 780. Type, by original designation and monotypy, *Cypselus* (*Chaetura*) *nudipes* Hodgson Cf. Lack, D.: 1956, Auk 73: 9-12, 26.

Characterized by the tail-feathers having rigid shafts the ends of which project as spines or needles for some distance beyond the web. Tarsi naked; all four toes forwardly directed as in *Apus*; claws strong and much curved. Wings very long and pointed: first primary (as.) longest.

Genus represented in the Ethiopian, Oriental, Australian and Holarctic regions. Three species within Indian limits.

Key to the Species

	Page
1 Larger. Wing over 180 mm; colour of back paler than surrounding parts	
a Webs of tail-feathers rounded at tips..... <i>C. caudacula</i>	33
b Webs of tail-feathers drawn to a point at the tip..... <i>C. gigantea</i>	36
2 Smaller. Wing under 130 mm. Centre of back not paler; abdomen white..... <i>C. sylvatica</i>	37

CHAETURA CAUDACUTA (Latham): WHITETHROATED SPINETAIL SWIFT

Key to the Subspecies

Chin and throat pure white; wing over 195 mm..... <i>C. c. nudipes</i>	33
Chin and throat smoky grey; wing under 185 mm..... <i>C. (c.) cochinchinensis</i>	35
Throat dark smoky; brown on underparts much paler; upperparts less glossy..... <i>C. (c.) rupchandi</i>	35

688. *Chaetura caudacula nudipes* (Hodgson)

Cypselus (*Chaetura*) *nudipes* Hodgson, 1837 (1836), Jour. Asiat. Soc. Bengal 5: 779 (Nepal)

Baker, FBI No. 1603, Vol. 4: 340

Plate 56, fig. 14

LOCAL NAME. *Silli-eng tithi-timbo* (Lepcha).

SWIFTS

35

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	196-209	7-8	c. 17	51-57 mm (Baker)

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet blackish purple or purple-slate; claws black.

689. *Chaetura cochinchinensis rupchandi* Biswas

Chaetura cochinchinensis rupchandi Biswas, 1951, Ardea 39: 320

(Hitaura, central upper Nepal Terai)

Baker, FBI No. 1603 (part), Vol. 4: 340

LOCAL NAMES. None recorded.

SIZE. Bulbul ±; stouter. Length c. 20 cm (8 in.).

FIELD CHARACTERS. As of 688, q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION AND HABITAT. Range not known. Collected in central Nepal terai, c. 600 m. Apparently a lower-elevation form than 688.

GENERAL HABITS, FOOD, VOICE AND CALLS. Presumably as in 688. Nothing specifically recorded beyond that 'it was observed from time to time in small flocks of about a dozen birds around Hitaura in the central dun [Nepal] during June-July; sometimes flying fairly low; within a few feet of the ground and parallel to it' (Biswas).

BREEDING. Unknown.

MUSEUM DIAGNOSIS. See Key.

MEASUREMENTS

	Wing	Bill (from anterior edge of nostril)	Tail
♂ ♀	180-192	6-7	46-49 mm (Biswas)

COLOURS OF BARE PARTS. As in 688.

690. Whitethroated Spinetail Swift. *Chaetura cochinchinensis cochinchinensis* Oustalet

Chaetura cochinchinensis Oustalet, 1878, Bull. Soc. Philom. Paris (7) 2: 52 (Saigon, Cochinchina [= South Vietnam])

Baker, FBI No. 1604, Vol. 4: 342

Plate 56, fig. 11

LOCAL NAME. *Dao hadi gadeba* (Cachari).

SIZE. Bulbul ±; stouter. Length c. 20 cm (8 in.).

FIELD CHARACTERS. As of 688, q.v. See Key to the Subspecies and

Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Apparently common in Assam hills south of Brahmaputra river, Nagaland, Manipur, Mizo; probably also E. Pakistan hill tracts.

Extralimital. Burma, Malaysia, Indochinese countries.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 688.

34

APODIFORMES

SIZE. Bulbul ±; stouter. Length c. 20 cm (8 in.).

FIELD CHARACTERS. A large blackish brown swift with long narrow pointed bow-shaped wings and short tail. Underwing uniform blackish.

Adult. Above, glossy black except for back which is pale brown, whitish in the centre. Below, chin, throat, and under tail-coverts white. Rest of underparts dark brown with a whitish patch on each flank. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. The entire Himalayas from Hazara dist. in W. Pakistan eastward through Nepal, Sikkim and Bhutan to NEFA, normally between c. 1250 and 4000 metres elevation. Rather uncommon everywhere; local and patchy. Affects the neighbourhood of crags and rock scarps.

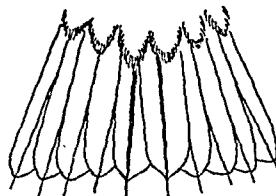
Extralimital. SE. Tibet eastward to W. Yunnan and W. Szechuan.

GENERAL HABITS. Justly reputed to be one of the fastest fliers among birds. Keeps in small loose parties and flocks hawking insects individually high over river valleys and upland pastures ranging over enormous distances in the day's foraging. The birds dash about with seemingly unhurried and effortless strokes of the long narrow wings, and glide and swish round crags and contours at phenomenal speed. The wings produce a peculiar musical swishing sound as they hurtle through space, high overhead at one moment vanishing in the distance the next, like a jet fighter plane. They descend to hawk lower in cloudy weather, especially after a thunderstorm, and drink by stooping down to water at a tangent and scooping sips as they momentarily skim along above the surface on quivering wings. Roosts at night (presumably also nests) in colonies, clinging to rough rock walls within clefts and fissures — possibly also in hollow boles of trees.

FOOD. Flying insects, chiefly Coleoptera, Hemiptera and Hymenoptera.

VOICE AND CALLS. Loud, shrill and lively 'screams' uttered in flight, particularly at dusk, while a rabble is disporting itself in the air round the roosting cliff prior to retiring. 'When wounded they utter a screeching sound like churr-r churr-r churr-r' (Tytler, 1868, *Ibis*: 196).

BREEDING. Presumably more or less as in 691, q.v., in clefts of rock up in the mountains; possibly also within hollow tree-trunks. Nothing definitely known beyond that an oviduct egg (white, 31.2 × 22.4 mm) was obtained by Baker from a female he shot in N. Cachar on 14 April (1899).



× c. 1 (After Hartert)

MUSEUM DIAGNOSIS. See Key; for details of plumage Baker, loc. cit.

Differs from the palaearctic nominate race in being more glossy on crown and nape and lacking white on forehead. For description of plumages and structure (also bionomics) of the nominate race see Witherby, 1938, 2: 249-51.

36

APODIFORMES

BREEDING. Practically unknown. Baker took an oviduct egg from a female shot on 26 May. It was white and measured 28.1 × 21.0 mm.

MUSEUM DIAGNOSIS. Differs from *C. c. nudipes* in being darker both above and below, with the chin and throat grey instead of white.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	183-184	c. 8	c. 16	48-49 mm (Baker)

COLOURS OF BARE PARTS. As in 688.

691. Large Brownthroated Spinetail Swift. *Chaetura gigantea indica* Hume

Chaetura indica Anonymous = Hume, 1873, Stray Feathers 1: 471

(Andaman Islands and southern India)

Baker, FBI No. 1605, Vol. 4: 343

Plate 56, fig. 10

LOCAL NAMES. *Dao hadi gadeba* (Cachari); *Sārāpākāhi* (Malayalam); *Wāhi lūhīnī* (Sinhala).

SIZE. Myna ±; length c. 23 cm (9 in.).

FIELD CHARACTERS. A large blackish brown swift with long, narrow, pointed bow-shaped wings and short squarish tail with needles projecting from the feathers — noticeable in flight under favourable conditions. The white under tail-coverts contrasting with the very black-looking underparts, and high speed, are further suggestive clues.

Adult. Above, glossy metallic black except for centre of back which is pale brown. A black spot in front of each eye, and a white spot on either side of forehead. Below, chin and throat pale brown, under tail-coverts white. Rest of underparts dark brown with a white patch on the flanks above the thighs. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident; described also as local migrant in some parts, but movements as yet not understood. Assam, Nagaland, Manipur and Mizo; E. Pakistan hill tracts; the Western Ghats strip from Goa and N. Kanara (c. 15°N. lat.) southward through W. Mysore, W. Tamil Nadu (including Nilgiri, Palni and associated hills) and Kerala; Ceylon; Andaman Islands, (Nicobars ?); from the seacoast to the mountain tops. Affects evergreen and moist-deciduous biotope.

Extralimital. Burma, Thailand, Indochinese countries.

GENERAL HABITS. Keeps in small parties of 4 or 5 birds or larger flocks ('rabblies') of up to 50 or more, sweeping the daylight hours on the wing, hawking in long back-and-forth sweeps high over forested valleys and grassy hilltops, flying at astonishing speed — here one moment, gone the next. Along with the Whitethroated Spinetail and Alpine Swift, reputed to be one of the fastest fliers among birds, estimates of 250-300 km per hour being mentioned. The wings produce a loud twanging sound ('as of a harp string') as the birds hurtle past overhead. The spines projecting from the tail-feathers, in addition to providing support when the bird is clinging to a vertical surface with both feet, possibly conduce to streamlining for

SWIFTS

37

speed. In normal cruising flight, the tail is fairly spread out; when the bird is shot at with a gun and thoroughly scared, the tail is narrowed down to a point and the bird then streaks through space at a velocity that is truly spectacular. Usually descends to treetop height in the wake of a thunderstorm or to hawk insects fleeing from a forest fire or fired cultivation clearing. Drinks at rivers and pools in the evenings, several birds swooping down at a tangent simultaneously, 'leaving a series of longitudinal splashes on the surface like a shoal of flying fish taking wing' (F. N. Betts). Roosts at night in colonies clinging to roughnesses within the hollow boles of lofty ancient trees. Owing to its sustained speed and vast cruising radius, makes sporadic fleeting appearances in distant areas in the course of the day's foraging, causing some confusion as to its local status.

FOOD. Flying insects, mainly beetles (Coleoptera), bugs (Hemiptera), grasshoppers (Orthoptera), and ants and bees (Hymenoptera).

VOICE AND CALLS. Loud, shrill 'screams', frequently uttered in flight, as in 688.

BREEDING. Hitherto recorded only in Kerala. Season, February to April. Nest, a depression in the earth and debris accumulated at the base, within the hollow boles of lofty over-mature trees such as *Valeria indica*, lined with dry leaves and straw — in humid forest. Entrance to 'chimney' provided by a natural or woodpecker hole often up to 15 metres above ground level. Normally only a single nest, or two or three, within each bole, not colonially. Eggs, 3 or 4, rarely 5, broad, elliptical, pure porcelain white becoming stained and discoloured during incubation. Average size of 100 eggs 30.7 × 22.2 mm (Baker). Share of the sexes in the domestic chores, incubation period, and other facets of breeding biology unknown.

MUSEUM DIAGNOSIS. See Key to the Species; for details of plumage Baker, loc. cit.

	Wing	Bill (from skull)	Tarsus	Tail (to tip of spines)
♂ ♀	188-200	13-16	16-18	54-60 mm (Baker, HW, SA)

COLOURS OF BARE PARTS. Iris brown. Bill horny black; mouth greyish pink. Legs and feet greyish pink; claws horny brown.

MISCELLANEOUS. *Ectoparasites*. 'Some infested with a large flat tick nearly one-third inch long [species?], over 30 taken from one bird clinging to bases of stiff tail-feathers under lower tail-coverts' (A. L. Butler, 1899, JBNHS 12: 563).

'Infested with a parasite very like common house bug (*Cimex* sp.?) in appearance and smell' (H. R. P. Carter, 1873, SF 1: 473).

692. Whiterumped Spinetail Swift. *Chaetura sylvatica* (Tickell)

Chaetura sylvatica Tickell, 1846, Jour. Asiat. Soc. Bengal 15: 284 (Central India, restricted to Maunbhum by Whistler & Kinnear, 1935, JBNHS 38: 33)

Baker, FBI No. 1606, Vol. 4: 344

Plate 56, fig. 1

LOCAL NAME. *Sārāppākshi* (all swifts — Malayalam).

SWIFTS

39

curved needle-sharp claws for clinging to rough vertical surfaces. Mouth very wide and deeply cleft. No rectal bristles. Represented by six species within our limits. (See David Lack, 1956, 'The species of *Apus*', *Ibis* 98: 34-62.)

Key to the Species

Page

- | | |
|--|--------------------------|
| A. No white on rump | |
| 1 Abdomen white..... | <i>A. melba</i> 39 |
| 2 Abdomen blackish brown..... | <i>A. apus</i> 43 |
| 3 Abdomen much paler; general coloration hair-brown..... | <i>A. pallidus</i> 45 |
| 4 Abdomen black, the feathers edged with white..... | <i>A. acuticaudus</i> 46 |
| B. White rump | |
| 5 Tail deeply forked..... | <i>A. pacificus</i> 47 |
| 6 Tail even or nearly so..... | <i>A. affinis</i> 50 |

APUS MELBA (Linnaeus): ALPINE SWIFT

Key to the Subspecies

Page

- | | |
|--|--------------------------|
| Pale brown band across breast, white throat-patch..... | <i>A. m. melba</i> 39 |
| Darker; breast-band wider, throat-patch smaller..... | <i>A. m. rubifuga</i> 40 |
| Darker than the preceding; more black in body plumage..... | <i>A. m. bakeri</i> 42 |

693. *Apus melba melba* (Linnaeus)

Hirundo Melba Linnaeus, 1758, Syst. Nat., ed. 10, 1: 192 (Gibraltar)

Baker, FBI No. 1589 (part), Vol. 4: 324

Plate 56, fig. 12

LOCAL NAMES. *Bādi ābābel* (Hindi); *Pāhādi ābābelo* (Gujarati).

SIZE. Bulbul +; stouter. Length c. 22 cm (8½ in.).

FIELD CHARACTERS. As for 694, q.v. A large sooty brown swift with white underparts and a brown pectoral band across breast. Sexes alike. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Recorded as a fairly common summer visitor (April to September) to Baluchistan in the Quetta neighbourhood, Kach, Ziarat, Chagai; as passage migrant on the Afghan frontier (Kohat, Chitral, etc.) from February to May and again in August-September. Winter specimens in BNHS collection from Saurashtra (Gujarat) and Mt Abu. Capricious season- and weather-dependent movements of Alpine Swifts, the vast radius they cover in the course of their daily foraging, and paucity of material to qualify sight records, make the status of the races, particularly of this one, rather enigmatic.

EXTRALIMITAL. 'Breeds in SE. Europe north to the Pyrenees and the Alps; Asia Minor, the Crimea, the Caucasus, Transcausia, Turkestan... Winter quarters not known but recorded from Arabia, Uganda, and Damaraland and as a migrant in the Algerian Sahara' (Peters).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 694, q.v.

BREEDING. Extralimital; not definitely recorded in our area, but probably breeds in the higher mountains of Baluchistan (W. Pakistan).

38

APODIFORMES

SIZE. Sparrow —; same as House Swift. Length c. 11 cm (4½ in.).

FIELD CHARACTERS. A small forest swift, black above with a broad white rump-band. Below, chin, throat, and breast greyish brown passing into white on lower abdomen and under tail-coverts. Sexes alike. Under aspect of wings in flight blackish. General effect very like House Swift (703) but white belly in addition to rump-patch diagnostic.

STATUS, DISTRIBUTION AND HABITAT. Resident, but patchy and local, though quite abundant in certain localities. Also subject to considerable wandering; movements imperfectly understood. The lower Himalayas in Garhwal, Kumaon, and Sikkim (possibly continuous). Cachar (Assam), Manipur, Sylhet (E. Pakistan), W. Bengal, Chota Nagpur, Madhya Pradesh (west to Seoni and Chanda, in Maharashtra, c. 79-80°E. long.); the Western Ghats strip from about Goa and N. Kanara (c. 15°N. lat.) southward through W. Mysore, W. Tamil Nadu, and Kerala. Not in Ceylon or Andaman Is. Affects evergreen and moist-deciduous biotope; from plains level to c. 1700 m in the Himalayas, somewhat lower in the peninsular ranges.

GENERAL HABITS. Keeps in loose rabbles of 12 to 50 birds or so, hawking insects all day above forest or river valleys, and over grassy hilltops and hill cultivation clearings, but may turn up almost anywhere in forested country. Roosts at night in colonies, clinging within the hollow boles of rotten trees, the birds popping in and out through natural or barbet holes that provide entrance and exit.

FOOD. As in 691, chiefly flying beetles and bugs.

VOICE AND CALLS. A twittering chick-chick like House Swift's uttered on the wing; rendered also as a 'rapidly-repeated swicky-sweetzy' (Nichols).

BREEDING. Up to the present known only from the Western Ghats area. Season, February to May, chiefly March and April. Nest, a shallow half-cup composed of small lengths of thin dead twigs cemented together with the bird's saliva, without any lining, attached bracket-wise inside a hollow rotten tree-trunk from half a metre to 14 metres or so above the ground. Boles of dead Fishtail palms (*Caryota urens*) are favourite sites. Only a single nest or a couple normally found within the same 'chimney'. Eggs, 3 to 5, pure white, long blunt ovals, closely resembling those of *Collocalia*. Average size of 60 eggs 17.5 × 12.1 mm (Baker). Incubation period, and other facets of breeding biology, unknown.

MUSEUM DIAGNOSIS.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀ (107)	112-116	c. 7-8	c. 8-9	34-37 mm (Baker, HW, SA)

Weight 1 ♂ 13 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill blackish brown; mouth greyish pink. Legs and feet pinkish brown; claws blackish brown.

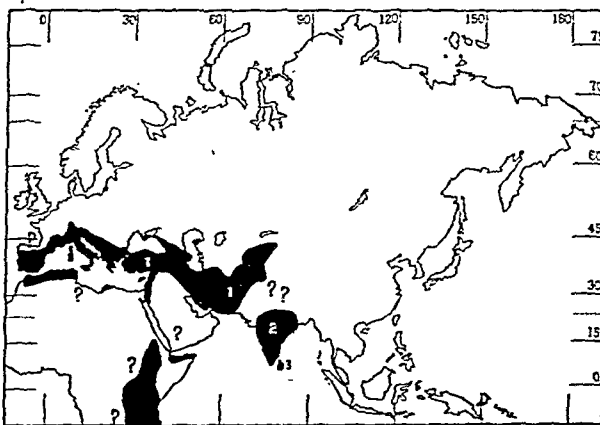
Genus *Apus* Scopoli

Apus Scopoli, 1777, Intr. Nat. Hist.: 483. Type, by tautonymy, *Hirundo apus* Linnaeus

Wings long, narrow, and pointed. Tarsus short and thickly feathered; all four toes bare and directed forwards, but first or hind toe reversible; equipped with

40

APODIFORMES

Apus melba

■ Breeding range 1 *A. m. melba* (693). 2 *A. m. rubifuga* (694). 3 *A. m. bakeri* (695).

For an excellent study of the ecology and breeding biology see M. Bartels (jr.), 1931, 'Beobachtungen an Brutplätzen des Alpenseglers — *Microtus melba* (L.)', *Jour. f. Ornithologie* 79: 1-28 (11 plates).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for subspecies Key.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail central outer
♂ ♂	220-228	15-16	16-18	55-64 77-90 mm
♀ ♀	207-221	—	—	— mm

(Witherby)

COLOURS OF BARE PARTS. As in 694.

694. *Apus melba rubifuga* Koelz

Apus melba rubifuga Koelz, 1954, *Contrib. Inst. Regional Exploration*, No. 1: 25 (Rathi, Kumaon)

Apus melba drabata Abdullahi, 1963, *Journ. Bom. nat. Hist. Soc.* 62: 156 (hills and ghats near Bombay)

Baker, FBI No. 1589 (part), Vol. 4: 324

LOCAL NAMES. As for 693. *Sārāppākshi* (for all swifts — Malayalam).

SIZE. Bulbul +; stouter. Length c. 22 cm (8½ in.).

FIELD CHARACTERS. A large streamlined sooty brown swift with very long, narrow, pointed wings, and slightly forked tail. Underparts white, with a brown pectoral band across breast; this, together with brown

SWIFTS

41

under tail-coverts and brown-and-white underside of bow-shaped wings diagnostic in flight. Sexes alike.

Young (immature) has more definite whitish edging to the feathers of the brown parts, especially on the wings, breast-band, and under tail-coverts.

STATUS, DISTRIBUTION and HABITAT. Resident, but subject to seasonal local migration (chiefly during the monsoon) in addition to very extensive and wide-ranging daily foraging peregrinations. Movements not yet worked out. From c. 2200 m up in the Himalayas west to east (including Nepal, Sikkim, Bhutan, and NEFA) southward through the peninsula to Rameswaram I. and Kanyakumari; from Sind eastward to Assam and E. Pakistan. Chiefly based on hilly country with crags and precipices and old forts, but liable to make unpredictable fleeting appearances almost anywhere at any time. A vast colony inhabits the gigantic cliffs flanking the Jog Falls in Mysore, sharing the fissures and crevices with blue rock pigeons, the birds dwarfed to a swarm of midges as they hurtle around the valley in this Brobdingnagian setting.

GENERAL HABITS. Keeps in loose flocks or rabbles on the wing all day, dashing about at great speed hawking insects high up in the air over grassy or forested hillsides and precipitous cliffs and gorges, and shooting round the contours with a loud swish of the wings. Descends lower in overcast drizzly weather or in the wake of a thunderstorm, and to hawk insects fleeing from a forest fire or burning grassland or clearing. Shares the honours for speed with the larger Spinetails, as all who have tried to shoot specimens will readily concede! Roosts at night in clefts and fissures of rock-scarps, clinging almost vertically to the rough surface with both feet. Has the characteristic habit of swifts of 'balling' up in the sky at sunset, often till well into the dark, in a close-packed rabble, wheeling and tumbling playfully to the accompaniment of shrill screams — the whirling mass moving hither and thither as if wafted by the wind, gradually disappearing from sight. On clear wintry evenings has been observed (SA) hawking at treetop height before sunset, rising higher and higher as the sun sank lower and below the horizon, evidently following insect prey into the warmth of the sunshine lingering in the upper air. The birds drink regularly at ponds or streams, a party skimming over the water with butterfly-like quivering of the wing-tips above the back, 'feathering' the surface from time to time as they scoop the draughts.

FOOD. Largely flies (Diptera), ants (Hymenoptera), beetles (Coleoptera) and bugs (Hemiptera) — all taken on the wing. Among the last, *Agnoscelis nubila* Fb., crammed in gullets and stomachs of specimens, has been specifically identified.

VOICE and CALLS. Short, shrill tremulous 'screams' 'chee-chee' etc. chiefly while balling in the air. Twittering noises while roosting (and nesting?) in fissures of cliffs.

BREEDING. Definitely known only in NW. Himalayas (Murree, Kashmir), Saptashring (Nasik dist., Maharashtra) and Gersoppa or Jog Falls (Mysore) but on circumstantial evidence, or putatively, also nests in many places elsewhere in the Western Ghats and peninsular hills with suitable rocky crags and precipices. Season, in the Himalayas evidently May-June; in

SWIFTS

43

visits the lowland tanks at certain seasons for drinking purposes' (Phillips). Subject to considerable erratic movements, and the Ceylon and South Indian populations doubtless wandering into each other's domains in the course of the day's foraging or seasonally.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 694, q.v.

BREEDING. No nests actually taken in Ceylon, but strong circumstantial evidence of breeding in the rock precipices among the hills of the Central Province, Uva and Sabaragamuwa (W. E. Wait, G. M. Henry). Season, c. March-May.

MUSEUM DIAGNOSIS. Smaller and darker even than *A. m. nubifuga*, the wing given by the describer as 190-195 mm. However, 2 ♂♂ from Ceylon in the British Museum collection, though very dark in coloration, have wing 201-207 mm (HW). See Note, p. 42.

COLOURS OF BARE PARTS. As in 694.

696. Swift. *Apus apus pekinensis* (Swinhoe)

Cypselus pekinensis Swinhoe, 1870, Proc. Zool. Soc. London: 435 (Pekin, China) Baker, FBI No. 1590, Vol. 4: 326 Plate 56, fig. 6

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 17 cm (6½ in.).

FIELD CHARACTERS. A typical swift with long, narrow, bow-shaped wings and moderately forked tail. Uniformly dark brown or sooty black, with whitish chin and throat and sometimes with a few pale crescentic marks on belly. Sexes alike.

Young (immature) has the forehead whitish. Feathers of crown, belly, under tail-coverts, and leading edge of wing, margined with whitish.

STATUS, DISTRIBUTION and HABITAT. Breeding visitor to N. Baluchistan ('commonest swift near Quetta'), and northward along the Afghan frontier to Chitral and Gilgit. Also Ladakh, Balistan, Kashmir and Himachal Pradesh (?); normally between c. 1500 and 3300 m, sometimes higher; obtained by Meinertzhagen in the Changchenmo, 14,800 ft (c. 4500 m) and observed at Tutyalak in the Indus Valley (Ladakh), 18,800 ft (c. 5730 m) in July, the latter presumably a foraging party from below; possibly partly resident in some of these areas. Wintering in small numbers in N. India; recorded from N. Cachar in Assam (Baker — regular or casual?), and stragglers from Andaman Is. (?), Maldives (Phillips), Saurashtra (Lavkumar, subspecies?).

Extralimital. 'Breeds in Cyprus, Asia Minor, Persia, Turkestan, NW. Mongolia and S. Manchuria, south to Palestine, Baluchistan, the Himalayas, Kansu and Chihili. Winters in India and in eastern Africa from the White Nile to the Kalahari Desert and Transvaal' (Peters).

MIGRATION. Arrives in its summer (breeding) quarters — N. Baluchistan, Chitral — beginning to mid April; leaves in September.

GENERAL HABITS. Keeps in parties and scattered flocks, sometimes large rabbles, spending the entire daylight hours on the wing, hawking insects high up in the air or swooping in their pursuit close to the ground. In the early mornings, but more usually at dusk, indulges in the characteristic

42

APODIFORMES

Mysore December to February. Nest, a half-saucer shaped structure of straw and feathers agglutinated with the bird's saliva, stuck bracket-wise on a vertical rock face within a fissure in a rocky cliff; alternatively, a concave pad of the same material placed on a horizontal ledge in similar situations. Nest material (straw and feathers) chased and collected in mid-air as it floats on wind eddies. Eggs, normally 3, sometimes 2, rarely 4. Pure white, long narrow ovals measuring c. 31 x 19 mm. Both sexes evidently share incubation; period c. 19-20 days (in the nominate race — Witherby). Copulation takes place in the air, the male and female with open motionless wings whirling round and round as one unit parachuting through space for 30 metres or so, then separating to fly away individually; evidently also at nest.

MUSEUM DIAGNOSIS. Differs from the nominate form in being somewhat smaller and darker, with a wider pectoral band and smaller throat-patch.

MEASUREMENTS

	Wing	Bill (from skull)	Tail	
			central	outer
♂♂	202-212	14-16	59-63	73-79 mm
♀♀	198-206	14-16	58-61	72-76 mm

(HW, SA)

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet blackish purple.

NOTE. Peninsular Indian birds (*nubifuga*) are normally darker than *melba* of southern Europe, but at the same time they are matched by some Himalayan examples considered to be migrants of the nominate form. A parallel case exists between the still darker birds of Ceylon (*bakeri*) and those of peninsular India. Allowing for the normal operation of Bergmann's Rule (decrease in size from north to south), the size differences are also not sufficiently clear-cut or suggestive for unequivocal racial identification of individual specimens when the races occur together. Our knowledge of the spatial foraging movements of these wide-ranging swifts is as yet too nebulous for a satisfactory evaluation of the races and their status within our limits.¹ Only a methodical collection of actually breeding birds from proved nesting sites can help to elucidate the position.

695. *Apus melba bakeri* Hartert

Apus melba bakeri Hartert, 1928, Novit. Zool. 34: 363 (Cattion Estate, 4500 ft, Ceylon) Baker, FBI No. 1589a, Vol. 8: 680

LOCAL NAME. *Wzhi lilihiyā* (Sinhala).

SIZE. Bulbul +; stouter. Length c. 22 cm (8½ in.).

FIELD CHARACTERS. As for 694, q.v. See Museum Diagnosis.

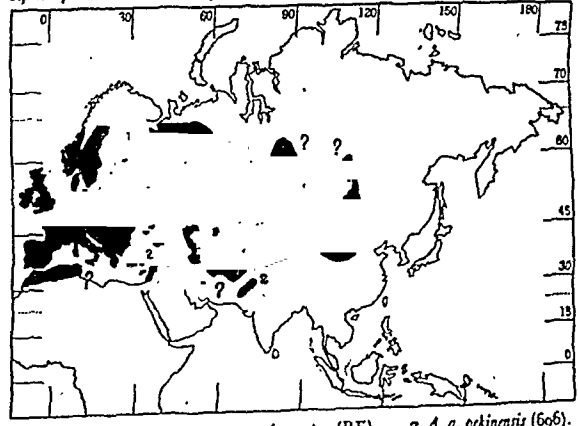
STATUS, DISTRIBUTION and HABITAT. Resident in Ceylon. 'Plentiful, but locally distributed, in the hills to altitudes of over 7000 ft (c. 2100 m);

¹ See the communication by A. H. H. 1965 / IRNH 62: 153-60 recording the occurrence of this swift, *A. m. derabtalai*,

APODIFORMES

44

Apus apus



communal 'balling' — a more or less compact rabble whirling round and round in the air, the disorderly revolving mass moving rapidly away as if wafted by the breeze; or mounting ever higher in the sky to disappear from view; this to the accompaniment of shrill lively 'screams'. Flight very fast, but less so than Alpine or Spinetailed, with rapid quivering wing-beats, punctuated by spells of rocket-like gliding on stiffly open wings, with slight tilts and turns of the body and swishing wheeling movements. As summer visitor usually seen about cliffs in the mountains, roosting and nesting in rock fissures; but in extralimital areas commonly takes the place of House Swift (703), hawking over urban localities and normally nesting in buildings.



Left foot, x c. 1

FOOD. As in 694 (q.v.) and other swifts — insects, chiefly Coleoptera, Hemiptera, Diptera, and Hymenoptera.

VOICE and CALLS. 'A long-drawn harsh screaming *sweet or sweet*' (Witherby) uttered on the wing; in a discordant chorus when balling. Aerial nuptial (?) chases, but involving a trio instead of a pair commonly observed; its significance not fully understood. Copulation commonly takes place in mid-air as in Alpine Swift.

BREEDING. Owing to inaccessible cliff-sites apparently no nests taken in our limits, but circumstantial evidence of breeding in NW. Pakistan and Kashmir adequate. Season, May-June. Nest, presumably as in the nominate European form, a shallow cup of bits of straw, feathers and other rubbish hawked in the air and agglutinated together with the bird's saliva. Built in colonies on ledges within fissures of rock. Eggs, normally 3, sometimes 2 or 4, dull white, elongated ovals, c. 25 x 16 mm; laid at c. 48-hour

SWIFTS

45

intervals; incubation period 18-19 days. (For details of breeding biology of nominate *apus*, see David Lack, 1956, *Ibis* 98: 606-19.)

MUSEUM DIAGNOSIS. Similar to nominate *apus* but paler. Body plumage more brownish less blackish; wing feathers (especially secondaries) more greyish brown less blackish; forecrown paler, the pale area of throat more extensive and whiter (Vaurie, 1965). For description of plumages and structure etc. of the nominate race see Witherby, 1938, 2: 244-8.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	160-180	c. 8	c. 10	66-77 mm (Baker)

Wing ♂ ♀ 165-176 mm (Hartert).

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet purplish brown.

697. Pallid Swift. *Apus pallidus pallidus* (Shelley)

Cypselus pallidus Shelley, 1870, *Ibis*: 445 (Egypt)

Cypselus marinus A. & L. Brehm, 1855, *Vogelfang*: 46 (North Africa and southern Europe, Suit, Egypt). Not *Cypselus marinus* Voigt, 1831, which = *Cypselus ferrus* (Lichtenstein)

Baker, FBI No. 1591, Vol. 4: 327

Plate 56, fig. 5

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 17 cm (6½ in.).

FIELD CHARACTERS. A typical swift with slender streamlined body, long, narrow bow-shaped wings, and moderately forked tail. Very like 696 but pale mousy- or hair-brown instead of blackish above, and even paler below (the feathers narrowly fringed whitish); whitish throat-patch diffusing at edges into surrounding brown. Sexes alike.

Pale coloration readily distinguishes it on the wing from Eastern Swift.

Young (immature) more squamated white and brown on underparts.

STATUS, DISTRIBUTION AND HABITAT. A desert form occurring only in W. Pakistan as a scarce and apparently irregular winter visitor. Recorded from coastal Makran and Sind (Karachi, Hyderabad).

Extralimital. Resident in Egypt, Palestine, Persia, S. Arabia and Sind; southern Sahara (Air) — Peters. Locally sympatric with 696.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 696, q.v.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	162-170	c. 7	c. 9	65-70 mm (Baker)

24 ♂ ♀ from Egypt: Wing 164-171 mm (Meinertzhagen).

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet dull purplish brown.

SWIFTS

47

BREEDING. Only known from the Khasi Hills, Assam, there restricted to the rocky cliffs and deep gorges around Cherrapunji facing the Sylhet plains — an area reputed for the world's heaviest rainfall. *Season*, end March to end April. *Nest*, similar to the Eastern Swift's (696), a shallow cup of grass, feathers, etc. agglutinated together with the bird's saliva and on to ledges of rock within fissures in cliffs — colonially. *Eggs*, 2 or 3, occasionally 4, white, long blunt ovals. Average size of 50 eggs 26.0 × 16.3 mm (Baker). Both sexes reported to partake in nest-building and feeding the young. Share in incubation, and incubation period, undetermined.

MUSEUM DIAGNOSIS. The squamated effect of underparts is produced by white margins to the dull black feathers. Amount of this white very variable in adults (age-dependent?).

Nestling (partly fledged) has the white feather-margins on underparts very broad, and traces of pale edges to the scapulars, back, and wing-coverts (Baker).

For a review and discussion of the taxonomical status of *A. acuticauda* and *A. pacificus*, of which he considers the former to be a subspecies, see D. Lack, 1956, *Ibis* 98: 36-8; *Auk* 73: 15 and *passim*.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail (outer)
♂ ♀	167-174 (once 177)	c. 8	c. 16	70-74 mm (depth of fork c. 21-26 mm) (Baker)

COLOURS OF BARE PARTS. Iris deep brown. Bill black. Legs and feet fleshy white or pale plumbeous white (Baker).

APUS PACIFICUS (Latham): LARGE WHITERUMPED SWIFT

Key to the Subspecies

	Page
Large; wing over 160 mm.....	<i>A. p. pacificus</i> 47
Large; darker than the preceding with narrower white rump.....	
.....	<i>A. p. kerrii</i> 50
Smaller; wing 160 mm or less.....	<i>A. p. leucorhynchus</i> 49

699. *Apus pacificus pacificus* (Latham)

Hirundo pacifica Latham, 1801, *Index Orn.*, Suppl., lviii (new Holland = New South Wales *apud* Mathews); the *terra typica* has been fixed as the vicinity of Vladivostok by Dominiewski, 1933, *Acta Orn. Mus. Zool. Polonica* 1: 80

Baker, FBI No. 1593, Vol. 4: 329

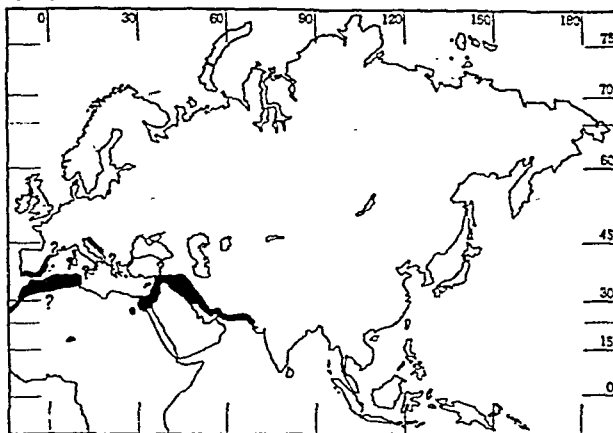
Plate 56, fig. 7

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. A deeply fork-tailed swift, blackish brown above with a broad white rump-patch; squamated or mottled black and white below, with whitish chin and throat. Sexes alike.

APODIFORMES

Apus pallidus

■ Breeding range

698. Darkbacked Swift. *Apus acuticauda* (Jerdon)

C. (cypselus) acuticauda [sic] 'Blyth (MSS)' = Jerdon, 1864, *Bds. India* 2: 870. With reference to Vol. 1: 177, No. 99 (Nepal). Misprint for *acuticauda*.

Cypselus acuticauda Blyth, 1865, *Ibis*: 45 (Nepal)

Apus acuticauda rupchandii Koelz, *Contrib. Inst. Regional Exploration*, No. 1: 26

(Blue Mountain, Lushai Hills)

Baker, FBI No. 1592, Vol. 4: 327

Plate 56, fig. 9

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As of 696, q.v.; also with moderately forked tail.

Adult. Above, deep metallic black including rump. Below, chin and throat white streaked with black; under tail-coverts black; rest of underparts black squamated with white. Sexes alike.

In high overhead flight when rump not visible easily confused with white-rumped *A. pacificus* (699), which likewise has squamated underparts. **STATUS, DISTRIBUTION AND HABITAT.** Enigmatical. The type of the species was obtained in Nepal where not met with since. A single specimen shot at Port Blair on 30 July; its occurrence in the Andamans at that date considered very remarkable by Hume (1874, *SF* 2: 156). Known as breeding bird only in the Khasi Hills (Cherrapunji); presumably also breeds in Mizo hills.

GENERAL HABITS. Similar to 696 and 699, q.v. Reported by Baker to keep in close proximity of its nesting cliffs while breeding, not making the far-ranging feeding forays of other swifts, and thereafter to disappear till the following nesting season.

APODIFORMES

48



× c. ½
(After Hartert)

Easily confused with *A. acuticauda* (698) in flight, but white rump (v. black) diagnostic.

STATUS, DISTRIBUTION AND HABITAT. From specimens collected, evidently a winter migrant or wanderer to Assam, Nagaland, Manipur, and Mizo (?); but status unclear owing to possible confusion in sight records with the other races, and even with *A. acuticauda*.

Extralimital. Breeds in eastern Asia from the western Altai and Yakutsk east to Kamchatka and Korea; northern Mongolia and eastern China westward to Kansu and Szechuan. (For details see Vaurie, 1965, 2: 654.)

GENERAL HABITS, FOOD, VOICE AND CALLS. As in other swifts, c.g. 703.

BREEDING. Extralimital.

Apus pacificus

■ Breeding range 1 *A. p. pacificus* (699). 2 *A. p. leucorhynchus* (700). 3 *A. p. kerrii* (701).

MUSEUM DIAGNOSIS. See Key; for details of plumage, Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail (outer)
♂ ♀	168-195	c. 7	c. 10-11	72-81 mm (Baker)

For eastern Chinese birds La Touche, 1931-34 (2: 91) gives:

♂ ♂	182-193	c. 7	c. 13	80-90 mm
♀ ♀	170-189			74-83 mm
				(depth of fork 23-33 mm)

SWIFTS

49

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet dark purplish black (Baker).

700. *Apus pacificus leuconyx* (Blyth)

Cypselus leuconyx Blyth, 1845, Jour. Asiat. Soc. Bengal 14 (1): 212 (Calcutta) Baker, FBI No. 1595, Vol. 4: 331

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. As of 699, q.v. On a casual view in flight would pass for a House Swift (703), but for the forked tail. See Key to the Species.

STATUS, DISTRIBUTION AND HABITAT. Status uncertain. Occurs in the breeding season along the outer Himalayas between c. 600 and 3600 m from Kashmir to NEFA including Nepal, Sikkim and Bhutan. Definitely known to breed round Murree, Mussoorie, Naini Tal and in the Khasi Hills (Shillong). Possibly also breeds elsewhere in the Himalayas and other hills south of Brahmaputra river, Manipur, Mizo and E. Pakistan hills. Movements in non-breeding season capricious and unpredictable even in areas of known abundance, e.g. northeastern Assam where 'flocks of hundreds one afternoon then not another bird to be seen again maybe for a week' (Hume). Easily missed in fine weather when hawking at great heights; more in prominence as forerunner of a storm and in overcast drizzly weather when it descends to lower levels, often seen in company with Alpine and House Swifts and swallows. Wanders far and wide in the Peninsula; has been reported from such far-flung localities as Andhra (Mulug), Saurashtra, Bombay City, Konkan, North Kanara (Karwar — 'large flocks occasionally during the rains' — Davidson, JBNHS 12: 47) and Malabar.

GENERAL HABITS, and FOOD. As in other swifts; during daytime almost ceaselessly on the wing hawking insects. Flying termites listed among stomach contents.

VOICE and CALLS. Not specifically described.

BREEDING. Season, apparently long-drawn, c. April to July. Nest, a half-cup of grass, bits of leaf, etc. cemented together with inspissated saliva, stuck against a slanting rock-face within a fissure in a high cliff; usually difficult of access. Built in small colonies or clusters. Utilizing nest of martin (*Delichon nipalensis*) has been recorded (Whymper). Eggs, 2 or 3, white, narrow, elongated, typical of swifts. Average size of 11 eggs 22.7 × 15.0 mm (Baker). Share of the sexes in the domestic chores, and incubation period, unrecorded.

MUSEUM DIAGNOSIS. Differs from the nominate race (699) in being smaller and darker with a narrower white rump.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail (outer)
♂ ♀	147-160	c. 7	c. 11	65-71 mm (Baker)

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet purplish brown or purplish black (Ticehurst).

SWIFTS

51

Extralimital. Morocco, Algeria, Tunisia and southern Sahara (Air); Syria, Palestine, Transcaspia and Persia (Peters). For details of range see Vaurie, 1965, 2: 649.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 703.

BREEDING. Season ill-defined; practically throughout the year excepting the coldest months. Nest and site as in 703. In Sind Ticehurst found small colonies under ledges of cliffs out in the desert (*Ibis*, 1923: 35). Eggs, 2, as of the Indian House Swift. Average size of 20 eggs 22.4 × 14.2 mm (Baker).

MUSEUM DIAGNOSIS. Very similar to nominate *affinis* (703), also with short tail and a distinct contrast between colour of head and nape and colour of mantle. It is merely a larger and paler form of *affinis*, the palest parts of the head, namely the forehead and a short connected superciliary streak, tending to white. But recognizable with certainty only if a series of Palestine birds is compared with a series from south and central India. Individual specimens from W. Pakistan and NW. India are not always distinguishable in colour either from *galilejensis* or *affinis*, and moreover the complete gradation in size often makes subspecific allocation impossible. For a discussion see Whistler (JBNHS 38: 30), who suggests that under the circumstances *galilejensis* may be removed from the Indian list.

MEASUREMENTS

	Wing	Tail
Palestine birds		
♂ ♀	132-138	40-46 mm
Punjab birds		
9 ♂♂	125-134	39-44 mm
13 ♀♀	127-133	38-43 mm (HW)

COLOURS OF BARE PARTS. As in 703.

703. *Apus affinis affinis* (J. E. Gray)

Cypselus affinis J. E. Gray, 1830, in Gray and Hardwicke's Ill. Ind. Zool. 1(2), pl. 35, f. 2 (No locality = Ganges) Baker, FBI No. 1596, Vol. 4: 332 Plate 56, fig. 4

LOCAL NAMES. *Ābābel*, *Bābelā* (Hindi); *Pākoli* (Marathi); *Ābābelo* (Gujarati); *Sārāppākūhi* (Malayalam).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. A small smoky black swallow-like bird with conspicuous white rump, white throat, short square tail, and long narrow sickle-shaped wings. Usually seen in scattered rabble-like flocks dashing about in the air at great speed all day long, hawking insects over towns and villages, often in company with swallows. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident and common; in some areas locally migratory in the coldest months. All India from the Punjab to West Bengal, and south through the entire Peninsula with the possible exception of Kerala where the birds are



× c. 1

50

APODIFORMES

701. *Apus pacificus kanoi* (Yamashina)

Micropus pacificus kanoi Yamashina, 1942, Bull. Biogeogr. Soc. Japan 12 (2): 72 (Botel Tobago)
Apus pacificus salimalii Lack, 1958, Jour. Bombay nat. Hist. Soc. 55: 160-1 (Molo, Chu Valley, SE. Tibet)
Baker, FBI No. 1593 (part), Vol. 4: 329

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. As of 699. See Key and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Not yet recorded but may occur in NEFA since it breeds in adjacent southeastern Tibet.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 699 and other swifts.

BREEDING in the lower Tsangpo Valley (SE. Tibet) at c. 3500 m in summer under the eaves of the larger houses and also in the lofty stone defence towers characteristic of the 'villages' (Ludlow, 1944).

MUSEUM DIAGNOSIS. As large as nominate *pacificus* (699), but almost identical with *leuconyx* in the other characters, viz. darker upperparts, decidedly narrower white rump, and much narrower white tips to feathers of underparts. Thus separable from *pacificus* by colour and from *leuconyx* by size.

MEASUREMENTS. Wing 5 ♂♂ 173-179 (mean 176) mm (Lack).

COLOURS OF BARE PARTS. As in 699.

APUS AFFINIS (J. E. Gray): HOUSE SWIFT

Key to the Subspecies

	Page
1 Tail square	
a Crown brown, forehead more grey but no white and no trace of supercilium.....	<i>A. a. affinis</i> 51
b Crown and forehead all brown.....	<i>A. a. nipalensis</i> 54
c Crown grey-brown grading to whitish on forehead, often a trace of white supercilium.....	<i>A. a. galilejensis</i> 50
d Head, tail and upper tail-coverts practically black.....	<i>A. a. singalensis</i> 54
2 Tail slightly but obviously forked.....	<i>A. a. subfuscatus</i> 55

702. *Apus affinis galilejensis* (Antinori)

Cypselus Galilejensis? Antinori, 1855, Naumannia: 307 (Sea of Galilee, Palestine) Baker, FBI No. 1597, Vol. 4: 334

LOCAL NAMES. *Ābābel*, *Bābelā* (Hindi); *Chāmro* (Sind).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As of 703, q.v. See Key to the Subspecies and Museum Diagnosis.

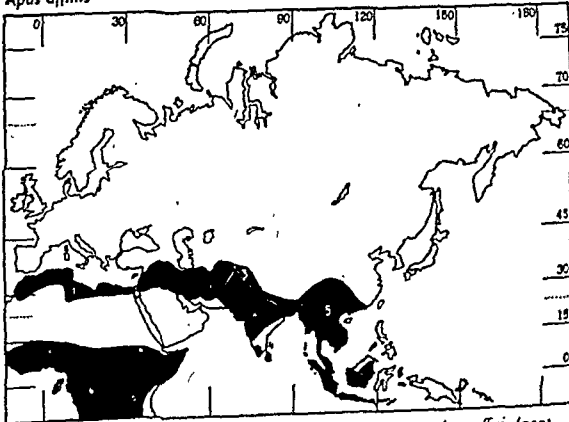
STATUS, DISTRIBUTION AND HABITAT. Resident and common in West Pakistan [Baluchistan (Quetta), Sind, W. Punjab (Dera Ghazi Khan)] except in the coldest months, c. November to February, when scarce or absent; presumably migrating then to warmer parts in peninsular India. But see remarks under Museum Diagnosis.

52

APODIFORMES

darker and seem more akin to the Ceylon race. Plains and up to c. 2000 m in the Himalayas and peninsular hills. Affects the neighbourhood of urban habitations, crumbling old forts and ruins, and cliffs.

Apus affinis



- Breeding range 1 *A. a. galilejensis* (702). 2 *A. a. affinis* (703).
3 *A. a. nipalensis* (705). 4 *A. a. singalensis* (704).
5 *A. a. subfuscatus* (706). 6 *A. a. abyssinicus* (RE).
7 *A. a. bannermani* (RE).

GENERAL HABITS. Gregarious, predominantly aerial and rather parochial. In small parties and loose rabble-like flocks of up to 50 or a hundred birds or so; sometimes much larger aerial congregations or 'clouds', presumably then on local migration. Spends most of the day on the wing, usually keeping within a wide perimeter of the nest colonies or 'villages', the birds shooting into the nests from time to time as they circle around, sometimes more or less all in a body. Flight very swift (whence the name) — a few rapid quivering beats of the stiffly held narrow wings, followed by swooping glides, with much agile wheeling and twists and turns in pursuit of midges and other aerial insects. Shrill musical twittering squeals often accompany these manoeuvres. Flocks commonly seen disporting themselves in the evenings, 'balling' up in the sky obviously for fun, uttering shrill joyous screams; the milling rabble gradually wafting away in the distance or mounting higher and higher till almost out of sight. In a strong head wind, the wings are often turned steeply downwards like a sloping roof, the bird thus remaining suspended in mid-air for split seconds or even drifted backwards by the current but clearly enjoying the sport. Very sensitive to low temperatures, the majority, especially in the northern parts, abandon their breeding areas for three

SWIFTS

53

or four of the coldest months. The paucity of tiny flying insects up in the frigid atmosphere may, however, be an important contributory factor.

Courtship. Nest-based birds frequently disport themselves of an evening — pairs or trios flying at speed in close formation, almost wing to wing, in and out of verandas etc. below the nest clusters, twittering shrilly the while. The flight now is a butterfly-like fluttering with the wings raised in a 'V' above the back, only their tips vibrating rapidly. The exact significance of these triangular 'chases' is not understood.

Food. Midges (Diptera), tiny flying bugs and beetles (Hemiptera, Coleoptera), winged ants (Hymenoptera), air-borne spiders (Araneida), etc. all captured in mid-air.

voice and CALLS. Shrill spirited musical screams, uttered chiefly on the wing. Rendered as 'a very rapid *siksiksiksik—sik-sik—siksiksiksik* all pitched on the same note' and variants of this (M. D. Lister). A shrill *chuck-chrrrr* started by one bird in the roost and promptly taken up as a chorus by its neighbours, sometimes passing as a wave, or as repeated waves, through the entire colony. Usually heard early in the morning before the birds leave their dormitory; sometimes also after retiring into it at dusk (A. Razack).

BREEDING. *Season*, practically all year except the coldest months, namely c. November to February, the peak periods (apparently two) varying locally. *Nest*, basically a globular untidy mass of grass and feathers cemented together with the birds' saliva, very variable in shape. Usually attached under the eaves of houses or in the angle of the ceiling and wall, or under an arched gateway, bridge and the like. Built in colonies, small or large, the nests stuck in disorderly fashion one upon another in a conspicuous conglomerated mass; each has a separate entrance, in some cases merely a slit between the wall and the nest. Old mosques and ruins are favoured, and the so-called 'nest villages' are often sited in the midst of congested noisy bazaars with people and traffic moving within a few metres of the birds flying in and out. The nests are repaired and used year after year, and where unmolested the 'villages' tend to become traditional, some being known to be occupied for over eighty years. In areas of all-year residence nests used as dormitories during non-breeding season. Occasionally single nests are built, or a pair of swifts will usurp the mud nests of Wiretailed, Redrumped and Cliff Swallows, adapting them to their own use by a copious lining of tell-tale feathers. *Eggs*, 2 or 3, rarely 4, pure white longish ovals; laid at intervals of 2 or 3 days, in some cases even up to 7 days. Average size of 100 eggs 22.2 × 14.2 mm (Baker). Both sexes take part in building the nest, incubation (?) and tending the young, who leave the nest between 37 and 43 days of hatching. Incubation period 18–26 days (Razack)¹. Brooding begins with the first egg, often resulting in considerable disparity in the growth of the nestlings. They are fed on boluses of tiny insects brought in the parents' gullet. All nest material is also collected in the air.

MUSEUM DIAGNOSIS. Crown light brown paling to greyish on forehead and forehead; upper tail-coverts and tail dark brown. Tail slightly forked when freshly moulted. For description of plumage see Baker, loc. cit.; for a discussion on the Indian races, Whistler (JBNHS 38: 30); Abdulali (ibid. 62: 523–8).

¹ Razack, K. M. A., 1968. 'Some Observations on the Biology of the House Swift, *Apus affinis* (Gray)'. Ph.D. thesis, M. S. University, Baroda.

SWIFTS

55

FIELD CHARACTERS. As of 703, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to seasonal local and altitudinal movements. Nepal, Sikkim, Bhutan and western Assam (Kamrup dist.) to c. 2000 m.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 703.

BREEDING. *Season*, chiefly April to July. Apparently less colonial than *affinis* at least when nesting in buildings; the 'villages' usually smaller, and usurpation of individual swallow nests commoner. Colonies may be larger when sited on cliffs, but this not specifically recorded. Average size of 10 eggs 21.9 × 14.4 mm (Baker).

MUSEUM DIAGNOSIS. Darker than *affinis* with the head all brown, not paling to greyish on forehead or forehead. Upperparts, excepting white rump-patch, sooty black slightly glossed with green.

MEASUREMENTS

	Wing	Tail
16 ♂ ♀	129–139	42–49 mm (Bixwas)

COLOURS OF BARE PARTS. As in 703.

706. *Apus affinis subfuscatus* (Blyth)

Cypselus subfuscatus Blyth, 1849, Jour. Asiat. Soc. Bengal 18 (2): 807 (Penang)
Baker, FBI No. 1599, Vol. 4: 335

LOCAL NAME. *Dao hādi* (Cachari).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As of 703, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, with the usual seasonal local movements. Assam (excluding Kamrup dist.) to c. 1200 m, south through Nagaland, Manipur, Mizo Hills (?); East Pakistan.

Extralimital. Southern China from Yunnan to Fukien, south to Burma, Malay Peninsula, Thailand and the Indochinese countries. Indonesian islands.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 703.

BREEDING. *Season*, in Assam April to July, chiefly May and June. 'A purely cliff-breeding bird, [in Assam] some of the colonies being of great size, numbering one or even two hundred pairs of birds. . . . The nests on cliffs are nearly all of the strong, well made half-cup type' (Baker). *Eggs* 2 or 3; average size of fifty 22.7 × 14.9 mm.

MUSEUM DIAGNOSIS. Darker than *affinis* with head, tail, and upperparts (except for white rump) all practically black and without contrast. Matches *singalensis* (704) in colour, but is larger on the average and with a longer, slightly forked tail.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	130–142	c. 6	c. 9–10	44–47 mm (Baker)

Outer tail-feathers 4–7 mm longer than the central ones.

54

APODIFORMES

MEASUREMENTS

	Wing	Tail
♂ ♀	122–135	37–44 mm (Baker, HW, HA)

Bill (from feathers) 6–7 mm; tarsus c. 9–10 mm (Baker).

Weight 1 ♂ 21 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill horny black; mouth pink. Legs and feet pinky brown; claws horny black (SA).

704. *Apus affinis singalensis* Madarász

Apus singalensis Madarász, 1911, Ann. Hist.-Nat. Mus. Nat. Hungar. 9: 420, pl. 16 f. 4 (Ceylon)

Baker, FBI No. 1598 (part), Vol. 4: 334

LOCAL NAMES. *Wēhi līhīmīyā* (Sinhala); *Sārāppākshi* (Malaya); *Forika* (Maldivean).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As of 703, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; Ceylon and possibly Kerala. Plentiful but locally distributed in all zones throughout the Island to over 1200 m; patchily and rather capriciously in Kerala. Sight recorded in Maldives Is. (Phillips, JBNHS 60: 580); subspecies unconfirmed. Keeps chiefly in the neighbourhood of big rock-masses in the foothills and low country.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 703.

BREEDING. *Season*, April to September, chiefly March to July. Breeding biology as in 703.

MUSEUM DIAGNOSIS. Distinguished from peninsular *affinis* (703) by blacker coloration: head, tail and upper tail-coverts all practically black, almost the same colour as mantle. Rump-patch white as in 703 and other races. Kerala birds are also blacker than *affinis* and evidently belong to the Ceylon population.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂ ♀	127–133	11–12	42–45 mm (HW, HA)

Weight 1 ♂ 24 g; 1 ♀ 23 g (SDR).

COLOURS OF BARE PARTS. As in 703.

705. *Apus affinis nipalensis* (Hodgson)

Cypselus Nipalensis Hodgson, 1836, Jour. Asiat. Soc. Bengal 5: 780

(Central region of Nepal)

Baker, FBI No. 1598, Vol. 4: 334

LOCAL NAME. *Bātāsi* (Nepali).

SIZE. Sparrow; length c. 15 cm (6 in.).

56

APODIFORMES

COLOURS OF BARE PARTS. As in 703.

Genus *CYPSIURUS* Lesson

Cypsiurus Lesson, 1843, Echo du Monde Savant, Ann. 10, 2me sem.: 134. Type, by monotypy, *Cypselus ambrasiacus* Temminck = *Cypselus parvus* Lichtenstein

Small swifts with deeply forked tails. Toes arranged in pairs, the 3rd and 4th toes outward, the 1st and 2nd (inner and hind) inward.

CYPSIURUS PARVUS (Lichtenstein): PALM SWIFT

Key to the Subspecies

Paler; depth of tail-fork exceeding 28 mm. *C. p. balariensis*
Darker; depth of tail-fork less than 28 mm. *C. p. infumatus*

707. *Cypsiurus parvus balariensis* (J. E. Gray)

Cyp.(selus) Balariensis [sic] J. E. Gray, 1829, in Griffith's Anim. Kingdom 7: 60 (India, restricted to Calcutta by Baker, 1927, Fauna 4: 336, re-restricted

to Balasore district, north-eastern Orissa, by Ripley, *Synopsis*, 2nd ed., p. 201, 1932)

Cypselus palmorum J. E. Gray, 1830, in Gray and Hardwicke's Ill. Ind. Zool. 1(2), pl. 35, figs. 1a and 1b (No locality = Cawnpore)

Baker, FBI Nos. 1600, 1601, Vol. 4: 336; 338

Plate 56, fig. 13

LOCAL NAMES. *Tādi ābābel*, *Tāchatta*, *Patta duli* (Hindi); *Tāchārāi*, *Bātāsi* (Bengali); *Shimri* (Marathi); *Tād ābābelo* (Gujarati); *Amāttān kātti* (Tamil); *Pānāpākshi*, *Pānākkatti* (Kannada); *Pānāmpākshi* (Malayalam); *Wēhi līhīmīyā* (Sinhala); *Ulavāra kūrūri* (Tamil, Ceylon).

SIZE. Sparrow —; slimmer. Length c. 13 cm (5 in.).

FIELD CHARACTERS. A slim, plain sooty grey swift, with narrow, deeply forked tail. In flight the long slender curving wings reminiscent of a miniature bow with the body set in it for an arrow. Tail-fork very conspicuous when bird banking in flight. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident practically throughout our area south of the Himalayas [excluding the range of the eastern *infumatus* (708)] and Ceylon. Patchy in Rajasthan and Gujarat. Absent in West Pakistan. Chiefly plains; locally in the hills to c. 1000 m. Affects open country and cultivation dotted with palm trees. Occurrence everywhere closely associated with palms, especially the *tād* or palmyra (*Borassus flabellifer*), and locally the betelnut palm (*Areca catechu*).

GENERAL HABITS. Gregarious and aerial like House Swift, but usually more scattered; rarely seen in close-packed flocks. Spends the day on the wing hawking insects high up in the air or close to the ground, almost invariably in the proximity of palmyra palms; sometimes a colony may even be based on a single palmyra palm, or a small cluster, with no others for miles around. Flight swift and arrowy with agile twists and turns in pursuit of prey, accompanied by lively twittering screams. This particularly when a party is sporting around the roosting place near sunset. Roosts in furlows on the underside of a downhanging palmyra leaf, clinging in an upright

SWIFTS

57

position. Courtship chases as in House Swift (703), sometimes involving three and even four birds. Copulation in mid-air as in most other swifts.

FOOD. Winged ants and other hymenopterous insects, tiny bugs and beetles (Hemiptera, Coleoptera), etc., taken in the air.

VOICE AND CALLS. A shrill, joyous, triple twittering scream *tititee*, uttered on the wing.

BREEDING. Season, practically throughout the year, the peak periods varying locally. *Nest*, a flimsy half-saucer c. 10 mm deep and 40 mm in diameter, of vegetable down (e.g. *Calotropis*, *Salmalia*, etc.) agglutinated together with the bird's saliva; attached bracketwise within a furrow on the underside of a drooping palmyra frond with the supporting 'apron' of inspissated saliva and feathers stretching upward for c. 8 cm behind the nest like a screen or backdrop. This apron used by growing young to cling to when the cup gets too small to contain them. Nest sometimes built near mid-rib under arching areca frond. *Eggs*, normally 2 occasionally 3, pure white elongated pointed ovals, typical of swifts. Average size of 50 eggs 18.2 × 11.5 mm (Baker). Both sexes take part in collecting floating vegetable down in the air and in building the nest. Share in incubation, and period, unrecorded.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail central outer
♂ ♀	113-122	7-8	8-9	30-33 60-68 mm (HW, SA)

COLOURS OF BARE PARTS. Iris brown. Bill dark horny brown; mouth pinkish grey. Legs, feet and claws pinkish brown.

708. *Cypsiurus parvus infumatus* (Sclater)

Cypselus infumatus Sclater, 1865, Proc. Zool. Soc. London: 602
(Banjermassing, Borneo)
Baker, FBI No. 1602, Vol. 4: 338

LOCAL NAME. *Dao hadi kashiba* (Cachari).

SIZE. Sparrow —; slimmer. Length c. 13 cm (5 in.).

FIELD CHARACTERS. As of 707. See Key to the Subspecies, and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Assam south of Brahmaputra river, Nagaland, Manipur, Mizo hills, Tripura, East Pakistan. Plains and up to c. 600 m. Sight recorded (subspecies?) in NEFA (Subansiri area) — Betts, JBNHS 53: 411.

Extralimital. Burma, Thailand, and Vietnam; Hainan I. Malay Peninsula, Tambelan Is., Sumatra, Java, Bali, Billiton and Borneo (Peters).

GENERAL HABITS. Similar to 707, but keeps more to open clearings in forest, and is somewhat less dependent on palm trees. In their absence commonly roosts and nests in the thatching of roofs in tribal villages, flying in and out of the houses fearlessly within grabbing distance of the inmates.

FOOD, VOICE AND CALLS. As in 707.

SWIFTS

59

deeply forked tail distinguish it. At rest the tail, narrowed to a spike, projects between the crossed wing-tips.

STATUS, DISTRIBUTION AND HABITAT. Resident; rather patchily distributed and subject to some seasonal local movements. All along the base of the Outer Himalayas (up to c. 1000 m) and throughout the Indian Union except the more treeless parts of Punjab, Rajasthan, and Gujarat (Kutch). Occurs also in Nepal (lowlands, bhabor and dun), East Pakistan, and Ceylon (lowlands and hills to c. 1200 m). Absent in West Pakistan. Affects well-wooded areas of deciduous forest — teak, *Anogeissus*, *Boswellia*, etc. — preferably in broken foothills country.

Extralimital. Extends through Burma south to central Tenasserim, Thailand and the Indochinese countries. Other races in the Indonesian islands.

GENERAL HABITS. Keeps in loose parties of 6 to 8, occasionally larger flocks, wheeling in wide circles hawking insects high above the tree-tops in open deciduous forest, uttering their distinctive calls. Comparatively parochial, seldom wandering as far afield as some other swifts in the course of their foraging. Flight very like Palm Swifts, much slower than is typical of the family though accompanied by the same nimble twists and turns and graceful evolutions in pursuit of insect prey. Settles from time to time near the tips of leafless trees to rest and preen, perching bolt upright with the crest raised. Dips at speed to drink from the surface of forest pools, rising again in a graceful curve.

FOOD. Flying insects — Hemiptera, Coleoptera, etc.

VOICE AND CALLS. A harsh but not unpleasant double note *ti-chuk, ti-chuk* or *whit-tuck, whit-tuck* reminiscent of the scolding notes of the Shikra hawk — uttered chiefly in flight. A trisyllabic *kip-kee-kep*, middle syllable much emphasized, given frequently from a perch (Lowther). Call also described as resembling a parakeet's scream (Nichols).

BREEDING. Season, December to July, varying with 'locality'. Chiefly January to March/April in the Peninsula; March to May and again September in Ceylon. *Nest*, a ridiculously tiny and shallow half-saucer c. 50 × 30 mm across, and 10-12 mm deep in the middle. Made of scales or flakes of papery bark, more or less uniform in size and shape, and small feathers, agglutinated together with the birds' saliva; attached bracketwise to the side of a thin horizontal branch, 20 to 50 mm in diameter, near the top of a leafless tree, 4 to 18 m above the ground. Nest practically invisible from below or merely as a small knot in the branch. *Egg*, a singleton, glossless white with a faint bluish tinge when fresh; elongated oval, obtuse at both ends, filling the diminutive nest completely. Average size of 29 eggs 23.7 × 17.1 mm (Baker). Both birds partake in nest-building, incubation, and feeding the young. Incubation period undetermined. The incubating bird perches upright on the branch against the nest puffing out its breast and abdomen feathers to cover the egg and nest. The nestling, clad in grey down, remains rigid and immobile in the nest with its bill pointing slightly upward, simulating to perfection a lichen-covered snag cf. *Hemipus* (1065) and *Tephrodornis* (1070). Older young in mottled juvenile plumage perches and more or less upright by nest, like incubating adult, with head, neck and bill extended upward and crest raised, thus becoming extraordinarily camouflaged. [For good accounts of the breeding biology see H. Whistler, JBNHS 34: ed.]

58

APODIFORMES

BREEDING. Season, chiefly March to August in the plains; April to June in the hills. *Nest* as in 707 but commonly built under projecting eaves or in the roofs of village houses thatched with grass, bamboo leaves, and palm leaves. Sometimes under large downhanging leaves of palms, e.g. the Tok palm (*Livistona jenkinsiana*) in compounds, frequently within hand reach. *Eggs* 2 or 3; average size of fifty 17.1 × 11.7 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *batesianis* (707) in being darker, with a shorter, less deeply forked tail. *Above*, blackish brown, the wing-quills and tail almost black with a slight gloss. *Below*, dark brown, sometimes slightly paler and greyish on chin and throat.

MEASUREMENTS. Wing ♂ ♀ 113-126 mm (Baker).

COLOURS OF BARE PARTS. As in 707.

Subfamily HEMIPROCNINAE

Differs from swifts of the subfamily Apodinae in the character of the tarsi and feet which superficially resemble swallows'. Hind toe not reversible, and unlike other swifts the birds are capable of perching like a true passerine.

Genus HEMIPROCNE Nitzsch

Hemiprocne [nominative plural] Nitzsch, 1829, Obs. Av. Arter. Carot. Comm.: 15 and note. Type, by subsequent designation, *Cypselus longipennis* Temminck = *Hirundo longipennis* Rafinesque

Sincipital plumes long and erectile forming a frontal crest. Tail long and deeply forked. Wings when folded reach nearly to end of tail. Sexes dimorphic in plumage and young unlike adult. There is a patch of silky down feathers on each flank. Only a single species and race within our limits.

709. Crested Swift. *Hemiprocne longipennis coronata* (Tickell)

Hirundo Coronata Tickell, 1833, Jour. Asiat. Soc. Bengal 2: 580
(Jungles of Borabhum and Dholbhum)

Hemiprocne longipennis dyas Ripley, 1950, Proc. Biol. Soc. Washington 63: 101
(Juna Rajpipla, South Gujarat)
Baker, FBI No. 1616, Vol. 4: 354
Plate 56, fig. 1

LOCAL NAMES. *Dao hadi ko* (Cachari); *Tājdar 'abābel* (Hindi); *Wāhi Kāhīyā* (Sinhala); *Chōtāliyo ābābelo* (Gujarati); *Sārāppākshi* (Malayalam).

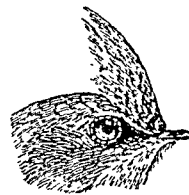
SIZE. Bulbul ±; length c. 23 cm (9 in.).

FIELD CHARACTERS. A slender blue-grey swallow-like bird with a prominent backward curving frontal crest, erected when perched.

Male. *Above*, bluish grey glossed with green. *Below*, chin, throat and sides of face: chestnut; breast ashy grey, passing into white on abdomen and under tail-coverts.

Female, similar but lacking the chestnut on the face and throat.

Flight, and appearance on wing, very like palm swift, but larger size, white underparts and more



× c. 1

TROGONIFORMES

60

772-7 (photos); J. K. Stanford and H. C. Smith, *ibid.* 39: 125-6; E. H. N. Lowther, *ibid.* 39: 116-24 (photos).]

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young (immature). *Above*, feathers finely edged with pure white with broad subterminal bands of pale brownish grey. Scapulars and innermost secondaries broadly grey-white at the ends, with very fine brown subterminal lines. *Below*, feathers edged with white and sub-edged blackish.

MOULT. Postjuvinal moult apparently does not include primaries and coverts, secondaries and greater coverts, tertiaries and tail. Except for these unmoulted parts, first-year male agrees with adult male. A complete moult in autumn in which the body plumage is usually changed well before the wings and tail. There appears to be a partial body moult in spring (Whistler).

Nothing is known about the patch of silky downy feathers on the flanks or the curious decomposed edges to the tertiaries which in some examples show up as a conspicuous patch.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail central outer
14 ♂♂	141-156	11-12	7-9	40-47 110-135 mm
10 ♀♀	148-160	11-13	7-9	40-46 124-127 mm (HW, SA)

Baker gives for ♂ ♀ Wing 151-165 mm.

COLOURS OF BARE PARTS. Iris brown. Bill horny black; mouth greyish pink. Legs and feet pinkish brown; claws blackish brown.

Order TROGONIFORMES

For morphological details see Stresemann, E., 1927-34, *Acas*: 833; Baker, 1927 FBI 4: 314 (Sub-order Trogones).

Family TROGONIDAE: Trogons

For description see Van Tyme, J., and Berger, A. J., 1959: 469; Eugene Eisenmann, 1964. Article 'Trogon' in Thomson, A. L. (ed.) *New Dict. Birds*, London & New York.

Genus HARPACTES Swainson

Harpactes Swainson, 1833 (1832-33), Zool. Ill. (2), 3: 107 (in key). Diagnosis only, no type or included species. Species added, Swainson, 1837, *Classif. Bds.* 2: 317

Type, by subsequent designation, *Trogon malabaricus* Gould

Bill short, strong and wide; tip of culmen boldly hooked and toothed. Nostril and base of bill well covered with bristles; cheeks partly naked. Feet small, unfeebly, half feathered. Tail long, the rectrices broad and squarely truncated in adult. Pointed in young; of 12 broad feathers, the outer three pairs steeply graduated. Wing rounded, of 10 primaries; inner primaries and secondaries very short. Body plumage soft and dense; skin very thin.

Key to the Species

	Page
A Belly red in males, cinnamon in females..... <i>H. fasciatus</i>	61
B Belly red in both sexes..... <i>H. erythrorhynchos</i>	64
C Belly geranium pink in males; primrose yellow in females..... <i>H. uerdi</i>	66

TROGONS

61

HARPACTES FASCIATUS (Pennant): TROGEN

Key to the Subspecies

	Page
Head and foreneck grey, not black or blackish.....	<i>H. f. fasciatus</i> 63
Head and neck black, not grey.....	<i>H. f. malabaricus</i> 61
Similar to last but paler, especially on back; white of wing barings more extensive.....	<i>H. f. legerli</i> 61

710. *Harpactes fasciatus legerli* Koelz

Harpactes fasciatus legerli Koelz, 1939, Proc. Biol. Soc. Washington 52: 79

(Foot of Mahendragiri, Orissa)

Baker, FBI No. 1585 (part), Vol. 4: 317

Cf. Salim Ali, 1949, JBNHS 48: 806-8

LOCAL NAME. *Kufni chiri* (Hindi).

SIZE. Myna \pm , with longer tail; overall length c. 31 cm (12 in.).

FIELD CHARACTERS. As of 711, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. Southern Gujarat (Surat Dangs) and northern Maharashtra (Khandesh) south to c. lat. 20°N., eastward, presumably over the Satpura trend, through Madhya Pradesh (Bastar dist.) to Chota Nagpur and Orissa (Mahendragiri); from plains level to c. 1200 m. Affects moist-deciduous and semi-evergreen forest.

GENERAL HABITS, FOOD, VOICE and CALLS. As in Malabar Trogon (711).

BREEDING. As in 711.

MUSEUM DIAGNOSIS. Differs from *H. f. malabaricus* (711) in being larger and brighter coloured.

Male. Head (and breast) greyish black r. deep sooty black in 711. Upperparts bright yellowish brown, less suffused with chestnut, particularly on upper tail-coverts.

Female. Above, upper back darker with an olive tinge (more or less concolorous with head), contrasting strongly with bright rufous-orange of rump and upper tail-coverts.

Females from S. Gujarat are somewhat intermediate between the Kerala population and that of eastern Madhya Pradesh and Orissa.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
14 ♂♂	130-142	20-21	15-17	155-184 mm
8 ♀♀	125-135	19-21	15-17	143-176 mm
				(SA)

COLOURS OF BARE PARTS. As in *malabaricus* (711).

711. *Harpactes fasciatus malabaricus* (Gould)

Trogon Malabaricus Gould, 1834, Proc. Zool. Soc. London, pt. 2: 26 (Malabar Coast)

Baker, FBI No. 1585, Vol. 4: 317

Plate 57, fig. 3

LOCAL NAMES. *Kufni chiri* (Hindi); *Kārnā* (Marathi); *Kēdānē hākki* (Kannada); *Thekkākkā* (Malayalam).

SIZE. Myna \pm , with longer tail; overall length c. 31 cm (12 in.).

TROGONS

63

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Differs from the nominate race of Ceylon (712) in the male having a much darker sooty black head and breast r. leaden grey-black. No difference in female.

Young (immature) male has crimson of underparts replaced by pinkish salmon or buffy brown (as in female), variegated with red. Primaries, secondaries and some of the lesser coverts are evidently retained from juvenile plumage, as is also the tail. Juvenile rectrices narrower; central pair not squarely truncated but with normal rounded tips, and lacking the black terminal band.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
16 ♂♂	122-129	20-23	13-15	156-180 mm
10 ♀♀	122-131	20-21	13-15	162-167 mm
				(SA, HW)

Weight 2 ♂♂ 62, 64; 2 ♀♀ 60, 64 g (Rensch, SA)

COLOURS OF BARE PARTS. Iris dark brown; orbital and sub-orbital skin bright cobalt blue. Bill blue, black on culmen and tips of both mandibles; mouth pink. Legs and feet pale blue; claws horny brown.

712. *Harpactes fasciatus fasciatus* (Pennant)

Trogon fasciatus Pennant, 1796, Indian Zool.: 4, pl. 5 (Ceylon)

Harpactes fasciatus parvus Deraniyagala, 1954, Admin. Rep. of the Dir. Nat. Museums Ceylon, for 1953. Pt. iv, Educ., Sci., and Art (E): E9 (Thanni arripu, N.P., Ceylon)

Baker, FBI No. 1584, Vol. 4: 316

LOCAL NAMES. *Gini kurullā*, *Nāva nīla kurullā*, *Ramren kōndea* (Sinhala).

SIZE. Myna \pm , with longer tail; overall length c. 31 cm (12 in.).

FIELD CHARACTERS. As of 711, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Race peculiar to Ceylon. Resident. Moderately plentiful in forest areas throughout the Island to over 1800 m; more plentiful in the Wet zone rain-forests than elsewhere (Phillips).

GENERAL HABITS, FOOD, VOICE and CALLS. As in 711. Observed plunging in pool from overhanging branch to bathe (CBCN, July 1972: 37).

BREEDING. *Season*, March to June, chiefly March and April. *Nest* and *eggs* as in Malabar Trogon (711), the latter even more spherical, measuring c. 25 x 24 mm.

MUSEUM DIAGNOSIS. Slightly smaller than *malabaricus* (711) with a shorter tail, actually and comparatively. Head and breast of male paler, a leaden grey-black r. sooty black in the former. No significant colour difference in females of the two. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	118-126	20-21	13-15	139-152 mm
				(HW)

COLOURS OF BARE PARTS. As in 711.

62

TROGONIFORMES

FIELD CHARACTERS. A brilliantly coloured bird with a relatively long, broad and curiously square-ended tail.

Male. Head, neck and breast sooty black. Back yellowish brown; wings blackish with fine wavy white barring. Underparts brilliant crimson-pink divided from black breast by a prominent white gorget.

Female duller, with the underparts orange-brown instead of crimson-pink.

STATUS, DISTRIBUTION and HABITAT. Resident. Peninsular India in the Western Ghats complex, south of the range of *legerli* (710), i.e. south of c. 20°N.—through Maharashtra, Goa, Mysore, Tamil Nadu, and Kerala; from plains level to c. 1500 m. Sight records from Andhra — Amrabad Plateau c. 700 m, Nallamalai Hills (SA, JBNHS 37: 136) and Sankrametta c. 1200 m (Vishakhapatnam dist., La Personne, ibid. 38: 28). Affects evergreen and moist-deciduous forest.

GENERAL HABITS. Essentially a forest bird with a preference for secondary moist-deciduous and mixed bamboo jungle. Arboreal, sluggish, and somewhat crepuscular, often hunting till well after sunset. Usually keeps singly or in widely separated pairs perched bolt upright and inert on low branches and tree-stumps for long periods, sallying out occasionally after winged insects. Seemingly possesses an uncanny knack of always keeping the dull coloured back turned to the observer. The broad truncated tail, as broad as the body, then looks like a strip of bark or a dry leaf, camouflaging the bird in an astonishing way. The peculiar mewing calls are usually the first indication of its presence in any patch of jungle. Has a curious habit, when alarmed or apprehensive and preparing to fly off, of bending forward and expanding and flicking up the tail every little while to the accompaniment of a low mewing twitter. In the initial spurt of taking wing, flutters or spins rapidly from side to side like a dove suddenly frightened, the pointed primaries and expanded tail screwing this way and that in the precipitate action. Jerky 'saw-toothed' braking movements before alighting also recall a dove's. Flits from one vantage point in the forest to another, the tail frequently flicked open and shut as it goes, flashing the white lateral feathers. Captures flying insects on the wing, turning and twisting in the chase with the graceful agility of a Paradise Flycatcher. Will sometimes cling laterally to tree-trunks and branches to snatch an insect, or hover momentarily in front of a bunch of leaves to do so; occasionally also swoops to the ground in the quest.

FOOD. Caterpillars, beetles, grasshoppers, cicadas and other insects; also leaves and berries.

VOICE and CALLS. A throaty, rather abrupt musical *mew* or *cue* (of near oriole quality) usually in runs of 3 (*cue-cue-cue*) — sometimes 4 and even 5 — either quickly repeated or unhurriedly and deliberately. A low rolling creak, *krr-r-r-r*, when alarmed or apprehensive.

BREEDING. *Season*, chiefly February to May. *Nest*, an unlined natural hollow in or on top of a broken tree-stump in deep forest, usually under 6 m from the ground. A flimsy stick-nest like a dove's has been reported (JBNHS 39: 24). *Eggs*, 2 to 4, pale ivory white, glossy, unmarked, rather spherical. Average size of 30 eggs 26.7 x 23.4 mm (Baker). Evidently both sexes partake in incubation; period unrecorded.

64

TROGONIFORMES

HARPACTES ERYTHROCEPHALUS (Gould): REDHEADED TROGON

Key to the Subspecies

	Page
Smaller: Wing 143-148 mm	<i>H. e. erythrocephalus</i> 66
Larger: Wing 142-168 mm	<i>H. e. hodgsonii</i> 64

713, 714. *Harpactes erythrocephalus hodgsonii* (Gould)

Trogon (Harpactes) Hodgsonii Gould, 1838, Monogr. Trogonidae, List of pl. No. 34 (Nepal). Restricted by Biswas to Hitauna, Chisapani Garhi Province, Nepal

Harpactes erythrocephalus helenae Mayr, 1941, Ibis: 495

(Nyetmawhka, 8500 ft, Myitkyina dist., Upper Burma)

Baker, FBI No. 1586 (part), Vol. 4: 318

LOCAL NAMES. *Sūda sohāgin* ♂, *Kūchikūchia* ♀ (Bengal); *Hāmāhā pīyārā* (Hindi); *Sakor* (Lepcha).

SIZE. Myna +, with longer tail; overall length c. 35 cm (13½ in.).

FIELD CHARACTERS. Male. Head, neck and breast deep crimson, sometimes with traces of a white breast band. Back and upperparts chiefly rusty brown. Wing-coverts and tertiaries finely vermiculated black and white. Long, broad, truncated square-ended tail black and white. Underparts brighter and lighter crimson.

Female. Head, neck and breast dull orange-brown; rest as in male including crimson underparts.

In both sexes the white in the outer tail-feathers and whitish wing-patch are conspicuous, particularly in flight.

STATUS, DISTRIBUTION and HABITAT. Resident. The Himalayas from Kumaon through Nepal, Sikkim, Bhutan and Arunachal; terai, duars and up to c. 2400 ft. Also the central Assam hill ranges (Khasi, Garo, etc.), Nagaland and Manipur. The form in the last two needs confirming. Affects dense tropical secondary evergreen and mixed bamboo jungle.

Extralimital. Extends into Upper Burma, northern Shan States and western Yunnan.

GENERAL HABITS. Very similar to Malabar Trogon (711), q.v. Silent, sluggish, and rather crepuscular. Perching upright on snags and tree-stumps along shady jungle paths below the foliage canopy, occasionally making sorties after flying insects and making for a new perch after each capture.



x c. 1

TROGONS

65



Right foot, x c. 1

FOOD. Insects and larvae; green grasshoppers, beetles and stick insects (Phasmidae) commonly found among stomach contents. Also eats leaves and berries. VOICE AND CALLS. Usually very silent. An abrupt mewing *cue* as in 711, of rich oriole quality, uttered deliberately and unhurriedly, usually 5 or 6 times, sometimes up to 10; the series repeated every minute or so. 'A single croak as it flew out to capture an insect or seek another perch' (Betts).

BREEDING. Season, April to July, chiefly May and June. Nest, an unlined natural hollow in a rotten tree-trunk, or a deserted woodpecker hole, c. 1.5 to 5 m up, usually in dense jungle. Eggs, 3 or 4, spherical, buff-coloured, highly glossed. Average size of 80 eggs 28.6 x 24 mm (Baker). Both sexes incubate; period unrecorded.

MUSEUM DIAGNOSIS. Differs from the nominate race (715) of East Pakistan and Lower Burma in being larger and deeper coloured, with a smaller Wing/Bill index¹ (Biswas).

Young (immature). Above, wing-coverts black, broadly edged with buff; inner secondaries black, barred on the outer webs and tipped with buff. Below, from throat to vent buff or buffy white.

Nestling described by Hume, 1881, SF 9: 246.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	142-164	18-22	18-20	176-207 mm
♀♀	144-168	19-22	18-20	180-201 mm

(BB, SA, SDR, Stresemann, Mayr)

Weight ♂♂ 85-110 g; ♀♀ 76 g (SA, SDR).

COLOURS OF BARE PARTS. Iris dull red to crimson; orbital skin purplish blue. Bill: upper mandible lavender- or purplish blue, blackish on ridge of culmen and tip; lower mandible purplish at gape, rest black. Legs and feet brownish flesh or light purple.

TROGONS

67

SIZE. Pigeon ±, with longer tail; overall length c. 38 cm (15 in.).

FIELD CHARACTERS. Appreciably larger than Redheaded Trogon.

Male above, dark vinous red (or maroon-crimson) appearing almost black in shady forest, but crimson-pink graduated lateral tail-feathers conspicuous in flight. Central tail-feathers black, squarely truncated at tip. Below, throat and breast dark vinous red like head; rest of underparts rich crimson-pink.

Female dark olive-brown on head, back, throat and breast. Rest of underparts orange primrose-yellow. Tail as in male but lateral feathers pale primrose-yellow instead of pink.

STATUS, DISTRIBUTION AND HABITAT. Resident at fairly high elevations in the eastern Himalayas, between c. 1500 and 3000 m, from the Mishmi Hills westward through NEFA and Bhutan to at least c. 90°40'E. (Shamgong Dzong). Affects the lower storey and evergreen undergrowth and bamboo in tall subtropical hill forest of *Quercus*, *Castanopsis*, etc.

Extralimital: Upper Burma; North Vietnam.

GENERAL HABITS. Typical of the trogons, see 711. Keeps singly or in separated pairs. Has the same fussy fluttering flight when sallying to capture a winged insect or shifting from one perch to another.

FOOD. Insects — moths, stick insects (Phasmidae), grasshoppers, bugs, etc. — and berries. 'Large seeds, probably acorns' (Stanford).

VOICE AND CALLS. Little known; normally very silent. One call of male described as 'a soft *kew-kew-kew-tiree* at intervals' and another (alarm?) note as *whirr-ur* (Smythies).

BREEDING. No nest recorded as yet, but specimens collected in central Bhutan on 5 and 8 April had fully mature gonads, the distended oviduct of one female indicating that she was laying.

MUSEUM DIAGNOSIS. Supplementing the Field Characters (q.v.) the male has velvety black lores, lateral edge of forehead, and ring around eye. Upper wing-coverts and innermost secondaries black, very finely vermiculated with grey. A large concealed white patch at base of secondaries. Outer webs of primaries 2-6 finely edged with white. In museum skins (in the closed wing) these edges superficially look very like white shafts to the primaries.

Female. Forehead, especially in front of eyes, bright primrose-yellow; wing-coverts and innermost secondaries finely vermiculated golden brown. White edges of primaries 2-6, and patch at base of secondaries, as in male.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
6 ♂♂	167-177	17-19 (2 msd.)	17-18 (2 msd.)	218-233 mm
5 ♀♀	169-175	18-19 (4 msd.)	18 (2 msd.)	210-228 mm

(Mayr, SA, SDR)

Weight 2 ♂♂ 115, 120 g; 2 ♀♀ 120, 120 g (SA).

COLOURS OF BARE PARTS. Iris ♂♂ reddish brown; orbital skin azure blue. Bill ♂ red; ♀ horny brown, pink for c. 1 cm laterally at base of lower mandible. Legs and feet ♂ pinkish flesh colour; claws pale pinkish horny.

66

TROGONIFORMES

715. *Harpactes erythrocephalus erythrocephalus* (Gould)

Trogon erythrocephalus Gould, 1834, Proc. Zool. Soc. London, pt. 2: 25 (Rangoon) Baker, FBI No. 1586 (part), Vol. 4: 318

Plate 57, fig. 1

LOCAL NAMES. *Suda sohagin* ♂, *Kuchkuchia* ♀ (Bengal).

SIZE. Myna +, with longer tail; overall length c. 35 cm (13½ in.).

FIELD CHARACTERS. As of 713, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. East Pakistan (Chittagong and Tippera hill tracts), Tripura, Mizo Hills (?); from the foothills to c. 1800 m. Affects evergreen jungle.

Extralimital. Extends into Lower Burma south to Tenasserim, and NW Thailand.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 713. Call described as 'rather plaintive, of 6 to 10 notes on a monotone *tyaw-tyaw, tyaw...* at c. 2 per second' (Smythies, JBNHS 44: 226).

BREEDING. Season, nest, eggs and breeding biology as in 713.

MUSEUM DIAGNOSIS. Slightly smaller and less richly coloured than *hodgei* with a larger Wing/Bill index

MEASUREMENTS

	Wing	Bill (from skull)	Tail
7 ♂♀	143-148	21-22	177-201 mm (BB)

COLOURS OF BARE PARTS. As in 713.

716. *Ward's Trogon*. *Harpactes wardi* (Kinnear)

Pyropterus wardi Kinnear, 1927, Bull. Brit. Orn. Cl. 47: 112 (Seinghu Valley, 8000 ft, Burma)

Not in Baker, FBI

Plate 57, fig. 2

LOCAL NAMES. None recorded.

CORACIIFORMES

Order CORACIIFORMES

For morphological details see Stresemann, E., 1927-34, *Acres*: 828-31 (= Orders Coraciace, Halcyonace, Meropidae, Upupidae); Baker, 1927, FBI 4: 1; Thomson, A. L. (ed.), 1964, *New Dict. Birds*, London & New York (article 'Coraciiformes').

Family ALCEDINIDAE: Kingfishers

For description see Van Tyne, J., and Berger, A. J., 1959: 470; Baker, 1927, FBI 4: 245; Thomson, A. L., 1954, article 'Kingfisher', *New Dict. Birds*, London & New York.

Key to the Genera

	Page
A Plumage black and white.....	<i>Ceryle</i> 68
B Plumage not black and white.....	1
1 Tail shorter than bill.....	a
Tail longer than bill.....	b
a Toes three.....	<i>Ceryx</i> 60
Toes four.....	<i>Alcedo</i> 73
b Bill compressed, culmen flattened and grooved on either side.....	
.....	<i>Ptergoporus</i> 23
Bill not compressed, culmen rounded and not grooved.....	<i>Halcyon</i> 67

Genus CERYLE Boie

Ceryle Boie, 1828, Isis von Oken 21, col. 316. Type, by subsequent designation, *Ceryle rudis* (Gm.) = *Alcedo rudis* Linnaeus

Bill long and compressed, the culmen slightly curved, flattened or rounded above, with a groove on either side. Wings rather pointed: first primary (as.) a little shorter than second; either 2nd or 3rd primary the longest. Tail longer than culmen. Plumage of all the Indian representatives black and white.

Key to the Species

	Page
Back barred; wing over 160 mm.....	<i>C. lugubris</i> 68
Back more streaked than barred; wing under 150 mm.....	<i>C. rudis</i> 70

CERYLE LUGUBRIS (Temminck): PIED KINGFISHER

Key to the Subspecies

Darker above. White bars on feathers of upperparts narrower.....	
.....	<i>C. l. gutturalis</i>
Paler above. White bars on feathers of upperparts wider.....	
.....	<i>C. l. continentalis</i>

717. *Ceryle lugubris continentalis* Hartert

Ceryle lugubris continentalis Hartert, 1900, Novit. Zool. 7: 534 (Sikkim) Baker, FBI No. 1532 (part), Vol. 4: 248

Plate 58, fig. 1

LOCAL NAMES. *Mdikhhi taag* (Hindi, Dun); *Jal kutara* (Chamba); *Ung-la-eh* (Lepcha).

SIZE. House Crow ±; length c. 41 cm (16 in.).

KINGFISHERS

69

FIELD CHARACTERS. A large, crested black-and-white kingfisher with cross-barred back.

Male. *Above*, prominent erectile crest black, spotted and streaked with white; wings and tail blackish grey, boldly spotted and barred with white. A broad white half-collar on nape. *Below*, white; a broad pectoral band of black spots mixed with rufous-brown; flanks, sides of abdomen and under tail-coverts barred with blackish.

Female similar, but with under wing-coverts and axillaries pale rusty or cinnamon clearly noticeable in flight.

Young (immature) like female.

STATUS, DISTRIBUTION and HABITAT. Resident. The Himalayas from Kashmir through Himachal Pradesh, Garhwal, Kumaon, Nepal and Sikkim to western Bhutan; from the terai locally to c. 2000 m; sometimes extending into the adjacent plains. Partial to well-wooded spots at the junction of rocky torrential feeder streams with main rivers.

GENERAL HABITS. Not abundant, and rather local and parochial; usually very wary and difficult to approach. Keeps in pairs, perched together or separately on rocks or snags at the edge or amidst a torrent overlooking a swirling pool; only rarely at lakes (e.g. in Kashmir Valley) and tarns. Haunts a favourite beat of river day after day. Perches upright and still; bobs or 'pumps' head from time to time, raising the crest and switching up the tail almost double over the back. Dives obliquely into the water from the fishing post to capture its prey near the surface; does not normally hover and plunge vertically from the air in the spectacular manner of the smaller Pied Kingfisher (719). Flight swift and stately, with deliberate wing-beats, usually low over the rushing water.

FOOD. Fish up to 15 or 18 cm long. Alleged to do much damage to trout in Kashmir streams and is greatly persecuted on that account.

VOICE and CALLS. Normally very silent. Occasionally utters a single sharp click. 'More rarely a loud hoarse grating sound repeated rapidly several times' (Osmaston). 'A loud ping similar to one of the calls of the Redwattled Lapwing' (Whistler).

BREEDING. *Season*, chiefly March and April. *Nest*, a horizontal tunnel dug into a vertical stream-bank sometimes over a metre and a half long, ending in a widened egg-chamber. Unlined but soon becoming strewn with smelly cast-up fish bones. *Eggs*, 4 or 5, white, roundish; average size of 20 eggs 38.5 x 32.5 mm (Baker). *Share of the sexes* in excavating nest-tunnel and incubation, and incubation period, unknown.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Differs from the East Himalayan *guttulata* (718) in being paler. Back and upper wing-coverts less blackish, the white spots on the feathers of these areas being larger — more like bars, less like spots. There is also a slight increase in the amount of white on the outer feathers of the crest, making it look less black.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
10 ♂♂	177-186	68-80	12-14	103-114 mm
10 ♀♀	178-195	69-75	13-15	98-112 mm
				(BB, SA, Fleming)

KINGFISHERS

71

719. *Ceryle rudis leucomelanura* Reichenbach

Ceryle leucomelanura Reichenbach, 1851, Handb. spec. Orn.: 21, pl. ccix b, f. 3488 (Ceylon)

Baker, FBI No. 1531, Vol. 4: 246

Plate 58, fig. 3

LOCAL NAMES. *Koryala*, *Kilkila* (Hindi); *Kingur* (Sind); *Kirkiria* (Kutch); *Kābāro kākāliyo* (Gujarati); *Kārūna* (Bihar); *Chilla kilkila* (Madhya Pradesh); *Phāka māchhrāngā*, *Karikata* (Bengal); *Hōr kola tōneh*, *Sufaid tōnt*, *Duddru* (Kashmir); *Kellapu pilihudurā*, *Gōmera pilihudurā* (Sinhala); *Ateenkotti* (Tamil); *Inrai gna* (Kacha Naga); *Dao natu meberang* (Cachari); *Ngārakpi*, *Wakrek* (Manipuri).

SIZE. Myna +; length c. 31 cm (12 in.).

FIELD CHARACTERS. A speckled and barred black-and-white kingfisher with the typical stout dagger-shaped bill (black). Readily identified by



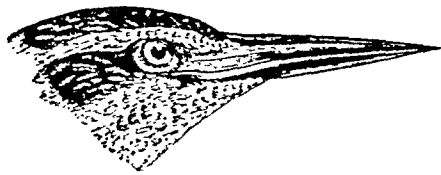
Bill from above, and tail, x c. 1/2
(After Hartert)



its spectacular habit of 'standing on its tail' in mid-air, hovering over water.

Male. *Above*, forehead, crown and nuchal crest black, finely streaked with white. Supercilium and collar on hindneck white. A broad black streak through eye to ear-coverts. *Below*, white, with a double black gorget across breast.

Female more or less similar but with only a single gorget, broken in the middle.



x c. 1/2

STATUS, DISTRIBUTION and HABITAT. Resident and rather sedentary. Common. Practically throughout the Indian Union (excepting Kerala —

70

CORACIIFORMES

COLOURS OF BARE PARTS. 'Iris almost black. Bill black with pale grey on almost the whole of basal half. Legs and feet greyish olive; claws dark horny with whitish tips; pads light brownish white' (Biswas).

718. *Ceryle lugubris guttulata* Stejneger

Ceryle guttulata Stejneger, 1892, Proc. U.S. Nat. Mus. 15: 294, in text (India and China, here restricted to Ningpo, China). New name for *Alcedo guttulata* Vigors, 1831, not *Alcedo guttulata* Boddaert, 1783

Baker, FBI No. 1532 (part), Vol. 4: 248

Cf. Ali, Sâlim and Ripley, S. D., 1948, JBNHS 48: 15

LOCAL NAME. *Das natu meberang gadaba* (Cachari).

SIZE. House Crow ±; length c. 41 cm (16 in.).

FIELD CHARACTERS. As of 717, q.v. In flight along a forest stream in dense shade looks remarkably large and uniformly blue-grey above with prominent white nuchal collar and sharply contrasting black crown. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. The Eastern Himalayas from central Bhutan eastward through NEFA; Assam hills north and south of Brahmaputra river, Nagaland, Manipur and East Pakistan hills; foothills and up to c. 1800 m. Affects rapidly flowing rocky streams and torrents, and the larger rivers in the foothills.

Extralimital. Eastward through China, north to the Tsin-ling Mts. and southern Chihili; south through Burma to Tenasserim; Thailand and North Vietnam.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 717.

BREEDING. *Season, nest, eggs* and breeding biology as in 717.

MUSEUM DIAGNOSIS. Differs from the West Himalayan *continentalis* in being darker, more slaty, with the white spots on the back and upper wing-coverts smaller and less like bars. Forehead and crest darker black with smaller white stippling and streaks.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
1 ♂	189	80	—	114 mm
3 ♀♀	180-187	72-75	15-16	109-110+ mm
				(SA, SDR)

Weight 2 ♀♀ 230, 280 g (SA).

COLOURS OF BARE PARTS. As in 717.

CERYLE RUDIS (Linnaeus): LESSER PIED KINGFISHER

Key to the Subspecies

Upperparts paler; white spotted with black.....*C. r. leucomelanura*
Upperparts darker; black spotted with white, and black spotting on flanks more extensive.....*C. r. travancorensis*

72

CORACIIFORMES

see 720), Nepal, Sikkim, Bhutan. Both Pakistans (including Baluchistan and NWF district). Ceylon. From sea level to c. 1800 m in Kashmir and the Himalayas and peninsular hills. Affects every kind of stagnant fresh water — sluggish rivers, streams and canals, jheels, irrigation reservoirs, village tanks and flooded ditches — in open country. Occasionally also tidal creeks and intertidal rock pools on the seashore.

Extralimital. Westward through Afghanistan, eastward to Vietnam. Burma south to Tenasserim; Thailand.

GENERAL HABITS. Usually keeps in pairs; sometimes singly and periodically in family parties of 4 or 5. Commonly seen perched together or separately on a rock or stake near water, flicking up its tail and bobbing, or 'pumping', the head every little while. Its most outstanding characteristic is the spectacular mode of hunting. Flies 8 or 10 metres up back and forth over a placid stream or other suitable water, bill pointing downward and intently scanning the depths. The bird checks itself abruptly from time to time and remains poised in mid-air 'standing on its tail' bill pointing straight downwards, facing the wind with rapidly hovering wings, to investigate a promising patch or some movement below. When a fish is sighted within striking depth, the bird turns over and hurls itself headlong with wings closed — a veritable bolt from the blue — momentarily vanishing under the surface. It presently reappears with the quarry firmly gripped between the mandibles, and makes for a nearby perch where the struggling victim is battered into submission and bolted down head foremost. Small prey is swallowed in the air.

FOOD. Mainly fish; supplemented with tadpoles and aquatic insects.

VOICE and CALLS. A sharp, lively chirrup chirrup uttered chiefly on the wing.

BREEDING. *Season*, staggered practically over the entire year (except perhaps the rainiest months) varying locally; chiefly February to April. *Nest*, a horizontal tunnel c. 7 or 8 cm in diameter excavated in vertical earth banks of streams and rivers, often 1.5 metres or more in length, ending in a widened egg-chamber. It is usually unlined, but almost invariably littered with smelly cast-up fish bones. *Eggs*, normally 5 or 6, pure white, roundish ovals with a glossy texture. Average size of 100 eggs 29.9 x 21.4 mm (Baker); of 15 from Kashmir 30.3 x 23.6 (BBO). Both sexes partake in excavating the nest, incubation (?) and feeding the young. Incubation period undetermined. In Kashmir the nest-tunnels are used by the birds for roosting in winter (B. T. Phillips, JBNHS 46: 94).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	133-142	66-68	10-12	66-70 mm
♀♀	139-141	61-70	10-13	65-75 mm
				(SA, HW, CBT)

COLOURS OF BARE PARTS. Iris brown. Bill brownish black, paler at chin; mouth pink. Legs, feet and claws brownish black.

MISCELLANEOUS. Normal flying speed timed over a 3-mile route 31 miles (49+ km) per hour (C. H. Donald, JBNHS 33: 204).

KINGFISHERS

73

720. *Ceryle rudis travancorensis* Whistler & Kinnear

Ceryle rudis travancorensis Whistler & Kinnear, 1935, Jour. Bombay nat. Hist. Soc. 37: 760 (Travancore)
Baker, FBI No. 1531 (part), Vol. 4: 246

LOCAL NAME. *Pilli ponnān* (Malayalam).

SIZE. Myna +; length c. 31 cm (12 in.).

FIELD CHARACTERS. As of 719, q.v. Distinctly blacker and more contrastingly 'pied'. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Extreme SW. Tamil Nadu (Nagercoil dist.) and Kerala north to Kozhikode (c. 11°15'N.). Affects the coastal backwaters and the larger placid streams in the low country, and hills (rare) to at least c. 1400 m (Munnar). Quite common at Periyar Lake (JBNHS 68: 110).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 719.

BREEDING. Season, principally November to April. Breeding biology as in the Indian subspecies (719).

MUSEUM DIAGNOSIS. Differs from *leucotelurea* (719) in being much darker, giving the general impression of being black above spotted with white rather than white spotted with black. The extent of the white marking, moreover, is much smaller and the spots less pure white, tending to smoky grey. Black spotting on flanks generally more extensive.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂	133-139	68-69	11	67-71 mm
1 ♀	140	70	—	71 mm (SA, HW)

COLOURS OF BARE PARTS. As in 719.

Genus *ALCEDO* Linnaeus

Alcedo Linnaeus, 1758, Syst. Nat., ed. 10, 1: 115. Type, by subsequent designation, *Alcedo ispida* Linnaeus. (Swainson, 1821 (1820-21), Zool. Ill. 1: text to pl. 26)

Bill long and compressed; culmen very slightly curved, with the ridge rounded above, not flattened, and with a slight groove on either side. Wing long and pointed: first primary (as.) long, 3rd or 4th longest. Tail rounded; shorter than bill. Feet very weak. Plumage never pied black and white; always with much green or blue on upperparts.

Key to the Species

	Page
A Size large; wing over 80 mm.....	<i>A. hercules</i> 74
B Size small; wing under 80 mm.....	1
1 Ear-coverts blue in adults.....	<i>A. meninting</i> 78
Ear-coverts ferruginous in adults.....	<i>A. althis</i> 74

KINGFISHERS

75

722. *Alcedo atthis pallasi* Reichenbach

Alcedo Pallasi Reichenbach, 1851, Handb. spec. Orn.: 3, pl. cccxvii, figs. 3043-6 (Siberia)
Baker, FBI No. 1535, Vol. 4: 253

LOCAL NAMES. *Chhātā kīkīlā*, *Nīā* or *Nīā māchhrālā* (Hindi); *Kōlā tōnā*, *Chhātā tōnā*, *Tūntū* (Kashmiri); *Narian shid* (Baluchi).

SIZE. Sparrow +; length c. 18 cm (7 in.).

FIELD CHARACTERS. A dapper little blue-and-green kingfisher with brilliant blue back and rump (conspicuous in flight) and deep rust coloured underparts; short stumpy tail and long, straight, pointed black bill. Other points to confirm its identity are: lores and a band through eye black; chin and throat white; cheeks and ear-coverts rusty-red ending in a white patch on side of neck; a broad greenish blue streak from lower mandible to side of neck. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Partly resident, partly migratory, apparently extralimital as well as local. Status not satisfactorily worked out. West Pakistan (Baluchistan, Sind, Chitral, NW. Frontier districts, Punjab), Kashmir (rare straggler in Ladakh), Himachal Pradesh, northern Uttar Pradesh, Rajasthan (Jodhpur), northern Madhya Pradesh, northern Bihar. Breeding so far proved only in Kashmir where it is exceedingly common. Normally from plains level to c. 1850 m; once observed at 3100 m in Lahul, Himachal Pradesh (Whistler, 1925, *Ibis*: 193). Affects streams, canals, rush-fringed tributary channels, ponds, roadside ditches, etc.

Extralimital. Western Siberia and Transcaspiā to Iran, Afghanistan and Turkistan.

MIGRATION. No ringing data. In winter very common in Sind (where the resident form is evidently *bengalensis*), arriving c. mid October departing by end April (Ticehurst, 1923, *Ibis*: 32). Common in Baluchistan (plains and valleys) November to May, and some reported to breed. Winter visitor to central Makran arriving about August, then largely frequenting the coastal mangroves.

GENERAL HABITS. Usually met singly or in pairs perched on some favourite stake or bund on the edge of water. Very tame and confiding, particularly in Kashmir, freely perching on house-boats within arm's length of the inmates, or on an arching reed overhanging water, to keep a lookout for little fishes rising near the surface. While thus occupied, bill pointing downwards, jerkily bobs its head up and down, turning it from side to side and flicking up the stumpy tail to the accompaniment of a subdued click. Suddenly nose-dives with a splash and disappears under, presently to emerge with a small fish held crosswise in the bill. Flies off with the quarry at top speed to another perch some distance away where the struggling victim is battered into submission and swallowed head foremost. Darts swiftly over the water with quick wing-beats from one vantage point to another or when chasing off an intruder from its favourite beat, uttering sharp squeaky notes. Occasionally will also hover 2 or 3 metres above the water in the manner of the Pied Kingfisher and plummet on the quarry from the air.

CORACIIFORMES

74

721. Blyth's Kingfisher. *Alcedo hercules* Laubmann

Alcedo grandis Blyth, 1845, Jour. Asiat. Soc. Bengal 14 (1): 190 (Darjeeling).
Not *Alcedo grandis* Gmelin, 1788
Alcedo hercules Laubmann, 1917, Verh. Orn. Ges. Bayern 13: 105. New name for *Alcedo grandis* Blyth, preoccupied
Baker, FBI No. 1542, Vol. 4: 258
Plate 58, fig. 7

LOCAL NAME. *Dao natu dedao* (Cachari).

SIZE. Myna —; length c. 20 cm (8 in.).

FIELD CHARACTERS. Superficially very like Common or Small Blue Kingfisher (722-724) qq.v., but appreciably larger. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident. Rare. Sikkim, Bhutan and east through NEFA. Assam (Cachar, Sylhet), Nagaland, Manipur; East Pakistan. Duars and foothills up to c. 1200 m. Affects shady streams in dense evergreen jungle.

Extralimital. Burma (Chin Hills, Prome-Arakan hills). North Vietnam; Hainan I.

GENERAL HABITS. Apparently not very different from its smaller congener on the whole, but little known beyond that it is rare, keeps singly, and haunts deeply shaded fast-flowing forest streams. Perches low down in overhanging bushes rather than on conspicuous vantage points, and is shy and difficult to observe.

FOOD. Fish and aquatic insects.

VOICE AND CALLS. A loud but soft replica of the note of the Small Blue Kingfisher (723) vide Baker.

BREEDING. Season, March to June, principally April and May. Nest, a horizontal tunnel dug into the steep bank of a forest stream or ravine, c. 8 cm in diameter and usually between 45 and 70 cm long, ending in a widened egg-chamber. Most holes are smelly with a considerable amount of insect and fish remains littered in the egg-chamber and along the tunnel. Eggs, 4 to 6, glossy, white, roundish ovals. Average size of 45 eggs 26.1 x 21.7 mm; both sexes incubate (Baker).

MUSEUM DIAGNOSIS. See Key to the Species; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	95-102	48-55	c. 11	45-47 mm (Baker)

COLOURS OF BARE PARTS. Iris blood red. Bill black, base of lower mandible in ♀ reddish; mouth blood red. Legs and feet coral-red.

ALCEDO ATTHIS (Linnaeus): SMALL BLUE KINGFISHER

Key to the Subspecies

	Page
A Larger and paler in tone, with colour of upperparts more green, less blue.....	<i>A. a. pallasi</i> 75
B Smaller.....	1
1 Darker in tone, with colour of upperparts more blue, less green.....	<i>A. a. taprobana</i> 77
Upperparts intermediate in tone but nearer to <i>pallasi</i> in colour.....	<i>A. a. bengalensis</i> 76

CORACIIFORMES

76

FOOD. Small fish, tadpoles and aquatic insects. Once observed carrying a frog about 4 cm long into nest tunnel (Magrath).

VOICE AND CALLS. A shrill piping or trilling *chichee*, *chichee* or *chickichee* as it dashes along above the water.

BREEDING. Season in Kashmir chiefly April and May; once September on circumstantial evidence (Magrath, JBNHS 21: 661). Nest, a horizontal tunnel c. 5 cm in diameter burrowed into the vertical earth bank of a stream or channel, from 25 to 100 cm long, terminating in a widened egg chamber c. 13-16 cm across. An evil stench invariably pervades the nest due to remains of fish and other food littered about. Eggs, 5 to 7, gloss white, rather spherical ovals. Average size of 37 eggs 21.2 x 17.6 mm (Osmaston, Kashmir). Both sexes share in excavating the nest, incubation and feeding the young. Incubation period unrecorded; given as 19-2 days for the European race *ispida* (Witherby).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for description of plumages and structure (also bionomics) of the allied European race *ispida* Witherby, 1938, 2: 275-6. *A. a. pallasi* differs from both *bengalensis* and *taprobana* in being larger, paler on the underparts and less deep vivid blue and green above.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	71-75	39-48	9-11	31-34 mm
♀♀	72-77	45-46	9-10	34-36 mm (HW, CBT)

Weight 3 ♂♂, 1 ♀ 26-29 g (Paludan).

COLOURS OF BARE PARTS. Iris hazel brown. Bill black or blackish horny; gape and base of lower mandible pale salmon reddish in female and immature male. Legs and feet coral-red.

723. *Alcedo atthis bengalensis* Gmelin

Alcedo bengalensis Gmelin, 1788, Syst. Nat. 1 (1): 450 (Bengal)
Baker, FBI No. 1533, Vol. 4: 250
Plate 58, fig. 6

LOCAL NAMES. *Chhātā kīkīlā*, *Nīā* or *Nīā māchhrālā* (Hindi); *Shāreśān* (Bihar), *Khāndya* (Marathi); *Legothi* (Gujarati); *Chhātā māchhrālā* (Bengali); *Ug ch* (Lepcha); *Dao natu kashibe* (Cachari).

SIZE. Sparrow +; length c. 18 cm (7 in.).

FIELD CHARACTERS. As of 722, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; common. West Pakistan (Sind, Punjab) and the northern sub-continent including the Himalayas: terai, Nepal, Sikkim and Bhutan: lowlands, Assam, Manipur and East Pakistan, south to c. 20°N. lat. where abouts it meets and intergrades with the southern *taprobana* (724). Plains and peninsular hills, occasionally to



KINGFISHERS

77

c. 1800 m. Also Andaman and Nicobar islands. Affects streams, canals, village ponds, flooded roadside ditches, etc. in open country; also intertidal rock pools on the seashore, and mangroves.

Extralimital. A large part of SE. Asia including Burma, Thailand, the Indochinese countries, Malay Peninsula and islands, and the Philippines.



Right foot, x c. 1

GENERAL HABITS, FOOD, VOICE and CALLS. As in 722.

BREEDING. *Season.* chiefly March to June. *Nest, eggs,* and breeding biology as in 722. Average size of 40 eggs 20.9 × 17.6 mm (Baker).

MUSEUM DIAGNOSIS. Smaller (except the northernmost populations) and brighter coloured than *pallani*; like it usually more green less blue than *taprobana*. Odd non-breeding examples of the last two, especially from intermediate areas, impossible to place with certainty due to individual as well as seasonal variation in amount of blueness and greenness. Except in comparable series, this character not sufficiently reliable for subspecific determination. Situation further obscured by possible intermingling of races under stress of factors such as drought, causing local migration in search of fish food.

MEASUREMENTS			
	Wing	Bill (from skull)	Tarsus
♂♂	68-76	42-46	8-10
♀♀	69-74	43-45	9-10
			30-37 mm (SA, BB, Koelz)

Weight 2 ♀♀ 25, 25 g (Diesselhorst).
COLOURS OF BARE PARTS. As in 722.

724. *Alcedo althys taprobana* Kleinschmidt

Alcedo ispida var. *taprobana* Kleinschmidt, 1894, Orn. Monatsb. 2: 126 (Ceylon) Baker, FBI No. 1534, Vol. 4: 252

LOCAL NAMES. *Māl pīlīhādunō* (Sinhala); *Meenotti* (Tamil); *Nīlā buchegādu* (Telugu); *Podi ponmān* (Malayalam).

SIZE. Sparrow +; length c. 18 cm (7 in.).
FIELD CHARACTERS. As of 722, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; common. Peninsular India south of the arbitrarily fixed boundary at 20°N. lat. (around which it intergrades with *bengalensis*), and Ceylon. Plains and hills to c. 1800 m. Affects streams, irrigation channels, ponds, roadside ditches, etc. in open country.

GENERAL HABITS, FOOD, VOICE. As in 722.

BREEDING. *Season,* February to September in S. India, chiefly March-April; November to June in Ceylon. *Nest and eggs* as in 722. Five eggs in S. India and 3 to 5 in Ceylon form the normal clutch. Average size of 48 eggs 20.4 × 17.2 mm (Baker).

MUSEUM DIAGNOSIS. Compared with *bengalensis* (723) this subspecies has the upperparts markedly blue in colour v. green in the former. There is no consistent difference in size, and the variability in the amount of blueness and greenness, unless

KINGFISHERS

79

FOOD. Mainly fish and aquatic insects.
VOICE and CALLS. Like 723 but somewhat sharper.

BREEDING. *Season,* in the northern parts of its range April to August, chiefly May and June; in Kerala c. January. *Nest,* a horizontal tunnel, as in 723, drilled into the bank of a forest stream, up to 1.5 m in length ending in a widened egg-chamber c. 12 cm in diameter. *Eggs,* normally 5 to 7, sometimes 8, glossy white rather spherical, similar to those of *A. a. bengalensis*. Average size of 50 eggs 20.3 × 17.6 mm (Baker). Breeding biology unrecorded.

MUSEUM DIAGNOSIS. Distinguished from *Alcedo a. bengalensis* (723) by its deeper blue upperparts, blue ear-coverts and lack of white neck-patches. For details of plumage see Baker, loc. cit., but as pointed out by Teechurst (JBNS 34: 472), anterior crown tinged with cerulean blue, not greenish.

Young (immature) has the cheeks and ear-coverts rufous, sometimes with a blue line under them. Bill reddish, with whitish tip.

MEASUREMENTS			
	Wing	Bill (from skull)	Tail
♂♀	62-74	43-45	c. 9
			28-30 mm (Baker, SA)

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible blackish or horny brown, lower brownish orange; gape and mouth orange-coral. Legs, feet and claws orange-coral.

726. *Alcedo meninting phillipsi* Baker

Alcedo meninting phillipsi Baker, 1927, Bull. Brit. Orn. Cl. 47: 72 (Cocoaawatte Estate, Ceylon) Baker, FBI No. 1537, Vol. 4: 255

LOCAL NAMES. Same as for 724; evidently not differentiated from it.
SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As of 725, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident (?); very scarce. Ceylon; possibly also the humid Western Ghats strip of the Indian peninsula (cf. 725). In Ceylon affects 'a few secluded waters in the Dry zone and occasionally ascends streams into the lower foothills to nearly 2000 ft' (c. 600 m) — Phillips.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 725.

BREEDING. Not recorded in Ceylon.

MUSEUM DIAGNOSIS. Distinguished from *coltarti* (725) by deeper royal blue upperparts, with the spots on the wing-coverts large and conspicuous. Ferruginous underparts also darker.

MEASUREMENTS		
	Wing	Bill (from skull)
2 ♂♂	69, 71	44, 52
		29, 30 mm (HW)

*Wing ♂♂ 55-71; bill (from feathers) 35-48 mm. In nearly all the wing is over 67 mm and the bill over 40 mm (Baker).

78

CORACIIFORMES

in comparable series, makes some individual non-breeding examples difficult to determine subspecifically.

MEASUREMENTS			
	Wing	Bill (from skull)	Tarsus
♂♂	67-73	41-45	8-9
♀♀	69-73	43-45	8-9
			29-32 mm 30-33 mm (SA, HW, SDR)

Weight 1 ♀ 23 g (SA).

COLOURS OF BARE PARTS. As in 722.

ALCEDO MENINTING (Horsfield): BLUE-EARED KINGFISHER

Key to the Subspecies

	Page
Bars of forehead and crown always tipped greenish blue <i>A. m. coltarti</i>	78
Bars of forehead and crown deep purplish blue..... <i>A. m. phillipsi</i>	79
Bars of forehead and forecrown as well as nape greenish blue..... <i>A. m. rufigaster</i>	80

725. *Alcedo meninting coltarti* Baker

Alcedo Asiatica Swainson, 1821, Zool. Ill. 1, pl. 50 ('Some part of India' = Bengal) Not *Alcedo asiatica* Menschen, 1787, Mus. Geversianum: 54, no. 262
Alcedo meninting coltarti Baker, 1919, Bull. Brit. Orn. Cl. 39: 39 (Saddya, Assam)
Alcedo laubmanni Mathews, 1925, Bull. Brit. Orn. Cl. 46: 21. New name for *Alcedo asiatica* Swainson, preoccupied
Baker, FBI No. 1540, Vol. 4: 256
Plate 58, fig. 5

LOCAL NAMES. Unrecorded; evidently not differentiated from 723 and 724.
SIZE. Sparrow; length c. 16 cm (6 in.).

FIELD CHARACTERS. A forest representative of the Small Blue Kingfisher (723), very similar to it but slightly smaller and much darker coloured above — deep purplish blue — with blue ear-coverts instead of ferruginous. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident. Nepal, Sikkim, Bhutan, NEFA (?), Assam, Nagaland, Manipur, East Pakistan, West Bengal, Orissa. Also the humid Western Ghats strip in Goa, Mysore, Tamil Nadu (Nilgiri Hills) and Kerala, but the subspecific identity of this population needs confirmation; may be closer to *phillipsi* of Ceylon. In general less common than Small Blue Kingfisher; affects small hill-streams in evergreen or heavy bamboo forest to c. 1000 m, occasionally to c. 1500 m. Prefers densely shaded spots.

Extralimital. Burma, Thailand, and the Indochinese countries.

GENERAL HABITS. Very like those of the Small Blue Kingfisher (723) but almost exclusively confined to forest. Keeps singly, perched quietly on low herbage overhanging a shaded rocky streamlet, bobbing its head and jerking up the tail from time to time. Drops vertically on its prey with a splash, often going completely under. Presently reappears with a small fish, and usually flies off with it to a nearby perch.

80

CORACIIFORMES

COLOURS OF BARE PARTS. As in 725.

726a. *Alcedo meninting rufigaster* Walden

Alcedo rufigaster Walden, 1873, Ann. & Mag. Nat. Hist. 12 (4): 487 (South Andaman Island) Baker, FBI No. 1541, Vol. 4: 257

LOCAL NAMES. None recorded.
SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As of 725, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. South and Middle Andaman Is. More abundant here than *A. a. bengalensis*, keeping to small forest streams and narrow mangrove-fringed tidal creeks 'occasionally venturing out to the fishing stakes at their mouths' (W. Davison).

GENERAL HABITS, FOOD, VOICE and CALLS. As in 725.

BREEDING. *Season,* all nests found by Osmaston between June 25 and July 15, thus apparently a late breeder (JBNS 17: 162); tunnels in banks of forest streams as in 725. *Eggs,* 5, also similar — glossy, white, broad ovals. Average size of 40 eggs 20.3 × 17.6 mm (Baker).

MUSEUM DIAGNOSIS. Differs from the other races in being distinctly paler. Blue of back and rump paler, with less of a purple tint. Bars on the head not only less deep and less purple but with a distinct greenish tinge (Baker, 1918, BBOC 39: 39-40). According to him the easiest race to distinguish, but later workers have found it doubtfully separable from *coltarti*!

MEASUREMENTS		
	Wing	Bill (from skull)
♂♀	63-71	43-47
		27-30 mm (HW, Baker)

COLOURS OF BARE PARTS. As in 725.

Genus *CERYX* Lacépède

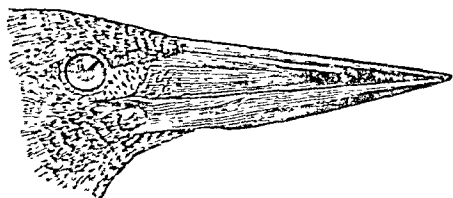
Ceryx Lacépède, 1799, Tabl. Ois.: 10. Type, by monotypy, *Alcedo tridactyla* Pallas = *Alcedo erithaca* Linnaeus (species added, Daudin, in Buffon, 1802, Hist. Nat. (ed. Didot) 14: 287)

Bill intermediate in form between *Alcedo* and *Halcyon*, less compressed than in the former, not grooved; culmen straight and slightly flattened. Foot with only 3 toes, the inner or second wanting. Tail very short and rounded. First primary (an.) very long, reaching almost to tip of wing.

KINGFISHERS

85

STATUS, DISTRIBUTION and HABITAT. Resident; locally common. All India east and south of a line from the Gulf of Cambay to Dehra Dun. The lower Himalayas in the terai, bhabar and dun of Uttar Pradesh, Nepal and Sikkim, duars of Bengal and foothills of Bhutan; Assam, Nagaland, Manipur; East Pakistan; Ceylon. Lowland and foothills, occasionally following the streams up to c. 1200 m. Affects large, placid, heavily shaded forest streams; also irrigation channels in well-wooded country, and *Pandanus*-lined coastal backwaters (e.g. in Kerala).



× c.

GENERAL HABITS. Keeps singly or in separated pairs, sitting hidden and motionless for long periods up in a leafy branch of a tree overhanging a forest stream, uttering its loud cackling call; occasionally darting down to seize some prey. Does not normally hover over water and plunge like Pied Kingfisher. Except when coursing down a nullah, much oftener heard than seen. In Bengal and Assam frequently perches on telegraph wires overlooking *bheels* and ditches.

FOOD. Fish, frogs, lizards, mice and young birds — sometimes marauded out of tree-holes. Also crabs, water beetles and other manageable animals.

VOICE and CALLS. Very noisy. Has a loud raucous shrieking 'laugh' *Ké-ke-ke-ke*, etc. with explosive accent on the initial *ké*; this uttered with a bobbing up and down of the head and flicking of the tail till it almost touches the back. Also a pleasant contented-sounding song or soliloquy *peer, peer*, *pūr* frequently repeated, delivered from a shady perch.

BREEDING. *Season*, overall January to August/September varying locally and also much staggered; chiefly April and May in the northern parts and Assam, February–March in Kerala, January to May and again August–September in Ceylon. *Nest*, the usual unlined chamber at the end of a horizontal tunnel drilled into the steep earth bank of a stream; up to a metre or more in length and c. 10 cm in diameter. An unusual nest c. 5 m up in a rotten tree stem has been recorded. *Eggs*, 4 or 5, white, glossy, rounded ovals as typical of the kingfishers. Average size of 30 eggs 36.6 × 31.2 mm (Baker). Presumably both sexes share in excavating the tunnel, incubation, and feeding the young, but this not specifically recorded. Period of incubation unknown. Curious behaviour has been observed in the breeding season of a pair charging full tilt repeatedly from a perch some distance opposite into a crack in a brick wall with the point of the bill, accompanied by the loud raucous calls. This 5 or 6 hours each day for several weeks, ultimately achieving a number of small purposeless cavities c. 8 to 10 cm across and 10 to 12 cm deep! (For particulars see K. K. Neelakantan, JBNHS 49: 553–4.)

KINGFISHERS

87

FIELD CHARACTERS. As of 730, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; fairly common. Nicobar Islands, but its occurrence on Car Nicobar or anywhere besides Little and Great Nicobar not yet authenticated. Affects swampy mangrove-forest, tidal creeks and the seashore.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 730.

BREEDING. No data.

MUSEUM DIAGNOSIS. Differs from *capensis* (730) in having the crown ochraceous like the nuchal collar, presenting no contrast with it.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	150–153	74–80	c. 15	92–98 mm (Baker, Abdulali)

COLOURS OF BARE PARTS. As in 730.

Genus HALCYON Swainson

Halcyon Swainson, 1821 (1820–21), Zool. Ill. 1, text to pl. 27. Type, by original designation, *Alcedo senegalensis* Linnaeus

Bill large, rather broad at base; culmen straight, rounded above without any distinct groove at the side. In one species (*chleris*) lower mandible much more curved upwards. Wing rounded: 3rd primary (as), generally the longest. Tail moderate, longer than culmen, slightly rounded at end.

Key to the Species

	Page
A Bill black..... <i>H. chleris</i>	95
B Bill red.....1	
i No white on primaries..... <i>H. coromanda</i>	87
Primaries white at base.....a	
a Head and neck chestnut..... <i>H. sumnerensis</i>	89
Crown black with a white collar..... <i>H. pileata</i>	94

HALCYON COROMANDA (Latham): RUDDY KINGFISHER

Key to the Subspecies

Smaller; much paler below..... <i>H. c. coromanda</i>
Larger; much darker below..... <i>H. c. ruficollis</i>

733. *Halcyon coromanda coromanda* (Latham)

Alcedo coromanda Latham, 1790, Index Orn. 1: 252 (Coromandel, India)
Baker, FBI No. 1555, Vol. 4: 273

Plate 58, fig. 11

LOCAL NAME. *Des neta gejas* (Cachari).

SIZE. Myna ±; length c. 26 cm (10½ in.).

FIELD CHARACTERS. A cinnamon-coloured kingfisher with a white rump conspicuous in flight, and bright red bill and feet. A d u l t . *Above*, head,

86

CORACIIFORMES

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	147–163	84–93	17–20	94–110 mm
♀ ♀	155–168	86–94	17–20	95–105 mm

(SA, HW, BB, Koelz)

Ceylon and S. Indian birds are smaller in keeping with the normal Bergmann trend.

COLOURS OF BARE PARTS. Iris deep brown. Bill dark blood-red, changing to black at tip; darker at base and brightest on gonys. Legs and feet coral-red; claws dusky.

731. *Pelargopsis capensis osmastoni* (Baker)

Ramphalagon capensis osmastoni Baker, 1934, Nidif. Bds. Ind. Empire 3: 416, footnote (Andaman Islands)

Pelargopsis capensis shekarii Abdulali, 1964, Jour. Bombay nat. Hist. Soc. 61: 415 (Chiria Tapoo, South Andaman)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Pigeon ±; overall length, including large bill, c. 38 cm (15 in.).

FIELD CHARACTERS. As of 730, q.v. See Key to the Subspecies, and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; fairly common. Andaman Islands. Affects mangrove-bordered tidal creeks.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 730.

BREEDING. Presumably as in 730, but no specific data.

MUSEUM DIAGNOSIS. Differs from *capensis* (730) in being paler and smaller with a relatively larger bill. Crown much paler (even than in Burmese birds — *burmanica*), almost whitish brown, contrasting less strongly with the ochraceous nuchal collar. Upper wing-coverts less blue.

MEASUREMENTS

♂ ♀ Wing 141–156; bill (from feathers) 78–85 mm (Baker, Abdulali).

COLOURS OF BARE PARTS. As in 730.

732. *Pelargopsis capensis intermedia* Hume

Pelargopsis intermedia Hume, 1874, Stray Feathers 2: 166: Southern Nicobars; restricted to Galatea Bay, Great Nicobar Island, by Oberholser, 1909, Proc. U.S. Nat. Mus. 35: 666

Baker, FBI No. 1547, Vol. 4: 264

LOCAL NAMES. None recorded.

SIZE. Pigeon ±; overall length, including large bill, c. 38 cm (15 in.).

88

CORACIIFORMES

neck, mantle light rufous-chestnut or cinnamon, overlaid with a red-violet or opal bloom. Middle of lower back, and rump, white tinged with pale blue or violet. *Below*, rufous, varying in depth, paler on chin and throat. Bill and feet bright red. Sexes alike.

Young (immature). *Above*, darker browner chestnut than in adult and lacking the violet bloom; rump and upper tail-coverts deeper blue. *Below*, chin albescent; rest of underparts darker rufous, the feathers from throat to abdomen edged with black. Bill largely black with an orange-red tip; feet dull dirty reddish.

STATUS, DISTRIBUTION and HABITAT. Resident; perhaps commoner than is apparent. The sub-Himalayan terai and duars from Nepal through Sikkim and Bhutan; Assam north and south of Brahmaputra river, Nagaland and Manipur; W. Bengal and East Pakistan (Sunderbans and hill tracts). Apparently subject to sporadic (or regular?) wide-ranging movements. A specimen has been obtained in Tamil Nadu (Chingleput dist.) in November, and the species is regularly taken at lights on certain mountain ridges and passes (e.g. Jātinga, N. Cachar) on dark monsoon nights suggesting definite migration passage; but these movements as yet enigmatical. (For particulars see Sālim Ali, JBNHS 59: 129–30.) Similar nocturnal falls also recorded in lighted bungalows, and regularly at lighthouses and lightships in the Straits of Malacca in the autumn months, October to December (Robinson & Chasen, 1927, 1: 102). Affects mangrove swamps and the neighbourhood of heavily wooded rivulets and pools in evergreen jungle, up to c. 1800 m.

Extratropical. Extends south through Burma and Malay Peninsula to northern Johore; southeastern China, Thailand, the Indochinese countries, and NE. Sumatra.

GENERAL HABITS. Shy and retiring. Keeps singly or in pairs to dense secondary evergreen tangles and cane brakes, occasionally dashing past as a cinnamon flash through the jungle. Oftener heard than seen, and its habits little known specifically.

FOOD. Fish, crabs, beetles, grasshoppers and other insects; doubtless also other animal items.

VOICE and CALLS. Of the same pattern as the Whitebreasted Kingfisher's (735–8) but louder, more musical, and less tinny.

BREEDING. *Season*, mainly March–April. *Nest*, the usual kingfisher tunnel bored horizontally into an overgrown ravine bank in evergreen jungle; c. 45 to 100 cm long and c. 5 cm in diameter, ending in a comparatively small egg-chamber. Sometimes also nests in holes in tree-trunks quite high up. *Eggs*, normally 5 occasionally 6, white glossy, rounded ovals. Average size of 30 eggs 27.3 × 23.2 mm. Both sexes incubate (Baker). Incubation period and other facets of breeding biology unknown.

MUSEUM DIAGNOSIS. For further details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	106–121	60–63	18–19	60–71 mm (Baker, BB, SA)

COLOURS OF BARE PARTS. Iris dark brown. Bill red, darker at base, pinker and paler at tip. Legs and feet pinkish red to coral-red.

734. *Halcyon coromanda mizorhina* (Oberholser)

Entomothera coromanda mizorhina Oberholser, 1915, Proc. U.S. Nat. Mus. 48: 645 (North Andaman Island)
Baker, FBI No. 1556, Vol. 4: 274

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 26 cm (10½ in.).

FIELD CHARACTERS. As of 733, q.v. See Museum Diagnosis.

In gloomy tidal forest 'the colour of the bird resembles that of the dry leaf of the mangrove *Rhizophora mucronata*' (Abdulali).

STATUS, DISTRIBUTION and HABITAT. Resident, Andaman Islands. Not uncommon on North Andaman, but scarce elsewhere. Also observed on Barren and Southern Jolly Boy islands (Hume, 1874, SF 2: 169-70). Not recorded in the Nicobars. Affects dense mangrove swamps.

GENERAL HABITS, FOOD, VOICE and CALLS. Nothing specifically described; presumably as in 733.

BREEDING. No data.

MUSEUM DIAGNOSIS. Differs from the Indian *coromanda* (733) in being much darker rufous above, entirely overlaid by a brilliant purple-violet sheen. Below also much darker, with a variable amount of violet bloom on foreneck and breast.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	112-122	57-60	c. 16-17	78-81 mm (Baker)

COLOURS OF BARE PARTS. As in 733.

HALCYON SMYRNNENSIS (Linnaeus): WHITEBREASTED KINGFISHER

Key to the Subspecies

	Page
A Bright blue to blue-green above.....	1
B More purplish blue above.....	2
1 Larger; underparts paler.....	<i>H. s. smyrnensis</i> 89
Smaller; underparts darker.....	<i>H. s. fusca</i> 90
2 Larger; underparts deep chocolate.....	<i>H. s. saturator</i> 93
Smaller; underparts paler.....	<i>H. s. perpulchra</i> 92

735. *Halcyon smyrnensis smyrnensis* (Linnaeus)

Alcedo smyrnensis Linnaeus, 1758, Syst. Nat., ed. 10, 1: 116 (Africa and Asia = *Smyrna*, ex Albin)
Baker, FBI No. 1550, Vol. 4: 268

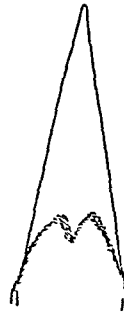
LOCAL NAMES. *Kilkila*, *Kourilla* (Hindi); *Nela mächhrála* (Himachal Pradesh); *Dalāl* (Sind); *Kālkāliya* (Gujarati); *Aspi chidok* or *Aspanchidok* (Baluchi = 'he who chatters at horses').

variable seasonally and in different lights as well as individually, sometimes appearing quite green at other times bright blue.

STATUS, DISTRIBUTION and HABITAT. Resident; common; subject to local movements, some nocturnal and suggestive of regular migration. Frequently taken at lights at certain periods during the monsoon in places where absent at other seasons (cf. Ruddy Kingfisher, 733). Perhaps our most widely distributed kingfisher. All India east and south of the range of 735, from the sub-Himalayan tracts (including those of Nepal and Sikkim) south throughout the Peninsula, and Ceylon. Intergrades with the eastern *perpulchra* (737) in eastern Madhya Pradesh and northern Andhra, but boundaries of the races equivocal. Penetrates considerable distances into the Himalayas locally up to c. 2300 m; also to about the same altitude in the peninsular and Ceylon hills. Less dependent on water than other kingfishers, and found in a very wide range of habitats, often very far away from it in dry deciduous forest. Affects wet paddyfields, flooded borrow-pits and roadside ditches, village tanks, *kutchas* wells, canals, streams, and the sandy seashore. Gardens in towns and fish-curing yards are favourite haunts.

GENERAL HABITS. Keeps singly or in separated pairs, perched upright on a fence-post, telegraph wire or branch surveying its surroundings for crawling prey, often well away from water. While thus perched, swings the downhanging tail back and forth accompanied by a jerky bobbing or pumping up and down of the head from time to time. Normally stoops to the ground like a shrike to seize its quarry in the bill, flying up with it to another perch nearby where, if too large or lively, it is purposefully battered to pulp before being bolted down. Each bird usually has a staked-out feeding territory which is actively defended against interlopers. On approach of the breeding season the male sings obstreperously for considerable periods, chiefly in the early morning, from a favourite exposed tree-top, usually within earshot of other males similarly performing. The singing bird sits bolt upright with the tail turned in under the perch, stiffly flicking open his wings from time to time for a second or two, deliberately flaunting the conspicuous white wing-patches; this even when no other bird is present nearby. Pair-formation behaviour and courtship display not properly studied, but the distinctive wing pattern evidently plays an important part in the proceedings. 'When inviting copulation, the female uttered a prolonged *kil-kil-kil* etc. (like the agitated chattering of Redvented Bulbul) accompanied by a shivering of the partly open wings (as in food-begging) before the male perched a few centimetres away' (SA).

FOOD, small animals; fish only a secondary item. Largely insects — grasshoppers, crickets, mantises, scarab and other beetles including the aquatic Dysticidae; ants and winged termites emerging from the ground. Has been observed capturing locusts and dragonflies on the wing (Whitehead, JBNHS 20: 957). Crabs — *Oxygode* on the sandy seashore, *Paratelphusa* in flooded paddyfields inland; scorpions and centipedes; frogs and lizards (*Mabuia*, *Calotes*, etc.), mice and birds — fledgling sparrows, adult white-eye and munias, and once a downy Redwattled Lapwing chick recorded. Predominantly a terrestrial feeder but individuals occasionally become a nuisance at fish hatcheries and ornamental goldfish ponds.



Bill from above, x c. 4 (After Hartert)

SIZE. Myna +; length c. 28 cm (c. 11 in.).

FIELD CHARACTERS. As of 736, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; common and widespread. West Pakistan (Baluchistan, Sind, Punjab) and NW. India (Kashmir, Rajasthan, N. Gujarat with Kutch and Saurashtra) roughly west of a line from the Gulf of Cambay to Dehra Dun; intergrades with *fusca* (736) around the eastern parts of its range. Habitat as in the Indian subspecies.

Extralimital. Extends westward through Iran and Iraq to Asia Minor, south to Arabia.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 736.

BREEDING. Season, in W. Pakistan, Kashmir and NW. Gujarat, overall March to July, varying with local conditions. Nest and eggs (c/5 or 6) as in the Indian race (736). Average size of 30 eggs 29.4 × 26.2 mm (Baker).

MUSEUM DIAGNOSIS. For description of plumage see Baker, loc. cit. Differs from *fusca* in having the scapulars, mantle and tail greener, not so blue; rump usually paler blue; head and underparts often, but not always, paler. There is, however, no constant difference in colour between the two races, and the slightly larger size of northwestern birds as compared with Ceylonese and southern peninsular examples is clinal and in keeping with Bergmann's Rule.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	118-128	60-67	16-19	77-93 mm (Baker, SA)

COLOURS OF BARE PARTS. As in 736.

736. *Halcyon smyrnensis fusca* (Boddaert)

Alcedo fusca Boddaert, 1783, Table Pl. enlum.: 54 (Malabar Coast ex Daubenton, Pl. enlum. no. 894)

Halcyon generosa Madarász, 1904, Ann. Mus. Nat. Hungar. 2: 85 (Ceylon)
Baker, FBI No. 1551, Vol. 4: 269

Plate 58, fig. 13

LOCAL NAMES. *Kilkila*, *Kourilla* (Hindi); *Tānki* (Bihar); *Sandabuk mächhrāya* (Bengal); *Lāli mächh sorāi* (Assam); *Kālkāliya* (Gujarat); *Khāndya* (Marathi); *Lakmuka*, *Buchegadu* (Telugu); *Vichuli*, *Meenokotti* (Tamil); *Ponmēn* (Malayalam); *Pilihuduwa* (Sinhala).

SIZE. Myna +; length c. 28 cm (c. 11 in.).

FIELD CHARACTERS. A brilliant turquoise-blue kingfisher with deep chocolate-brown head, neck and underparts. Chin, throat, and centre of breast glistening white forming a conspicuous 'shirt-front'. A large white wing-patch, prominent in flight, and long, heavy, pointed coral-red bill and red legs are further clues to its identity. Sexes alike. Upperparts highly

VOICE and CALLS. Normal call well described as 'a loud defiant rattling [or cackling] laugh' (Nichols), uttered chiefly when taking wing. Song, a long-drawn tremulous musical whistle *Kiltili* repeated again and again from a tree-top for long periods, each phrase ending in a detached harsh undertone like the *pench* of a snipe, audible only at close range.

BREEDING. Season, overall January to August, varying locally; mainly April to July, somewhat earlier in Ceylon and S. India. Nest, a tunnel bored in the steep bank of a (usually) dry nullah or roadside cutting, or in the side of a dry ditch, *kutchas* well or borrow-pit; usually sloping slightly upwards, c. 7 cm in diameter and from c. 50 cm to a metre or more long. It ends in a widened egg-chamber, unlined but usually becoming littered with bones and foul-smelling cast-up remains of prey brought for the young. Fresh, occupied tunnels recognizable by the double tracks of loose earth left by the birds' feet as they shuffle in and out. Digging of tunnel in a vertical bank initiated by both birds tilting with the bill into the earth in full flight, one after the other in quick succession until a circular indentation is made to afford foothold for the bird to cling, supported by open wings pressed against the wall, and continue the digging (cf. *Pelargopsis capensis*, 730). Eggs, 4 to 7, normally 5 or 6, pure white spherical ovals, c. 29 × 26 mm. Both sexes share in excavating the nest-tunnel, incubation, and feeding the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. The Indian *fusca* differs from nominate *smyrnensis* (735) in being usually more blue less green on the upperparts, but this variable seasonally and individually; centre of back generally a deeper blue; chocolate-brown parts slightly deeper in shade.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	113-124	56-63	15-16	72-83 mm (SA, HW, BB)

Weight 3 ♂♂ 78-83 g (GD, SDR); 1 ♂ 79 g (SA).

COLOURS OF BARE PARTS. Adult. Iris brown. Bill brownish orange-red to deep coral-red; mouth orange-brick colour or coral-red. Legs and feet dusky orange to coral-red (brighter on hind tarsus and sole); claws blackish brown. Nestlings. Bill dull yellow and blackish.

737. *Halcyon smyrnensis perpulchra* Madarász

Halcyon perpulchra Madarász, 1904, Ann. Mus. Nat. Hungar. 2: 85 (Singapore)
Halcyon (Entomobia) smyrnensis fokienis Laubmann & Götz, 1926, Verh. Orn. Ges. Bayern 17: 42 (Fochow, Fokien)
Baker, FBI No. 1551 (part), Vol. 4: 269

LOCAL NAMES. *Sandabuk mächhrānga* (Bengal); *Lāli mächh sorāi* (Assam); *Dan natu gophu* (Cachari).

SIZE. Myna +; length c. 28 cm (c. 11 in.).

FIELD CHARACTERS. As of 736, q.v. See Key to the Subspecies and Museum Diagnosis.

KINGFISHERS

93

STATUS, DISTRIBUTION and HABITAT. Resident; common; subject to local movements. From eastern Madhya Pradesh and northern Andhra [where it intergrades with *fusca* (736)], Orissa and eastern Bihar, eastward through W. Bengal, Bhutan foothills, Assam, Nagaland, Manipur and East Pakistan. *Extralimital.* Burma, Thailand, Malay Peninsula, Indochinese countries, S. and E. China; Hainan and Formosa.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 736.

BREEDING. Season, in Assam chiefly March to June. *Nest and eggs* as in 736.

MUSEUM DIAGNOSIS. Underparts slightly paler than in *fusca* but subspecies doubtfully distinct from it, and separable chiefly with 'the eye of faith'!

MEASUREMENTS, within the range of *fusca* but somewhat on the smaller side.

COLOURS OF BARE PARTS. As in 736.

738. *Halcyon smyrnensis saturation* Hume

Halcyon saturation Hume, 1874, *Stray Feathers* 2: 168, in text: 531 (Andaman Islands) Baker, FBI No. 1553, Vol. 4: 270

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. As of 736, q.v. See Key to the Subspecies and Museum Diagnosis.

'In flight the white wing-patches more conspicuous than in Indian birds' (Abdulali, JBNHS 61: 542).

STATUS, DISTRIBUTION and HABITAT. Resident. Very common and abundant in the Andaman Islands, especially on South and Middle Andamans. Not recorded in the Nicobars. Affects sea coast, mangrove swamps, and forest clearings, frequently far into the interior.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 736.

BREEDING. Season, mainly April and May. *Nest and eggs* (normally 3, sometimes 4) as in the Indian bird. Average size of 60 eggs 30.2 × 26.4 mm (Baker).

MUSEUM DIAGNOSIS. Chocolate-brown of head, neck and underparts distinctly darker than in 736.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
1 ♂	133	72	86 mm
2 ♀♀	128, 129	64, 70	82, 83 mm (Grubb)

♂♀ Wing 123-134; bill (from feathers) 54-63 mm (Baker).

COLOURS OF BARE PARTS. As in 736.

KINGFISHERS

95

seacoast though not an exclusively salt-water species like the Brownwinged Storkbill (729). Dives obliquely from a perch for fish or stoops to the ground like a shrike to take crawling prey.

FOOD. Chiefly fish, frogs and crabs, but also insects—crickets, grasshoppers, beetles, etc.—and presumably lizards and other small animals.

VOICE and CALLS. A cackling laugh like the Whitebreasted Kingfisher's, but shriller and quite distinctive. Song undescribed.

BREEDING. Very few nests taken within Indian limits—in Lakhimpur dist. of Assam, Kerala (*Nidif* 3: 423) and Mysore (Shamoon Abdulali, JBNHS 45: 607), the last containing 2 hatchlings and 2 eggs on 5 May. *Nest*, the usual horizontal kingfisher tunnel, a metre or so deep, drilled into the bank of a stream in wooded country. *Extralimital* season given as May to July, and normal clutch as 4 or 5 eggs—white, spherical ovals. Average size of 46 eggs 29.6 × 26.3 mm (Baker).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	127-133	57-65	c. 15	83-88 mm (Baker)

COLOURS OF BARE PARTS. Iris dark brown. Bill deep coral-red. Legs and feet dark red.

HALCYON CHLORIS (Boddaert): WHITECOLLARED KINGFISHER

Key to the Subspecies

	Page
A Underparts pure white.....	1
B Underparts sullied with buff.....	2
1 Smaller: wing under 108 mm.....	<i>H. c. humii</i> 96
Larger: wing over 109 mm.....	<i>H. c. ridali</i> 95
2 A very broad buffy white supercilium to the nape.....	<i>H. c. occipitalis</i> 98
Supercilium absent or obsolete.....	<i>H. c. darisomi</i> 97

740. *Halcyon chloris ridali* Sharpe

Halcyon ridali Sharpe, 1892, *Cat. Bds. Brit. Mus.* 17: 217 (in key): 278 (Ratnagiri and Keshi Creek, South Konkan, India) Baker, FBI No. 1558, Vol. 4: 276 Plate 58, fig. 10

LOCAL NAME. *Kāyāl pōmān* (Malayalam).

SIZE. Myna ±; length c. 24 cm (9½ in.).

FIELD CHARACTERS. As for 741, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; rare and little known. Authenticated only from a small area on the west coast in Ratnagiri dist. (Maharashtra) c. 120 km south of Bombay whence the subspecies originally described. Reported occurrence in coastal Kerala quite probable but not yet confirmed by specimens. Frequents thick mangrove swamps fringing the estuaries of the tidal creeks.

CORACIIFORMES

94

739. Blackcapped Kingfisher. *Halcyon pileata* (Boddaert)

Alcedo pileata Boddaert, 1783, *Table Pl. enlum.*: 41 (China, ex Daubenton, Pl. enlum., no. 673)

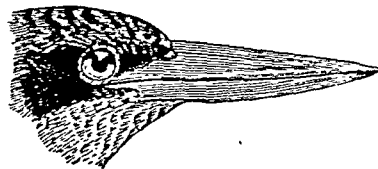
Baker, FBI No. 1554, Vol. 4: 271

Plate 58, fig. 8

LOCAL NAMES. *Abāk tānki* (Mirshikars, Bihar); *Kourilla* (Hindi; generally for all kingfishers).

SIZE. Myna +; length c. 30 cm (12 in.).

FIELD CHARACTERS. A medium-sized kingfisher with bright coral-red bill and a large whitish wing-patch (as in Whitebreasted), conspicuous in flight. Readily identified also by its pale rusty underparts including underside of wings. Upper plumage looks black until sunshine transforms it to brilliant purple-blue.



× c. ½

Adult. *Above*, crown velvety black, separated from dark mantle by a prominent white collar on hindneck. Upperparts deep cobalt blue. *Below*, pale rusty buff. Sexes alike.

Young (immature) has numerous black striations running from lower mandible to neck; feathers across breast edged with black.

STATUS, DISTRIBUTION and HABITAT. Resident and locally migratory. Primarily a maritime kingfisher, not common but frequent on the western seaboard from about Bombay southward, Ceylon (rare), and up the eastern coast of the Peninsula through the Godavari delta, Sunderbans and East Pakistan (Chittagong, common), and beyond. Also the Andaman and Nicobar Islands. Affects the seashore and mangrove swamps, often ascending the creeks and estuaries for considerable distances above tidal limits. Sporadically penetrates much deeper inland along the larger rivers and their feeders (up to c. 1000 m); as such, collected and/or observed in Gonda dist. (Uttar Pradesh), Monghyr, Madhubani, Tirhut (Bihar), Dumagudim (Andhra), Bharatpur (Rajasthan), N. Lakhimpur (Assam), Naga Hills north of Manipur (SF 11: 45), and elsewhere.

Extralimital. Extends through Burma, Thailand, Malay Peninsula and islands, the Indochinese countries, China (north to Kansu, Shansi and Chihili), Korea, Hainan, Philippine and Indonesian islands (Borneo, Sumatra, etc.).

GENERAL HABITS. Similar to the Whitebreasted Kingfisher (736) but much less terrestrial in its hunting and less noisy, usually flying off silently. Keeps singly and has a number of alternative fixed hunting posts in a feeding territory, occupying them day after day. Seldom wanders far from the

CORACIIFORMES

96

GENERAL HABITS, FOOD, VOICE and CALLS. As in 741. Feeds at low tide on the exposed mudflats, on crabs, mud-skippers (*Periophthalmus*) and orthopterous insects.

BREEDING. Not recorded.

MUSEUM DIAGNOSIS. Differs from *humii* (741) in being generally brighter and paler blue on the wings and more consistently green on the back; ear-coverts green with no trace of black; black nuchal band generally absent; white collar broader.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	110-116	42-49	c. 16	70-73 mm (Baker)

COLOURS OF BARE PARTS. As in 741.

741. *Halcyon chloris humii* Sharpe

Halcyon humii Sharpe, 1892, *Cat. Bds. Brit. Mus.* 17: 217 (in key): 281, pl. 8 (Siam to the Malay Peninsula and Sumatra; type from Jaam, Selangor, Malay Peninsula, *vide* Oberholser, 1919, *Proc. U.S. Nat. Mus.* 55: 373) Baker, FBI No. 1557 (part), Vol. 4: 275

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 24 cm (9½ in.).

FIELD CHARACTERS. A medium-sized maritime kingfisher with a black bill.

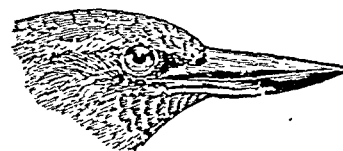
Adult. *Above*, crown and upperparts greenish blue; a prominent white nuchal collar running into the pure white underparts. A black band (generally present) from eye to eye encircling the crown behind; a short white supercilium and a white patch under the eye. *Below*, from throat to vent white. Sexes alike.

Young (immature) has the breast feathers edged with dusky producing a barred effect; white collar and underparts sometimes tinged with fulvous, more prominently on flanks and vent.

STATUS, DISTRIBUTION and HABITAT. Resident; common. The Sunderbans and coastal areas of West Bengal, Orissa and Bangladesh. Affects mangrove swamps; also *char* lands in the neighbourhood of villages in 24-Parganas.

Extralimital. Coasts of Burma, Malay Peninsula, Tioman Archipelago; NE. Sumatra.

GENERAL HABITS. Generally similar to Whitebreasted Kingfisher (736); like it also often found far from water since not entirely dependent on aquatic food. A bold and noisy species frequently hanging round fishermen dragging their nets for the fleeing or rejected sprats. 'The flight is curiously hesitant and weak; they look more like a cuckoo-shrike than a kingfisher in flight' (J. K. Stanford).



× c. ½

KINGFISHERS

97

FOOD. Fiddler and other crabs, mudskippers (*Periophthalmus*) taken on tidal mudflats at ebb; grasshoppers, crickets and other orthopterous insects; lizards, centipedes. Once observed flying up to mud nest of termites 6 metres up in tree and pecking at it (feeding?) while hovering momentarily (SA).

VOICE and CALLS. Particularly vocal in the morning. Harsh, unmusical cries of the timbre of the Black Bulbul's (*Hypsipetes*), described as *krerk-krerk-krerk*, in the breeding season. Excessively noisy during courtship, the birds of a pair chasing each other from tree to tree with 'loud raucous laughter'.

BREEDING. Season, March to August, chiefly April and May. *Nest*, a hole up in a tree-trunk or one excavated in a carton or mud nest of tree ants, often a live one; sometimes in a termite mound. Frequently in kampongs and orchards adjoining villagers' huts. *Eggs* 3 or 4, white, roundish ovals. Average size $c. 29 \times 24$ mm. Evidently both sexes dig the nest-hole, incubate, and feed the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. This subspecies (*humii*) has the upperparts very blue, in some examples practically without any green tinge; ear-coverts all blue; black nuchal band usually absent.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	96-107	40-47	c. 15	62-65 mm (Baker)

COLOURS OF BARE PARTS. Iris deep brown. Bill: upper mandible and terminal third of lower black or deep greenish black; basal two-thirds of lower mandible pinkish or yellowish white. Legs and feet slaty black or plumbeous.

742. *Halcyon chloris davisoni* Sharpe

Halcyon davisoni Sharpe, 1892, Cat. Bds. Brit. Mus. 17: 217 (in key): 282 (Aberdeen, South Andaman)
Baker, FBI No. 1560, Vol. 4: 278

LOCAL NAMES. None recorded.

SIZE. Myna \pm ; length $c. 24$ cm (9½ in.).

FIELD CHARACTERS. As for 741, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; common. Andaman and Coco islands. Recorded on Great and Little Cocos, Little Button, Strait Is., Stewart Sound, Port Cornwallis and elsewhere in the groups. Affects the sea coast, mangrove swamps, tidal creeks, and some distance inland, there keeping to gardens and edges of forest.

GENERAL HABITS, VOICE and CALLS. As in 741.

FOOD. Mainly crabs, fish, grasshoppers and other insects.

BREEDING. Season, principally April-May. *Nest*, a hole excavated in an earth-bank, 30 cm or so deep; occasionally in a termite mound or in the upturned roots of a fallen tree, or a hollow in a tree-trunk (Osmaston, JBNHS 17: 163). *Eggs*, 3 or 4 as in 741. Average size of 30 eggs 29.3×24.5 mm (Baker).

BEE-EATERS

99

Genus *MEROPS* Linnaeus

Merops Linnaeus, 1758, Syst. Nat., ed. 10, 1: 117. Type, by tautonymy, *Merops apiaster* Linnaeus (*Merops*, prebinomial specific name in synonymy)

Cf. Marien, D., 1950, JBNHS 49: 151-64

Bill long, slender, curved throughout; culmen ridged; both mandibles pointed. Legs and feet feeble, syndactyle, the outer or 4th toe united to the 3rd or middle toe as far as the last joint; 2nd and 3rd toes united up to the basal joint only. Wings long, pointed: 1st primary (as.) minute, 2nd primary longest. Tail of 12 feathers, the middle pair long, pointed, and usually projecting beyond the rest.

Key to the Species

	Page
Middle pair of tail-feathers usually not longer than, and nearly similar in shape to the lateral..... <i>M. leschenaulti</i>	99
Middle pair of tail-feathers much longer than the lateral, attenuated and pointed.....	
1 Throat yellow..... <i>M. apiaster</i>	102
2 Throat green..... <i>M. orientalis</i>	108
3 Throat chestnut.....	
a Tail and rump green..... <i>M. superciliosus</i>	104
b Tail and rump blue..... <i>M. philippinus</i>	106

MEROPS LESCHENAUULTI Vieillot: CHESTNUTHEADED BEE-EATER

Key to the Subspecies

Smaller..... <i>M. l. leschenaulti</i>
Larger..... <i>M. l. andamanensis</i>

744. *Merops leschenaulti leschenaulti* Vieillot

Merops leschenaulti Vieillot, 1817, Nouv. Dict. d'Hist. Nat. 14: 17 (Java, *error* = Ceylon)

Baker, FBI No. 1528, Vol. 4: 240

Plate 57, fig. 4

LOCAL NAMES. *Lālsir pātrīnga* (Hindi); *Kurumini kurullā* (Sinhala); *Kattālan kūrūti*, *Panchānkam* (Tamil); *Vēli tātti* (Malayalam).

SIZE. Bulbul \pm ; length $c. 21$ cm (8½ in.).

FIELD CHARACTERS. A slim grass-green bird with slender, curving, pointed black bill; similar to Small Green Bee-eater (750) but with crown, hindneck and upper back bright cinnamon-chestnut; chin and throat yellow bordered by a rufous and black gorget. Central rectrices scarcely projecting beyond tail. Sexes alike.

Young (immature) has the head green, concolorous with lower back; rufous of upper back much mixed with green; rufous-and-black gorget ill-defined; bill smaller.

STATUS, DISTRIBUTION and HABITAT. Resident. Widely but locally distributed, emigrating from heavy rainfall areas during the monsoon months $c.$ June to October. The submontane tracts of the Himalayas (terai, duar,

98

CORACIIFORMES

MUSEUM DIAGNOSIS. Differs from *humii* (741) in having the underparts sullied with buff; ear-coverts dark and mixed with black; black nuchal band narrow but practically always present; white hind-collar bordered below with dark brownish green; faint sub-barring of tail-feathers more noticeable.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	96-108	38-41	c. 14-15	63-72 mm (Baker, Grubb)

Bill from skull 1 ♂ 52, 1 ♀ 50 mm (Grubb).

COLOURS OF BARE PARTS. As in 741.

743. *Halcyon chloris occipitalis* (Blyth)

Todirhamphus occipitalis Blyth, 1846, Jour. Asiat. Soc. Bengal 15: 23, note; 51 (Nicobar Islands)

Baker, FBI No. 1559, Vol. 4: 277

LOCAL NAMES. None recorded.

SIZE. Myna \pm ; length $c. 24$ cm (9½ in.).

FIELD CHARACTERS. As of 741, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; common. Nicobar Islands. Recorded on Car Nicobar, Camorta, Nancowry, Trinkut and throughout the group. Affects mangrove swamps, tidal creeks, coconut groves, etc.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 741.

BREEDING. Season, February to April. *Nest* and *eggs* as in 741 and 742.

MUSEUM DIAGNOSIS. General tone of plumage very dark; the crown very green. Differs from the other races also in being much more fulvous on abdomen and vent; fulvous patch above eye continued back as a broad supercilium to nape, meeting above the black band.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	105-113	40-48	14-15	65-72 mm (Baker)
		(from skull)		
4 ♂♂	104-117	51-53	—	72-79 mm
4 ♀♀	109-112	50-53	—	71-74 mm (Grubb)

COLOURS OF BARE PARTS. As in 741.

Family MEROPIDAE: Bee-eaters

For description see Van Tyne, J., and Berger, A. J., 1959: 473; Baker, 1927 FBI 4: 232; Thomson, A. L., 1964, Article 'Bee-eater', *New Dict. Birds*, London & New York.

Key to the Genera

	Page
Breast and throat feathers not elongated..... <i>Merops</i>	99
Breast and throat feathers elongate, loose and coloured differently from the surrounding plumage..... <i>Nyctornis</i>	111

100

CORACIIFORMES

bhabar, and dun) from about Dehra Dun eastward through Kumaon, Nepal, Sikkim, W. Bengal and Bhutan, Assam, Nagaland, Manipur, East Pakistan, Orissa. Also the Western Ghats complex from about Goa southward (including western Mysore, western Tamil Nadu, and Kerala), and Ceylon; normally up to $c. 1500$ m. Less frequent, or locally absent, in the central, eastern and southeastern parts of the Peninsula, but likely to turn up on passage in almost any forested area. Affects the neighbourhood of streams in mixed deciduous forest country.

Extralimital. Burma, Malay Peninsula, Yunnan, Thailand, the Indo-chinese countries.

GENERAL HABITS. Keeps in parties of 8 to 30 birds or so, perching on bare branches near the top of forest trees or on telegraph wires where available, one bird or several together launching out in the air from time to time to hawk insects, circling back to the base. Flight fast—a few rapid wing-beats followed by a graceful glide. In common with many other insectivorous birds, and other bee-eaters, drinks and bathes on the wing, splashing on the surface while flying low over water or dipping down to it from an overhanging perch, thereafter settling nearby to shuffle the feathers and preen. Has communal roosts in favourite trees in open forest where the birds converge at sundown. Much noise and flying around in a rabble takes place, and settling and resettling as individuals try to supplant others from coveted position in the huddle along a leafy branch. Observed actually taking small fish by dropping from overhanging perch (P. L. Samy, in *epist.*).

FOOD. Winged insects—bees, dragonflies, ants, termites, etc. Occasionally butterflies snapped up in the air with a little click of the bill, the discarded wings floating to the ground as the bird flies on after the capture.

VOICE and CALLS. Almost indistinguishable from those of the large green bee-eaters (747, 748), qq.v.

BREEDING. Season, overall February to June, most generally March and April. *Nest*, a horizontal tunnel drilled into the shelving sandy bank of a stream or in sandy level ground at a gently downward-sloping angle; up to $c. 2$ metres long ending in a widened egg-chamber. Though not colonial, e.g. like Sand Martins, often several nests scattered in a restricted area like rat-holes, a metre or two from one another. *Eggs*, 5 or 6, pure white, roundish ovals. Average size of 200 eggs 21.7×19.0 mm (Baker). Both sexes share in digging the tunnel, incubation, and feeding the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Post-nuptial moult complete; apparently no spring moult. Freshly moulted birds have the back dark green (v. pale blue) and the crown and nape rich chestnut-brown. Although the central feathers hardly project beyond the tail, they are quite different in shape from the lateral rectrices, approximating to the condition that obtains in juveniles of Bluetailed and Small Green Bee-eaters (748, 750).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
15 ♂♂	105-111	35-40	c. 9-10	76-84 mm
19 ♀♀	104-109	35-40	c. 9-10	77-84 mm (BB, HW, SA, Koels)

BEE-EATERS

101

Marion (JBNHS 49: 154) gives

	Wing	Bill (from feathers)	Tail
32 ♂♂	104-113 (107.4)	25-32 (28.6)	78-85 mm (80.9)
29 ♀♀	100-112 (106.0)	26-30 (28.0)	75-84 mm (79.6)

Weight 3 ♀♀ 24-33 g (Diesselhorst, SA).
COLOURS OF BARE PARTS. Iris crimson. Bill horny black; mouth greyish pink.
Legs, feet and claws blackish brown.

745. *Merops leschenaulti andamanensis* Marion

Merops leschenaulti andamanensis Marion, 1950, Jour. Bombay nat. Hist. Soc. 49: 155
(Port Blair, Andaman Island)
Baker, FBI No. 1528 (part), Vol. 4: 240

LOCAL NAMES. None recorded.
SIZE. Bulbul ±; length c. 21 cm (8½ in.).
FIELD CHARACTERS. As of 744, q.v. See Museum Diagnosis.
STATUS, DISTRIBUTION AND HABITAT. Resident; common. Great and Little Coco, and Andaman Islands. Not recorded in the Nicobars. Seldom met away from forest; occasionally in clearings. Frequents the neighbourhood of streams and roads running through forest, and well-wooded gardens.
GENERAL HABITS, FOOD, VOICE AND CALLS. As in 744.
BREEDING. Season, nest, eggs, etc. as in 744. Clutches reportedly smaller, of 3 to 5 eggs (Osmaston).
MUSEUM DIAGNOSIS. Differs from the nominate subspecies (744) in being larger, with longer wing, bill and tail. No difference in plumage.

	Wing	Bill (from feathers)	Tail
14 ♂♂	107-115 (111.2)	26-34 (31.0)	81-94 mm (88.5)
8 ♀♀	107-112 (108.7)	29-32 (30.4)	85-97 mm (90.1)

Recent specimens from Middle and South Andamans give

	Wing	Tail
4 ♂♂	110-115 (113)	84-90 mm (86.25)
2 ♀♀	109-112 (110.5)	86-88 mm (87)

(Abdullahi)

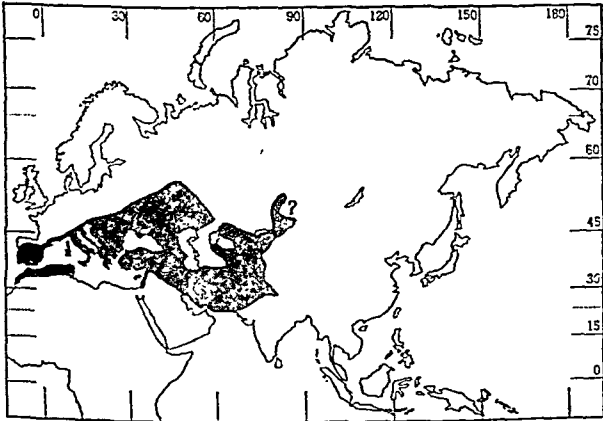
COLOURS OF BARE PARTS. As in 744.

BEE-EATERS

103

(including islands in the Mediterranean Sea) Morocco, Tunisia, Palestine. Winters in Africa as far south as Cape Province; also in S. Arabia. Occurs on the eastern Atlantic islands during migration; casual in C. and N. Europe (Peters).

Merops apiaster



■ Breeding range

MIGRATION. No ringing data. Recorded as passing through Kohat (33°37'N., 71°30'E.), northern West Pakistan, in April and early May, re-passing in August-September (Whitehead, 1909, *Ibis*: 250). Arrives in Chitral end May, most birds passing on northward (Perreau, JBNHS 19: 917); in coastal Makran early April, in N. Baluchistan throughout April, re-passing southward in August (Ticehurst, JBNHS 31: 878).
GENERAL HABITS. In Kashmir (summer, breeding) keeps in pairs or small communities. Perches on telegraph wires or bushes in exposed situations, darting out now and again to seize a dragonfly or wasp often from as much as twenty metres away, swooping upwards at the end to snap up the quarry with a little click of the mandibles, the bird circling round with the capture back to its perch. Here the victim is vigorously battered to pulp before being swallowed or carried to the nest. Flight graceful, undulating, a few rapid wing-beats alternated with fast glides — very swift when in pursuit.
FOOD. Dragonflies (Odonata), bees, hornets, and other Hymenoptera including the fierce yellow wasp *Polistes hebraeus*; occasionally butterflies (Lepidoptera), all taken on the wing. Sometimes becomes a serious nuisance to bee-keepers by preying on their hive bees.
VOICE AND CALLS. A pleasant, rather liquid trill *tre, tre*, etc., uttered on the wing and from a perch.

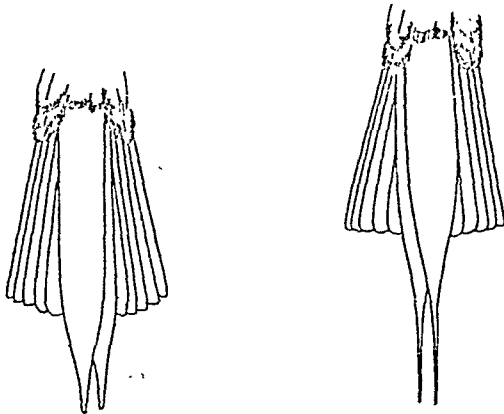
102

CORACIIFORMES

746. European Bee-eater. *Merops apiaster* Linnaeus

Merops Apiaster Linnaeus, 1758, Syst. Nat., ed. 10, 1: 117 ('Europa australi; oriente')
Baker, FBI No. 1522, Vol. 4: 233
Plate 57, fig. 7

LOCAL NAMES. *Bādā hārriāl* (Hindi); *Tūleri kār, Rodabubru* (Kashmiri).
SIZE. Myna +; length c. 27 cm (10½ in.).
FIELD CHARACTERS. A typical bee-eater, multicoloured, with long, slender, curving pointed black bill and projecting pin-feathers in tail.



Tail of *M. apiaster*, × c. ½ (After Hartert) Tail of *M. s. persicus*, × c. ½

Adult. Above, mantle chestnut and yellow; tail blue-green, the narrow tips black. Below, checks and throat bright clear yellow separated from blue-green breast and abdomen by a narrow black gorget. Sexes alike.
Young (immature) has very little chestnut on head or neck; scapulars pale green- or blue-grey, the tips almost white; chestnut of wings replaced by chestnut-grey; underparts paler and duller.
STATUS, DISTRIBUTION AND HABITAT. Breeding visitor to Kashmir, chiefly in the Vale, arriving in April or early May, departing in September. Breeds also in Baluchistan (Quetta area) to c. 1800 m, and in the Kurram Valley between c. 900 and 2100 m. Elsewhere in NW. India and Pakistan mainly a passage migrant, recorded in Gilgit, Chitral, Himachal Pradesh, Garhwal, Punjab, Sind, and eastern Rajasthan. Once in Tamil Nadu (Salem dist.), specimens, February 1952 (Basu Roy, JBNHS 65: 776), once in the Maldives Is. — a party of three birds staying on between January and March 1959; status unknown (W. W. A. Phillips, JBNHS 60: 580). Affects open country, low foothills and cultivation, and environs of lakes.
EXTRALIMITAL. Breeds from the Iberian Peninsula, S. France, N. Italy, Yugoslavia, Romania, S. Russia, the Aral Sea and W. Siberia, south to

104

CORACIIFORMES

BREEDING. Season, principally June and July. Nests singly or in communities of a few pairs, widely spaced. Nest, a horizontal tunnel c. 6-9 cm in diameter and up to 2 m deep, ending in a widened egg-chamber c. 23 cm across; usually littered with remains of beetles and winged insects. Excavated in steep banks or cliffs of soft alluvial clay at a slightly upward angle; the holes noted as usually facing east. Eggs, 5 or 6 (c/7-9 reported), pure white spherical ovals, glossy. Average size of 23 Kashmir eggs 25.8 × 21.9 mm (Osmaston). Both sexes share in digging the nest-tunnel and feeding the young; evidently also in incubation. Incubation period undetermined.
MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for description of plumages and structure (also bionomics), Witherby, 1938, 2: 263-5; for remarks on moult, Marion, JBNHS 49: 156.
MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail central outer
♂♂	144-156	37-44	12-14	108-120 87-96 mm
♀♀	136-148	—	—	—

(Witherby)

Weight 7 ♂♂ 45-56 (av. 49.7) g (Paludan).
COLOURS OF BARE PARTS. Iris crimson or red. Bill horny black. Legs and feet brown.

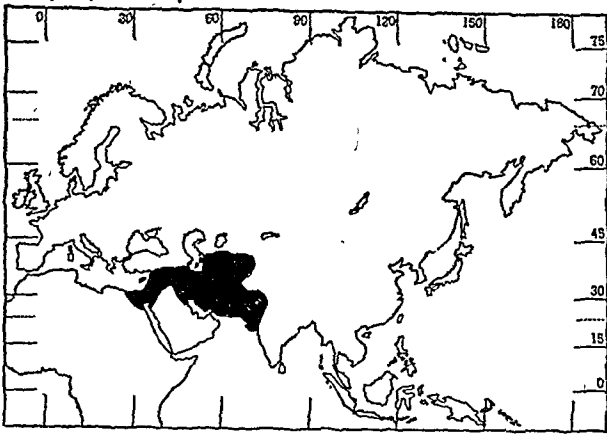
747. Bluecheeked Bee-eater. *Merops superciliosus persicus* Pallas

Merops persica Pallas, 1773, Reise Russ. Reich 2: 708 (Shores of the Caspian Sea)
Baker, FBI No. 1527, Vol. 4: 239
Plate 57, fig. 6

LOCAL NAMES. *Wādo trāklo* (Sind); *Bādā pātrings* (Hindi); *Haz rāgh* (= rain bird, Brahui); *Kerru* (Baluchi); *Bādā hājār-dā* (Kutch); *Mās pātrāngiyo* (Gujarati).
SIZE. Bulbul ±; length from tip of bill to tip of tail-pins c. 31 cm (12 in.).
FIELD CHARACTERS. A bright green bird with slender, slightly curved black bill and projecting pin-feathers in the tail. Readily distinguished from the commoner, more familiar Little Green Bee-eater (750) by larger size; a pale chestnut patch on throat; a broad black streak from base of bill backward through eye to ear-coverts; and a conspicuous white and blue-green cheek-patch below it. Rump and tail green (v. blue in 748). Sexes alike.
More 'stately' flight and sailing, rufous underwing, and call, further distinguish it from Little Green in the air.
STATUS, DISTRIBUTION AND HABITAT. Resident in small numbers locally in the more arid northwestern parts of the subcontinent, but numbers vastly augmented in summer by extralimital breeding visitors in West Pakistan (Baluchistan, Sind, northwestern Punjab) and NW. India (western Rajasthan, Saurashtra, Delhi). In some areas (e.g. NW. Punjab, Delhi and Dehra Dun (?)) breeding range overlaps with Bluetailed Bee-eater (748). Affects the neighbourhood of jheels and tanks and sandy seashores.
EXTRALIMITAL. Breeds elsewhere in Palestine, Iran, Transcaspia and W. Turkestan, south to Egypt and Iraq. Migrates over Arabia and the Nile Valley, wintering in tropical and southern Africa.

BEE-EATERS

105

Merops superciliosus persicus

Breeding range

MIGRATION. No ringing data. Observed as follows:

Gilgit. Passes through southward late in autumn — November (Scully, SF 10: 101).

Baluchistan. Arrives early April from a western direction, bulk follows later during the month or in early May; many remain to breed in coastal and central Makran and the Quetta area, others pass on eastward. Repasses through during the second half of August (Ticehurst, JBNHS 31: 878).

Sind. Arrives middle to late April or early May, apparently from a western direction. Some remain to breed others pass on, the passage sometimes continuing into early June. Return passage commences in late August or early September with many young birds in evidence; continues through October and early November (K. R. Eates, JBNHS 40: 756-9).

Kutch. Outward passage in September; inward not observed (SA).

Saurashtra. Arrives on the coast in May (Dharmakumarsinhji, JBNHS 46: 723-4).

Maharashtra (Bombay area). Passes through in April-May; repasses September-October, the flocks often mixed with the Bluetailed *M. philippinus* (SA).

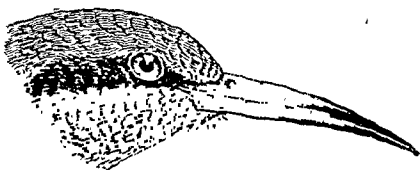
Migrates during the night chiefly between the hours of dusk and dawn ('dusk to midnight and c. 4.30 to 9.30 a.m.' — Eates) in loose sprawling flocks. Passage high overhead in the dark revealed by the trilling contact calls of the birds. Evidently feeds and rests during daytime.

GENERAL HABITS. As in 746 (q.v.) and other bee-eaters. Keeps in pairs or small flocks near water — dhands or jheels, irrigation reservoirs and canals, etc. Invariably perches on telegraph wires where available. Launches out in the air every now and again in pursuit of winged insects, circling back

BEE-EATERS

107

Breeds in W. Pakistan in NW. Punjab (where breeding in some areas overlaps with 747) and northern India through Uttar Pradesh, Bihar, Bengal and Assam; patchily throughout the Peninsula south to Mysore. Also in Nepal (lowlands) and East Pakistan. Winters in the southern parts of its breeding range southward to Ceylon,¹ and in the Coco, Andaman and Nicobar Islands. Affects more wooded, less arid country than 747 and like it keeps to the neighbourhood of water — jheels, tanks, streams, coastal backwaters, etc.



x c. 1

Extralimital. Breeds elsewhere in Burma, Yunnan, Thailand, northern Malay Peninsula and the Indochinese countries. Winter visitor to the Indonesian islands and the Philippines.

GENERAL HABITS. Very similar to Bluecheeked Bee-eater (747). Loose flocks sometimes fly around over forest clearings hawking insects like swallows, or perch on the tips of tall trees and bamboos at the edge of forest whence to launch their aerial forays. On the West Coast the birds often hunt far out over estuaries and backwaters, considerable distances from land.

FOOD. Winged insects, mainly dragonflies, wasps and bees. Of the latter the following have been specifically identified in stomachs: *Apis indica* and *A. florea*, *Rhynchium bengalense*, *Sphex lobatus*, *Vespa orientalis*, *Polistes hebraeus*, the leaf-cutting bee *Megachile carbonaria* and the carpenter bee *Xylocopa discimilis* (Mason & Leisroy, 1912). On occasion also takes moths, beetles, bugs and bluebottle flies, *Musca vomitoria* (?). Predation on hive bees sometimes makes it a serious nuisance to bee-keepers.

VOICE AND CALLS. Close to the Little Green Bee-eater's (750) but louder and lower in key and unmistakable with it; more akin to the notes of the Chestnut-headed species.

BREEDING. Season, March to June, principally April and May. Nest, the usual tunnel in a vertical river bank or sandy cliff, usually up to 2 metres long. Nests colonially, often a hundred pairs or more together. Eggs, 5 to 7 normally 6, white, roundish ovals. Average size of 100 eggs 23.2 x 20.1 mm (Baker).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for comments on moult, Marien, JBNHS 49: 150-1.

Differs from Bluecheeked Bee-eater (747) chiefly in its rump and tail being bright cerulean blue instead of bronze-green; whitish blue-green cheek-patch much smaller and less conspicuous; chestnut patch on throat and breast much larger and darker.

¹ Breeding recorded for the first time at Kumana, Eastern Province, April 1962 (C. E. Norris, JBNHS 60: 259).

106

CORACIIFORMES

gracefully to the base after each capture. Flight, as in other bee-eater, swift — a few rapid wing-beats followed by a glide.

FOOD. Dragonflies, bees, wasps (see under 748).

VOICE AND CALLS. Resembling those of the European Bee-eater (746), a musical interrogative *teew?* (repeated); in the distance sounding very much like the *pettigrew* of Redvented Bulbul (SA). These also used as contact calls during migration flight.

BREEDING. Season, April to August, principally May and June. Nest, the usual underground tunnel (1 to 2 metres long) burrowed in gently sloping sand dunes or mounds — sometimes almost flat ground — in semi-desert tracts, or in a shelving sandy seashore above tide mark; colonially, often up to a hundred pairs or more together, the holes scattered a metre or so apart. Eggs, 4 or 5, white, roundish ovals. Average size of 100 eggs 26.2 x 20.9 mm (Baker). Both sexes share in excavating nest-tunnel, incubation (?) and feeding the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for comments on moult, Marien, JBNHS 49: 150-1.

Differs from Bluetailed Bee-eater (748) chiefly in its rump and tail being more bronze-green less blue, and cheeks more conspicuously white and blue-green. Chestnut patch on throat and breast much smaller and paler.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail central outer
♂ ♀	146-160	35-44	11-12	135-148 86-90 mm (Baker)

6 ♂ ♀ ad. Wing 151-162 mm; weight 45-53 (av. 48.3) g (Paludan).

COLOURS OF BARE PARTS. Iris reddish brown to deep crimson. Bill horny black. Legs and feet fleshy plumbeous to dark brown.

748. Bluetailed Bee-eater. *Merops philippinus philippinus* Linnaeus

Merops philippinus Linnaeus, 1766, Syst. Nat., ed. 12, 1: 183, errata at end of volume; name for *Merops* 5th sp. (Philippine Islands)

Merops javanicus Horsfield, 1821, Trans. Linn. Soc. London 13 (1): 171 (Java)
Baker, FBI No. 1526, Vol. 4: 237
Plate 57, fig. 9

LOCAL NAMES. *Biddō pātrīnga* (Hindi); *Dorla* (Mirshikara, Bihar); *Jeta kasho* (Assamese); *Kompu pasteriki* (Telugu); *Viliññā* (Malayalam); *Shala* (Nicobares); *Kurumini kurullā*, *Nattūl kurullā*, *Ranillā*, *Ameyā* (Sinhala); *Kattālan kūrūn*, *Pā-chānkām* (Tamil).

SIZE. Same as Bluecheeked Bee-eater (747).

FIELD CHARACTERS. As of 747, q.v., but rump and tail bright blue, clearly seen in good light, especially in the flying bird. Sexes alike. See Museum Diagnosis.

Young (immature) paler and duller coloured than adult, especially on throat and breast.

STATUS, DISTRIBUTION AND HABITAT. Resident and locally migratory, frequently moving with Bluecheeked Bee-eater, but position very unclear.

108

CORACIIFORMES

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail central outer
♂ ♀	121-135	36-41	12-13	126-145 84-86 mm (Baker)
5 ♂ ♂	133-139	(from skull) 45-48	11-13	130-141 — mm
6 ♀ ♀	126-131	43-46	—	115-136 — mm (BB, SA, HW)

COLOURS OF BARE PARTS. As in 747.

MEROPS ORIENTALIS Latham: SMALL GREEN BEE-EATER

Key to the Subspecies

		Page
1	Paler. Head and neck with merely a golden sheen.....	<i>M. o. beludschicus</i> 108
2	Darker	
a	Head and neck only tinged with rufous.....	<i>M. o. orientalis</i> 109
b	Upperparts of head and neck wholly ferruginous.....	<i>M. o. birmanus</i> 110
c	Nape and hindneck with a more pronounced golden bronze sheen.....	<i>M. o. ceylonicus</i> 111

749. *Merops orientalis beludschicus* Neumann

Merops viridis beludschicus Neumann, 1910, Orn. Monatsb. 18: 80
(Sarbae, Persian Baluchistan)
Baker, FBI No. 1525, Vol. 4: 236

LOCAL NAMES. *Nāndo trāklo*, *Atedan* (Sind).

SIZE. Sparrow ±; length bill-tip to tip of tail-pins c. 21 cm (8 in.).

FIELD CHARACTERS. As of 750, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to seasonal and altitudinal local movements. West Pakistan in Baluchistan (Makran, Sibi Plain, Quetta Valley (occasional; recorded November and January)), the Punjab districts, and Sind. Possibly extends into northern and western Rajasthan. Some Kutch and northern Gujarat examples are indistinguishable from this pale race (possibly migrants?). Affects open semi-desert country in the neighbourhood of cultivation, and grazing land.

Extralimital. Southeastern Iran.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the Indian race (750).

BREEDING. Season, March to June, principally April and May. Nest and eggs (c/5 or 6) as in 750.

MUSEUM DIAGNOSIS. Much paler than the nominate subspecies of peninsular India (750); paler blue on throat and with merely a golden sheen on head and nape rather than rufous tint.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂ ♀	91-95	29-32	{ 120-133 (♂) mm 100-114 (♀) mm

Central tail-feathers exceed outer by 51-63 mm in males, 33-43 mm in females (Ticehurst).

BEE-EATERS

109

Weight 3 ♂ 19-20 g; 3 ♀ 18-27 g (Paynter).
COLOURS OF BARE PARTS. As in 750.

750. *Merops orientalis orientalis* Latham

Merops orientalis Latham, Index Orn., Suppl.: xxxiii (India = Pondichery side
Stresemann, 1952, Ibis 94: 515)
Baker, FBI No. 1523, Vol. 4: 234
Plate 57, fig. 10

LOCAL NAMES. *Pāringa*, *Hārīāl* (Hindi); *Bānpātī* (Bengal); *Tai lingi*, *Veda reghu*, *Pūtūr*, *Pūtēri* (Marathi); *Nāno pātāngiya* (Gujarati); *Chhēla hājāmdā* (Kutch); *Chinna passeriki* (Telugu); *Vēli tāttā* (Malayalam).

SIZE. Sparrow ±; length bill-tip to tip of tail-pins c. 21 cm (8 in.).

FIELD CHARACTERS. A slender grass-green bird tinged with reddish brown on head and hindneck, with the central pair of tail-feathers projecting as blunt pins beyond tail. Chin and throat verditer blue bordered below by a black gorget. Slender, long slightly curved black bill. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, with marked seasonal local movements — withdrawing from wet areas during the monsoon and from northern areas in winter. Throughout the Indian subregion excluding W. Pakistan (*beludschicus*), eastern Assam (*birmanus*) and Ceylon (*ceylonicus*). Also occurs in Nepal, Sikkim and Bhutan at the lower elevations. Plains and up to c. 1500 m in the Himalayas and peninsular hills (to c. 2000 m in the Nilgiris). Affects open country interspersed with light forest and cultivation. Less tied up with the presence of water — ponds, jheels, etc. — than Blue-checked and Bluetailed Bee-eaters. On the seacoast shows a marked preference for the sandy zone immediately above high tide mark.

GENERAL HABITS. Keeps in loose parties and flocks of 15 to 20 or more, usually perched along telegraph wires, or on fence-posts and dead branches; frequently on the bare ground, sometimes on the backs of grazing cattle. Launches aerial sallies after winged insects, flying with a few rapid flaps followed by graceful swallow-like glides on open motionless wings. Snaps up the quarry in mid-air with an agile upward swoop and circles back to the base where it is whacked against the perch before being swallowed. Has communal roosts in leafy trees (e.g. neem — *Melia*) or bamboo clumps, where large numbers congregate at sunset. Much noise and bustle prevail before the birds finally retire for the night. There is constant bickering and supplanting of occupants of coveted perches in the centre of the huddled rows, and every now and again for no apparent reason the entire concourse 'explodes' to fly around in a confused rabble, accompanied by much excited trilling, the birds gradually settling again. Is a late riser and frequently to be seen in the mornings clumped in little groups along the perch, all facing the same way, head tucked under the wing, fast asleep till well after sunrise. Is fonder of dust-bathing than its larger congeners (747-8), which bathe chiefly by dipping in water on the wing.

FOOD. Mainly Hymenoptera — ants, bees and wasps; also moths, butterflies, small beetles (e.g. *Myllocerus* spp.), dragonflies, termites, and other winged insects. In bee-keeping districts preys largely on the two common

BEE-EATERS

111

STATUS, DISTRIBUTION AND HABITAT. Eastern Assam east of Cachar; lowlands.

EXTRALIMITAL. Burma (including Shan States), Yunnan, Thailand, Indo-Chinese countries (excluding North Vietnam) — Peters.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 750.

BREEDING. Season, chiefly April and May. Nest and eggs, as in 750 but 'full clutch seems to be 5 more often than 6' (Baker).

MUSEUM DIAGNOSIS. Differs from the nominate Indian subspecies (750) in having the upper head, hindneck and upper back ferruginous; the upper plumage is generally darker and the flanks more ferruginous.

MEASUREMENTS

Wing ♂ ♀ 93-99 mm (Baker).
COLOURS OF BARE PARTS as in 750.

752. *Merops orientalis ceylonicus* Neumann

Merops orientalis ceylonicus Whistler, 1944, Spolia Zeylanica 23: 223
(Kallawewa, Ceylon)
Baker FBI No. 1523 (part), Vol. 4: 234

LOCAL NAMES. *Kurumim kirillā* (Sinhala); *Kattālen kiriri*, *Penchānkam* (Tamil).

SIZE. Sparrow ±; length bill-tip to tip of tail-pins c. 21 cm (8 in.).

FIELD CHARACTERS. As of 750, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Widely distributed and abundant throughout the low-country Dry zone (under c. 300 m), especially in the sandy tracts round the coast in the northwest and south-east. Affects the same biotope as in the Peninsula.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 750.

BREEDING. Season, April to July, chiefly during June and July. Nest and eggs as in the Indian bird.

MUSEUM DIAGNOSIS. Not very distinct from peninsular birds (750) but in a comparable series shows a more pronounced golden tinge on nape and hindneck; throat and moustachial streak bluer; black gular band wider and heavier; bill stouter and longer.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail (central)
9 ♂ ♂	92-95	34-36	9-10	114-138 mm
2 ♀ ♀	91	33, 34	10	108 mm (HW)

Weight 1 ♂ 17 g (SDR).

COLOURS OF BARE PARTS. As in 750.

Genus NYCTYORNIS Jardine & Selby

Nyctyornis Swainson MS., Jardine & Selby, 1830, Ill. Orn. 2, Addenda, sign. D2
Type, by diagnosis, *Merops ericta* Temminck

Feathers of throat and centre of breast greatly lengthened and brightly coloured. Bill stronger and deeper than in *Merops*; ridge of culmen flattened, with a hollow on either side; nostrils covered by plumes. Wings long: first primary (as.) about two-thirds length of third which is the longest. Tail long, slightly graduated, with the central feathers not attenuated or projecting.

CORACIIFORMES

110

hive bees *Apis indica* and *A. florea*, thus sometimes becoming a serious nuisance.

VOICE AND CALLS. A pleasant jingling tree-tree-tree or teep-teep-teep etc. punctuated from time to time by a tit-tit-tit; uttered chiefly on the wing, but also while perched.

BREEDING. Season, overall February to June varying locally. Nest a tunnel c. 3-4 cm in diameter bored horizontally in an earth mound or sandy cutting, or in the sides of a borrow-pit and the like; often driven obliquely in almost flat sandy ground, singly or in a scattered colony. Tunnels usually from half a metre to two metres long ending in a widened egg-chamber; unlined but often littered with chitinous insect remains. Eggs, 4 to 7, commonly 6, pure white roundish ovals. Average size of 100 eggs 19.3 × 17.3 mm (Baker). From the marked disparity in growth of young in the same brood, eggs possibly laid at longer intervals than 24 hours, incubation commencing from the first egg. Apparently both sexes incubate as they also tend the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Post-juvenal moult complete. No spring moult, and post-nuptial moult complete. Wear turns many green feathers blue, especially the tertiaries.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail (central)
♂ ♂	92-99	28-33	9-10	112-141 mm
♀ ♀	91-94	30-33	8-10	(84) 107-126 mm (SA, HW)
		(from feathers)		(outer)
♂ ♂	89-97 (av. of 20, 93.6)	20-25 (av. of 25, 23.2)	—	68-74 mm (av. of 19, 71.2)
♀ ♀	89-95 (av. of 22, 91.4)	19-26 (av. of 27, 22.6)	—	65-74 mm (av. of 24, 70.4) (Marien)

Weight 1 ♂ 18 g (Rensch); 1 ♀ 15 g (SA).

COLOURS OF BARE PARTS. Iris claret or crimson. Bill brownish black; mouth pink. Legs and feet yellowish brown; claws horny brown.

751. *Merops orientalis birmanus* Neumann

Merops viridis birmanus Neumann, 1910, Orn. Monatsb. 18: 80
(Myingyan [= Myingyan], Irawaddy River, Burma)
Baker, FBI No. 1524, Vol. 4: 236

LOCAL NAME. *Hārīāl sorāi* (Assam).

SIZE. Sparrow ±; length bill-tip to tip of tail-pins c. 21 cm (8 in.).

FIELD CHARACTERS. As of 750, q.v. See Key to the Subspecies and Museum Diagnosis.

CORACIIFORMES

112

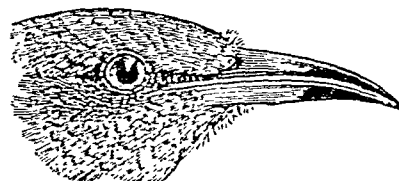
753. Bluebearded Bee-eater. *Nyctyornis athertoni athertoni* (Jardine & Selby)

Merops athertoni Jardine & Selby, 1830, Ill. Orn. 2, pl. 58 and text (India = Bangalore)
Bucia nipalensis Hodgson, 1836, Jour. Asiat. Soc. Bengal 5: 361 (Nepal)
Nyctyornis athertoni barlettii Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 25 (Keitum, Lushai Hills)
Baker, FBI No. 1529, Vol. 4: 242
Plate 57, fig. 5

LOCAL NAMES. *Bukay chera* (Nepal); *Sang rhyak* (Lepcha); *Deo hukuru* (Cachari); *Kāttu rēlittāttā* (Malayalam).

SIZE. Pigeon ±; slimmer. Length c. 36 cm (14 in.).

FIELD CHARACTERS. A large green bee-eater with long, slender, slightly curved black bill. Above, grass-green with pale greenish blue forehead. Below, middle of throat and of the deep verditer upper breast light blue, the feathers lengthened and forming the 'beard' which is conspicuous in profile especially when the bird is calling. Rest of underparts reddish buff streaked with broad green shaft-stripes. Tail square-cut with no projecting pin-feathers; looks triangular in flight like Large Green Barbet's. Sexes alike.



x.c.1

STATUS, DISTRIBUTION AND HABITAT. Resident; local and scattered. The Lower Himalayas (westernmost records, specimens, from 'Kalesar forest, SE. Punjab' and Kotgarh, H.P. [c. 31°18'N., 77°29'E.] — H. W. Waite, JBNHS 39: 861). Normally in the terai, bhabar, duns and duars and up to c. 1700 m, from about Dehra Dun eastward through U.P., Nepal, Sikkim, Bhutan; also Assam north and south of Brahmaputra river, Nagaland, Manipur, Mizo and East Pakistan. The Western Ghats complex (to c. 1700 m in the Nilgiris) from Khandesh southward through Surat Dangs (?), Maharashtra, western Mysore, western Tamil Nadu and Kerala. Andhra, Madhya Pradesh, Orissa, Bihar and W. Bengal. Affects secondary evergreen and moist-deciduous forest biotope, especially broken foothills country with overgrown ravines etc.; occasionally forest clearings with a few scattered trees.

EXTRALIMITAL. Burma, Thailand, and the Indochinese countries. Also Hainan Island (subspecies?).

GENERAL HABITS. Arboreal. Rather sluggish compared to the smaller bee-eaters. Usually keeps in pairs and is very shy, rarely returning to the same place whence disturbed. Launches aerial sallies after passing insects

ROLLERS OR BLUE JAYS 113

from a look-out post in a leafy tree-top, sailing back to its base after each capture and battering the victim against the perch before swallowing it. Flight steeply undulating, very like Large Green Barbet's — a few flaps followed by a downward dip with wings closed.

FOOD. Insects, chiefly bees, wasps, dragonflies and beetles. Has been occasionally observed at nectar-bearing flowers, e.g. *Erythrina* and *Salmalia* (for nectar or insects?).

VOICE AND CALLS. Hoarse guttural croaks or chortles *kor-r-r, kor-r-r*, etc. reminiscent of the notes that preface the *kutroo* calls of the Green Barbet (780-82), but deeper in tone. Not specially loud, but audible at a surprising distance. When calling the 'beard' stands away conspicuously from the throat and breast.

BREEDING. Season, overall February to August, varying locally; chiefly April and May. Nest, a horizontal tunnel c. 5 to 6 cm in diameter and 1.5 to 3 metres long bored into precipitous outcoursed alluvial banks of forest ravines and streams, or in landlips and roadside cuttings in hilly country; sometimes 6 to 8 metres up the face, at others fairly low down. Tunnel ends in a widened egg-chamber, unlined but usually littered with a quantity of chitinous insect remains which also get copiously scattered outside below the entrance-hole. Eggs, 4 to 6, pure white, roundish and with a fair gloss — closely resembling those of Whitebreasted Kingfisher (736). Average size of 50 eggs 30 × 28 mm (Baker).

Excavation often commences a month or more before actual laying of eggs. Both sexes take part, and later also in incubation (?) and feeding the young. Incubation period undetermined.

Snakes frequently take refuge in the nests, therefore caution is recommended when inserting the hand to examine the contents — *experto crede!*

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young (immature) exactly like adult in plumage only somewhat smaller in size and with usually a shorter bill.

Has a single complete moult (post-nuptial) between May and October. Post-juvenal moult occurs about the same time (Marien, JBNHS 49: 164).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	133-143	50-56	18-19	127-137 mm
♀♀	132-140	47-57	18-19	127-137 mm (SA, HW, BB)

Weight 2 ♂♂ 85, 93 g; 1 ♀ 84 g (SA, Paynter).

COLOURS OF BARE PARTS. Iris bright golden orange. Bill horny brown, grey at chin and on basal half of lower mandible; mouth greyish pink. Legs and feet pale yellowish sage-green; claws horny brown.

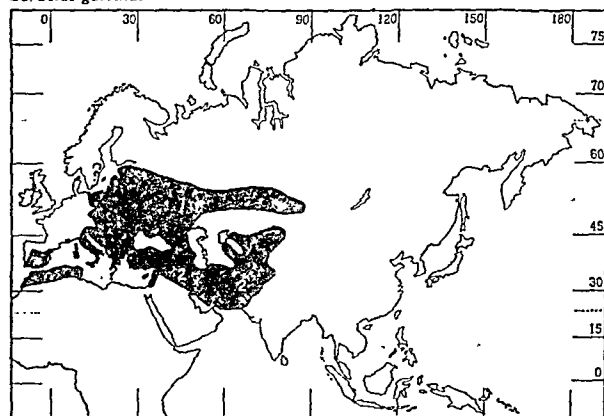
Family CORACIIDAE: Rollers or Blue Jays

For description see Van Tyne, J., and Berger, A. J., 1959: 474; Baker, E. C. S., 1927, FBI 4: 221; Thomson, A. L., 1964, Article 'Roller', *New Dict. Birds*, London & New York.

8

ROLLERS OR BLUE JAYS 115

Coracias garrulus



■ Breeding range x *C. g. garrulus* (RE). a *C. g. semenowi* (754).

MIGRATION. No ringing data. In spring arrives in N. Baluchistan, Peshawar district, Chitral, Gilgit and Kashmir between end March and May, the majority of birds passing through, some remaining to breed. Return (autumn) passage through these areas occurs in August-September. Plentiful on autumn passage in an ENE.-WSW. direction through Sind, Punjab (Lahore dist.), Rajasthan, Kutch and northern Gujarat between mid August and early October. Spring passage evidently follows a different route by-passing these areas. Not noted in Kutch at that season, nor in Sind 'except, only once, on 14 May' (Ticehurst).

Migrates during daytime, chiefly in the morning before noon, but also later throughout the day. The birds travel individually in a steady stream, strung out one behind another at about half-minute intervals over a very wide front, flying at a height of 100 to 150 metres with unhurried purposeful wing-beats.

GENERAL HABITS. Met with singly or in pairs perched on telegraph wires, posts or dead trees commanding an uninterrupted view of the surroundings. Pounces on quarry on the ground either disposing of it on the spot or flying back with it to the perch. Habits largely as of the Northern Roller (755, q.v.) including the extravagant noisy acrobatic nuptial display. Flight rather sluggish, with deliberate wing-strokes very like a crow's in silhouette.

FOOD. Beetles, mole crickets (*Gryllotalpa*), grasshoppers and other large insects taken on the ground; occasionally in the air. Also lizards and frogs, the latter forming a considerable proportion of the food brought to the young.

VOICE AND CALLS. Harsh grating screams uttered chiefly during the aerial display; occasionally from perch. Birds very noisy in breeding season:

114 CORACIIFORMES

Key to the Genera

	Page
Bill compressed; breadth at gape about half the length of culmen.....	114
Bill short, broad and swollen at base; breadth at gape about equal to culmen.....	120

Genus CORACIAS Linnaeus

Coracias Linnaeus, 1758, Syst. Nat., ed. 10, 1: 107. Type, by subsequent designation, *Coracias garrulus* Linnaeus

Bill rather long, compressed, and with the culmen slightly curved; nostrils elongate and exposed; gape with strong rictal bristles.

The genus extends throughout Europe and a great part of Asia and Africa.

Key to the Species

Lower plumage pale blue throughout.....	<i>C. garrulus</i>	114
Breast rufous, abdomen and lower tail-coverts blue....	<i>C. benghalensis</i>	116

754. Kashmir Roller. *Coracias garrulus semenowi* Loudon & Tschudi

Coracias garrulus semenowi Loudon & Tschudi, 1902, Orn. Jahrb. 13: 148 (Transcaspia)

Baker, FBI No. 1516, Vol. 4: 222

Plate 57, fig. 8

LOCAL NAMES. *Nilā krāsh* (Kashmir); *Sābkhārāk* (Brahui); *Kashmiri nilkāt* (Gujarat).

SIZE. Pigeon; length c. 31 cm (12 in.).

FIELD CHARACTERS. A brightly coloured bird, chiefly blue and brownish rufous, with biggish head and stout bill. Easily distinguished on the wing from the commoner 'Blue Jay' by its blue-black flight feathers (v. banded dark-and-light blue) and by its uniformly light blue breast and underparts (v. blue restricted to abdomen and vent). Sexes alike.

Young (immature) like adult but paler and duller. Wing-quills tipped browner; the blue of the coverts dull and pale.

STATUS, DISTRIBUTION AND HABITAT. Breeds in Baluchistan (?), NW F. districts of W. Pakistan, Gilgit, and Kashmir between c. 1700 and 2200 m altitude (straggler recorded at c. 3200 m). Migrates to Arabia and presumably Africa in autumn, commonly passing through Sind, Rajasthan and northern Gujarat (Kutch, Saurashtra). Occasionally straggling, then as far east as Seoni dist. in Madhya Pradesh (Lakhnad on 79°30'E.—SA) and south through Maharashtra (Dhulia, Khandala, Bombay) to Mysore (Karwar, 14°50'N.). In its Indian breeding range affects lightly wooded parkland and cultivated areas such as are characteristic of the Vale of Kashmir.

Extralimital. Breeds also in Transcaspia, Turkestan, and the western Tien Shan south to Iran (thence westward to Iraq and perhaps the Jordan Valley (Peters)). Winters in Arabia; possibly also in Africa though this subspecies not yet proven there *vide* Meinertzhagen (1954: 296).

8

116 CORACIIFORMES

BREEDING. Season, chiefly May to July. Nest, a natural hollow in an ancient poplar, willow or chenar tree, or in a clay or conglomerate cliff. Unlined, but often bestrewn with chitinous remains of beetles etc. Eggs, 5 or 6, pure white, glossy, rather elongate ovals; sometimes speckled with small brown spots of unknown origin easily removed by washing. Average size of 16 Kashmir eggs 36.3 × 29.0 mm (Osmaston). Both sexes incubate and feed the young; incubation period undetermined; in nominate race 18-19 days (Witherby). When one bird is brooding its mate keeps guard nearby, swooping with harsh grating squawks at intruders into the proximity.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for description of plumages and structure (also bionomics) of the nominate (European) race, Witherby, 1938, 2: 269-72. Differs from the latter in being paler coloured above and below. Frontal feathers almost white; underparts paler, blue rather than greenish blue. More easily distinguished in juvenile and adult winter plumage. 'The lateral pair of tail-feathers fall short of the middle pair by 17-24 mm. It migrates through in its juvenile dress' (Ticehurst).

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♀	180-210	30-35 (from feathers)	25-26	122-135 mm (Baker)

Weight 1 ♂ 164, 1 ♀ 120 g (SA).

Kashmir birds, *vide* Baker, are very large compared with those from Iran, Afghanistan, Baluchistan and Punjab.

COLOURS OF BARE PARTS. Iris pale brown to hazel brown. Bill brownish black to black. Legs and feet dull yellow.

CORACIAS BENGHALENSIS (Linnaeus): INDIAN ROLLER

Key to the Subspecies

	Page
1 Under wing-coverts pale blue	
a Nuchal collar absent or obsolete.....	<i>C. b. benghalensis</i> 116
b A well-defined deep red collar on the hindneck.....	<i>C. b. indica</i> 118
2 Under wing-coverts deep blue.....	<i>C. b. affinis</i> 119

755. *Coracias benghalensis benghalensis* (Linnaeus)

Corvus benghalensis Linnaeus, 1759, Syst. Nat., ed. 10, 1: 106 (Benghāla, i.e. Madras *vide* Biswas, 1961, Bull. zool. Nomencl. 18: 217-18; fixed at Tulun, Furulia district, West Bengal by Biswas's Neotype designation as per ICZN Ruling [Opinion 663]; see Bull. zool. Nomencl. 20: 195-6, April 1963)

Baker, FBI No. 1517, Vol. 4: 224

Plate 57, fig. 11

LOCAL NAMES. *Nīlkāt*, *Sābkhārāk* (Hindi); *Nīlkāt-bhā* (Bengali); *Tāi*, *Chāh* (Marathi); *Dīkhī nīlkāt* (Gujarati); *Pāli pīlī* (Telugu); *Nātra kārī*, *Pāli kārī* (Tamil); *Nīla krāsh* (Kashmir); *Kārgāsh* (Baluchi); *Chāri* (Sind).

ROLLERS OR BLUE JAYS

117

SIZE. Pigeon; length c. 31 cm (12 in.).

FIELD CHARACTERS. A striking Oxford-and-Cambridge blue bird with biggish head, heavy rather crow-like bill, rufous-brown coloured breast, and pale blue abdomen and vent. An obsolete reddish brown collar on hind-neck. In flight the dark and pale blue portions of the wings flash as brilliant bands. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to little understood seasonal local movements; common. West Pakistan (Baluchistan, Sind, Punjab) and all continental India along the Himalayan submontane tract (up to c. 1500 m — Dharmasala; Garhwal). A specimen collected at c. 3700 m in NW. Nepal (Lowndes, JBNHS 53: 36), and one in Bhutan at c. 2500 m (Ludlow, 1937, *Ibis*: 487) eastward through Nepal, south through the plains to an arbitrary boundary at 20°N. latitude where it intergrades with *indica*. Intergrades with *affinis* in Nepal east of c. 85°E. longitude, NE. Bihar, Sikkim, northern and eastern Bengal, and W. Assam (Garo Hills). Affects open cultivation, gardens, groves of mango and other trees near villages; also light deciduous forest.

Extralimital. Eastern Arabia, southern Iran, Iraq.

GENERAL HABITS. Keeps singly or in pairs perched on telegraph wires, fence posts, earth clods in ploughed fields, and bare trees commanding a clear view of the surroundings and movements of creeping prey. On perch, swings tail slowly up and down as in Blackwinged Kite, Forest Wagtail and Little Green Bee-eater. Pounces lazily — almost parachutes — down to the ground from time to time to seize its quarry, disposing of it on the spot or flying leisurely with it back to the same perch or across to another nearby where the victim is battered before swallowing. Has been observed to pick up small fish neatly from near surface of water (SA) and occasionally to plunge for it like a kingfisher, completely submerging for a moment (Delme-Radcliff, JBNHS 20: 225; Dalglish, *ibid.* 20: 853; Tiwary, *ibid.* 34: 578). This evidently an individual idiosyncrasy. Has a very noisy and spectacular display during the breeding season, sometimes both birds of a pair participating. The bird rockets up in the air vertically, flaps about erratically in steep wave-crests and performs a series of fantastic evolutions — tumbling, somersaulting, nose-diving, looping the loop and rolling from side to side to the accompaniment of loud raucous screams, its brilliant plumage flashing in the sun. These extravagant antics and playful dives sometimes directed at quietly perched female, at other times apparently in self-exhilaration.

FOOD. Largely insects — beetles, locusts, crickets — sometimes (e.g. moths, winged ants and termites) taken in the air. Also frogs, lizards, occasionally small snakes and field mice, and rarely even young birds. Scorpions also recorded. Among stomach contents analysed at Pusa (Bihar) the following insects were frequently recorded: *Gryllotalpa africana*, *Gryllodes melanoccephalus*, *Myrmecocystus selipes*, *Chrologonus* spp., ants (*Camponotus compressus*), and beetles and grubs of various kinds (*Trox*, *Opatrum*, etc.). Is, on balance, a highly beneficial species to agriculture by virtue of the vast



Left foot, x c. 1

ROLLERS OR BLUE JAYS

119

STATUS, DISTRIBUTION and HABITAT. Resident, with some local movement. Common. Indian peninsula south of 20°N. lat. (around which it intergrades with *benghalensis* [755]), and Ceylon; low country and locally up to c. 1000 m. Laccadive Is. (Burton, JBNHS 41: 597). Maldives Is. (Gan, Addu Atoll, November 1968 — Flt Lt J. L. Gregory, *in epist.*). Affects open cultivation, groves of trees in the neighbourhood of habitations, and light forest — in deciduous biotope.

GENERAL HABITS, FOOD, VOICE and CALLS. As in the Northern Roller (755).

BREEDING. Season, in South India (e.g. Kerala) January to March/April; in Ceylon March to June, chiefly March and April. Nest and eggs as in 755. Average size of 24 eggs from Kerala and Ceylon given by Baker as 35.2 × 27.7 mm.

MUSEUM DIAGNOSIS. Differs from *benghalensis* in being slightly smaller, darker and more greenish above, with a deeper-coloured more pronounced nuchal collar.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	170-190	41-49	24-26	109-132 mm (SA, HW)

COLOURS OF BARE PARTS. As in 755.

757. *Coracias benghalensis affinis* Horsfield

Coracias affinis Horsfield, 1839 (1840), Proc. Zool. Soc. London pt. 7: 164 (Assam) Baker, FBI No. 1519, Vol. 4: 226

LOCAL NAMES. *Kabrar*, *Konsa* (Assam); *Das galang* (Cachari); *Takral* (Lepcha).

SIZE. Pigeon; length c. 31 cm (12 in.).

FIELD CHARACTERS. As of 755, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to seasonal local movements; common. Nepal, Sikkim, Bhutan, Assam, Nagaland, Manipur, Mizo (?), East Pakistan. Plains, duars and foothills to c. 600 m.

Intergrades with *benghalensis* in Nepal (around c. 85°E. long.), NE. Bihar, Sikkim, northern and eastern Bengal and western Assam (Garo Hills).

Affects cultivation, light forest and clearings.

Extralimital. Burma south to Tenasserim, Yunnan, Thailand, Indo Chinese countries.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 755.

BREEDING. Season, principally April and May. Nest and eggs as in 755. Average size of 30 eggs 34.7 × 27.9 mm (Baker).

MUSEUM DIAGNOSIS. Much darker and deeper coloured than *benghalensis* or *indica*. Under wing-coverts deep purple-blue; rufous-brown underparts with a strong purplish blue flush; streaks on throat brilliant small-blue instead of whitish; pale blue on underparts confined to vent and under tail-coverts.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	184-204	30-36	26-28	118-137 mm (Baker)

118

CORACIIFORMES

quantities of insect pests it destroys. (For details of food items see Mason & Lefroy, 1912: 155-7.)

VOICE and CALLS. A loud, raucous *kāl* (or *chāk*)-*kāk-kāk-kāk* etc. uttered from a perch; varied and drawn out into excited discordant screeches and shrieks during aerial display, and by way of 'war cries' when chasing off intruders in its territory. 'Independently-hunting young birds mew like cats' (Mrs M. D. Wright).

BREEDING. Season overall March to June/July, principally March and April. Nest, an untidy collection of grass, straw, rags and rubbish in a natural hollow in a rotten tree-trunk or bough at moderate heights, or in the trunk of a palmyra palm; sometimes in a hole in the outer wall or under the roof of a dilapidated building. Eggs, 3, sometimes 4, rarely 5; pure white, glossy, roundish ovals. Average size of 50 eggs 34.3 × 28.1 mm (Baker). Both sexes incubate and feed the young; incubation period 17-19 days, mostly 18. (B. S. Lamba).

MUSEUM DIAGNOSIS. See Key to the Subspecies; for details of plumage, Baker, loc. cit.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	178-201	39-49	25-29	117-140 mm (HW, SA, BB)

Weight 1 ♂ 166 g; 2 ♀ 166, 176 g (Paynter).

There is no consistent difference in the size of the sexes, but in keeping with the normal trend (Bergmann's Rule) a gradual increase in size from south to north.

COLOURS OF BARE PARTS. Iris brown; rim round eye dull orange. Bill brownish black; mouth sulphur-yellow and pink. Legs and feet dirty brownish yellow; claws black.

756. *Coracias benghalensis indica* Linnaeus

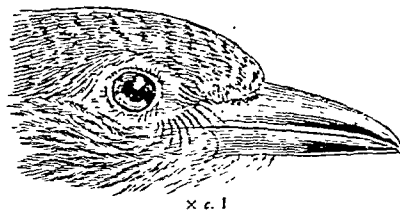
Coracias indica Linnaeus, 1766, Syst. Nat., ed. 12, 1: 159

(East Indies = Ceylon, ex Edwards)

Baker, FBI No. 1518, Vol. 4: 226

LOCAL NAMES. *Tās*, *Chāsh* (Marathi); *Pālā pītā* (Telugu); *Kāttu kadri*, *Pāl kūrūri* (Tamil); *Panamkākkā* (Malayalam); *Dunkāwa*, *Dunkāwulwā*, *Dumbonā* (Sinhala); *Panamkādai*, *Kōttai-kili* (Tamil — Ceylon).

SIZE. Pigeon; length c. 31 cm (12 in.).



x c. 1

FIELD CHARACTERS. As of 755, q.v. See Key to the Subspecies and Museum Diagnosis.

120

CORACIIFORMES

COLOURS OF BARE PARTS. Iris brown; edge of eyelids and bare skin in front and behind eye orange-yellow. Bill almost black. Legs and feet dull yellowish brown (Baker).

Genus EURYSTOMUS Vieillot

Eurystomus Vieillot, 1816, Analyse: 37. Type, by monotypy, *Rolle des Indes*, Buffon = *Coracias orientalis* Linnaeus.

Cf. Ripley, S. D., 1942, Proc. Biol. Soc. Washington 55: 169-76

Meise, W., 1950, Jour. Bombay nat. Hist. Soc. 49: 305-6

Deraniyagala, P. E. P., 1951, Spolia Zeylanica 26: 155-7

Bill short, broad, and very stout; width at gape about equal to length of culmen; terminal quarter compressed; upper mandible strongly hooked. Nostrils exposed; no rictal bristles. Wing long and pointed: 2nd primary (as.) longest. Tail almost square.

EURYSTOMUS ORIENTALIS (Linnaeus): BROADBILLED ROLLER

Key to the Subspecies

	Page
1 A pronounced blue wash on the primaries and secondaries; wing-tail ratio 47-51 per cent. <i>E. o. cyanicollis</i>	120
2 Very dark blackish crown and cheeks, blackish blue ear-coverts; lower parts intense blue	
a Wing average 200 mm. <i>E. o. laetior</i>	122
b Wing average 183 mm; skull narrower. <i>E. o. iris</i>	123
3 Bill larger; culmen about 27-30 mm. <i>E. o. gigas</i>	123

758, 761. *Eurystomus orientalis cyanicollis* Vieillot

Eurystomus cyanicollis Vieillot, 1819, Nouv. Dict. d'Hist. Nat. 29: 425 ('les Indes' = Chandernagor, Bengal, fide Stresemann, 1952, *Ibis* 94: 511, 519)

Eurystomus colonyx Sharpe, 1890, Proc. Zool. Soc. London: 551 (Himalayan terai from Kumaon to Darjeeling and upper Assam)

Eurystomus orientalis aburdu Ripley, 1942, Proc. Biol. Soc. Washington 55: 170 (Nanking, China). New name for *colonyx* Sharpe

Baker, FBI No. 1520 (part), Vol. 4: 228

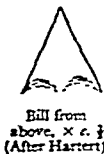
Plate 57, fig. 12

LOCAL NAMES. *Tek rel song* (Lepcha); 'Dollar Bird' (English, substantive).

SIZE. Pigeon; length c. 31 cm (12 in.).

FIELD CHARACTERS. A dark greenish brown and purple blue-black Roller with blackish head and very broad orange-red bill and legs. A large pale blue roundish patch on wing (the 'dollar') particularly conspicuous in flight. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident; not common. The Himalayan submontane tract normally from Garhwal (westernmost record Ambala dist. [Waite, JBNHS 39: 861]) eastward through Nepal, Sikkim, Bhutan and NEFA; Assam, Nagaland, Manipur, East Pakistan. From plains level (terai, duars and duns) to c. 1000 m. Affects heavy secondary tropical

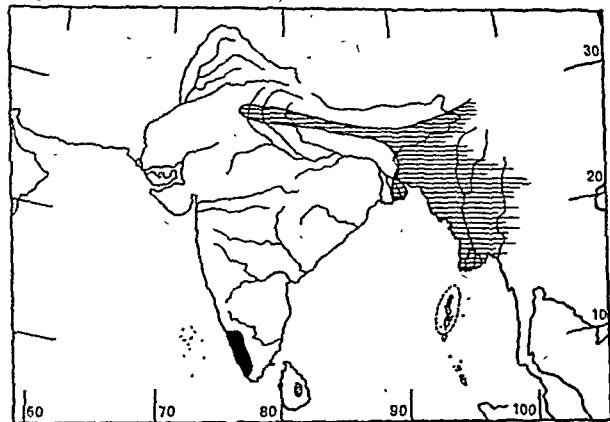


Bill from above, x c. 1 (After Hartley)

ROLLERS OR BLUE JAYS

121

evergreen jungle, and forest clearings for cultivation with scattered standing trees.

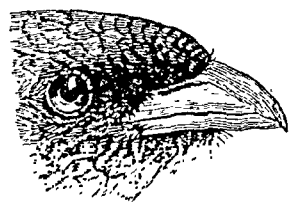
Eurystomus orientalis

E. o. cyanicollis (758).
 E. o. laetior (759).
E. o. irisi (760).
 E. o. gigas (762).

Distributional range

Extralimital. Northern Burma northward to the lower Amur (Siberia) and Manchuria. South in winter to Malay Peninsula, Thailand, Indochinese countries, S. China, Japan, and many Indo-Malaysian islands.

GENERAL HABITS. Keeps singly or in pairs — occasionally small loose parties — to heavy forest or its immediate environs (clearings etc.) perched on the topmost branches of tall dead trees for long periods. Makes short sorties now and again after passing insects, performing curious evolutions in mid-air in their pursuit and usually returning to its base after each capture.



× c. 1

Less sluggish than Blue Jay, and markedly crepuscular. Active in the morning and evening, commonly hunting till late into the dusk. Takes insects on the wing; occasionally pounces on creeping prey on the ground. Flapping flight more rapid and direct than Blue Jay's. Follows insects, e.g. winged termites, to considerable heights, hawking in wide circles — a few deliberate wing-flaps followed by long stretches of gliding. Has a spectacular aerial nuptial display similar to the Blue Jay's (755) q.v.,

ROLLERS OR BLUE JAYS

123

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
6 ♂♂	194-205	33-36	19-21	99-106 mm (HW, SA)

COLOURS OF BARE PARTS. Iris brown. Bill orange-red, blackish brown at tip; palat and gape pale sulphur-yellow, gullet greyish pink. Legs and feet orange-red or coral-red; claws blackish brown (SA).

760. *Eurystomus orientalis irisi* Deraniyagala

Eurystomus orientalis irisi Deraniyagala, 1951, Admin. Rept. of the Dir. Nat. Museums, Ceylon, for 1950, Pt. iv, Educ., Sci. and Art (E): E14 (Maha-oya, Ceylon) Baker, FBI No. 1520 (part), Vol. 4: 228

LOCAL NAMES. *Pūlappōrūkki* (Tamil); *Kes kaunda* (Sinhala).

SIZE. Pigeon; length c. 31 cm (12 in.).

FIELD CHARACTERS. As in 758. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Very rare resident; nearly extinct. In all only about twelve records known from the Island in a century or more, the latest after a lapse of 60 years. This, a breeding pair, possibly two of the very last birds in existence, was shot by an unspeakable museum collector in February 1950, since when no more have been reported!

GENERAL HABITS, FOOD, VOICE AND CALLS. Not recorded; presumably as in 758 and the Kerala subspecies.

BREEDING. *Sedon*, 'February and March' (Phillips).

MUSEUM DIAGNOSIS. Differs from the Kerala population only in having a shorter wing; no difference in coloration.

MEASUREMENTS	Wing	Tarsus	Tail
4 o? Wing 178-188 mm; Bill (from skull) 29-30 mm (Meise, SA).			
1 ♂	182*	18	98 mm
1 ♀	180	17	97 mm (Deraniyagala)

* Type of *E. o. irisi*

COLOURS OF BARE PARTS. As in 759.

762. *Eurystomus orientalis gigas* Stresemann

Eurystomus orientalis gigas Stresemann, 1913, Novit. Zool. 20: 297 (in key), 299 (Rutland Island, Andaman Islands) Baker, FBI No. 1521, Vol. 4: 231

LOCAL NAMES. None recorded.

SIZE. Pigeon; length c. 31 cm (12 in.).

FIELD CHARACTERS. As in 758. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; fairly common and widely distributed: Andaman Islands including Narcondam. Affects clearings in high evergreen forest.

122

CORACIIFORMES

consisting of shooting vertically skyward and nose-diving in steep wave-crests, rolling from side to side, and other fantastic acrobatics kept up for several minutes at a time.

FOOD. Chiefly insects: crickets, beetles, flying termites, etc. Also lizards, and doubtless other small animals.

VOICE AND CALLS. On the whole very silent. Occasionally utters a raucous *chack-chack* repeated every second or two, alternated from time to time by a quicker-repeated chattering croak *chack-chack-chack*.

BREEDING. *Season*, March to May. *Nest*, an unlined natural hollow, or a barbet- or woodpecker hole in a lofty tree-trunk (such as *Salmaia* or *Tetra-*meles**) standing near the edge or in the midst of a forest clearing, frequently 15 or 20 m up. The same hole is often occupied in successive years, but whether by the same or a different pair is unproven. *Eggs*, 3 or 4, white spherical ovals measuring c. 36 × 28 mm. Both sexes incubate and feed the young; period of incubation undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for subspecies Key.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
8 ♂♂	178-198	27-33	20 (1)	93-102 mm
6 ♀♀	184-196	30-35	—	90-100 mm (BB, SA)

Weight 1 ♀ (March) 172 g; 1 ♂ (August) 120 g — Paynter.

COLOURS OF BARE PARTS. Iris dark brown; edges of upper eyelid and orbital skin dusky vermilion. Bill, legs and feet deep vermilion with black on tip of bill; claws black; soles vermilion (Biswas).

759. *Eurystomus orientalis laetior* Sharpe

Eurystomus laetior Sharpe, 1890, Proc. Zool. Soc. London: 551 (Forests of Malabar, the Nilgiris and Ceylon, restricted to Eridge, Travancore) Baker, FBI No. 1520 (part), Vol. 4: 228

LOCAL NAMES. *Pūlappōrūkki* (Tamil); *Kattu pānamkalka* (Malayalam).

SIZE. Pigeon; length c. 31 cm (12 in.).

FIELD CHARACTERS. As in 758. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; rather rare and patchily distributed: Kerala north to Wynad (Malabar dist.); W. Mysore (Coorg dist.) and western Tamil Nadu (Nilgiri dist.). Affects cultivation clearings in heavy evergreen and semi-evergreen forest, neglected overgrown rubber and coffee plantations, etc.; low country and foothills up to c. 500 m.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the Himalayan subspecies (758), q.v.

BREEDING. *Season*, September to May, chiefly March and April. *Nest*, eggs, and breeding biology as in 758.

MUSEUM DIAGNOSIS. Differs from the disjunct Himalayan population *cyanicollis* (758) in being a brighter, more intense blue on the underparts, with a markedly blacker head (crown and face).

CORACIIFORMES

124

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 758 and other races, qq.v. **BREEDING.** Unrecorded.

MUSEUM DIAGNOSIS. Differs from Himalayan *cyanicollis* (758) only in having a much larger bill; also slightly larger measurements. No difference in coloration.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	184-205	27-30	c. 21	106-112 mm (Baker)
		(from skull)		
5 ♂♂	192-198	35-38	19-21	105-110 mm
1 ♀	199	35	19	103 mm (Grubb)

Weight 1 ♂ 165 g; 1 ♀ 145 g (Grubb).

COLOURS OF BARE PARTS. As in 758 and other races.

Family UPUPIDAE: Hoopoes

For description see Van Tine, J., and Berger, A. J., 1959: 476; Stresemann, E., 1927-34, *Aves*: 831-2; Baker, E. C. S., 1927, FBI 4: 307; Thomson, A. L., 1964, Article 'Hoopoe', *New Dict. Birds*, London & New York.

Genus UPUPA Linnaeus

Upupa Linnaeus, 1758, Syst. Nat., ed. 10, 1: 117. Type, by monotypy, *Upupa epops* Linnaeus

An ample erectile fan-shaped crest with the posterior feathers longest. Bill long, slender and decurved from the base; tongue very short. Wing rounded, of 10 primaries. Tail moderately long; 10 rectrices only. Tarsus short, scutellated behind; foot imperfectly syndactyle, 3rd and 4th toes joined at the base.

UPUPA EPOPS Linnaeus: HOPOOE

Key to the Subspecies

	Page
1 Hinder feathers of crest with white subterminal spots; general colour paler, less rufous	124
a Paler.....	127
b Darker.....	
2 Hinder feathers of crest normally with no white spots; general colour darker, more rufous	128
c Lighter in colour; slightly larger.....	128
d Darkest and most rufous; slightly smaller.....	

763. *Upupa epops epops* Linnaeus

Upupa Epops Linnaeus, 1758, Syst. Nat., ed. 10, 1: 117 (*Europae tyritus* = Sweden) Baker, FBI No. 1579, Vol. 4: 308 Plate 58, fig. 14

LOCAL NAMES. *Hāhād* (Hindi); *Satut* (Kashmir); *Sikāḍū* (Himachal Pradesh); *Māgh-i-Sulimān* (Baluch); *Kāḍḍo* (Sind); *Lacher ghak* (Punjab); *Khetile*, *Nēz* (Madhya Pradesh); *Seem kōrka* (Halbi, Bastar Dist.).

SIZE. Myna; length c. 31 cm (12 in.) to tip of long slender bill.

HOOPES

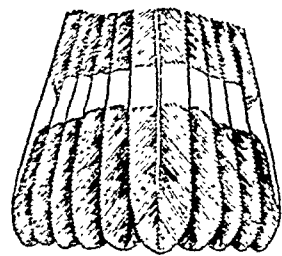
125

FIELD CHARACTERS. A fawn coloured bird with prominent black-and-white zebra markings on back, wings and tail. A prominent black-and-white-tipped crest, full and fan-shaped when erected, falling to a point behind the head when folded. Long, slender, gently decurved bill. Sexes alike.

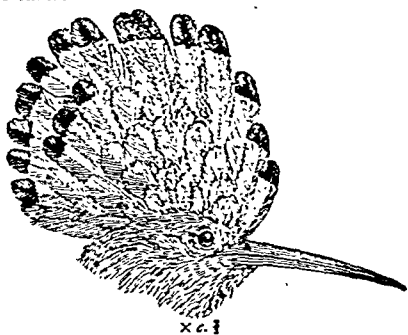
Young (immature) duller and paler above, browner below.

STATUS, DISTRIBUTION and HABITAT. Resident or breeding summer visitor in West Pakistan (Baluchistan, Punjab and N.W.F. districts, Chitral) and in Kashmir, Ladakh, Baltistan, Himachal Pradesh, Garhwal and Kumaon; foothills and up to c. 4600 m. Winters south (c. September to March)—numbers greatly augmented by extralimital immigrants—through Sind, Rajasthan, Gujarat, Madhya Pradesh, Uttar Pradesh and Bihar; plains and hills. Possibly farther south in the Peninsula where there is a confusing intermingling of the races in winter. Affects open country, cultivation, light forest, and the neighbourhood of villages and habitations, in deciduous biotope.

Extralimital. Breeds also in Europe and Asia from S. Sweden to SW. Siberia and Kirghiz Steppe, south to NW. Africa, Palestine, Iraq, Iran, and the Altai; Mediterranean islands; occasionally England. Winters also in N. Africa and Arabia.



Tail $\times c. \frac{1}{2}$ (After Hartert)



$\times c. \frac{1}{2}$

MIGRATION. No ringing data. Continuing observations of mountaineers indicate that at least some extralimital migration occurs directly across the Himalayas. Reported frequently (subspecies?) at high altitudes, notably at c. 6400 m by the first Mount Everest Expedition in September (Wollaston, *Ibis*, 1922: 504) and on Pomori Glacier, c. 5790 m in Nepal in May (Biswas, *JBNHS* 58: 116).

Arrives in its breeding areas between early March and early April; departs August-September, a few birds wintering in the warmer lower valleys (e.g. in Kashmir and northern Baluchistan).

HOOPES

127

eggs 26.2 \times 17.6 mm (Osmaston). Incubation by female alone who is a very close sitter and fed by the male within the nest throughout the period—15 to 17 days, mostly 16 (B. S. Lamba). Both sexes feed the young. The nestlings deliberately squirt their foul-smelling liquid faeces against an intruder as a means of defence.

MUSEUM DIAGNOSIS. See Key to the Subspecies; for details of plumage, Baker, loc. cit.; for plumage phases and structure (also bionomics), Witherby, 1938, 2: 266-9.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
$\sigma\sigma$	140-153	53-63	22-24	98-109 mm
♀♀	136-148	50-58	—	—

(Witherby)

Weight 9 $\sigma\sigma$ 60-73 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill horny brown or horny black, paler (flesh colour) at gape and base of lower mandible; mouth pale flesh. Legs and feet greyish- or slaty brown.

764. *Upupa epops saturata* Lönnerberg

Upupa epops saturata Lönnerberg, 1909, *Ark. Zool.* 5, no. 9: 29
(Kjacha, southern Transbaicalia)
Baker, *FBI* Nos. 1580, Vol. 4: 310

LOCAL NAME. *Das hu dyp* (Cachari).

SIZE. Myna; length c. 31 cm (12 in.) to tip of long slender bill.

FIELD CHARACTERS. As in 763 q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident and/or breeding visitor in the Tibetan facies of the High Himalayas in Nepal, Sikkim, Bhutan and NEFA (?) above c. 1700 m; recorded up to c. 4400 m in summer and once at c. 5000 m in October. Migrates in winter to the plains in Nepal, Bihar, W. Bengal, Orissa and East Pakistan. Affects openly wooded country.

Extralimital. Eastern Siberia and Manchuria southward over Mongolia and northern China, to Yunnan, Kwangtung, and Fohkien (Peters).

GENERAL HABITS, FOOD, VOICE and CALLS. As in the European (nominate) subspecies (763).

BREEDING. Season, April to June. *Nest*, eggs and breeding biology as in 763.

MUSEUM DIAGNOSIS. Very similar to nominate *epops* (763), only a trifle darker on back and wings; also darker and more brown, less vinous, on breast. But race not very distinct and of questionable validity.

MEASUREMENTS

$\sigma\sigma$ Wing 123-164 (mostly over 140). Bill (from feathers) 59-55 mm (Baker).
15 $\sigma\sigma$ Wing 141-155 (av. 149) mm — Stresemann, *BR*.
Weight 4 $\sigma\sigma$ 59-72 g (SA, Paynter).
COLOURS OF BARE PARTS. As in 763.

126

CORACIIFORMES

GENERAL HABITS. Keeps singly or in pairs, often widely separated when feeding; in loose parties of 8 to 25 or more when freshly arrived on migration. Curious unexplained behaviour often observed at this time, of individual birds or 3s and 4s together, flying around as if demented, flitting crazily from branch to branch, crest erected and tail expanded from time to time, fluttering, twisting and turning in and out through branches and tree-trunks in slow erratic butterfly-like flight. Partial to lawns and meadows and dusty cart tracks for feeding and dust-bathing. Runs about actively with a quail-like, somewhat waddling gait, probing here and there in loose sandy soil or damp earth with bill partly open like forceps. When thus digging, crest furred to a point projecting behind, making the bird's head look like a miniature pickaxe; the crest is fanned out momentarily each time the bird settles after a short flight, and on the least excitement. Given to much territorial fighting in the breeding season: rival cocks advance at one another uneasily with crests erected and bill pointing downward, almost touching the ground. They suddenly seize each other's bill tips in a straight line as if to maintain a safe distance between themselves. Thus locked, the combatants flutter down from the branch and disengage to continue jabbing at each other on the ground until one of them retreats.

FOOD. Entirely insectivorous: largely underground grubs and pupae of beetles (Coleoptera); crickets (Gryllidae); earwigs (Forficulidae); locusts and grasshoppers (Acrididae); surface caterpillars of many species (*Agrotis*, *Opatrum*, etc.); ant-lions (*Myrmaleo*); ants and termites. Mole-crickets (*Gryllotalpa africana*) and 'bherwa' (*Schizodactylus monstrorum*) feature largely among the food items brought to the young. For details of some stomach analyses in an intensely cultivated area see Mason & Lefroy, 1912: 172-3. They point to the great usefulness of the species as a destroyer of agricultural pests.

VOICE and CALLS. Song, a deep mellow *hoo-po* or *hoo-po-po* (or *hüd-hüd-hüd*) with a peculiar ventriloquial quality; repeated again and again at about 3-second intervals—in the breeding season often for 10 or 15 minutes at a stretch. This call is very similar to that of Himalayan Cuckoo, *Cuculus saturatus* (580) and rather confusing in localities where both species occur together. However the cuckoo's is usually distinguishable by its four notes *hüd-hüd-hüd-hüd* against the hoopoe's two or three. When calling, the bird lowers and bobs its head, bill pointing downward almost flush with breast, tail depressed and turned in under the perch as if the bird were trying to make both its ends meet! At other times head jerked forward with each successive *hüd* as in a dog barking, the crest raised and lowered from time to time. A subdued harsh *ca-aw* when fighting; rasping croaks and hisses when agitated; a wheezy note by female while being fed by her mate and as a preliminary to inviting copulation by tilting forward and raising her posterior.

BREEDING. Season, late March to early June, principally April and May. *Nest*, a hollow or split in a tree-trunk, or hole in a mud or stone wall of a village house; occasionally lined scantily with grass, leaves, wool, feathers and rubbish which become fouled and matted into an evil-smelling mess with the birds' droppings as incubation proceeds. *Eggs*, 5 to 7, pale skim-milk blue when fresh soon turning to a pale dirty greenish grey and further discoloured by contact with the filthy nest lining. Average size of 26 Kashmir

CORACIIFORMES

128

765. *Upupa epops ceylonensis* Reichenberg

Upupa ceylonensis Reichenbach, 1853, *Handb. spec. Orn.*, Scansoriae: 320, pl. pxcv, f. 4036 (Ceylon)

Upupa indica Reichenbach, 1853, *Handb. spec. Orn.*, Scansoriae: 320

(Bengal, Nepal, Nilghiris and Tenasserim). Not *Upupa indica* Latham

Upupa epops orientalis Baker, 1921, *Bull. Brit. Orn. Cl.* 42: 29. New name for *U. indica* Reichenbach, not *Upupa indica* Latham. (Ambala [Punjab] fixed as type locality by Baker, 1927, *Fauna* 4: 311, in error = Nilgiri Hills, hereby restricted)
Baker, *FBI* Nos. 1581, 1582, Vol. 4: 311, 312

LOCAL NAMES. *Hüd-hüd* (Hindi, Marathi); *Hüd-hüd* or *Ghenti tãnkô* (Gujarati); *Konda pitta*, *Kurelam pitta*, *Kukudu guwa* (Telugu); *Peruwa kurullâ* (Sinhala); *Châcal kûrûci* (Tamil); *Uppoooppân* (Malayalam).

SIZE. Myna; length c. 31 cm (12 in.) to tip of long slender bill.

FIELD CHARACTERS. As in 763. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Breeds in the Himalayas in a lower altitudinal zone than 764 (normally below c. 1500 m), in Nepal, Bihar, northern West Bengal, Sikkim and Bhutan; south through western Uttar Pradesh, central India, western Madhya Pradesh, Gujarat, Maharashtra, Andhra, Tamil Nadu, Mysore, Kerala and Ceylon. Affects open country, light deciduous forest, cultivated areas, and the neighbourhood of habitations: plains and hills to c. 1700 m.

GENERAL HABITS, FOOD, VOICE and CALLS. As in the nominate race (763), q.v.

BREEDING. Season, locally variable: chiefly April to June in northern India, January to March/April in the south, March to May and occasionally August in Ceylon. *Nest*, eggs, and breeding biology as in 763. Size of eggs (c/4-7) c. 25 \times 17 mm.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Smaller, darker and more rufous than the other races. Breast with hardly any tint of vinous; rufous of head and crest deep and rich; subterminal white patches on crest feathers absent or obsolete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
$\sigma\sigma$	120-143	51-63	20-22	83-99 mm
♀♀	(mostly under 135)	—	—	(SA, HW)

Weight 7 $\sigma\sigma$ 48-62 g (SA).

COLOURS OF BARE PARTS. As in 763.

766. *Upupa epops longirostris* Jerdon

Upupa longirostris Jerdon, 1862, *Bds. India* 1: 393 (Burma)
Baker, *FBI* No. 1583, Vol. 4: 312

LOCAL NAME. *Songârâh*, *Songârâh* (Manipur).

SIZE. Myna; length c. 31 cm (12 in.) to tip of long slender bill.

FIELD CHARACTERS. As in 763. See Museum Diagnosis.

HORN BILLS

129

STATUS, DISTRIBUTION and HABITAT. Resident and locally migratory: Assam, Nagaland (?), Manipur and East Pakistan; plains and up to c. 1600 m. Affects grassland, open deciduous forest glades, bamboo and light scrub jungle; cultivated areas and waste land.

Extralimital. Burma, Thailand, Indochinese countries, Malay Peninsula, Sumatra (Peters).

GENERAL HABITS, FOOD, VOICE and CALLS. As in 763, q.v.

BREEDING. Season, February to May, chiefly March and April. Nest, eggs (c/5 or 6) and breeding biology as in the nominate race (763). Average size of 50 eggs 24.9 × 17.9 mm (Baker).

MUSEUM DIAGNOSIS. Paler in colour than *ceylonensis* (765) and with a proportionately longer bill on average.

MEASUREMENTS

	Wing	Bill	
♂ ♀	136-158	(from feathers) 42-66 (mostly over 50)	mm (Baker)

COLOURS OF BARE PARTS. As in 763.

Family BUCEROTIDAE: Hornbills

For description see Van Tyne, J., and Berger, A. J., 1959: 478; Stresemann, E., 1927-34, *Aves*: 832-3; Baker, E. C. S., 1927, FBI 4: 282; Bannerman, D. A., 1964, Article 'Hornbill' in Thomson, A. L. (ed.), *New Dict. Birds*, London & New York. Moults: Females renew all remiges and rectrices synchronously in the nest-hole, while the body moult is inactive. Males have a different moult pattern.

Key to the Indian Genera

	Page
A Casque large in adults, as high as, or higher than the upper mandible	
1 Casque broad, concave on top, ending anteriorly in two points	143
2 Casque compressed, ridge-like, ending in a single point	139
B Casque moderate, small or absent	
3 Casque low, broad and rounded above, composed of transverse ridges	137
4 No casque but a few oblique ridges on sides of base of upper mandible	135
5 Casque small and compressed, the upper ridges curving down in front	133
6 Casque small, compressed and pointed or wanting; no ridges on sides of bill	129

Genus *Tockus* Lesson

Tockus Lesson, 1830, *Traité d'Orn.*, livr. 4: 252. Type, by subsequent designation, *Buceros erythrorhynchus* Brisson, i.e. Temminck

Casque either absent or when present small and compressed, terminating anteriorly in a point. Bill considerably curved and carinate above. Eyelids furnished with long bristly eyelashes, as in the family. Tail long and graduated in the Indian forms.

Key to the Species

Bill with small, keel-shaped casque	<i>T. birostris</i>	130
Bill with no casque	<i>T. griseus</i>	131

HORN BILLS

131

FOOD. Largely fruit, especially wild figs (*Ficus* spp.), berries and flower petals (e.g. *Bauhinia*); also insects (beetles, mantids, grasshoppers, wasps, etc.) and lizards, mice and other small animals. Recorded eating the poisonous fruits of the Yellow Oleander (*Thevetia nerifolia*), extracting and devouring parakeet nestlings from a tree-hole, and taking fish avidly in captivity.

VOICE and CALLS. Normal note a shrill monotonous kite-like squeal *whewee*, frequently uttered. Also has a variety of loud cackling and squealing conversational notes *k-k-k-ka-ē*; while uttering these tail depressed or doubled under perch and swung slowly back and forth.

BREEDING. Season, overall March to June, the principal periods varying locally. Nest, a natural hollow in an old tree-trunk or bough c. 3 to 8 m up, sometimes enlarged to suit. After the female enters, the hollow is walled up with a mixture of wet mud collected by the male outside, and her own excreta and 'casts' by the female within, she (mostly) using her bill as trowel for the plastering. A narrow slit is left in the wall through which the male feeds his mate throughout the incubation period. After the eggs hatch and the young are about a week (?) old, the wall is broken down to release the female and then rebuilt with a narrow opening as before. Through this both parents feed the squabs till they are fully fledged. The wall is then broken down to let them out (whether by the parents, or chicks, or both?). Female evidently moults her wing-quills during her incarceration, but this needs further study. Excreta of imprisoned female and chicks ejected directly through the narrow slit with considerable force. Eggs, normally 2 or 3, rarely 4, dull glossless white, becoming stained and dirty during incubation. Average size of 30 eggs 41.9 × 30.0 mm (Baker). Incubation period undetermined.

For more detailed accounts of the nesting habits see E. F. Hall, 1918, JBNHS 25: 503-5; E. H. N. Lowther, 1942, *ibid.* 43: 389-401.

MUSEUM DIAGNOSIS. See Key to the Species; for details of plumage Baker, *loc. cit.*

MEASUREMENTS

	Wing	Bill (from posterior base of casque)	Tarsus	Tail
♂ ♀	196-228	81-105	42-46 (Baker, HW, BB, SA)	237-297 mm

COLOURS OF BARE PARTS. Iris brownish orange to red (♂), brown (♀). Bill slaty black on basal portion including casque, waxy yellow or creamy white on culmen, tips, and most of lower mandible; palate pale yellowish flesh, gullet dark slate. Legs and feet plumbeous to slaty black; claws black.

MISCELLANEOUS. Both adults and squabs widely persecuted and slaughtered for food and alleged medicinal properties. Popularly believed to cure after-childbirth pains in women. A broth prepared of the entire bird, feathers and all, is administered internally, in addition to bathing the patient with a decoction of it.

Tockus griseus (Latham): MALABAR GREY HORNBILL

Key to the Subspecies

Underparts grey; central pair of tail-feathers all or nearly all black	<i>T. g. griseus</i>
Underparts paler grey; central pair of tail-feathers with broad white tips	<i>T. g. gulgulensis</i>

130

CORACIIFORMES

767. Grey Hornbill. *Tockus birostris* (Scopoli)

Buceros birostris Scopoli, 1786, *Del. Flor. et Faun. Insulr.*, fasc. 2: 87 (Coromandel, India)

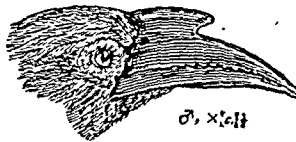
Tockus birostris pergriseus Koelz, 1939, *Proc. Biol. Soc. Wash.* 52: 79 (Lahore, Baker, FBI No. 1575, Vol. 4: 301)

Plate 59, fig. 2

LOCAL NAMES. Dhāmār, Dhānī, Dhānī, Lāmdār, Chālābrā, Dhānēh (Hindi); Selagilli (Hindi, Saugar, M.P.); Puttial dhānēh (Bengali); Rundu mukkūla guwa, Sijpānī, Kommu kasiri (Telugu); Mūmu mukkūla kākā, Irawakkē (Tamil); Chīlībrō (Gujarati); Bhīndīs (Marathi).

SIZE. Kite ±; length c. 61 cm (24 in.).

FIELD CHARACTERS. A clumsy brownish grey bird with a heavy curved blackish bill surmounted by a peculiar pointed protuberance or casque; long black-and-white-tipped graduated tail, the pattern particularly conspicuous when tail spread in alighting. Sexes alike, but casque in female smaller. Young (immature) like adult but has no casque, thus could be mistaken for *T. griseus* (768) in passing. Bill almost wholly yellow; white tips to primaries lacking.



STATUS, DISTRIBUTION and HABITAT. Resident, moving locally subject to fruiting seasons. Throughout the better wooded parts along the base of the Himalayas up to c. 1000 m (recorded at 1400 m in Kumaon [Bhim Tal]) from West Pakistan Punjab (Lahore, Sialkot) eastward through Nepal to northern W. Bengal; southward throughout the Peninsula, plains and hills, excepting the more arid parts of Rajasthan and Gujarat (Kutch), and the heavy-rainfall areas of Kerala. Absent in Assam, East Pakistan, and Ceylon. Confined to deciduous biotope. Affects open but fairly well-wooded country with a scattering of *Ficus* trees; roadside avenues, groves and rambling gardens, in the neighbourhood of cultivation and habitations.

GENERAL HABITS. Largely arboreal, but will occasionally descend to the ground and hop about with vertically cocked tail to pick fallen fruit. Similarly also for winged termites emerging from rain-sodden ground, the birds taking each insect in the bill-tip and jerking the upraised bill to transfer the morsel to the gullet; they may also spring up a few centimetres now and again to snatch the quarry in the air. Keeps in pairs or small parties of 5 or 6, feeding on fruiting trees such as banyan and peepul (*Ficus* spp.) in company with mynas, green pigeons, bulbuls and other frugivorous birds; larger assemblages — 30 or more — where food is abundant. On alarm the gathering breaks up into small parties which scatter in different directions flying in follow-my-leader style, uttering weird squeals. Flight undulating and noisy — a few rapid flaps followed by a dipping glide and sailing with the wing-tips strongly upturned. Recorded dust-bathing regularly (Hoffmann, CBCN Aug. 1980: 12).

* Biswas (JBNHS 58: 117) supports the distinctness of *T. b. pergriseus* Koelz (here synonymized). He confirms that northern Indian birds are consistently less brown and more grey than from the southern Peninsula.

CORACIIFORMES

768. *Tockus griseus griseus* (Latham)

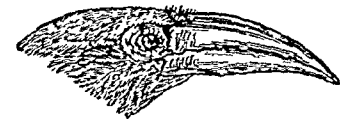
Buceros griseus Latham, 1790, *Index Orn.* 1: 147 (New Holland = Malabar) Baker, FBI No. 1576, Vol. 4: 303

Plate 59, fig. 5

LOCAL NAMES. Kaldal hākki (Kannada); Kōchi vechāmbāl (Malayalam).

SIZE. Kite ±; length c. 59 cm (23 in.).

FIELD CHARACTERS. A plain brownish slaty grey hornbill without any casque on bill. Head, crest, throat and breast streaked with whitish. Nasal plumes and broad supercilia extending far backwards, whitish. Wing-quills black, with broad white tips to some of the primaries. Tail glossy black with broad white tips to all rectrices except the two central pairs. Sexes alike but for bill colour, q.v.



STATUS, DISTRIBUTION and HABITAT. Resident. Confined to the heavy-rainfall Western Ghats or Sahyadri strip from about Bombay and Khandala south through southern Maharashtra, Goa, western Mysore (Malnad), western Tamil Nadu (Nilgiri, Palni, and associated hills), and Kerala; from plains level to c. 1600 m. Affects rather open evergreen and moist-deciduous forest especially where abounding in *Ficus* trees; apparently the ecological counterpart here of the Grey Hornbill of deciduous country, the two species overlapping in some intermediate zones.

GENERAL HABITS. Very similar to 767, q.v. Keeps in pairs or small flocks of 6 to 20 or more, feeding in *Ficus* trees in company with other frugivorous birds and keeping up an almost incessant clamour of harsh croaks, chuckles and inane 'laughter', the flocks flying from tree to tree in follow-my-leader fashion. For a good note on behaviour of young being hand-reared see H. Abdulali, JBNHS 50: 403-4. Dipping flight in silhouette very reminiscent of Bluebearded Bee-eater or Himalayan Barbet (SA, JBNHS 72: 46).

FOOD. *Ficus* figs, drupes and berries; also insects, lizards and other small animals.

VOICE and CALLS. Shrill squeals and raucous cackling 'reminiscent the loud protestations of a domestic chicken held up by its legs' (S) 'Kyah, kyah, kyah ad lib.' (Davison).

BREEDING. Season, January to early April, chiefly February-March. Nest, eggs (c/3 or 4) and breeding biology as in 767. Average size of 50 eggs 41.8 × 30.3 mm (Baker). Foraging male on return with supply taps on side next 'window'. Offers berries regurgitated one by one and shifted to his bill-tip.

MUSEUM DIAGNOSIS. See Keys to the Species and Subspecies.

In first-year bird primaries more narrowly pointed, rectrices narrower than adult. Distinguished from adult also by paler coloration with a fulvous tinge above the vent; all wing-coverts conspicuously edged with fulvous; wing-quills edged with pale grey except the outer primaries which are conspicuously marked white.

MISCELLANEOUS. Parasitized by the ticks *Haemaphysalis spinigera* and *H. tortu* (Rajagopalan, JBNHS 69: 62).

HORN BILLS

133

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	205-220	100-110 (depth c. 40)	44-45	219-235 mm (Baker)

Wing 3 ♂ 205-218; 9 ♀ 185-195 mm (Koele, SA).

COLOURS OF BARE PARTS. Adult male: Iris red-brown; orbital skin black. Bill horny yellow with a brownish red tinge on all but tip. Legs and feet greenish slate to greyish sage-green; claws black. Adult female: Bill waxy yellow with irregular brownish slate patches along culmen and at base of lower mandible. Rest as in ♂. Immature: Iris grey to brown. Bill pale yellow; commissure, gape, a patch on either side of lower mandible, and a triangular patch on culmen (near forehead) brownish slate colour.

769. *Tockus griseus gingalensis* (Shaw)

Buceros gingalensis Shaw, 1811, Gen. Zool. 8(1): 37 (Ceylon)
Baker, FBI No. 1577, Vol. 4: 304

LOCAL NAMES. *Kanditā* (Sinhala); *Irattai chondu kūrūri* (Tamil).

SIZE. Kite —; length c. 59 cm (23 in.).

FIELD CHARACTERS. As in 768. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; Ceylon. Fairly common throughout the forests of the low country; seasonally (September–October) in the hills to c. 1200 m.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 768, q.v. 'A loud *kāā* . . . *kāā* . . . *kāā* *kāā* . . . or sometimes *kuk* . . . *kuk-kuk-kuk ko ko kokoko* which is answered by its mate in similar tones' (Henry).

BREEDING. Season, April–May, occasionally in July. Nest, eggs, and breeding biology as in 768.

MUSEUM DIAGNOSIS. Differs from the Malabar population (768) in being much paler grey below and with much more white on the outer tail-feathers, the three outer pairs becoming pure white in old birds.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	192-215	101-110	38-41	210-226 mm
♀ ♀	191-202	82-89	37-41	186-213 mm (HW, SDR)

Weight 1 ♂ 238 g (SDR).

COLOURS OF BARE PARTS. Iris: ♂ red; ♀ brown. Bill: ♂ horny white with a black patch at base of upper mandible, and another indistinct patch beneath lower mandible; ♀ horny black with a long sharply defined white patch on lower portion of upper mandible. Legs and feet greenish plumbeous.

Genus *PTILOLAEMUS* Ogilvie-Grant

Ptilolaemus Ogilvie-Grant, 1892, Cat. Bds. Brit. Mus. 17: 349 (in key), 392. Type, by subsequent designation, *Buceros tickelli* Blyth. (Richmond, 1902, Proc. U.S. Nat. Mus. 24: 711)

Throat well feathered. Casque small, compressed and sharp-edged. Feathers of head normal, lengthened posteriorly and forming a full crest. Sexually dimorphic.

HORN BILLS

135

during incubation. Average size of 24 eggs 48.8 × 34.2 mm (Baker). Period of incubation undetermined; reported by local Nagas as 24 days.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	312-337	121-135	c. 50	281-297 mm (Baker)

COLOURS OF BARE PARTS. Iris dull brown. Bill and casque dull wax-yellow, reddish yellow on sides near base; orbital skin bluish white or bright blue ('pale yellow' [?] — Baker). Legs dull horny green, dirty yellow at sides; claws dusky black.

Genus *ACEROS* J. E. Gray

Aceros J. E. Gray, 1844, Zool. Misc.: 85. Type, by monotypy, *Aceros nipalensis* = *Buceros nipalensis* Hodgson

Distinguished by absence of a true casque though basal portion of culmen thickened and sometimes showing an incipient protuberance. Sides of upper mandible near base grooved or ridged in adult. Cheeks, chin and throat naked. Tail long and graduated. Feathers of head long, loose and hair-like forming a bushy crest. Sexually dimorphic

771. *Rufousnecked Hornbill. Aceros nipalensis* (Hodgson)

Buceros nipalensis Hodgson, 1829, Asiat. Res. 18 (1): 178, 2 pls. (Nepal)
Baker, FBI No. 1570, Vol. 4: 294
Plate 59, fig. 9

LOCAL NAMES. *Deo yung gajao* (Cachari); *Kolep* (Lepcha).

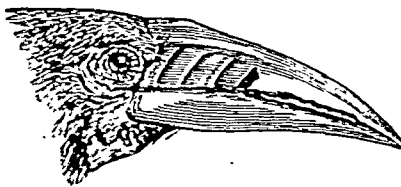
SIZE. Vulture; length c. 122 cm (48 in.).

FIELD CHARACTERS. Male. Head (with bushy mop-like crest), neck, and breast rufous, changing to maroon on abdomen and blackish maroon farther down. Rest of upper plumage black, glossed with dark green. Outer primaries tipped white. Terminal half of long graduated tail white. Heavy horn-shaped yellow bill without casque; vertically ridged with blackish on sides of upper mandible. Cheeks, chin, and throat naked, bright scarlet; naked patch round eye blue.

Female all black, but with outer primaries white-tipped as in male, and terminal half of tail also white.

Young (immature) like adult, sex for sex, but with much smaller bill, and without the lateral ridges.

STATUS, DISTRIBUTION AND HABITAT. Himalayan foothills to c. 1800 m elevation, Nepal eastward through Sikkim, Bhutan and NEFA. North-eastern Assam (Cachar), Nagaland, Manipur, Mizo Hills, East Pakistan



× c. 1/2

CORACIIFORMES

134

770. *Whitethroated Brown Hornbill. Ptilolaemus tickelli austeni* (Jerdon)

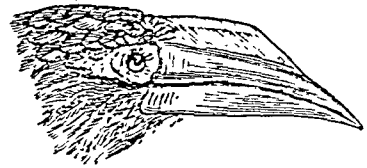
Anorhinus [sic] *austeni* Jerdon, 1872, Ibis: 6 (Asalu, Cachar Hills)
Baker, FBI No. 1573, Vol. 4: 298
Plate 59, fig. 3

LOCAL NAME. *Deo yung lai* (Cachari).

SIZE. Kite +; length ♂ c. 76 cm (30 in.), ♀ smaller.

FIELD CHARACTERS. A medium-sized hornbill chiefly dark brown above, bright rufous below, with a small sharp-edged yellowish casque on the culmen. Cheeks, throat and sides of neck white; foreneck pale rufous. Tail long, graduated, black and broadly tipped with white excepting the middle pair of rectrices which are all brown and without white tips.

Female has sides of neck concolorous with crown. Below more grey-brown, less rufous, with no rufous on foreneck or upper breast. Colour of bill as in male.



× c. 1/2

STATUS, DISTRIBUTION AND HABITAT. Not uncommon where occurring, but distribution imperfectly known. Assam hills south of the Brahmaputra and Luhit rivers, Nagaland (?), Manipur (?); plains, foothills and to c. 1000 m alt. Affects evergreen forest.

GENERAL HABITS. Keeps in noisy cackling flocks of 8 to 10 birds — often up to 20 or more — to the tops of lofty forest trees, feeding in company with Pied Hornbills and other frugivorous birds. Very restless, constantly moving about in the branches or flying from tree to tree in follow-my-leader style, the birds launching one by one and maintaining their individual distance in the air. Flight, as of the family — a few rapid wing-beats followed by sailing with the wing-tips upcurved, again a few flaps, and so on — but comparatively noiseless.

FOOD. Wild figs, drupes, and berries; also insects, and doubtless lizards and other small animals.

VOICE AND CALLS. Loud croaks, chuckles and squeals similar to those of the Pied Hornbills (774, 775), but somewhat less harsh.

BREEDING. Season, chiefly April to June. Nest, a hollow in a tree at comparatively low heights (4 to 8 or 9 m), sometimes higher. Partially walled up with the bird's excrement and pulp of fruits etc. as usual, with the incubating female within who is fed by the male through the narrow opening throughout her incarceration. Eggs, 3 or 4, white, but becoming stained and dirty

¹ The illustration is of a male of the closely similar nominate race (with all tail-feathers white-tipped) only known from Tenasserim, Lower Burma.

CORACIIFORMES

136

(Chittagong Hill Tracts). Affects tall evergreen forest; not uncommon patchily, but reportedly disappearing from many areas consequent on steady felling of primeval forest.

EXTRALIMITAL. Hills of Burma south to Tenasserim, northern Thailand and Indochinese countries.

GENERAL HABITS. Chiefly arboreal and frugivorous. Occasionally descends to the ground to pick fallen fruit, moving in ungainly shuffling hops. Keeps in pairs or small parties of four or five to tall forest on hillsides, sailing majestically across deep wooded valleys — 3 or 4 rapid, noisy 'full' wing-flaps followed by a glide on flat outstretched pinions for 3 or 4 seconds, and so on. Has a curious habit of diving with closed wings for some distance from time to time to make long swooping dips in its flight like a woodpecker. The male has a bizarre nuptial display accompanied by loud discordant roars and cackles. Perched on a bough 'head thrown back, red hair on end, his gular skin inflated and his bill held erect and wide open. His wings hang loosely and slightly quivering, whilst every now and then his long tail is jerked up until it almost touches the head' he shows off thus to his mate (Baker).

FOOD. Large drupes and berries swallowed entire; the fruits of *Dysoxylon* sp. and nutmegs (*Myristica*) are especially favoured; in one case 18 large nutmegs in stomach, complete with mace, weighing 98 g (SA).

VOICE AND CALLS. A variety of loud roars, croaks and cackles. Male has a short 'bark' reminiscent of the distant stroke of an axe upon a sapling; female's bark slightly different in tone. Frequently uttered by a pair in irregular duets, then easily mistakable in the distance for two woodcutters chopping alternately and sometimes striking almost together.

BREEDING. Season, chiefly April and May. Nest, a natural hollow in a lofty tree-trunk in forest, between 10 and 30 m up; walled up by the female from within with her own excreta and viscid pulp of figs and other fruit remains; possibly supplemented with mud by the male from outside (as in 767). She leaves a narrow slit or window through which she is fed by her mate throughout the incubation period. The same hollow is used year after year. Eggs, 1 or 2, white, with a coarse texture. Average size of 12 eggs 59.2 × 43.1 mm (Baker). Incubation period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	445-470	215-240	c. 74	395-458 mm
♀ ♀	434-440	183-209	—	— (Baker)
		(from posterior edge of culmen)		
1 ♂	467 (chord)	226	72	433 mm
1 ♀	445 (chord)	c. 207	64	405 mm

Weight 1 ♂ 2.5 kg; 1 ♀ 2.27 kg.

(SA)

HORNBILLS

137

COLOURS OF BARE PARTS. Iris deep reddish orange (♂), claret (♀); orbital skin brilliant sky blue. Bill yellowish ivory; lateral ridges on upper mandible (up to 8) black. Gular skin (pouch) brilliant orange-scarlet criss-crossed with fine brown creasing; fleshy pads at sides of base of lower mandible deep purplish violet connected by a narrow band across the orange gular skin. These colours differ slightly in details in the sexes and/or ages. Legs, feet and claws black.

Genus RHYTICEROS Reichenbach

Rhyticeros Reichenbach (1849), Av. Syst. Nat. pl. L. No species; generic details only. Species added, Bonaparte, 1854, Ateneo Italiano 2: 312. Type, by subsequent designation, *Buceros plicatus* Latham, i.e. Forster

Casque small, rounded and corrugated in appearance, composed of plates the upper edges of which form alternate ridges and furrows. Chin and throat naked forming a pouch capable of great inflation. Feathers of crown long and loose forming a shaggy crest. Sexually dimorphic.

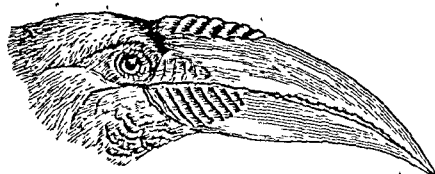
772. Assam Wreathed Hornbill. *Rhyticeros undulatus ticehursti* Deignan

Rhyticeros undulatus ticehursti Deignan, 1941, Auk 58: 397 (Hua Oi, 14 km north of the Ban Pak Li, Nan Province, Thailand)
Baker, FBI No. 1567 (part), Vol. 4: 291

Plate 59, fig. 7

LOCAL NAMES. *Mah do la* (Assamese); *Dao rai* (Cachari).

SIZE. Vulture ±. Overall length ♂ c. 114 cm (45 in.); female, with shorter bill, c. 98 cm (38 in.).



× c. 1

FIELD CHARACTERS. A large black hornbill with entirely white tail.

Male. Forehead, crown, and nape deep chestnut passing into black on hindneck. Sides of head and neck, and foreneck, buffy white. Tail all white; rest of plumage glossy black. Bill pale yellow; naked throat-patch bright yellow.

Female. All black except tail which is wholly white.

In high overhead flight jet black body and underwing, white neck, dark crown, and all-white tail are diagnostic of the male. On a nearer view the very bright yellow throat-pouch, puffed and sticking out like a goitre, is

HORNBILLS

139

773. Narcondam Hornbill. *Rhyticeros (plicatus) narcondami* (Hume)

Rhyticeros narcondami Hume, 1873, Stray Feathers 1: 411 (Narcondam Island)
Baker, FBI No. 1569, Vol. 4: 293

Plate 59, fig. 1

LOCAL NAMES. Unrecorded.

SIZE. Kite +; length ♂ c. 66 cm (26 in.), ♀ somewhat smaller.

FIELD CHARACTERS. A medium-sized black hornbill with white tail.

Male. Head and neck rufous; throat a little paler. Tail white; rest of plumage black, glossed with dark green.

Female. All black excepting tail which is white as in male.

STATUS, DISTRIBUTION AND HABITAT. Endemic; resident. Narcondam Island (Andamans). Was common and fairly plentiful 50 years ago. In 1905 total 'world' population estimated by B. B. Osmaston at about 200 individuals, all confined to an area of less than 3 square miles (JBNHS 16: 620-1). Reported in April 1969 to be still plentiful on the island (B. R. Grubb). Estimated population 400 birds (Hussain). Affects high forest covering the lower slopes of the central peak (c. 700 m) down to the coast.

GENERAL HABITS AND FOOD. Osmaston and Grubb both found them noisy and fearless, feeding exclusively on wild figs. Among other fruit items identified, *Anamirta cocculus* and *Bassia latifolia*. Flight heavy and slow (Hume).

VOICE AND CALLS. 'Loud ka-ka-ka-ka with tone quality of domestic fowl's cackle. Often 3 or 4 birds sitting in a single tree calling' (Grubb).

BREEDING. Season commences February; in full swing March/April. Nest-holes chiefly high up in tree-trunks of *Tetrameles nudiflora*, *Salmalia insignis*, *Parishia insignis* etc.; many as low as 2 metres and exposed. Eggs 2, earthy brown in colour. Size c. 33 × 45 mm weighing c. 28 g (S. A. Hussain).

MUSEUM DIAGNOSIS. Bill apparently varies considerably with age in regard to the furrows as well as its total length; proportionately to the depth it is shorter in female than in male.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	303-305	121-126	46-50	195-198 mm
♀♀	285-287	—	—	180-182
		(from feathers)		(Baker)
		(from skull)		
4 ♂♂	305-322	119-123	41-44	187-205 mm
3 ♀♀	295 (3)	100-109	39-42	c. 180-189 mm
Weight 4 ♂♂ 700-750 g; 3 ♀♀ 600-750 g.				
			(Grubb)	

COLOURS OF BARE PARTS. Iris: ♂ brilliant orange-red with a fine circle of pale yellow next the pupil; ♀ dark olive-brown with the same thin circle of pale yellow. Orbital skin rich smalt blue; gular skin same colour, in places lighter almost white. Bill waxy yellow: furrows of casque light brown, of a pinkish shade near base. Legs and feet black; soles yellow (C. P. Cory, JBNHS 14: 372, and coloured plate).

Genus ANTHRACOCEROS Reichenbach

Anthraceros Reichenbach (1849), Av. Syst. Nat., pl. xlix. No species; generic details only. Type, by subsequent designation, *Buceros malabaricus* Gmelin

138

CORACIIFORMES

distinctive. All-black body contrasting with all-white tail makes the female unmistakable.

STATUS, DISTRIBUTION AND HABITAT. Bengal duars, Bhutan foothills, NEFA, Assam, Nagaland, Manipur, Mizo, and East Pakistan. From plains level to c. 2400 m. Affects forest and edges of clearings in tropical evergreen biotope. Not uncommon, but usually very shy due to persecution by locals almost everywhere for its flesh and feathers.

Extralimital. Burma, Thailand, Indochinese countries and Malay Peninsula north of the Isthmus of Kra; Mergui Archipelago.

GENERAL HABITS. Mainly arboreal and frugivorous. Keeps in pairs and small parties, gathering in some numbers where food is plentiful. Has a particularly noisy flight, 'a rhythmic beat sounding like the puffing pant of a steam locomotive' (SDR) audible at great distances. Flight—a few full wing-flaps followed by sailing and punctuated with occasional 'whooshing' dives with closed wings to lose height, resulting in undulations as in a woodpecker. Flight noted as noiseless in damp rainy weather (Stevens). Like other large hornbills has a very punctual time schedule of daily feeding circuits and roosting flights. Large numbers congregate at sunset, flying high in irregular follow-my-leader style over fixed routes for roosting in selected patches of giant bamboo or tall thinly foliated trees.

FOOD. Large drupes, wild figs and berries; also lizards and other small animals. The morsel is jerked up in the air from the bill-tip, caught in the open gullet and swallowed entire.

VOICE AND CALLS. Perhaps less noisy than most other large hornbills. Male utters a short raucous grunt from a perch, his tail drooping, bill jerked skywards to the vertical at each call and then lowered again. This repeated from six to a dozen times in succession—a ludicrously mechanical performance.

BREEDING. Season, chiefly April and May. Nest, a natural hollow in a lofty tree-trunk usually at a great height—25 or 30 m. Breeding biology similar to that of other large hornbills, e.g. Great-Pied (776) q.v. Eggs, 2, white, coarse textured. Average size of 25 eggs 63 × 43.2 mm (Baker). Incubation period unknown.

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♀	458-505	(from feathers) 202-219 (♂) 178-198 (♀)	60-70	300-330 mm

(Baker)

COLOURS OF BARE PARTS. Male. Iris orange-red to blood-red; orbital skin dull red to brick-red. Bill wax-yellow, tinged with dull orange at base; corrugations at base of both mandibles dark reddish in the furrows; casque dull yellow with dark reddish furrows. Gular skin bright yellow to orange-yellow with a broad transverse black band, generally interrupted in the middle. Legs and feet greenish- to blackish slate. Female. Iris brown or grey-brown. Bill yellow without reddish tinge. Gular skin bright dark blue with transverse black band as in male.

CORACIIFORMES

140

Hydrocissa Bonaparte, 1850, Consp. Av. 1: 90. Type, by subsequent designation, *Buceros monoceros* Shaw = *Buceros coronatus* Boddaert

Casque very high and large, sharp-edged and projecting in front, broader and carried back above crown behind, the upper outline curved parallel with commissure. Orbital skin and a patch on either side of throat bare; chin and middle of throat feathered. Tail long and graduated. Wings short and rounded. The sexes differ only in the coloration and size of bill, and shape of casque.

Key to the Species

	Page
Outer tail-feathers all white; casque compressed and flat on the sides	<i>A. coronatus</i> 142
Outer tail-feathers black with white tips; casque convex on the sides	<i>A. malabaricus</i> 140

774. *Anthraceros malabaricus malabaricus* (Gmelin)

Buceros malabaricus Gmelin, 1788, Syst. Nat. 1 (1): 359

(India = Chandernagor, *apud* Baker)

Baker, FBI No. 1565, Vol. 4: 288

Plate 59, fig. 6

LOCAL NAMES. *Hay tuk tek* etc, *Káo dhánéh* (Assam); *Dao yang kashiba* (Cachari).

SIZE. Vulture —; length ♂ c. 89 cm (35 in.), ♀ somewhat smaller.

FIELD CHARACTERS. A large black and white (or pied) hornbill with black neck, white underparts and ponderous wax-yellow and black bill surmounted by a high ridge-like casque ending in front in a single point. Outer tail-feathers black, only white at the ends. See Key to the Species.

Female similar but smaller, with a different colour pattern on bill.

STATUS, DISTRIBUTION AND HABITAT. Resident subject to local movements dependent chiefly on food supply (fruiting seasons). From about Kalesar, Punjab (Waite, JBNHS 39: 862), and Dehra Dun and the Siwalik range in Kumaon ('occasional winter visitor to New Delhi'—Frome, JBNHS 47: 288) eastwards through U.P., Nepal and Sikkim terai, Bengal duars, Bhutan and NEFA foothills; Assam north and south of the Brahmaputra, Nagaland, Manipur, Mizo Hills (?), East Pakistan; Bihar, Orissa, eastern Andhra and eastern Madhya Pradesh (Bastar dist.). Apparently overlapping with *coronatus* in eastern Chota Nagpur (South Bihar) and adjacent hilly forests of Orissa and W. Bengal, but no hybrids known. Affects open forest in moist-deciduous and evergreen biotope, also groves of large mango and suchlike trees around habitations; from plains level to c. 350 m.

Extralimital. Extreme northern Burma. The rest of Burma south to Tenasserim and northern Malay Peninsula together with Thailand, the



♂, × c. 1

HORNBILLS

141

Indochinese countries and SE. China are inhabited by the slightly smaller equivocal subspecies *leucogaster*.

GENERAL HABITS. Arboreal and mainly frugivorous. Keeps in noisy parties of 4 or 5 or small flocks of 8 to 10; larger congregations on fruit-laden trees (*Ficus* etc.) in company with Grey hornbills, green pigeons and other fruit-eaters. Flight less noisy than of the larger hornbills — a few quick flaps alternated with sailing, wing-tips upcurved and tail expanded, the birds moving from tree to tree in follow-my-leader style. Feeds a good deal on the ground, individuals and small parties not uncommonly seen hopping about to pick fallen fruit or seize creeping prey; food picked up in bill-tip, jerked into the air, caught in gullet and swallowed. Very fond of dust-bathing (Primrose, JBNHS 27: 950). Also takes termites from termite mounds, deftly picking up the tiny insects one by one in the point of the enormous bill; flying termites occasionally hawked in mid-air by ludicrously ungainly sorties. Becomes exceedingly tame and makes an amusing pet when hand-reared from nestling, flying about loose and coming to be fed; but is a tyrant in the aviary and will kill and devour any small bird.

FOOD. Wild figs, drupes and berries (*Ficus*, *Melanoxylon*, etc.). 'Passionately fond of live fishes which it catches in shallow pools. Fish bones found in stomachs of several shot' (Inglis in Hume, SF 5: 20-21). Also marauds nestling birds from tree-holes, and takes lizards, snakes, and any other small animal that can be come by.

VOICE AND CALLS. A variety of loud shrill squeals and raucous cackles. Described as 'inane screams between the protestations of a dak bungalow chicken seized by the cook and the squeals of a three-quarters grown pup receiving punishment' (SA). A 'rapid, piercing kak-kak, kak-kak' (R. L. Fleming).

BREEDING. Season, principally April and May. Nest and breeding biology as in 767 and 776, qq.v. Eggs, 2 or 3, white, smaller replicas of those of the Great Pied Hornbill (776), with a somewhat smoother texture. Average size of 18 eggs 49.9 × 34.9 mm (Baker). Period of incubation undetermined.

MUSEUM DIAGNOSIS. See Key to the Species.

Juvenile. 'A dull edition of the adult with but little gloss on the black parts of the plumage. Area round eyes and sides of chin bare as in adults. Casque smaller and of different shape. Tail-feathers narrower. Black marks on casque not so extensive' (Ticehurst, JBNHS 36: 935 — for *A. m. leucogaster*). No indication of casque when 2 months old; casque estimated to mature at 7 to 9 months of age (E. P. Gee, ibid. 36: 751), but the point needs elucidation.

MEASUREMENTS

	Wing	Bill (from forehead)	Tarsus	Tail
♂♂	294-315 (once 336)	159-170	60-68	259-318 mm
♀♀	280-301	136-146	c. 60	259-290 mm (Baker, SA, SDR)

COLOURS OF BARE PARTS. Male. Iris red-brown to blood-red; orbital skin bluish white to pale purplish blue; naked throat-patch duller, more fleshy blue. Bill and casque wax-yellow, a black patch running from the fore part of the casque to the centre of the join between the casque and the upper mandible; extreme bases

HORNBILLS

143

blue-brown; orbital skin, cheek-pads and gular skin pinkish creamy white. Bill creamy white: terminal two-thirds of casque, and patch at base of lower mandible, black (SA). Bill with the black less in extent, and absent on the back of the casque. Rest as in the male.

Genus *BUCEROS* Linnaeus

Buceros Linnaeus, 1758, Syst. Nat., ed. 10, 1: 104. Type, by subsequent designation, *Buceros rhinoceros* Linnaeus

Size large. Bill very large, stout, and much curved; casque large and broad, covering more than basal half of culmen, the sides flat and vertical behind, the top overhanging in front. Posterior edge of casque broad and rounded, projecting over the head behind; its upper surface flat or slightly convex posteriorly, concave in front terminating in two lateral points, blunted in old males. Feathers of neck and nape loose and long, but not forming a real crest. Chin feathered; small orbital patch naked. Tail long and rounded. Sexes alike in plumage.

776. Great Pied Hornbill. *Buceros bicornis homrai* Hodgson

Buceros homrai Hodgson, 1832, Jour. Asiat. Soc. Bengal 1: 251 (Nepal)

Baker, FBI No. 1563, Vol. 4: 284

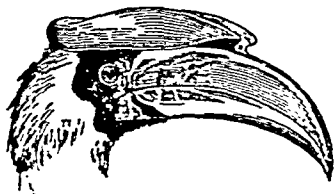
Plate 59, fig. 44

LOCAL NAMES. *Homrai* (Nepal); *Bāmrao* (Hindi, Kumaon); *Kugrong*, *Kudong* (Lepcha); *Gāridā* (Kannada); *Gārid* (Marathi); *Malāmōrīkki* (= 'mountain-shaking'), *Vīzhāmbāl*, *Kōmban rēzhāmbāl* (Malayalam); *Rāj dhānzih* (Bengal); *Rāj dhānzih*, *Hivāng* (Assam); *Dao jung* (Cachari); *Inrai* go (Kacha Naga).

SIZE. Vulture; length ♂ to tip of bill c. 130 cm (52 in.), ♀ somewhat smaller.

FIELD CHARACTERS. A large black-and-white hornbill with enormous horn-shaped yellow-and-black bill surmounted by a ponderous concave-topped casque, broadly U-shaped when viewed from the front. Face, back,

♂, × c. 1/2,



underparts and wings black, the last with double white bars. Neck, lower abdomen, upper and under tail-coverts and tail white, the last with a broad black subterminal band.

The white neck and wing-bars, and black band in the white tail, are diagnostic in flight.

Female similar, but slightly smaller and with smaller bill and casque (see colours of bare parts).

CORACIIFORMES

142

of casque and bill, and commissure, black. Legs and feet dull dark slate or greenish slate. Female. Iris brown or grey-brown. Whole fore part of casque, top and upper part of upper mandible, and commissure, black; bold black streaks on lower mandible, the amount of black variable but always more extensive than in male.

775. Lesser Pied Hornbill. *Anthracoceros coronatus coronatus* (Boddaert)

Buceros Coronatus Boddaert, Table Pl. enlum.: 53 (Malabar)

Baker, FBI No. 1564, Vol. 4: 286

Plate 59, fig. 8

LOCAL NAMES. *Dhān chiri* (Hindi); *Sulimani mānghi* (Deccani); *Dhānzih* (U.P.); *Bagma dhānzih* (Bengal); *Kūchā khā* (Orissa); *Wagerā* (Marathi); *Kanari* (Konkan); *Peshā gonda* (Gond); *Poruvā kōndetta* (Sinhala); *Iretti chōnda kūrūri* (Tamil); *Vīzhāmbāl* (Malayalam).

SIZE. Vulture —; length ♂ c. 92 cm (36 in.), ♀ somewhat smaller.

FIELD CHARACTERS. A large black and white (or pied) hornbill with black neck, white underparts and ponderous wax-yellow and black bill surmounted by a high ridge-like casque ending in front in a single point. Very similar to 774 but with the outer tail-feathers all white. See Key to the Species.

Female similar but smaller, and with the bare parts somewhat differently coloured.

STATUS, DISTRIBUTION AND HABITAT. Resident; subject to local movements governed by food supply (fruiting seasons). Extreme western part of W. Bengal bordering Chota Nagpur and Orissa (where it partly overlaps the range of *A. malabaricus*), Andhra and Madhya Pradesh. The western side of the Peninsula, chiefly the wooded country inland along the foot of the Ghats, from about Ratnagiri (south of Bombay) through Goa, W. Mysore (Malnaad) and W. Tamil Nadu (Nilgiri dist.) and Kerala. Ceylon ('very local but fairly plentifully distributed in the more secluded forest areas of the Dry zone' — Phillips). Affects open forest in evergreen and moist-deciduous biotope; plains and foothills to c. 300 m. Also groves of large mango, *Ficus* and suchlike trees around forest villages.

GENERAL HABITS, FOOD, VOICE AND CALLS. Almost identical with 774, q.v.

BREEDING. Season, in the Peninsula chiefly March and April; in Ceylon April to July. Nest, breeding biology, and eggs as in 774. Clutch size and incubation period undetermined. Size of eggs c. 55 × 38 mm.

MUSEUM DIAGNOSIS. See Key to the Species.

MEASUREMENTS

	Wing	Bill (from forehead)	Tarsus	Tail
♂♂	315-342	216-227 (from gape)	c. 65	295-335 mm
♀♀	295-328	126-166	c. 61	— (Baker, SA)

Weight 1 ♀ 1000 g (SA).

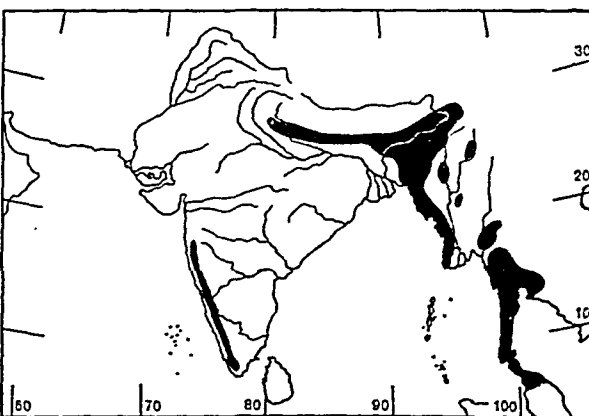
COLOURS OF BARE PARTS. Male. Iris orange-red to red; orbital skin black or blue-black. Bill wax-yellow, black at base of true bill and of casque; also on terminal half or two-thirds of the latter. Bare throat-patch flesh coloured (yellowish pink). Legs and feet slaty grey, greenish grey or dark grey. Female. Iris brown or

CORACIIFORMES

144

Young in early stage without casque, but rudiments of it appear when about six months old.

STATUS, DISTRIBUTION AND HABITAT. Resident; subject to local movements governed by food supply (fruiting seasons). The Sahyadri or Western Ghats complex from about Khandala (18°N, 74°E.) in Maharashtra south through Goa, western Mysore (Malnaad), western Tamil Nadu (Nilgiri and associated hills), and Kerala; curiously enough absent in Ceylon. A disjunct population in the lower Himalayas from Kumaon eastward through Nepal, Sikkim, Bhutan, NEFA, Assam, Nagaland, Manipur, Mizo and East Pakistan (Chittagong Hill Tracts). Affects evergreen and moist-deciduous forest, from plains level to c. 1500 m in the Ghats and Assam hills; to c. 2000 m in the Himalayas.

Buceros bicornis

■ Distributional range

Extralimital. Burma, Thailand, Malay Peninsula, Indochinese countries and Sumatra.

GENERAL HABITS. Largely arboreal and frugivorous; occasionally descending to the ground and hopping about to pick up fallen fruits. Keeps in pairs or small parties of 3 to 5; gatherings of 30 or more at lavishly fruiting banyan or peepul (*Ficus*) and suchlike trees, and also at roosting sites. Once a congregation of '150 to 200 birds' in SE. Bhutan lowlands (G. F. Hamilton, personal communication). Moves along boughs by quick ungainly but buoyant sideways hops, bouncing lightly to a higher or lower perch from one branch to another. Covers enormous feeding circuits in the course of the day and is remarkably punctual in its visits to the various trees; also in its roosting habits, the birds usually following the same routes day after day as to a fixed time-table. Flight laboured and very noisy — 3 or 4 deliberate flaps punctuated by spells of sailing on outspread wings with upcurved tips, and

150

MEASUREMENTS and **COLOURS OF BARE PARTS** as in the other races. **STATUS, DISTRIBUTION AND HABITAT.** Resident. Assam in the Mithun Hills above c. 1200 m, in wet subtropical and temperate forests. **GENERAL HABITS, FOOD, VOICE AND CALLS.** As in 777, q.v. **BREEDING.** Season, Nest, Eggs, etc. Not specifically described; doublets as in the other races. **MUSEUM DIAGNOSIS.** Similar to *M. v. magnifica* (778) but much darker. **LOCAL NAMES.** *Meigalima zeylanica* (Cmelin): Large Green BARBET. **CL. MUSEUMS.** A. K., 1952, Bull. Brit. Orn. Cl. 72: 34-6. **Rand, A. L. and Fleming, R. L., 1957, Fieldiana: Zoology 41 (1): 87-8**

Key to the Subspecies

- A Darker and richly coloured.....*M. z. zeylanica* 152
- B Paler and less richly coloured.....*M. z. zeylanica* 152
- a Brown on outer upper and lower parts more extensive; breast-streaks very faint.....*M. z. zeylanica* 152
- b Brown on upper and lower parts less extensive; breast-streaks broader and wider.....*M. z. zeylanica* 150

780. *Megalaima zeylanica cantilepis* (Franklin) **Bucco cantilepis** Franklin, 1831 (1830-31), Proc. Zool. Soc. London (1): 121 ('On the Gangas between Calcutta and Benares, and the Vindhyan Hills between the latter place and Gurrah Mundela on the Nerbudda') **Therapsid zeylanica kungia** Whistler & Kinnear, 1934, Jour. Bombay nat. Hist. Soc. 37: 516 (Ranial, 2000 ft., Kangra)

LOCAL NAMES. *Bada baidia* (Hindi and Bengali); *Jokar pahit* (Bengal); *Kishna* (Deccan); *Kishna*, *Gumma* (M.P.); *Kolar* (U.P.); *Sunier* (Bihar); *Kishna* (Madras). **SIZE.** Mylna +; length c. 27 cm (10½ in.).

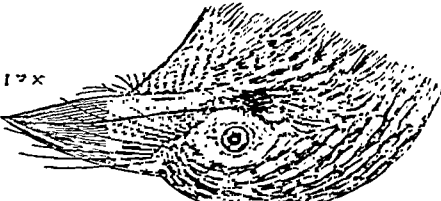
FIELD CHARACTERS. A dumpy stout-billed grass-green arboreal bird. Head, neck, upper back and upper breast brown, streaked with whitish; lower breast and abdomen pale green. Under surface of tail bluish. A conspicuous naked orange-coloured patch around eye extending to base of bill. Sexes alike. **Persistent** *kithoo* calls and noisy dipping flight distinctive. Young (immature) similar to adult but obscurely streaked and overall much paler and duller.

STATUS, DISTRIBUTION AND HABITAT. Resident. The lower western Himalayas (up to c. 800 m) from Kangra in Himachal Pradesh to Kumaon Mr Abu and Gujarat, east through Madhya Pradesh and northern Maharashtra to Bihar, W. Bengal (straggling as far as Calcutta), and Orissa south to Godavari R. The races intergrade into one another and borderline cases are difficult to place. Affords well-wooded moist and dry deciduous country, often frequenting roadside avenues and entering gardens within city limits.

152

and on culmen (non-breeding), reddish orange (breeding); mouth pale pink. Legs and feet lemon-yellow; claws dusky.

781. *Megalaima zeylanica inornata* Walden **LOCAL NAMES.** *Kitha* (Mahrishi); *Kitha kathi* (Kannada); *Caru kama* (Telugu). **SIZE.** Mylna +; length c. 27 cm (10½ in.). **FIELD CHARACTERS.** As of 780. See Key to the Subspecies and Museum Diagnosis.



STATUS, DISTRIBUTION AND HABITAT. Resident. Western India from about the Godavari river in Maharashtra south through Goa and Mysore to Coorg district. Habitat as in 780. **GENERAL HABITS, FOOD, VOICE AND CALLS.** As in *cantilepis* (780), q.v. A minor pest of coffee plantations in Mysore, avidly devouring the ripe 'cherries', often involving appreciable loss to the growers. **BREEDING.** Season, chiefly March, April and May. Nest and eggs (c. 2-4) as in the other races. Average size of 18 eggs 30.5 x 21.8 mm (Baker). **MUSEUM DIAGNOSIS.** Differs from the Kerala and Ceylon populations (782) in having the brown extending further on to the breast and back. General plumage paler and duller with the streaks on the breast narrower and confined to the pale bar. Pale specks on wing-coverts wanting; streaks on head and upper back less conspicuous. **MEASUREMENTS** and **COLOURS OF BARE PARTS.** As in *M. z. cantilepis* (780). **Weight:** ♂ 123 g (S.A.).

782. *Megalaima zeylanica zeylanica* (Cmelin) **Bucco zeylanica** Cmelin, 1788, Syst. Nat. 1 (1): 408 (Ceylon) **LOCAL NAMES.** *Kitha kathi* (Kannada); *Caru kama* (Telugu); *Kishna* (Malayalam); *Pollu kishna*, *Chibbi kishna* (Sinhala); *Kitha*, *Kishna* (Tamil). **SIZE.** Mylna +; length c. 27 cm (10½ in.). **FIELD CHARACTERS.** As of 780, q.v. See Museum Diagnosis. **STATUS, DISTRIBUTION AND HABITAT.** Resident. Kerala and southern Tamil Nadu, mostly in the moist-deciduous low country and foothills, sometimes up to c. 1200 m. Ceylon — widely distributed and plentiful throughout the lowlands and lower hills to c. 1500 m. Habitat as in the other races.

149

BARBETS

COLOURS OF BARE PARTS. Its dark brown or reddish brown. Bill yellow on proximal half, black on distal half of culmen and distal quarter of sides of upper mandible (tip white in many examples), yellowish grey on middle part of culmen, pale greenish yellow elsewhere. Legs and feet greenish slaty; claws horny black with greenish slaty bases; pads white (Biswas).

778. *Megalaima virens magnifica* Baker

LOCAL NAME. *Dakunt lama* (Cachar). **SIZE.** Mylna +; length c. 33 cm (13 in.). **FIELD CHARACTERS.** As of 777. See Museum Diagnosis. **STATUS, DISTRIBUTION AND HABITAT.** The Himalayas east of western Nepal — Sikkim, Bhutan, NEFA. Also Cachar, Nagaland, Manipur, and East Pakistan in the Chittagong Hill Tracts; from c. 1000 to 3000 m. Affords subtropical evergreen and moist temperate forest.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 777, q.v. **BREEDING.** Season, chiefly April and May. Nest and eggs as in 777. Full clutch said by Baker to be of 2 or 3 eggs, never 4. Average size of 30 eggs 34.9 x 24.3 mm (Baker). **MUSEUM DIAGNOSIS.** Similar to *M. v. marshallorum* (777) but much more deeply and richly coloured both above and below.

MEASUREMENTS		Wing		Bill		Tarsus		Tail	
♂	♀	♂	♀	♂	♀	♂	♀	♂	♀
141-145	140-149	45-48	45-49	32-39	30-36	93-96	95-107	98-111	95-107
(from feathers)		(from skull)		(Baker)		(S.A.)		(S.A.)	

WEIGHTS 3 ♂ 250-295 g; 3 ♀ 192-206 g (S.A.). **COLOURS OF BARE PARTS.** As in 777. Noted also as: Its brownish crimson. Bill yellow at base, slightly greenish anteriorly; a broad horny black band, c. 5 mm wide, along ridge on terminal three-fourths of culmen. Legs and feet olive-plumbeous; claws horny black (S.A.).

779. *Megalaima virens mayi* Ripley

LOCAL NAMES. None recorded. **SIZE.** Mylna +; length c. 33 cm (13 in.). **FIELD CHARACTERS.** As of 777. See Museum Diagnosis.

151

BARBETS

Has become conspicuously common and abundant in New Delhi during the last forty years due to increases in wooded gardens and roadside avenues with large *Ficus* and other fruit-bearing trees in the process of the city's development as India's metropolis. But is not a new arrival in the area as often believed, being described as 'common' in the (Old) Delhi environs even in 1893 (J. Moray Brown in *Singapore Sport*).

GENERAL HABITS. Arboreal and eminently frugivorous. Usually keeps singly or in small loose feeding parties, but gatherings of 20 and more frequently collect on a large fruit-laden banyan or peepul tree in company with mynas, bulbuls, green pigeons and other frugivorous species. Rather silent in winter, but waxes extremely noisy with the hot weather, the jungle then resounding with its monotonous but characteristic calls throughout the day. As soon as one bird begins calling it is promptly and unfailingly joined by a second, followed maybe by a third and a fourth and more within a ceshor, to sustain the uneven chorus *ad nauseum*. The sudden report of a gun will often start off several birds calling at once. The typical barbet flight is noisy and dipping, a few rapid wing-beats followed by a short downward glide.

FOOD. *Ficus* figs, and a large variety of drupes and berries; flower petals, e.g. *Bauhinia*, and flower nectar (*Erythrina*, *Salmalia*, etc.). Occasionally does damage to tomatoes in kitchen gardens. Also takes insects — beetles, flying ants, etc. in awkward aerial sorties from tree-tops, and has been recorded devouring a lizard. **VOICE AND CALLS.** Monotonous, almost incessant throughout the hotter parts of the day especially in the summer months. Calling begins with a harsh *kr-r-r-r* and settles down to a steady unvarying *kithoo*, *kithoo*, *kithoo* or *kithuk*, *kithuk*, *kithuk* (or *poock*, *poock*, etc.); it is promptly joined by other birds within a ceshor and continued as an uneven chorus. **BREEDING.** Season, February to June, chiefly March to May. Nest, a hole in a rotten vertical branch or tree-stem usually excavated by the birds themselves, at heights between c. 3 and 15 meters. Eggs, normally 3 — occasionally 2 or 4 — pure white longish ovals. Average size of 30 eggs 29.3 x 22.3 mm (Baker). Laid on bare wood at bottom of shaft or on a scanty bed of chips fortuitously accumulated within during excavation. Both sexes work at drilling the hole; share in incubation, incubation period, and other facets of breeding biology uninteresting. **MUSEUM DIAGNOSIS.** Nostrils exposed; rictal and chin bristles well developed. Wings short and rounded; tail graduated. For details of plumage see Baker, loc. cit.; for subspecies Key.

COLOURS OF BARE PARTS. Its brown to Indian red; orbital skin bright orange (paler and more yellow in non-breeding season). Bill orange-brown, darker at tip (S.A.) **SIZE.** Mylna +; length c. 27 cm (10½ in.). **FIELD CHARACTERS.** As of 780, q.v. See Museum Diagnosis. **STATUS, DISTRIBUTION AND HABITAT.** Resident. Kerala and southern Tamil Nadu, mostly in the moist-deciduous low country and foothills, sometimes up to c. 1200 m. Ceylon — widely distributed and plentiful throughout the lowlands and lower hills to c. 1500 m. Habitat as in the other races.

HORNBILLS

145

expanded tail. Flight silhouette differs from that of *Aceros* (771) which has fuller and quicker wing-strokes, more like the smaller Grey hornbills (767, 768). Loud scraping noise produced by the pinions, both in flapping and gliding, audible at considerable distances. Is usually very wary and difficult to approach due to persecution by local tribals for its flesh (adults, and squabs taken from nest), considered by Hume 'far superior to any fowl or pheasant'. This, added to the increasing destruction of its native rain-forest habitats, especially in its peninsular range, is producing a marked decline in its numbers. Occasionally flies at great heights and for considerable distances across forest-clad valleys. Arrives at roost punctually about sunset by the same route day after day, the birds following one another strung out irregularly 20 to 100 metres apart. Roosts among the topmost branches of lofty thinly foliated trees, the individuals not clumped together but distributed over several neighbouring trees in a grove, 3 or 4 birds in each tree a few metres above or below one another, each constantly changing position till late in the dusk. They sleep with the neck pulled into the shoulders and bill pointing at an upward angle.

Food. Chiefly wild figs (*Ficus*), nutmegs (*Myristica*) and drupes of various species, some of very large size. Also miscellaneous animal items — lizards, snakes, rats, and nestling birds marauded from tree-holes. When too large to manage, the struggling victim is battered into submission, then flicked up in the air from the bill-tip, caught in the gullet and bolted down.

VOICE AND CALLS. Deep hoarse grunts and resounding 'barks' and roars. A very loud reverberating *tok* repeated at slow but regular intervals, with the neck stretched vertically up and bill pointing to the sky. Particularly noisy at the commencement of the breeding season.

BREEDING. Season, March–April in the Himalayas; February to April in SW. India. Nest, an unlined natural hollow in a giant forest tree such as *Calophyllum tomentosum* or *Cullenia excelsa*, and other lofty species, between 18 and 25 m up. Entrance walled up chiefly by the female herself from within, with an amalgam of her dung and remains of figs, bits of leaves and sticks possibly supplemented with wet mud brought by the male, as in Grey Hornbill, the plaster drying to the consistency of sun-baked clay. A narrow slit is left in the wall through which the male feeds the female throughout the period of her self-incarceration, and through which she, and later the squabs, shoot out their excreta with some force. Location of nest often betrayed by these excreta and remains of food littered on the ground below. When chicks about a fortnight (?) old, the wall is broken down (by ?), the female makes her exit and thereafter both parents forage for the young. Usually the wall is rebuilt as before. Female moults her rectrices and remiges while imprisoned within, but details of the process need further study and elucidation. Eggs, usually 2 sometimes only 1, (rarely 3, *vide* Baker); coarse-textured, white or creamy white, becoming stained and dirty during incubation. Average size of 44 eggs 65.1 × 45.3 mm (Baker). Period of incubation undetermined; said to be c. 31 days. If unmolested the same site is used year after year, tending to become almost traditional.

MUSEUM DIAGNOSIS. The white feathers of the foreneck and wing-bands are often tinged with bright yellow due to the bird's habit of smearing them with an oily lipid exudation from the uropygial gland while preening.

BARBETS

147

MEGALAIMA VIRENS (Boddaert): GREAT BARBET

Key to the Subspecies

Colour of head blue without any green tinge	Page
1 General coloration palest; yellow-streaked hindneck collar well developed	147
2 Darker, more richly coloured; pale streaks on hindneck few	149
3 Darkest, most richly coloured; with a greater amount of black on culmen	149

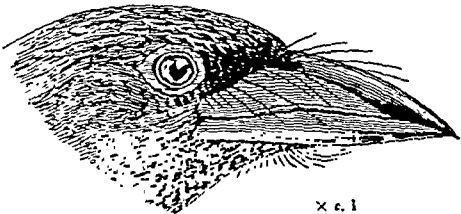
777. *Megalaima virens marshallorum* Swinhoe

Megalaima marshallorum Swinhoe, 1870, Ann. Mag. Nat. Hist. 6 (4): 348 (Himalayas) Baker, FBI No. 1427, Vol. 4: 106

LOCAL NAMES. *Traiho* (Hindi, Himachal Pradesh); *Mweli* (Mussooree); *Nyahul*, *Néul* (Nepal); *Kun nyong* (Lepcha).

SIZE. Myna +; length c. 33 cm (13 in.).

FIELD CHARACTERS. A gaudily coloured rather clumsy arboreal bird with heavy ungainly yellow bill surrounded by prominent bristles at base. Above,



× c. 1

maroon-brown with violet blue-black head; below, olive-brown, blue, and yellow with a bright scarlet patch under the tail (coverts). Sexes alike. Dipping woodpecker-like flight and expanded triangular tail proclaim it as a barbet.

STATUS, DISTRIBUTION and HABITAT. Common resident, with seasonal altitudinal movements. From Murree and the Salt Range in Rawalpindi dist., W. Pakistan, eastward in the Himalayas through Kashmir, Himachal Pradesh, Garhwal and Kumaon to western Nepal where it intergrades with *magnifica* (778); between c. 1000 and 3000 m in summer, at lower elevations and in the foothills in winter. Affects moist temperate forest.

GENERAL HABITS. Keeps singly or in small feeding parties of 5 or 6 to tall trees, but will descend into lower bushes where fruits attract, and even venture into open hill orchards and cultivation environs. Gatherings of up to 30 or more frequently collect in large fruiting trees. In spite of its gaudy coloration becomes astonishingly camouflaged amongst the foliage and is difficult to see when silent, as mostly in winter, since it usually selects the topmost branches and sits quite motionless. Has a habit, when alarmed

146

PICIFORMES

MEASUREMENTS	Wing	Bill (from forehead)	Tarsus	Tail
♂ ♀	500–552	330–375	73–75	380–432 mm
Longest casque 192; widest 106; highest 56 mm.				
COLOURS OF BARE PARTS. Male. Iris blood-red. Bill and casque yellow, tinged with red at tip and with orange in middle; front and back of casque black, together with ridge of bill just in front of casque. Female. Iris pearly white. Back of casque red. In both sexes circumorbital skin fleshy pink; eyelids black. Legs and feet greenish plumbeous (Whistler).				

Order PICIFORMES

For morphological details etc. see Stresemann, E., 1927–34, *Acet*: 839–43; Baker E. C. Stuart, 1927, FBI 4: 2; Witherby *et al.*, 1938, 2: 276.

Family CAPITONIDAE: Barbets

For description see Van Tyne, J., and Berger, A. J., 1959: 481; Dorst, Jean, 1964, Article 'Barbet' in Thomson, A. L. (ed.), *New Diet. Birds*, London & New York. For some aspects of taxonomy and relationships, see Goodwin, Derek, 1964, *Ibis* 106: 198–220.

Genus MEGALAIMA G. R. Gray

Megalaima G. R. Gray, 1842, Appendix to List Gen. Bds.: 12. Type, by original designation and monotypy, *Bucco grandis* Gmelin = *Bucco virens* Boddaert (Baker)

Prevailing colour green. Bill stout; culmen rounded, somewhat arched but never keeled. Nostrils either covered with plumes and bristles or exposed; base of bill completely surrounded by rictal bristles of moderate length, in some species long and reaching almost or quite to tip of bill. A naked orbital patch usually present. Wings rounded. Tail square or graduated. Sexes alike.

Key to the Species

	Page
I Under tail-coverts red	147
II Under tail-coverts green	
A Second primary shorter than tenth	
1 Head, neck and breast brown, streaked paler	
a A large naked orbital space (orange), extending to gape	150
b Naked space smaller, not extending to gape	
i Wing over 110 mm, orbital space yellow	153
ii Wing under 105 mm, orbital space blackish	155
2 Head and neck with bright colours	
c Chin and throat blue or bluish green	
iii Anterior crown red; forehead red	158
iv Forehead golden yellow, occiput green	157
d Chin and throat yellow and grey	157
e Chin, throat and whole head green	160
B Second primary (as.) longer than eighth	
3 Throat yellow, cheeks blackish	163
4 Throat orange, cheeks blue	161

148

PICIFORMES

or suspicious, of dropping like a stone from a tree overhanging a hillside into the valley below before making across to the opposite side. In summer the forest-clad hillsides and valleys resound with its endless wailing choruses, yet even then the bird is seldom seen except in flight. Flight swift and strong — a few rapid flaps followed by a drop with wings closed producing sweeping undulations as in a woodpecker. The wings produce a whirring noise like a green pigeon's, as the birds slit from one fruiting tree to its neighbour.

Food. Chiefly fruit — drupes and berries; insects — beetles, cicadas, flying termites, hornets — captured in clumsy aerial sorties from tree-tops. Flower petals, e.g. rhododendron, avidly eaten, the whole flower being first revolved and crushed in the mandibles and compacted into boluses of crumpled petals.

VOICE AND CALLS. A mournful wailing *piho*, *piho* or *piāo*, *piāo* (*pihow*) of great volume and far-reaching quality, uttered monotonously and incessantly (about 30 times per minute) throughout the day in irregular choruses by several scattered birds. Calling commences with a husky, halting *piho* as if the performer was clearing his throat in preparation. A bird will call from the same perch for an hour or more at a stretch punctuated only by momentary pauses. While calling the beak is tightly closed, the throat swells gradually almost to the size of a golf ball and deflates and inflates in a very curious way. The mechanics of the process needs investigation. A rapidly repeated gull-like *gyok gyok gyok* and a harsh *karr-r* (Magrath); occasion and significance of these calls not suggested.

Duetting is common: one bird (?) repeats *tūk, tūk, tūk* (rather like a Copper-smith barbet but faster) at about two per second; its partner (♂?) accompanies this with a perfectly timed *pihow, pihow, ad nauseam*. Both these calls sometimes also given solo. Particularly noisy at sunset when the valleys resound with their wailing from all sides.

(For a good account of habits, food and nesting see Dodsworth, P. T. L., 1911, JBNHS 31: 681–4.)

BREEDING. Season, April to July; earlier at lower elevations, later higher up. Nest, an unlined hollow in the bole or upright bough of a forest tree 3 to 5 m up, occasionally much higher; usually excavated by the birds themselves — sometimes a disused woodpecker hole. Diameter of entrance c. 8 cm, of egg-chamber c. 18 cm; shaft normally quite deep — between 30 and 45 cm. Eggs, 3 or 4, white, longish ovals. Average size of 25 eggs 34.0 × 24.9 mm (Baker). Share of the sexes in incubation, and period, undetermined. Both parents feed the nest-young.

MUSEUM DIAGNOSIS. For details of plumage see Baker, FBI 4: 104 and loc. cit.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	146–152	c. 46	c. 23	100–109 mm (Baker)
		(from skull)		
10 ♂♂	140–148	42–48	—	92–105 mm
4 ♀♀	139–143	43–51	—	93–99 mm (BB)

BARBETS

149

COLOURS OF BARE PARTS. Iris dark brown or reddish brown. Bill yellow on proximal half, black on distal half of culmen and distal quarter of sides of upper mandible (tip white in many examples), yellowish grey on middle part of culmen, pale greenish yellow elsewhere. Legs and feet greenish slaty; claws horny black with greenish slaty bases; pads white (Biswas).

778. *Megalaima virens magnifica* Baker

Megalaima virens magnifica Baker, 1926, Bull. Brit. Orn. Cl. 47: 43 (Machi, Manipur) Baker, FBI No. 1428 (part), Vol. 4: 107 Plate 60, fig. 4

LOCAL NAME. *Doakunt laima* (Cachar).

SIZE. Myna +; length c. 33 cm (13 in.).

FIELD CHARACTERS. As of 777. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. The Himalayas east of western Nepal — Sikkim, Bhutan, NEFA. Also Cachar, Nagaland, Manipur, and East Pakistan in the Chittagong Hill Tracts; from c. 1000 to 3000 m. Affects subtropical evergreen and moist temperate forest.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 777, q.v.

BREEDING. Season, chiefly April and May. Nest and eggs as in 777. Full clutch said by Baker to be of '2 or 3 eggs, never 4'. Average size of 30 eggs 34.9 × 24.3 mm (Baker).

MUSEUM DIAGNOSIS. Similar to *M. v. marshallorum* (777) but much more deeply and richly coloured both above and below.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	141-145	39-45	c. 32	93-96 mm (Baker)
		(from skull)		
4 ♂♂	140-149	45-48	30-36	98-111 mm
3 ♀♀	139-145	45-49	32-39	95-107 mm (SA)

Weight 3 ♂♂ 250-295 g; 3 ♀♀ 192-206 g (SA).

COLOURS OF BARE PARTS. As in 777. Noted also as: Iris brownish-crimson. Bill yellow at base, slightly greenish anteriorly; a broad horny black band, c. 5 mm wide, along ridge on terminal three-fourths of culmen. Legs and feet olive-plumbeous; claws horny black (SA).

779. *Megalaima virens mayri* Ripley

Megalaima virens mayri Ripley, 1948, Proc. Biol. Soc. Washington 61: 100 (Dreyi, Mishmi Hills, NE. Assam) Baker, FBI No. 1428 (part), Vol. 4: 107

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 33 cm (13 in.).

FIELD CHARACTERS. As of 777. See Museum Diagnosis.

BARBETS

151

Has become conspicuously common and abundant in New Delhi during the last forty years due to increase in wooded gardens and roadside avenues with large *Ficus* and other fruit-bearing trees in the process of the city's development as India's metropolis. But is not a new arrival in the area as often believed, being described as 'common' in the (Old) Delhi environs even in 1893 (J. Moray Brown in *Stray Sport*).

GENERAL HABITS. Arboreal and eminently frugivorous. Usually keeps singly or in small loose feeding parties, but gatherings of 20 and more frequently collect on a large fruit-laden banyan or peepul tree in company with mynas, bulbuls, green pigeons and other frugivorous species. Rather silent in winter, but waxes extremely noisy with the hot weather, the jungle then resounding with its monotonous but characteristic calls throughout the day. As soon as one bird begins calling it is promptly and unfailingly joined by a second, followed maybe by a third and a fourth and more within earshot, to sustain the uneven chorus *ad nauseam*. The sudden report of a gun will often start off several birds calling at once. The typical barbet flight is noisy and dipping, a few rapid wing-beats followed by a short downward glide.

FOOD. *Ficus* figs, and a large variety of drupes and berries; flower petals, e.g. *Bauhinia*, and flower nectar (*Erythrina*, *Salmalia*, etc.). Occasionally does damage to tomatoes in kitchen gardens. Also takes insects — beetles, flying ants, etc. in awkward aerial sorties from tree-tops, and has been recorded devouring a lizard.

VOICE AND CALLS. Monotonous, almost incessant throughout the hotter parts of the day especially in the summer months. Calling begins with a harsh *kr-r-r-r*, *kr-r-r-r* and settles down to a steady unvarying *kūtroo*, *kūtroo*, *kūtroo* or *kūtrūk*, *kūtrūk*, *kūtrūk* (or *pocock*, *pocock*, etc.); it is promptly joined by other birds within earshot and continued as an uneven chorus.

BREEDING. Season, February to June, chiefly March to May. Nest, a hole in a rotten vertical branch or tree-stem usually excavated by the birds themselves, at heights between c. 3 and 15 metres. Eggs, normally 3 — occasionally 2 or 4 — pure white longish ovals. Average size of 30 eggs 29.3 × 22.3 mm (Baker). Laid on bare wood at bottom of shaft or on a scanty bed of chips fortuitously accumulated within during excavation. Both sexes work at drilling the hole; share in incubation, incubation period, and other facets of breeding biology undetermined.

MUSEUM DIAGNOSIS. Nostrils exposed; rictal and chin bristles well developed. Wings short and rounded; tail graduated. For details of plumage see Baker, loc. cit.; for subspecies Key.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	116-123	31-35	29-30	74-79 mm (Baker)
		(from skull)		
12 ♂♂	115-127	32-39	30-33	71-79 mm
7 ♀♀	113-123	33-41	29-33	72-77 mm (SA)

COLOURS OF BARE PARTS. Iris brown to Indian red; orbital skin bright orange (paler and more yellow in non-breeding season). Bill orange-brown, darker at tip

150

PICIFORMES

STATUS, DISTRIBUTION AND HABITAT. Resident. Assam in the Mishmi Hills above c. 1200 m, in wet subtropical and temperate forest.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 777, q.v.

BREEDING. Season, Nest, Eggs, etc. Not specifically described; doubtless as in the other races.

MUSEUM DIAGNOSIS. Similar to *M. v. magnifica* (778) but much darker.

MEASUREMENTS AND COLOURS OF BARE PARTS as in the other races.

MEGALAIMA ZEYLANICA (Gmelin): LARGE GREEN BARBET

Cf. Mukherjee, A. K., 1952, Bull. Brit. Orn. Cl. 72: 34-6

Rand, A. L. and Fleming, R. L., 1957, Fieldiana: Zoology 41 (1): 87-8

Key to the Subspecies

	Page
A Darker and richly coloured.....	<i>M. z. zeylanica</i> 152
B Paler and less richly coloured	
a Brown on oom upper and lower parts more extensive; breast-streaks very faint	<i>M. z. inornata</i> 152
b Brown on upper and lower parts less extensive; breast-streaks broader and wider.....	<i>M. z. caniceps</i> 150

780. *Megalaima zeylanica caniceps* (Franklin)

Buceo caniceps Franklin, 1831 (1830-31), Proc. Zool. Soc. London (1): 121 ('On the Ganges between Calcutta and Benares, and the Vindhyan Hills between the latter place and Gurrah Mundela on the Nerbudda')

Thereictyx zeylanicus kangrae Whistler & Kinnear, 1934, Jour. Bombay nat. Hist. Soc. 37: 516 (Ranital, 2000 ft, Kangra)

Baker, FBI No. 1430, Vol. 4: 110

LOCAL NAMES. *Bādā bāsāntā* (Hindi and Bengali); *Jokārē pākhi* (Bengal); *Kūtimra* (Deccan); *Kūdrūnga*, *Gummā* (M.P.); *Kotūr* (U.P.); *Sunterar* (Bihar); *Kūtirgā* (Marathi).

SIZE. Myna +; length c. 27 cm (10½ in.).

FIELD CHARACTERS. A dumpy stout-billed grass-green arboreal bird. Head, neck, upper back and upper breast brown, streaked with whitish; lower breast and abdomen pale green. Under surface of tail bluish. A conspicuous naked orange-coloured patch around eye extending to base of bill. Sexes alike.

Persistent *kūtroo* calls and noisy dipping flight distinctive.

Young (immature) similar to adult but obsoletely streaked and overall much paler and duller.

STATUS, DISTRIBUTION AND HABITAT. Resident. The lower western Himalayas (up to c. 800 m) from Kangra in Himachal Pradesh to Kumaon (U.P.) and western Nepal terai (to c. 300 m). Continental India west to Mt Abu and Gujarat, east through Madhya Pradesh and northern Maharashtra to Bihar, W. Bengal (straggling as far as Calcutta), and Orissa south to Godavari R. The races intergrade into one another and borderline cases are difficult to place. Affects well-wooded moist and dry deciduous country, often frequenting roadside avenues and entering gardens within city limit.

PICIFORMES

152

and on culmen (non-breeding), reddish orange (breeding); mouth pale pink. Legs and feet lemon-yellow; claws dusky.

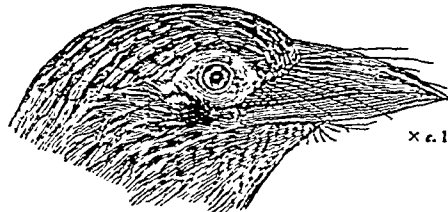
781. *Megalaima zeylanica inornata* Walden

Megalaima inornata Walden, 1870, Ann. Mag. Nat. Hist. 5 (4): 219 (Malabar) Baker, FBI No. 1431, Vol. 4: 110

LOCAL NAMES. *Kūtirgā* (Marathi); *Kūtir hākki* (Kannada); *Gandu karnam* (Telugu).

SIZE. Myna +; length c. 27 cm (10½ in.).

FIELD CHARACTERS. As of 780. See Key to the Subspecies and Museum Diagnosis.



STATUS, DISTRIBUTION AND HABITAT. Resident. Western India from about the Godavari river in Maharashtra south through Goa and Mysore to Coorg district. Habitat as in 780.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in *caniceps* (780), q.v. A minor pest of coffee plantations in Mysore, avidly devouring the ripe 'cherries', often involving appreciable loss to the growers.

BREEDING. Season, chiefly March, April and May. Nest and eggs (c/2-4) as in the other races. Average size of 18 eggs 30.5 × 21.8 mm (Baker).

MUSEUM DIAGNOSIS. Differs from the Kerala and Ceylon population (782) in having the brown extending further on to the breast and back. General plumage paler and duller with the streaks on the breast narrow and confined to the pale shafts. Pale specks on wing-coverts wanting; streaks on head and upper back less conspicuous.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in *M. z. caniceps* (780).

Weight 1 ♂ 123 g (SA).

782. *Megalaima zeylanica zeylanica* (Gmelin)

Buceo Zeylanicus Gmelin, 1788, Syst. Nat. 1 (1): 408 (Ceylon) Baker, FBI No. 1429, Vol. 4: 108

Plate 60, fig. 3

LOCAL NAMES. *Kūtir hākki* (Kannada); *Gandu karnam* (Telugu); *Kūtirwān* (Malayalam); *Pollos kottirwān*, *Gābbāi kottirwān* (Sinhala); *Kūtir*, *Kattirwān* (Tamil).

SIZE. Myna +; length c. 27 cm (10½ in.).

FIELD CHARACTERS. As of 780, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Kerala and southern Tamil Nadu, mostly in the moist-deciduous low country and foothills, sometimes up to c. 1200 m. Ceylon — widely distributed and plentiful throughout the lowlands and lower hills to c. 1500 m. Habitat as in the other races.

BARBETS

153

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 780, q.v.
BREEDING. Season, in Kerala chiefly February to April; in Ceylon February to October, 'chiefly March-April and again during September and October' (Phillips). *Nest* and *eggs* (normally c/3) as in the other races. Average size of 18 eggs 30.9 × 23.7 mm (Baker).

MUSEUM DIAGNOSIS. Differs from the adjacent subspecies *inornata* (781) in having the chin, throat and breast rather darker brown and more conspicuously streaked with pale shaft-streaks. It is also slightly smaller.

MEASUREMENTS (of Ceylon birds)

	Wing	Bill (from skull)	Tarsus	Tail
7 ♂♂	106-113	30-33	27-29	61-69 mm
8 ♀♀	110-118	32-36	27-29	63-71 mm (HW)

Weight 1 ♂ 87 g (SDR):

COLOURS OF BARE PARTS. As in *M. z. caniceps* (780).

MEGALAIMA LINEATA (Vieillot): LINEATED BARBET

Key to the Subspecies

Darker *M. l. rana*
 Paler *M. l. hodgsoni*

Cf. Ripley, S. D., 1950, *tom. cit. infra*: 101-2 (ranges of forms in Nepal).

783. *Megalaima lineata rana* Ripley

Megalaima zeylanica rana Ripley, 1950, Proc. Biol. Soc. Washington 63: 101

(Bajora, Dailekh dist., west Nepal)

Baker, FBI No. 1432 (part), Vol. 4: 111

LOCAL NAMES. *Kūdürta*, *Khotoor* (Nepal); *Bādā bārāntā*, *Kolūr* (U.P.).

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. As of 784. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. The Himalayan submontane tract from the edge of the terai and through the foothills up to c. 1000 m; from Kumaon (Dehra Dun dist.) to west-central Nepal. Apparently replaces the subspecies *hodgsoni* in west-central Nepal at levels above the terai. Affects moist-deciduous biotope.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in *M. l. hodgsoni* (784), q.v.
BREEDING. Season, end March to middle June: most eggs in first half April. *Nest* and *eggs* (c/2-4) as in 784.

MUSEUM DIAGNOSIS. Very similar to *M. l. hodgsoni*; originally described as larger and darker.¹

MEASUREMENTS

	Wing	Bill (from skull)	Tail
8 ♂♂	128-135	34-36 (4 msd.)	78-82 mm (4 msd.)
8 ♀♀	128-142	34-37 (4 msd.)	77-85 mm (4 msd.) (DB, Fleming)

¹ But not readily distinguishable; validity of the subspecies considered equivocal by some authorities.

BARBETS

155

and 12 metres; diameter c. 8 cm, depth up to 50 cm ending in a widened egg chamber. *Eggs*, 2 to 4, white, elongated ovals averaging c. 32 × 23 mm. Laid on the bare wood or a scanty bed of fortuitously fallen-in chips. Both sexes share in excavating the hole, incubation, and feeding the young. Period of incubation undetermined: estimated to be 14 or 15 days.

MUSEUM DIAGNOSIS. Very similar to *M. z. caniceps* (780) but with much broader pale streaks above and below. Pale spots and striations on upperparts confined to extreme upper back. Bare patch round eye smaller and separated from base of bill by a broad line of feathers. Differs from *M. l. rana* (783) in being slightly smaller (?) and paler.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	123-137	30-33	29-30	82-86 mm (Baker)

A large series from Nepal, Bhutan and Buxa duars ♂♀ Wing 119-139 mm (Ticehurst).

Weight 1 ♂ 139 g; 2 ♀♀ 149, 170 g (Paynter).

COLOURS OF BARE PARTS. Iris brown; eyelids and orbital skin deep yellow. Bill horny yellow, culmen and tip darker. Legs and feet fleshy yellow to orange-yellow.

785. *Small Green Barbet. Megalaima viridis* (Boddaert)

Bucco viridis Boddaert, 1783, Table Pl. enlum.: 53

(Mahe, India ex Daubenton, pl. 870)

Baker, FBI No. 1434, Vol. 4: 113

Plate 60, fig. 2

LOCAL NAME. *Chhōlā bāsānthā* (Hindi).

SIZE. Myna ±; length c. 23 cm (9 in.).

FIELD CHARACTERS. A dumpy grass-green bird very similar to and easily confused with Large Green Barbet (781) but white cheek-stripe diagnostic even at a distance.

Above, crown and nape dark brown with a blackish band running backward from eye, a short white supercilium, and a broad white stripe from the lores through the ear-coverts. Below, chin and throat whitish; breast whitish streaked with brown; abdomen and vent pale green. Naked orbital patch much smaller than in 781 and blackish brown (v. orange). Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident; common. The Sahyadri or Western Ghats complex (including Nilgiri and Palni hills) from Kerala northward to about the Narbada river; extends east in southern peninsular India to the Shevaroy and Chitteri hills (Tamil Nadu). Evergreen and moist-deciduous biotope, from plains level to c. 1500 m (the commonest barbet at Mahabaleshwar). Occurs up to c. 1800 m in the Nilgiris, occasionally to 2300 m. Affects wooded country; also gardens and groves in the neighbourhood of towns, villages and cultivation.

GENERAL HABITS. Very similar to the larger Green Barbets, *M. zeylanica* and *M. lineata*, qq.v. Usually keeps in pairs and small parties, but 20 to 30 birds or more will collect on a fruit-laden banyan or peepul tree to feast in company with bulbuls and other frugivorous birds. Is of a quarrelsome disposition and given to continual bickering and fighting with its fellow

154

PICIFORMES

COLOURS OF BARE PARTS. As in *M. l. hodgsoni*.

784. *Megalaima lineata hodgsoni* Bonaparte

Bonaparte

Megalaima hodgsoni Bp. = Bonaparte, 1850, Consp. Av. 1: 144 (Nepal, restricted to Simra, central Nepal, by Ripley, 1950, Proc. Biol. Soc. Washington 63: 102)
Therocircus lineatus intermedius Baker, 1918, Bull. Brit. Orn. Cl. 39: 19

(Pahpoon, Burma)

Megalaima lineata kutru Mukherjee, 1952, Bull. Brit. Orn. Cl. 72: 36

(Chahala, Simlipal Hills, Orissa)

Baker, FBI No. 1432, Vol. 4: 111

Plate 60, fig. 1

LOCAL NAMES. *Kūdürta*, *Khotoor* (Nepal); *Dang kim nyong* (Lepcha); *Das tikra* (Cachari); *Inruikūru* (Kacha Naga).

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. A dumpy stout-billed grass-green arboreal bird, very similar to Green-Barbet (780) but much more broadly pale-streaked above and below; naked yellow patch around eye much smaller and less conspicuous, not extending to the gape. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident. West-central Nepal (where it apparently occurs at lower levels than *rana*), east through northern Bihar, West Bengal, Sikkim, Bhutan, Assam, Manipur, and East Pakistan from c. 800 m down to the terai, duars and the lowlands, and south to the Orissa hills. Affects moist-deciduous biotope frequenting light secondary forest as well as well-wooded gardens, roadside avenues of *Ficus* trees, etc.

Extralimital. Burma, Thailand, the Indochinese countries and Malay Peninsula.

GENERAL HABITS. Very similar to Green Barbet (780 and races), from which it is seldom differentiated in the field by casual birdwatchers. Keeps singly or in loose feeding parties on fruiting *Ficus* and suchlike trees in company with other frugivorous birds. Extremely noisy in the hot weather, its resounding choruses, joined in by several birds within earshot of each other, continued practically without intermission throughout the day, with occasional bursts during moonlight nights as well. Flight, as typical of the barbets, noisy, rather heavy and dipping.

FOOD. Mainly fruits of all kinds [including *phalsa* (*Grewia*) in low bushes and strawberries on the ground]; flower nectar (e.g. *Salmalia* and *Erythrina*); insects — termites, larvae and grubs — and small animals such as lizards and tree-frogs on occasion.

VOICE AND CALLS. Very similar to the Green Barbet's and doubtfully recognizable as different when casually heard. On a critical listening-in perhaps rather mellow and softer, sounding more like *kōtūr*, *kōlūr*, *kōtūr* than *kūtrū* or its other renderings (see 780); also a variety of guttural chuckles expressive of anger, agitation and other emotions. Baker describes 'a loud musical whistle apparently only used to call together scattered members of a family flock', which we have not heard.

BREEDING. Season, end March to mid June, the peak periods varying locally. *Nest*, a hole cut into a rotten branch or snag at heights between 3

156

PICIFORMES

feasters. Frequently clings to trunks and boughs of trees, climbing up like a woodpecker.

FOOD. Mainly fruit, especially *Ficus* figs, but it is also largely insectivorous. Often makes serious raids on kitchen gardens and orchards. Alleged to cause considerable waste in S. Indian coffee estates by guzzling the ripe 'cherries' and scattering the valuable seeds or 'berries', but extent of damage unduly exaggerated. Regularly takes insects on tree-trunks, and flying termites in mid-air by clumsy aerial sorties from tree-tops. Is also fond of flower nectar — *Erythrina*, *Grevillea*, *Bombax*, etc., and may be incidental in their cross-pollination.

VOICE AND CALLS. Calling starts with a loud explosive *pitrr-rrr* (c. one second). Notes confusingly like the larger Green Barbets' (qq.v.), perhaps slightly higher in key but hardly distinguishable unless heard side by side. Also sounds more like *pūcock*, *pūcock*, *pūcock*, etc. (c. two per second) than the *kūtrōo*, *kūtrōo* of the former. Particularly obstreperous in the breeding season, calling incessantly from dawn till dusk, some individuals often continuing far into or throughout moonlit nights. As soon as one bird begins calling a second some distance away promptly chimes in, followed by a third and a fourth and so on till the forest resounds with an almost deafening uneven chorus. Occasionally utters a single note *tūk*, very like the Copper-smith's (792).

BREEDING. Season, overall December to June; principally between December and March in the southern part of its range. *Nest*, similar to that of the other Green Barbets — a hole in a rotten branch or snag excavated by the birds themselves, almost any height from the ground between 2 and 10 metres; occasionally higher. It is not unusual to find several holes in the same tree, in some cases leading to the same chamber and apparently drilled in different years. *Eggs*, usually 3, sometimes 2 or 4; pure white regular ovals as characteristic of the barbets. Average size of 30 eggs 26.2 × 20.3 mm (Baker). Frequently two broods are raised. Both sexes incubate and feed the young, at first by regurgitation and when older on entire berries. Incubation period 14-15 days; fledging period c. 36 days (S. A. Yahya).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Has a complete post-nuptial moult and no spring moult. Worn birds are paler in colour especially on crown and breast, the latter becoming much whiter with the wearing off of the brown margins to the feathers.

Young (immature) like adult but the streaking on head and breast less well-defined and head rather paler.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	97-113	24-29	c. 27	65-70 mm (SA, HW, Koels)

Average of Wing 19 ♂♀ 103 mm. There is no significant difference in size between birds from the northern and southern parts of the range.

Weight 16 ♂♀ 71-90 (av. 80.5) g — Grubb.

COLOURS OF BARE PARTS. Iris chestnut-brown to dark brown; eyelids and circumorbital skin slaty brown or slaty black. Bill brownish flesh colour, browner on culmen, plumbeous at gape; mouth pinkish grey. Legs and feet greenish grey; claws horny brown.

MISCELLANEOUS. Parasitized by thick *Harmaphysalis spinigera* (Rajagopalan, JBNHS 69: 62).

BARBETS

157

786. Yellowfronted Barbet. *Megalaima flavifrons* (Cuvier)

Bucco flavifrons Cuvier, 1817 (1816), Règne Anim.: 423, note 2
(Ceylon. Based on Levaillant, Ois. de Paradis, pl. 55)

Baker, FBI No. 1440, Vol. 4: 120

Plate 60, fig. 7

LOCAL NAMES. *Mūkalāṅg kottāruwā* (Sinhala); *Kūṭūr*, *Kūkkuruvān* (Tamil).

SIZE. Myna —; length c. 21 cm (8½ in.).

FIELD CHARACTERS. Similar to Green Barbet (782) but slightly smaller: dark grass-green above with golden yellow forehead and verditer-blue face and throat. Below, pale green, the breast feathers boldly scalloped with emerald-green, producing a scaly pattern. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Endemic to Ceylon. Plentiful but locally distributed in the low-country Wet zone and in parts of the Dry zone (especially in the Eastern Province). Generally abundant in the hills to c. 2000 m. Affects forest.

GENERAL HABITS. Similar to Green Barbet (782), q.v.

FOOD. Mainly *Ficus* figs, and various drupes and berries. Does considerable damage to fruit in orchards, of which it is a minor pest. Occasionally also takes animal food — insects, lizards, etc.

VOICE and CALLS. The call which resounds in the forest 'commences with a rolling and ascending *houwouououou* and changes to *kuiār*, *kuiār*, *kuiār* . . . repeated many times; it is always answered by the performer's mate [?] from perhaps a hundred yards away' (Henry). Cf. 785.

BREEDING. Season, not well defined; breeds practically throughout the year but chiefly March to May and again during August and September (Phillips). Nest and eggs (cf 2 or 3) as in Green Barbet, the latter pure white and oval with a smooth texture. Average size of 38 eggs 26.6 × 20.7 mm (Baker); apparently laid at intervals of more than 24 hours judging from the disparity in the nestlings.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	87-93	21-25	22-25	52-58 mm (HW)

Weight 2 ♂♂ 57, 60 g (SDR).

COLOURS OF BARE PARTS. Iris light red. Bill greenish horn colour, darker about the nostrils. Legs and feet greenish or bluish.

787. Goldthroated Barbet. *Megalaima franklinii franklinii* (Blyth)

Bucco Franklinii Blyth, 1842, Jour. Asiat. Soc. Bengal 11 (1): 167 (Darjeeling)

Baker, FBI No. 1444, Vol. 4: 124

Plate 60, fig. 6

LOCAL NAMES. *Bānbāsi*, *Bāghbāsi* (Nepali); *Dao yāla* (Cachari).

SIZE. Myna; length c. 23 cm (9 in.).

FIELD CHARACTERS. A dumpy grass-green barbet with crimson and bright golden crown, grey ear-coverts, and a broad black supercilium from bill to

BARBETS

159

vertex. Crown behind this crimson, with a black streak on either side running back to nape. A short supercilium and feathers round eye, ear-coverts, chin and throat, verditer-blue. A crimson speck on either side at base of lower mandible; a crimson patch at base of throat on either side. Base of bill surrounded by conspicuous black bristles. Sexes alike.

The subspecies described and illustrated by Stuart Baker (Fauna 4: 119) as *Cyanops asiatica rubescens* from the Khasi and Cachar hills, Manipur etc. and sporadically met with also in Bhutan and elsewhere in the eastern Himalayas is merely a variant of the nominate form. It is 'Similar to *C. asiatica asiatica* but with the upper parts suffused with crimson; the under parts flecked and streaked with crimson, though in varying degree and generally less so in females than in males'.



STATUS, DISTRIBUTION and HABITAT. Resident; common. The lower Himalayas from W. Pakistan Punjab (Rawalpindi dist.) and Kashmir eastward through Himachal Pradesh, U.P., Nepal, Sikkim, Bhutan and NEFA. Also Bengal (common in Calcutta City), Assam, Nagaland, Manipur, Mizo Hills and East Pakistan; from plains level to c. 2000 m. In the Himalayas occupies a lower altitudinal zone in summer than Goldthroated Barbet (787). Affects well-wooded country — light deciduous and evergreen forest and groves of trees (especially *Ficus*) around villages and in urban gardens.

Extralimital. Extends south to Burma and the northern Shan States. Other races in Yunnan, Thailand, Indochinese countries and Borneo.

GENERAL HABITS. Not appreciably different from those of the Large and Small Green barbets, qq.v.

FOOD. Mainly fruits; occasionally mantises and other large insects which are whacked limp against the perch before swallowing.

VOICE and CALLS. Casually almost indistinguishable from those of Large Green Barbet (780); critically, softer and in a somewhat higher key, sounding more like *pūkūrik*, *pūkūrik* (3 syllables) more rapidly repeated than *pecock* or *kūrik* (2 syllables) of the former; often ends in a rippling *kū-rrr*. In the distance sometimes strangely reminiscent of the rattling call of Red Spurfowl (275), q.v., but less loud and more 'nutty'. Song also described as *kool' toodzedoo* . . . repeated *ad nauseam*, the first note lower, the three others rapidly uttered (Desfayes). Indulges in the same irregular duets and choruses, confused and made still noisier by both the species often calling together in the same locality.

BREEDING. Season, overall March to June/July, varying with altitude. Nest, the typical barbet hole excavated in a dead tree-trunk or decaying branch, between 2 and 8 metres up. When in a horizontal branch the

158

PICIFORMES

nape. Chin and throat golden yellow with an orange spot on each side of base of bill near gape. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident. The Himalayas from Central Nepal eastward through Sikkim, Bhutan and NEFA. Also Cachar, Nagaland, Manipur and Mizo hills; East Pakistan in the Chittagong Hill Tracts. Affects forested hillsides normally between c. 600 and 2400 m. Inhabits a higher altitudinal zone in summer than the Bluethroated Barbet.

Extralimital. Northern Burma, southern Yunnan, northern and central Vietnam and northern Laos (Peters). Other races in Thailand and Malay Peninsula.

GENERAL HABITS. Not appreciably different from the Green and Bluethroated barbets, qq.v. Arboreal, noisy, and gregarious when feeding on fruit-laden trees.

FOOD. Mainly fruit; occasionally insects.

VOICE and CALLS. Various rendered: a wailing *pegu, pegu*, etc. reminiscent of the calls of the Great Barbet (777) but somewhat higher pitched, reiterated monotonously for considerable periods. A single note *wook* (as in owl) preceded by an undertone *pk* or *pik* audible only at close quarters, thus actually *pik-wook*, repeated for many minutes at a stretch in intermittent runs. Calling begins with a rolling *krrr-krrr* and settles down to a monotonous *pūkūwok*, *pūkūwok*, *pūkūwok*—*ad nauseam*.

BREEDING. Season, April to June, mostly during May. Nest, the usual barbet hole in a dead tree-stump or rotten branch between 2 and 5 m up, excavated by the birds themselves. Eggs, 3 or 4, white, rather long to broad blunt ovals. Average size of 50 eggs 27.4 × 21.1 mm (Baker). Both sexes share in drilling the hole, incubation, and feeding the young. Period of incubation undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	97-109	23-28 (from skull)	24-28 (SA, BB, Stresemann)	59-68 mm

Weight 6 ♂♂ 79-101 g; 5 ♀♀ 72-94 g (SA, Paynter).

COLOURS OF BARE PARTS. Iris brown. Bill black, greyish at base of both mandibles. Legs and feet greenish slate; pads dull yellow.

788. Bluethroated Barbet. *Megalaima asiatica asiatica* (Latham)

Trogon asiaticus Latham, 1790, Index Orn. 1: 201 (India = Calcutta *vide* Baker)

Cyanops rubescens Baker, 1896, Novit. Zool. 3: 257 (Highest ranges in the east of the Cachar Hills). (Erythristic form)

Baker, FBI No. 1436, Vol. 4: 116

Plate 60, fig. 5

LOCAL NAMES. *Bādā bāsānth bairi*, *Bādā benebo*, *Korul* (Bengali); *Kattak* (Lepcha); *Rutarki*, *Bāsānthā* (Nepali); *Hūmūnū* (Himachal Pradesh); *Dao tikra gadeba* (Cachar); *Tuktikra sorai* (Assam).

SIZE. Myna; length c. 23 cm (9 in.).

FIELD CHARACTERS. A gaudy grass-green barbet with verditer-blue chin and throat. Forehead crimson, then yellowish, followed by a black band across

160

PICIFORMES

entrance-hole is on the underside. Approved sites are used year after year, but whether by the same or a different pair is not known. Evidently a fresh entrance-hole is cut at each occupation. Eggs, 3 or 4, white. Average size of 40 eggs 27.8 × 20.5 mm (Baker). Both sexes share all the domestic chores; period of incubation undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young (immature). Duller replica of adult, the crimson forehead and crown intermixed with dull green and blackish. Nestlings have the whole upper head dull green.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♂	102-112	(from skull) 26-30 (once 32)	27-30	60-68 mm (once 74)
♀ ♀	100-109	27-30	27-30	60-68 mm (BB, SA, SDR)

Weight 13 ♂♂ 62-100 g (SA, Paynter).

COLOURS OF BARE PARTS. Iris reddish brown; fine rim round eye brownish salmon colour or orange-yellow. Bill pale greenish horn, black on culmen and anterior half of upper mandible, horny black on sides of anterior third of lower mandible. Legs and feet sage green or greenish slaty; claws horny brown; pads greyish white.

789. Indian Blue-eared Barbet. *Megalaima australis cyanotis* (Blyth)

Bucco cyanotis Blyth, 1847, Jour. Asiat. Soc. Bengal 16 (1): 465 (Arakan)

Cyanops australis viridis Deignan, 1941, Auk 58: 398 (Pang Makhm Phong, foot of Doi Pha, Sakaeng, Siam)

Cyanops robustirostris Baker, 1896, Jour. Bombay nat. Hist. Soc. 10: 356, pl. F (North Cachar Hills)

Cf. Ripley, S. D., 1953, *Ibis* 95: 547-8

Baker, FBI No. 1443, Vol. 4: 123

Plate 60, fig. 11

LOCAL NAME. *Dao tikra kashiba* (Cachari).

SIZE. Sparrow +; length 17 cm (6½ in.).

FIELD CHARACTERS. A small bright grass-green barbet distinguished chiefly by its gaudy multicoloured head-pattern. 'Whiskers' (narial bristles) projecting beyond tip of bill. Lores, forehead and forecrown black, the feathers fringed with pale blue; hindcrown cobalt blue. Ear-coverts pale verditer-blue with a crimson patch above and another below. Chin and throat pale verditer-blue. An area below eye mixed yellow and bright red divided from chin by a black moustachial stripe. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident. E. Nepal, Sikkim, northern Bengal, Bhutan, Assam, Nagaland, Manipur, Mizo (?), East Pakistan (Chittagong Hill Tracts); terai, duars, and foothills up to c. 1200 m. Affects thick evergreen forest.

Extralimital. Burma south to northern Tenasserim, Thailand, and the Indochinese countries.

GENERAL HABITS. Similar to those of the Crimsonbreasted Barbet or Coppermith (792), q.v., though more restricted to heavy jungle. Usually seen singly, perched on the very summit of some tall tree whence it keeps calling for hours at a time (Davison).

BARBETS

161

FOOD. Mainly fruits; occasionally some insects.

VOICE AND CALLS. A peculiar, somewhat harsh metallic double note *koo-turr, koo-turr* or *loo-rook, loo-rook* unlike that of any other barbet, but closer in pattern to that of the Green, endlessly repeated.

BREEDING. Season, April, May and early June. Nest, the typical barbet excavation in a dead tree-trunk or branch, usually in dense forest. Eggs 2 to 4, white; probably laid at longer than 24-hour intervals. Average size of 40 eggs 24.5 × 18.3 mm (Baker). Both sexes share all the domestic chores. Period of incubation undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young (immature) has the whole head green, washed with blue on throat and sides of head.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	77-85	18-21	c. 21	45-50 mm (Baker)

Weight 5 ♂ ♀ 32-38 g (Paynter).

COLOURS OF BARE PARTS. Iris dark brown or reddish brown. Bill dark horny brown, yellowish green on base and gape, black on culmen and tip. Legs and feet dull green, or yellowish green to slaty green.

MEGALAIMA RUBRICAPILLA (Gmelin): CRIMSONTHROATED BARBET

Key to the Subspecies

Chin, throat, supercilium, and suborbital patch crimson.....	<i>M. r. malabarica</i> .
Chin, throat, supercilium, and suborbital patch orange.....	<i>M. r. rubricapilla</i> .

790. *Megalaima rubricapilla malabarica* (Blyth)
malabarica (Blyth)

Bucco malabaricus Blyth, 1847, Jour. Asiat. Soc. Bengal 16 (1): 465 (Malabar)
Baker, FBI No. 1448, Vol. 4: 129
Plate 60, fig. 9

LOCAL NAMES. *Takaji* (Telugu); *Alkili* (Malayalam).

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. A dumpy little grass-green barbet very like the Coppersmith (792) but with chin, throat, foreneck and upper breast crimson (in addition to forehead and forecrown), the last streaked with black. A crimson patch below eye and a similar speck on cheek. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident; common but local. The Western Ghats complex from about Goa (Savantwadi, c. 16°N.) south through Kerala, including the Nilgiris, Palnis, and W. Mysore (Malnaad); low country, foothills and up to c. 1200 m. Restricted to evergreen biotope, here being the ecological counterpart of the Coppersmith of more deciduous facies.

11

BARBETS

163

op op . . . , usually in 6-syllabled beats, but sometimes in 4 or 5 syllables.

BREEDING. Season, December to September, chiefly March and April (Phillips). Nest and eggs (2 or 3) as in 792. Average size of 10 eggs 25.1 × 18.1 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	75-83	16-18	18-20	33-38 mm (HW)

Weight 1 ♂ 36 g; 2 ♀ ♀ 32, 39 g (SDR).

COLOURS OF BARE PARTS. Iris red-brown. Bill black. Legs and feet coral red (Baker).

792. *Crimsonbreasted Barbet* or *Coppersmith*. *Megalaima haemacephala indica* (Latham)

Bucco indicus Latham, 1788, Index Orn. 1 (1): 205 (India)

Bucco luteus Lesson, 1830, Traité d'Orn. 3: 163 (Pondicherry)

Xantholaema haemacephala confusa Koelz, 1939, Proc. Biol. Soc. Washington 52: 78 (Londa, Bombay State)

Baker, FBI Nos. 1446, 1447, Vol. 4: 127, 128

Plate 60, fig. 8

LOCAL NAMES. *Kūphāra*, *Tambayāt*, *Bāsānth līra*, *Chhōta bāsānth* (Hindi); *Chhōta bāsānthā būri*, *Bhāgīrūth* (Bengal); *Phauk bāsānth* (Bihar); *Bāsānth sōri* (Assam); *Hetuluka* (Nowgong, Assam); *Jūtkūk*, *Sōmār*, *Tāmbāt* (Marathi); *Tūtkīyo* (Gujarati); *Takaji*, *Kāmudli pitta* (Telugu); *Chempukotti* (Malayalam); *Māl kottūrūv* (Sinhala); *Sinna kukurūv* (Tamil).

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. A small dumpy grass-green barbet with yellow throat, crimson breast and forehead, and green-streaked yellowish underparts. Short, truncated tail, distinctly triangular in flight-silhouette. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident; common and very widely distributed. Practically throughout the Indian Union (including Assam and Manipur), both Pakistans, Nepal, Sikkim, Bhutan (terai and lowlands),

and Ceylon; plains and foothills to c. 2000 m in dry- and moist-deciduous biotope. Rare in the arid portions of Sind, Punjab, Rajasthan and Kutch. Largely replaced in the heavy-rainfall areas of the southern Western Ghats by *M. r. malabarica* (790). Affects the lightly wooded countryside, roadside avenues and groves of trees (especially *Ficus* species) near villages and cultivation, and in urban gardens and compounds.

Extralimital. Southern Yunnan, northern Malaya, Thailand and the Indochinese countries. Other races in the Philippine and Indonesian islands.



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162

PICIFORMES

GENERAL HABITS. Except for its adaptation to an evergreen biotope, not appreciably different from the better known Coppersmith (792), q.v. Its moister habitat coincides with that of Small Green Barbet in the same way as the Coppersmith's does with that of *M. zeylanica* (782). Gregarious in non-breeding season. Very numerous in south Indian coffee estates where *Ficus* trees are grown as shade, consorting with green pigeons, mynas and other frugivorous birds to feed on the figs. In flight from treetop to treetop mistakable for lorikeet, with similar rapid fluttering when alighting.

FOOD. Wild figs, drupes and berries; doubtless also insects on occasion but this not specifically recorded.

VOICE AND CALLS. Indistinguishable from Coppersmith's — a metallic *tūk . . . tūk* or *tūnk . . . tūnk* etc. repeated monotonously for many minutes; perhaps a trifle softer and also quicker in tempo.

BREEDING. Season, January to March. Nest and eggs (normally 2, sometimes 3) indistinguishable from those of Crimsonbreasted Barbet (792). Average size of 10 eggs 24.7 × 17.7 mm (Baker). Incubation by both sexes; period 14-15 days, fledging c. 36 days (S. A. Yahya).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young (immature). Like adult but duller, with the whole head green or only with yellow traces of the crimson patches of adult. Young indistinguishable from that of the nominate subspecies of Ceylon (791).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	78-88	15-18	17-20	35-39 mm (SA, Baker)

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible horny brown; lower pale flesh colour at chin, plumbeous at gape and sides except near terminal portion which is brownish; mouth greyish pink. Legs and feet coral pink; claws horny brown.

MISCELLANEOUS. Parasitized by tick *Haemaphysalis spinigera* (Rajagopalan, JBNHS 69: 62).

791. *Megalaima rubricapilla rubricapilla* (Gmelin)

Bucco rubricapillus Gmelin, 1788, Syst. Nat. 1 (1): 408 (Ceylon)
Baker, FBI No. 1449, Vol. 4: 130
Plate 60, fig. 10

LOCAL NAMES. *Māl kottūrūv* (Sinhala); *Sinna kutturūv* (Tamil).

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Similar to Crimsonthroated Barbet (790) but with chin, throat, supercilium and patch below eye orange-yellow instead of crimson. Crimson patch on foreneck, and rest of underparts, as in 790. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Subspecies endemic to Ceylon. Plentiful throughout the Wet zone and in many areas in the Dry zone and lower hills to c. 1300 m (Phillips). Affects openly wooded country with a scattering of *Ficus* trees.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 790, q.v. The sustained, monotonous calling is described by Henry as 'sometimes a slow *wok, wok, wok* . . . , but more often a rapid, throbbing *pop op op op op op, pop op op op*

164

PICIFORMES

GENERAL HABITS. Like other barbets entirely arboreal and eminently frugivorous. Keeps solitary or in pairs and parties of a dozen or so — sometimes large gatherings of up to a hundred or more on abundantly fruiting *Ficus* trees — in company with bulbuls, mynas, green pigeons and other fruit-eaters. Fond of sunning themselves in the morning on bare top branches of tall trees in between spells of feeding, sitting inert or flitting about to perch near one another. Comparatively silent in winter, its calls becoming ubiquitous as the hot season waxes; particularly vocal during the hotter parts of the day. A spell of rain or cold immediately silences the birds. Flight straight, with rapid flaps, rather like a finch in distant silhouette particularly when several are flying off together from a tree-top as after sunning.

FOOD. Banyan, peepul and other wild figs; various drupes and berries. Occasionally moths and flying termites captured in clumsy aerial sorties.

VOICE AND CALLS. A loud rather metallic *tūk* (or *tūnk*) . . . *tūk . . . tūk* and so on, reminiscent of a distant coppersmith hammering on his metal. Repeated monotonously for long periods, the tempo varying with the prevailing emotion from about twice a second to three in two seconds. Has been timed as fast as 108 to 121 *tūks* per minute and repeated 204 times without a break. When the spacing is correct, sounds exceedingly like the time-signal pips of All-India Radio! The calls usually start with a very subdued *tūk* and steadily work up to an even pitch in volume and tone. The bird's beak remains shut: a patch of bare skin on either side of the throat inflates like a rubber bulb and collapses with each *tūk*, the feathers of the crimson breast-patch standing out like a short beard; the whole body, especially tail, is jerked and the head bobbed and turned from side to side producing a curious ventriloquistic effect.

BREEDING. Season, overall November to June, mainly February to April; in Ceylon, December to September, mainly from February; often two broods raised in quick succession. Nest, a shaft excavated in a dead or decaying softwood branch or snag (*Moringa*, *Erythrina*, *Pongamia*, *Salmalia*, etc.) c. 25-80 cm deep — usually c. 40 cm — ending in a slightly widened chamber. Eggs, 2 to 4, normally 3, glossless white, loughish ovals. Laid on bare wood at bottom of shaft. Average size of 100 eggs 25.2 × 17.5 mm (Baker). Both sexes share all the domestic chores. Period of incubation undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young (immature) similar to adult but the green is duller and rather greyish in tint. Forehead, crown, and nape uniform with rest of upperparts, i.e. lacking the red, black, and grey of the adult. Yellow above and below eye paler; black behind eye and ear-coverts, and on moustachial streak, duller and less extensive. Chin and throat greyish white tinged with yellow round the chin and sides. Breast greyish green merging into the streaking of the lower breast and flanks.

Moult. Post-nuptial complete; no spring moult. Post-juvénal moult presumably complete as first-year bird indistinguishable from adult. Wear (caused partly by the birds constantly scraping in and out of roosting and nesting holes) produces a great change in the plumage, the upperparts looking bluish green rather than yellowish green as in fresh plumage, thus offering tempting scope to enterprising creators of new subspecies!

HONEYGUIDES

165

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	78-84	16-20	17-21	33-38 mm
♀♀	75-83	17-20	18-21	30-37 mm (SA, HW)

Weight 10 ♂ 32-47 g (SA, SDR, Paynter).

COLOURS OF BARE PARTS. Iris brown; eyelids (rim) coral-red. Bill dark horny brown or black; mouth pale pinkish grey. Legs and feet coral-red; claws black; pads yellowish.

Family INDICATORIDAE: Honeyguides

For description see Van Tyne, J., and Berger, A. J., 1959: 482; Stresemann, E., 1927-34, *Aves*: 840-1; Baker, E. C. S., 1927, FBI 4: 131; Friedmann, Herbert, 1964, Article 'Honeyguide' in Thomson, A. L. (ed.), *New Dict. Birds*, London and New York.

Represented by three genera and eleven species in Africa; only a single species within Indian limits, and one in Malaysia.

(See 'The Honey-guides' by Herbert Friedmann, 1955, United States Nat. Mus. Bulletin 208, pp. vii + 292, Washington.)

Genus INDICATOR Stephens

Indicator Stephens, 1815, in Shaw's Gen. Zool. 9 (1): 131. Type, by tautonymy, *Indicator Sparrmannii* Stephens = *Cuculus indicator* Sparrman

Bill short, stout, and well curved. Tail-feathers twelve in our only species. Wing long and pointed, with nine primaries only. Ventral feather-tract forked on the throat but not on each side of the breast.

INDICATOR XANTHONOTUS Blyth: HONEYGUIDE

Key to the Subspecies*

- Paler; forehead orange-yellow.....*I. x. xanthonotus*
 Darker; yellow of forehead restricted posteriorly.....*I. x. fulvus*
 * Distinctness of *radcliffei* from nominate *xanthonotus* unconfirmed for want of additional specimens from the type locality.

793. *Indicator xanthonotus radcliffei* Hume

Indicator radcliffei Hume, 1870, Ibis: 528 (Kalabagh, Hazara dist., W. Punjab)
 Baker, FBI No. 1450 (part), Vol. 4: 131

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 794, q.v.

STATUS, DISTRIBUTION and HABITAT. Presumably resident; very rare and sporadic. The Western Himalayas from the Afghan frontier (Hazara, Bannu, Murree), eastward to Garhwal, Kumaon and possibly western Nepal (but no specimens). From c. 1500 to 3000 m, possibly moving altitudinally with seasons. Affects coniferous and dry deciduous forest with cliffs and rock scarps. May possibly range above tree-line.

HONEYGUIDES

167

had laid (Diesselhorst, 1968). Presumably brood-parasitic on barbets like other honeyguide species in Africa, but breeding biology little known in India. However, a remarkable mating system, described as 'Resource-based non-harem polygyny', revealed by recent studies in E. Nepal. A male holds a bees' comb as his territory throughout the year. Copulates with females visiting comb to feed during the breeding season, April-May. Males without territory apparently seldom have a chance of mating (Cronin Jr., Edward, in *Living Bird* 1976).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Female. Similar to male but slightly smaller and duller: rump-patch sulphur yellow (v. bright orange-yellow); yellow areas on forehead, crown, and sides of throat paler and less extensive.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	92-97	8-9	13-15	54-61
♀♀	82-92	c. 9	13-14	53-55

(from feathers)

(Friedmann, SA)

Bill from skull 3 ♂ 11.5-12 mm, 2 ♀ 11-12 mm.

Weight 4 ♂ 29-34, 3 ♀ 26-29, 3 o? 28-31 g (SA, SDR, Diesselhorst)

COLOURS OF BARE PARTS. Iris dark brown; bare circumocular area very pale green. Bill yellow, somewhat dusky terminally; at the base of both the maxilla and the mandible, as well as on the chin, black bristles are present, none present above the large, swollen, triangular nostrils. Tarsi and toes pale greenish horny (Friedmann).

795. *Indicator xanthonotus fulvus* Ripley

Indicator xanthonotus fulvus Ripley, 1951, Postilla, no. 6, Feb. 28: 2
 (Pflutero, eastern Naga Hills, Assam)
 Baker, FBI No. 1450 (part), Vol. 4: 131

LOCAL NAME. *Mephi tsu kelie para* (= the bird that eats bees, Naga) — SDR.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 794, q.v. Reminiscent of a flycatcher when perched on a tree-top. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Eastern NEFA, NE. Assam (Margherita area), Nagaland, Manipur; above c. 1500 m and at least to 2100 m, possibly higher and moving altitudinally with season. Affects denser and wetter forest than 793 and 794.

Extralimital. Northeastern Burma.

GENERAL HABITS. As in 793 and 794.

FOOD. As in 794.

VOICE and CALLS. An occasional single *weei* uttered on the wing during the aerial flycatching sallies (Smythies, *Ibis* 1949: 645).

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Darker than nominate *xanthonotus*; more blackish both above and below, with the yellow of the forehead more restricted posteriorly.

MEASUREMENTS

	Wing	Bill	Tail
1 ♂	90	11	57 mm
1 ♀	86	10	56 mm

(from skull)

(SDR)

... brown. Bill yellowish horn, distal half of upper

166

PICIFORMES

The type of *radcliffei* was collected in June 1867 since when the bird has been observed perhaps not more than half a dozen times but no more specimens procured; the last seen was on 2.iv.1923 by Whistler at Truin, Dharmasala, c. 2900 m in oak forest (*Quercus semecarpifolia*).

GENERAL HABITS, FOOD, VOICE and CALLS. Very little known. Sits upright and motionless among top branches of trees in a dove-like attitude, head sunk on breast, plumage rather puffed out and wings drooping (Magrath, JBNHS 19: 153-4).

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Distinctness of this population from nominate *xanthonotus* unconfirmed due to lack of specimens.

MEASUREMENTS and COLOURS OF BARE PARTS. As in *xanthonotus* (794).

794. *Indicator xanthonotus xanthonotus* Blyth

Indicator xanthonotus Blyth, 1842, Jour. Asiat. Soc. Bengal 11 (1): 116 (Darjeeling)
 Baker, FBI No. 1450, Vol. 4: 131

Plate 103, fig. 1

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. A sparrow-like olive-brown bird with a rather stout finch-like bill and glistening orange-yellow forehead and cheeks. Middle of back pure yellow; lower back and rump orange-yellow conspicuous when the bird sits, as is its habit, with the wings partly drooping at the sides; also contrasting strongly with dark upperparts in flight. Upper tail-coverts and tail blackish brown; under tail-coverts black, scalloped paler.

Female more or less similar.

STATUS, DISTRIBUTION and HABITAT. Resident. Evidently not uncommon, but easily overlooked. The Himalayas from east-central Nepal (Baglung dist.—Fleming) eastward through Sikkim, Bhutan and Arunachal (?), from c. 1500 to 3500 m. Also observed (ssp.?) in Garhwal (Valley of Flowers—Hussain, JBNHS 75: 487). Affects mixed broad-leaf and conifer forest in the neighbourhood of bee-nesting cliffs and rock-scarps. May possibly range above tree-line.

GENERAL HABITS. As in 793 and 795, but little known. Nothing known as to whether this species guides humans and other melliphagous animals to live bees' nests as its congeners and relations are reputed to do in Africa.

FOOD. Bees and probably other hymenoptera, taken in the air by clumsy flycatching sallies in the manner of a bulbul (Smythies). Also clings like a woodpecker to combs of rock bees when the bees are absent (e.g. in winter). Feeds predominantly on wax from abandoned combs, even on pieces fallen to ground below. Gizzards of specimens contained beeswax almost exclusively, but also some insect remains.

VOICE and CALLS. See under 795.

BREEDING. Season. The only positive indication is provided by a female collected in Nepal on May 7 (1962) with the largest of three developed ovarian follicles measuring 8 mm. Its dilated oviduct, moreover, showed that the bird



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PICIFORMES

168

Family PICIDAE

For description see Van Tyne, J., and Berger, A. J., 1959: 484; Stresemann, E., 1927-34, *Aves*: 841-3; Baker, E. C. S., 1927, FBI 4: 3-4; Joachim Steinbacher, 1964, Article 'Woodpecker' in Thomson, A. L. (ed.), *New Dict. Birds*, London & New York.

Key to the Subfamilies

	Page
I Shafts of tail-feathers stout and rigid.....	Picinae 176
II Shafts of tail-feathers soft and flexible	
A Nostrils concealed by feathers.....	Picumninae 172
B Nostrils not concealed by feathers but partly covered by a membrane.....	Jynginae 168

Subfamily JYNGINAE: WRYNECKS

Genus JYNX Linnaeus

Jynx Linnaeus, 1758, Syst. Nat., ed. 10, 1: 112. Type, by monotypy, *Jynx torquilla* Linnaeus

Bill of moderate length conical, compressed, pointed; nostrils large, near the culmen, not covered by plumes but partially by a membrane. Plumage soft, brownish grey in colour, minutely speckled. Wing pointed. Tail more or less square, about three-quarters length of wing or more; rectrices soft and flexible.

JYNX TORQUILLA Linnaeus: WRYNECK

Key to the Subspecies

	Page
Largest, pale above, sparingly spotted.....	<i>J. t. torquilla</i> 168
Browner, with markings conspicuous and more blackish on nape and back; darker ochre on throat.....	<i>J. t. chinensis</i> 170
Underparts more vermiculated and barred rather than spotted.....	<i>J. t. himalayana</i> 170

796. *Jynx torquilla torquilla* Linnaeus

Jynx Torquilla Linnaeus, 1758, Syst. Nat., ed. 10, 1: 112 (Europe = Sweden)
 Baker, FBI No. 1423, Vol. 4: 99

Plate 62, fig. 1

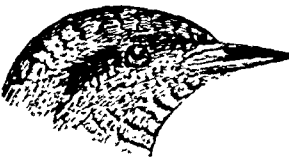
LOCAL NAMES. *Gārdān eyengtha* (Hindi); *Meda nulingadu* (Telugu).

SIZE. Bulbul —; length c. 19 cm (7½ in.).

FIELD CHARACTERS. A slim, silvery grey-brown bird, streaked, speckled and vermiculated with black and fulvous above. Below, whitish with arrow-head markings producing a finely cross-banded pattern. Tail with 3 or 4 conspicuous dark bands. Sexes alike.

Deceptively sparrow-like, particularly in flight. On a flashing glimpse also mistakable for Great Reed Warbler in the appropriate habitat.

STATUS, DISTRIBUTION and HABITAT. Winter visitor (c. September to March) to West Pakistan (Baluchistan, Sind, Punjab), Nepal terai, and



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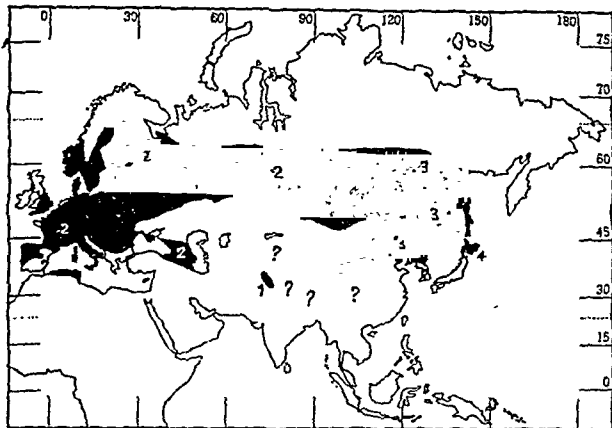
WOODPECKERS

169

through U.P., Rajasthan, Gujarat, Maharashtra and western central India south to Kerala (Jackson, 1967, JBNHS 64: 368). Precise subspecific determination of winter specimens often equivocal, and of sight records impossible. Recorded as passage migrant in many localities. Affects semi-desert, stunted thorn jungle, open deciduous scrub country and cultivation.

Extralimital. 'Breeds in Europe and W. Asia from S. England, N. Scandinavia, Finland, Russia and W. Siberia north to lat. 64°N. on the Yenisey and east to Lake Baikal, south to the Pyrenees, the Alps, Yugoslavia, Bulgaria, the Caucasus and Tien Shan. Winters in the Mediterranean region, Africa south to the Equator, and India' (Peters).

Jynx torquilla



1 *J. t. himalayana* (797a). 2 *J. t. torquilla* (796).
3 *J. t. chinensis* (797). 4 *J. t. japonica* (RE).

GENERAL HABITS, FOOD, VOICE and CALLS. As in 797a, q.v.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. For description of plumages and structure (also bionomics) see Witherby, 1938, 2: 292-6.

Differs from *J. t. chinensis* (797) in being paler, less brown above, with the dark markings on nape, back, and scapulars brownish rather than blackish. Below, paler on throat and upper breast, the spots and vermiculations on the underparts being finer, less coarse.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	83-91	14-17	19-20	61-71 mm
♀♀	83-91	—	—	— mm

Wing 30 ♂♂ (Sweden) 84-94 (av. 89) mm — Vaurie.

WOODPECKERS

171

habitats in winter, but apt to be overlooked due to its drab sparrow-like appearance and unobtrusive behaviour. A bird ringed in Saurashtra in October 1960 was recaptured in the same locality the following year almost to the date (Shivraj Kumar, JBNHS 58: 807). Though a member of the woodpecker family, feeds more on ground than on trees. Clings to upright stems and branches, where its coloration is remarkably obliterative, as well as perches crosswise like a true passerine. Picks ants etc. off branches and from crevices of bark, but does not 'drum' like woodpecker. Hops about on the ground with tail partially cocked, like Indian Robin, picking ants and crawling insects: frequently flushed in open scrubland while thus engaged. Flies up into a branch or bush when disturbed, soon descending again to resume feeding. Dipping flight, habit of twitching the wings upon alighting, and general behaviour very finch-like. When surprised within its nest-hole or handled, has a comical way of stretching neck and bill upwards, erecting forehead feathers, and screwing neck continuously from side to side like a clockwork toy, whence the name 'Wryneck'. This apparently an agonistic posture to deter would-be enemies: but the bird makes no sound nor any attempt to peck.

FOOD. Chiefly ants and their eggs and pupae. In an intensively cultivated area in Bihar, stomachs of 8 examples found crammed almost exclusively (up to 500 in a single stomach) with the ant *Phidole malini*, with a few examples of *Camponotus compressus* and the weevil *Myliocerus discolor*, picked up mostly in cotton fields (Mason & Lefroy, 1912).

VOICE and CALLS. Only occasionally heard in winter, more commonly in spring and summer: a shrill, quick-repeated and rather nasal *cheem, cheem, cheem* (4 or 5 times, at c. 3 per second) of a timbre between the notes of Common Myna and Goldenbacked Woodpecker. This usually the first indication of the bird's presence in a locality (SA). In summer (breeding?) 'a loud plaintive note of several syllables *ter-ter-ter-ter* repeated very quickly about 18 times, audible for a long distance — reminiscent of the distant call of an angry kestrel' (Whistler).

BREEDING. *Season.* (in Kashmir) chiefly May-June. *Nest.* a tiny natural hollow or slit in a willow, mulberry or chenar tree and the like at varying heights. The most favoured sites are evidently disused borings of the Brown-fronted Woodpecker with apertures small enough to exclude interloping mynas and starlings. Self-excavation of holes, as reported, needs confirmation. *Eggs.* 6 to 8, white, slightly glossed, oval, somewhat pointed at the small end. Average size of 13 Kashmir eggs 21.1 x 15.5 mm (BBO). Share of the sexes in incubation, and period, undetermined. Young fed largely on ants, ants' eggs and pupae dug out of the ground and conveyed in over-flowing beakfuls by both parents.

MUSEUM DIAGNOSIS. Differs from 796 and 797 in being more vermiculated on the lower breast, abdomen and flanks: the markings broader, less arrow-shaped, and tending to coalesce, giving the abdomen a barred rather than spotted appearance.

MEASUREMENTS

Wing 12 ♂♂ 81-90 (av. 86) mm — Vaurie.

Weight 20 ♂♀ (possibly mixed subspecies) 30-39 (av. 34) g — SA.

COLOURS OF BARE PARTS. Iris brown. Bill brownish flesh colour; gape yellowish cream; mouth pale pink. Legs and feet greyish leaf-green; claws dusky.

170

PICIFORMES

COLOURS OF BARE PARTS. Iris hazel brown. Bill, legs and feet pale brownish horn colour.

797. *Jynx torquilla chinensis* Hesse

Jynx torquilla chinensis Hesse, 1911, Orn. Monatsb. 19: 181
(China, Tsingtao, Shantung)
Baker, FBI No. 1424 (part), Vol. 4: 100

LOCAL NAMES. *Gārdān-jengtha* (Hindi); *Meda nulingadu* (Telugu); *Doo garu* (Cachari).

SIZE. Bulbul —; length c. 19 cm (7½ in.).

FIELD CHARACTERS. As in 796. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Winter visitor (c. September to March-April) to eastern India including Sikkim, Bhutan, Assam and Manipur; also East Pakistan. Winter ranges of the populations not worked out. Affects open scrub country and cultivation environs.

Extralimital. Breeds from the southern end of Lake Baikal, N. Manchuria and the Amur south to N. Szechuan and the Yangtze Valley. Winters in India, Burma, Thailand, S. China and northern Indochinese countries (Peters).

GENERAL HABITS, FOOD, VOICE and CALLS. As in 797a, q.v.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Differs from nominate *torquilla* (796) in being darker: browner above with the dark markings on nape, back, and scapulars usually better defined and more blackish, less brownish; darker ochre on throat and upper breast, the vermiculations and spots on the underparts averaging slightly coarser (Vaurie).

MEASUREMENTS

Wing 20 ♂♂ 82-87 (av. 85.5) mm — Vaurie.

COLOURS OF BARE PARTS. As in 796.

797a. *Jynx torquilla himalayana* Vaurie

Jynx torquilla himalayana Vaurie, 1959, Amer. Mus. Novit., No. 1963: 9
(Inshan, Wardwan Valley, Kashmir)
Baker, FBI No. 1423 (part), Vol. 4: 99

LOCAL NAME. *Viri mōi* (Kashmir).

SIZE. Bulbul —; length c. 19 cm (7½ in.).

FIELD CHARACTERS. As in 796. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Breeds in the NW. Himalayas from the Kurram Valley (?) to Chitral, Gilgit, Ladakh, Baltistan, Kashmir and Himachal Pradesh from c. 1500 to 3300 m; arriving in March-April, leaving c. September. In summer frequents the better wooded portions of bottom valleys with orchards etc., and edges of the thinner mixed forests. Winters south in the plains; but the winter ranges of the populations overlap extensively and have not been worked out. Specimen, Sambalpur dist., Orissa (JBNHS 76: 162).

Extralimital. Probably extends to Badakhshan and southern Tadzhikistan.

GENERAL HABITS. Keeps singly or in pairs: transient 'invasions' may erupt locally for a day or two on migration. Is fairly common in appropriate

172

PICIFORMES

Subfamily PICUMINAE: PICULETS

Key to the Genera

	Page
Toes four; orbital region feathered.....	<i>Picumnus</i> 172
Toes three; orbital region naked.....	<i>Sasia</i> 174

Genus PICUMNUS Temminck

Picumnus Temminck, 1825, Pl. col., livr. 62, text to pl. 371. Type, by subsequent designation, *Picus minutissimus* (Gmel.) Temm., pl. enl. 786, f. 1 = *Picumnus bufford* Lafresnaye

Bill conical, compressed, and pointed; tip of upper mandible slightly wedge-shaped. Nostrils and angle of chin concealed by dense plumes with black bristles projecting beyond. Circumorbital area feathered. Body plumage soft, lax and lengthened. Wings and tail rounded. Toes four.

PICUMNUS INNOMINATUS BURTON: SPECKLED PICULET

Key to the Subspecies

Upperparts brighter, more tinged with orange; head paler tinged with green.....	<i>P. i. innominatus</i>
Upperparts duller, with less orange tint; head darker and more grey.....	<i>P. i. malayensis</i>

798. *Picumnus innominatus innominatus* Burton

Picumnus innominatus Burton, 1836 (1835), Proc. Zool. Soc. London (3): 154
(Himalayas = Sikkim)

Vireo innominata similans Ticehurst, 1933, Bull. Brit. Orn. Cl. 54: 20 (Murree)
Baker, FBI No. 1416, Vol. 4: 92

Plate 61, fig. 2

LOCAL NAMES. *Wiri* (Nepal); *Dangchim* (Lepcha); *Danja gadajis tirling* (Cachari).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. A diminutive woodpecker with short, soft, rounded black-and-white tail.

Male. Above, back and mantle bright yellow-olive; forecrown black-and-orange; a broad blackish olive band behind eye and down side of neck bordered above and below by conspicuous whitish bands; a dark moustachial stripe under the lower band. Below, yellowish white with bold black spots coalescing into bars on posterior flanks.

Female. Similar to male but with the whole crown yellow-olive, concolorous with back.

STATUS, DISTRIBUTION and HABITAT. Resident. The Himalayas from about Abbottabad and Murree in W. Pakistan (c. 73°E.) eastward through Kashmir, Himachal Pradesh, Garhwal, Kumaon, Nepal, Sikkim, northern Bengal



One of central pair of rectrices, x c. 1 (After Hartert)



x c. 1

WOODPECKERS

173

(Darjeeling dist.) and Bhutan to Assam north and west of Brahmaputra R., and in the Khasi Hills: plains, foothills and up to c. 2000 m (recorded up to c. 3000 m in NW. Himalayas). Affects low jungle and tangled brushwood with bamboos, in moist-deciduous and semi-evergreen biotope. In the Himalayas and Assam habitat largely coincident with that of Rufous Piculet (800, 801).

GENERAL HABITS. Keeps singly or in pairs. Commoner than it appears to be, but liable to be overlooked amongst the restless itinerant hunting parties of tits, warblers, nuthatches and small tinelines, etc. with which it usually associates. May be picked out by its typical 'triangular' woodpecker shape and its habit of working as a detached outrider of the flock, chiefly on the end-twigs of trees and shrubs, frequently on stems of low bushes close to the ground. Creeps energetically along or in circles around thin branches like a nuthatch, clinging on the underside back to the ground, tapping persistently now and again in true woodpecker style — producing a surprisingly big noise for such a small bird. Also perches crosswise like a passerine, and has been observed to hover like a sunbird in front of a sprig to take a spider. In one phase of the courtship the male chases the female, scuttling forwards and 'in reverse' in little jerky spurts round and round a branch. Flight strong and direct with fewer of the typical woodpecker dips and undulations.

FOOD. Mainly ants and their eggs and pupae.

VOICE AND CALLS. A sharp *spit*, *spit* frequently repeated. A persistent mechanical drumming *br-r-r*, *br-r-r-r* with the bill on a bamboo stem or dead snag of a branch, repeated at regular intervals. Rather sonorous and remarkably loud and far-reaching for a bird of this size; given chiefly, but not only in the breeding season and serving to advertise the presence of individuals to one another.

BREEDING. Season, principally April and May. *Nest*, a hole drilled by the birds themselves in a hollow bamboo or rotten branch or stem of a small tree one to five metres up, often used for more than one year; entrance-hole barely 2.5 cm in diameter, chamber about 15 cm deep and 6 or 7 cm wide at the end. *Eggs*, 3 or 4, white, rather glossy, roundish ovals. Average size of 30 eggs 14.8 × 12 mm (Baker). Both sexes share in excavating the nest (?), incubation, and feeding the young. Period of incubation undetermined; presumed by Baker to be 11 days.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young (immature). A dull edition of the female. See Field Characters.

Differs from the eastern and S. Indian subspecies *malayorum* (799) in having the upper plumage bright golden yellow; underparts strongly washed with yellow and less heavily spotted with black.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	54-61	12-14	13-14	29-35 mm (BB, SDR, SA)

Weight 4 ♂ ♀ 10.5-12.5 g (Diesselhorst, SA).

COLOURS OF BARE PARTS. Iris brown or reddish brown. Bill dark slaty black or plumbeous, paler at tip. Legs and feet dull plumbeous.

WOODPECKERS

175

800. *Sasia ochracea ochracea* Hodgson

Sasia ochracea Hodgson, 1836, Jour. Asiat. Soc. Bengal 5: 778 (Nepal)

Baker, FBI No. 1419, Vol. 4: 95

Plate 61, fig. 5

LOCAL NAMES. *Sasya* (Nepal); *Chim*, *Chin pho* (Lepcha).

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. A diminutive, dumpy, stub-tailed bird, very unlike the conventional woodpecker.

Male. Deep rufous and olive overall, with rufescent golden forehead, a short broad white supercilium (above and behind eye), and stumpy black tail.

Female similar but lacking the yellow forehead, which is almost concolorous with the crown.

STATUS, DISTRIBUTION AND HABITAT. Resident; not uncommon, but unobtrusive and easily overlooked. The Himalayas from Garhwal eastward through Kumaon, Nepal, Sikkim, Bhutan, NEFA, and Assam in the Dibruigarh area: duns, foothills, and locally up to c. 2100 m. Affects mixed semi-evergreen and deciduous secondary scrub- and bamboo jungle.

GENERAL HABITS. Keeps singly or in pairs, frequently in marginal association with the quick-moving itinerant hunting parties of small insectivorous birds. Active and restless. Flits about in brushwood, clinging to and spiralling up bamboo culms and looping creeper stems etc. with quick jerky movements, busily tapping with its bill like a nuthatch or tit every now and again for minutes at a time, making an inordinately loud noise. Also perches crosswise on a twig like a passerine. Sometimes hops amongst the debris of decaying bamboo stems and mulch on the ground with its absurd little tail cocked up like a wren's. Has not been recorded 'drumming'.

FOOD. Insects: chiefly ants and their eggs and pupae.

VOICE AND CALLS. 'A querulous miniature of its larger brethren, uttered both in flight and while climbing' (Baker).

BREEDING. Season, not properly determined: eggs taken between May 25 and July 2. *Nest*, a tiny hole (c. 2.5 cm in diameter) drilled fairly low down in a decaying hollow bamboo, in mixed scrub- and bamboo jungle. *Eggs*, 3 or 4, white, rather glossy roundish ovals, indistinguishable from those of Speckled Piculet. Average size of 12 eggs 15.9 × 12.7 mm (Baker). Other facts of breeding biology unknown.

MUSEUM DIAGNOSIS. Differs from the Burmese population (801) in being much darker more olive above, with deep ferruginous underparts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	52-55	12-15	14-15	22-24 mm (SA, SDR, BB)

Weight 1 ♂ 10 g (SA).

COLOURS OF BARE PARTS. Iris red; circumorbital skin crimson in ♂, pale magenta in ♀. Bill: upper mandible black, lower pale grey. Legs and feet yellowish brown.

174

PICIFORMES

799. *Picumnus innominatus malayorum* Hartert

Picumnus innominatus malayorum Hartert, 1912, Vög. pal. Fauna 2: 937
(Gunong Ijau, Perak, Malaya)

Picumnus innominatus arunculorum Hartert, 1912, Vög. pal. Fauna 2: 937
(Kotagiri, Nilgiri Hills)

Baker, FBI No. 1417, 1418, Vol. 4: 94

LOCAL NAME. *Mārūmkotti* (Malayalam).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 798. See Museum Diagnosis.

General effect and coloration reminiscent of Thickbilled Flowerpecker, *Dicaeum agile* (1892).

STATUS, DISTRIBUTION AND HABITAT. Resident. The Western Ghats complex (including Nilgiri, Palni and associated hills) from about Goa and Belgaum (c. 16°N.) south through western Mysore (Malnaad) and Kerala: Andhra (Eastern Ghats), eastern Madhya Pradesh (Bastar dist.), Orissa (hill tracts), southern Bengal (Khulna Sunderbans), East Pakistan (hill tracts), Mizo (?), Manipur, Nagaland, Assam east of Brahmaputra R., and eastern NEFA (Mishmi Hills): foothills and up to c. 2000 m. Affects moist-deciduous and semi-evergreen secondary jungle and mixed bamboo forest. In SW. India habitat coincident with that of Great Black (830) and Larger Goldenbacked (862) woodpeckers.

Extralimital. Eastern Burma, southern Shan States, Thailand, Malay Peninsula, Vietnam, Laos, Sumatra, Borneo (Peters).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 798, q.v.

BREEDING. Season, in SW. India January to March; elsewhere evidently somewhat later — March–April. *Nest*, eggs and breeding biology as in the nominate subspecies.

MUSEUM DIAGNOSIS. Upperparts duller and paler than in *innominatus* (798); crown somewhat darker, with the dark centres to the feathers more pronounced. Underparts, excepting throat, rather more heavily spotted and with a paler yellow wash.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	57-62	11-12	12-14	30-35 mm (SA, HW, Koelz)

COLOURS OF BARE PARTS. As in 798.

Genus *SASIA* Hodgson

Sasia Hodgson, 1836, Jour. Asiat. Soc. Bengal 5: 778. Type, by original designation, *Sasia ochracea* Hodgson

Differs from *Picumnus* in having only three toes (first, or inner hind-toe wanting), and a naked circumorbital patch. Tail even shorter than in *Picumnus*; culmen slightly more rounded.

SASIA OCHRACEA Hodgson: RUFOUS PICULET

Key to the Subspecies

Darker above; underparts deep ferruginous.....*S. o. ochracea*
Paler above; underparts orange-rufous.....*S. o. reichenowi*

176

PICIFORMES

801. *Sasia ochracea reichenowi* Hesse

Sasia ochracea reichenowi Hesse, 1911, Orn. Monatsb. 19: 181

(Burma, type from Thayetchaung, Tenasserim)

Sasia ochracea guerulicox Baker, 1926, Bull. Brit. Orn. Cl. 47: 43
(Tipperah Hills, eastern Bengal)

Sasia ochracea ferruginea Koelz, 1952, Jour. Zool. Soc. India 4: 44
(Kohima, Naga Hills)

Baker, FBI Nos. 1420, 1421, Vol. 4: 96, 97

LOCAL NAME. *Dao jagadaiya kashiba gajao* (Cachari).

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. As in 800. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; not uncommon, but unobtrusive and easily overlooked. Assam south of Brahmaputra R., Nagaland, Manipur, Mizo dist. and East Pakistan (hill tracts): plains level to c. 1700 m. Affects mixed semi-evergreen and deciduous secondary scrub- and bamboo jungle.

Extralimital. Burma, S. Shan States, N. Tenasserim, N. and E. Thailand, Laos and Vietnam.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 800, q.v. A sharp, high-pitched *trik* similar to the call of *Ceryx* or *Pnoepyga* (Heinrich).

BREEDING. Season, March to June. *Nest* and *eggs* (c/3 or 4) as in 800. Nest-holes usually drilled low down in decaying bamboos, occasionally in branches of small trees. Average size of 40 eggs 15.3 × 12.2 mm (Baker). Courtship display described as 'very pretty and quite typical of the family. The little female crouches against a bamboo or trunk of a tree and the little male then flutters on to the same a foot or two above her, at once running rapidly backward towards her; arrived where she is, he then drops a few feet and runs up to her, seems to skip over her and run up the bamboo, and then go through all the procedure again, perhaps once or twice, perhaps half a dozen times before anything further takes place. All the time the head and neck of both birds are twisted backwards and forwards, and volleys of little squeaks are uttered, growing louder and louder until the finale is reached' (Baker).

MUSEUM DIAGNOSIS. Differs from nominate *ochracea* (800) in being much paler and less olive above, with orange-rufous underparts (c. deep ferruginous).

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 800.

Subfamily PICINAE: WOODPECKERS

Key to the Genera

	Page
I Primaries spotted or banded	
A Nodris concealed by feathers	
a Toes mostly four	
1 Mantle wholly or partly green; back not barred..... <i>Picus</i>	181
2 Mantle black and white	
i Nasal ridge less than half length of bill and nearer commissure than culmen at base..... <i>Hytopicus</i>	210

WOODPECKERS

177

ii	Nasal ridge half or more than half length of bill and about half-way between culmen and commissure.....	<i>Picoides</i>	212
b	Toes three		
3	Mantle green or red.....	<i>Gecinulus</i>	204
B	Nostrils exposed		
c	Mantle rufous or crimson, more or less banded		
4	Culmen nearly straight, tip truncated.....	<i>Blythipicus</i>	237
5	Culmen curved, tip pointed.....	<i>Micropternus</i>	177
d	Mantle golden-olive or crimson, not banded		
6	Hallux large, about half length of second toe.....	<i>Chrysocolaptes</i>	239
7	Hallux small, about one-third length of second toe or lacking	<i>Dinopium</i>	195
II	Primaries without spots or bands		
C	Inner secondaries with large spots; wing under 105 mm..	<i>Hemicircus</i>	235
D	No spots on inner secondaries; wing over 180 mm		
e	Plumage nearly all ashy grey.....	<i>Mulleripicus</i>	206
f	Plumage mostly black.....	<i>Dryocopus</i>	208

Genus MICROPTERNUS Blyth

Micropternus Blyth, 1845, Jour. Asiat. Soc. Bengal 14 (1): 194. Type, by original designation, *Picus badius* Raffles

Bill curved above, without nasal ridge; chin-angle nearer to tip of bill than to gape; nostrils rounded and exposed. Wing rounded. Tail-feathers pointed, the outer pair just exceeding tail-coverts in length. First toe very short, with very small claw; third and fourth toes subequal.

MICROPTERNUS BRACHYURUS (Vieillot): RUFOUS WOODPECKER

Key to the Subspecies

A	Feathers of throat with longitudinal streaks		
a	Larger and paler.....	<i>M. b. humei</i>	177
b	Smaller and darker.....	<i>M. b. phaeiceps</i>	178
b	Feathers of throat scaly patterned.....	<i>M. b. jerdonii</i>	179

802. *Micropternus brachyurus humei* Kloss

Micropternus brachyurus humei Kloss, 1918, Ibis: 109 (Rohilkand; restricted by Baker, 1921, JBNHS 28 (1): 133; corrected by Whistler & Kinnear to Kumaon bhabar, ibid. 37: 291)

Baker, FBI No. 1390, Vol. 4: 64

LOCAL NAMES. None specifically recorded. *Kāthphōra* for all woodpeckers (Hindi); *Kāth thokā* (Bengali); *Sūtār* (Marathi).

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. As in 804. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. The lower Himalayas from about Dehra Dun — Garhwal, Kumaon and possibly western Nepal: terai and foothills up to c. 1000 m. Affects sal forest and mixed secondary and bamboo jungle, in subtropical and moist-temperate biotope.

12

WOODPECKERS

179

BREEDING. Season, chiefly April and May. Nest, eggs and breeding biology as in *jerdonii* (804).

MUSEUM DIAGNOSIS. Differs from *humei* in being slightly smaller, with a shorter bill on average. Upperparts slightly darker (more bay), but otherwise very similar to *humei* including the squamation on the throat which is more in the nature of longitudinal streaks than scalloping.

MEASUREMENTS

		Wing	Bill (from skull)	Tarsus	Tail
Central Nepal	4 ♂♂	130-133	30-31	—	61-68 mm
	4 ♀♀	127-131	28-31	—	65-68 mm
Sikkim & Assam	36 ♂♂	119-130	26-30	—	— mm
					(Ticehurst)
Bastar & Orissa	2 ♂♂	122-126	28-29	23-25	65-67 mm
	3 ♀♀	121-126	26-29	21-22	58-65 mm
					(SA)

Weight 1 ♂ 102 g (SA); 1 ♀ 113 g (Scully).

COLOURS OF BARE PARTS. As in 804.

804: *Micropternus brachyurus jerdonii* (Malherbe)

Phaiopterus jerdonii Malherbe, 1849, Rev. et Mag. Zool. 1 (2): 535

(Indian Peninsula; restricted to Travancore)

Micropternus brachyurus lanka Kloss, 1918, Ibis: 108 (Ceylon)

Micropternus brachyurus kanaray Koeltz, 1950, Amer. Mus. Novit., No. 1452: 5

(Londā, Belgaum dist., Bombay)

Baker, FBI No. 1392, Vol. 4: 65 (= *gularis*)

Plate 62, fig. 14

LOCAL NAMES. *Chempān mārmākkōtti* (Malayalam); *Dūmbura kerellā* (Sinhala); *Mārmākkōtti*, *Thachchan kūrūvi* (Tamil).

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. A chestnut-rufous woodpecker, narrowly cross-barred with black on upperparts, wings and tail. Feathers of throat pale-edged producing a scaly or scalloped pattern. Male distinguished from female by a crescent-shaped crimson patch of feathers under the eye. See Museum Diagnosis.

Young (immature). More heavily barred than adult both above and below, the bars on the underparts crescentic in shape on breast and abdomen.

STATUS, DISTRIBUTION and HABITAT. Resident; locally common. From about the Tapi R. in Gujarat south through western Maharashtra, Mysore, western Tamil Nadu (also Shevaroy Hills), Kerala and Ceylon; wooded plains and foothills up to c. 1000 m. Affects secondary jungle mixed with bamboo, in moist-deciduous biotope.

GENERAL HABITS. Goes about in pairs and is usually met with in jungle abounding in carton nests of tree ants with which it is closely associated. Frequently seen hammering away and digging into such ants' nests, while

178

PICIFORMES

GENERAL HABITS, FOOD, VOICE and CALLS. As in 804, q.v.

BREEDING. Season, chiefly April to June. Nest, eggs and breeding biology as in the Southern subspecies (804).

MUSEUM DIAGNOSIS. The largest of the three Indian races. Upperparts paler, less bay than in the other two; head greyer. Sides of head, chin and throat much paler, the squamation on the last being in the nature of chestnut and buff streaks as in *phaeiceps* (803) v. dark chocolate and whitish scalloping in *jerdonii*.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
7 ♂♂	129-145	31-33	66-73 mm (Whistler)

COLOURS OF BARE PARTS. As in 804.

803. *Micropternus brachyurus phaeiceps* Blyth

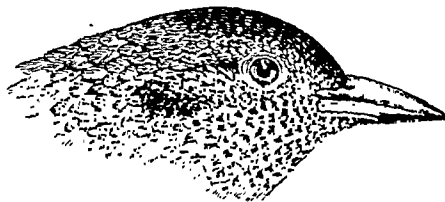
Micropternus phaeiceps Blyth, 1845, Jour. Asiat. Soc. Bengal 14 (1): 195 (Arrakan) [near Calcutta vide Ticehurst, JBNHS 35: 32]

Micropternus brachyurus mesos Kloss, 1918, Ibis: 109 (Cuttack, Orissa)
Baker, FBI No. 1389. 1391. Vol. 4: 63, 65

LOCAL NAME. *Daoja gadaiya tunti* (Cachari).

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. As in 804. See Museum Diagnosis.



x c. 1

STATUS, DISTRIBUTION and HABITAT. Resident; locally common. From Nepal (west-central ?) eastward through Sikkim, Bhutan, Assam, Nagaland, Manipur, and East Pakistan. West Bengal, Bihar, Orissa, eastern Madhya Pradesh (Balaghat and Bastar dists.) and south in northern Andhra to c. 18°N. (Anantgiri). Terai, duars, plains and foothills up to c. 1500 m; commoner below c. 700 m than above. Affects sal and secondary mixed forest with bamboo, in moist-deciduous biotope.

Extralimital. Extends through Burma (including the Shan States), and Thailand.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 804, q.v.

180

PICIFORMES

clinging to them or from an adjoining perch. Comes out after a bout of digging on to a neighbouring branch (sitting across it like a passerine) picking out the ants from its plumage and swallowing them. The head of the bird, abdomen and tail-tip are usually besmeared with a strong-smelling resin, often with numerous ants' heads sticking to the tail. The origin of this resin is not quite clear. Much given to drumming, but on the whole rather silent vocally.

FOOD. Mainly ants and their pupae, of which *Crematogaster* spp., *Phidola malinai* and *Oecophylla smaragdina* have been commonly identified. The first perhaps forms the staple food item; as many as 2600 *Crematogaster subnuda* have been counted in a single stomach (Mason & Lefroy, 1912). Occasionally takes fruit, especially wild figs (*Ficus*), and flower nectar (*Erythrina*, *Salmalia*); has been observed clinging to a smooth banana stem, puncturing it near the base of the leaves and sucking the sap.

VOICE and CALLS. A high-pitched nasal *keen*, *keen*, *keen* almost invariably repeated 3 times (rarely 4), very similar to one of the commoner notes of the Common Myna and of the same timbre.

Drums (evidently male only) frequently and regularly in the breeding season, sporadically and half-heartedly at other times. The drumming consists of a series of very rapid 'vibratory' hammering with the bill on a tree-trunk or bamboo to which the bird is clinging upright. It starts softly and works up to a reverberating crescendo of sound audible a quarter kilometre away. The bursts, of 10-12 strokes each, are repeated every 10 or 15 seconds. After each burst the drummer turns his head round purposefully to right and left as if expecting a response, and often gets it from another performer in the distance. Often drums at the same spot for over quarter of an hour, thereafter flying off to resume from elsewhere within its territory (?). The drumming is not interpolated with any vocal calls: it is given chiefly till the morning warms up, and again in the cooling afternoon until sunset. Flight undulating, typical of the woodpeckers — a few rapid wing-beats followed by a long dipping bound with wings closed to sides.

BREEDING. Season, principally February to end April; in Ceylon March to June. Nest, normally a hollow excavated in a 'live' oval-shaped carton nest of tree ants (*Crematogaster*, *Plagiolepis*, etc.) made of a blackish papiermâché-like substance commonly in trees 4 or 5 metres from the ground. Usually a lateral entrance-hole c. 5 cm in diameter gives access to the hollowed-out interior, leaving a wall about 25 mm thick all round the chamber. Only occasionally nests in tree-holes like a conventional woodpecker. Eggs, 2 or 3, white, unglazed, slightly longish ovals. Average size of 10 eggs 28.1 x 20.1 mm (Baker). Both sexes share in excavating the nest: share in incubation, period, and other details unknown. The eggs, incubating bird and chicks, even when newly hatched and naked, remain unmolested by the otherwise ferocious insects, the immunity being doubtless derived through the acrid 'anty' smell acquired by the birds and contents of the nest from physical contact with, and a diet of, the ants. This is a subject for closer investigation.

MUSEUM DIAGNOSIS. Distinguished from both *humei* and *phaeiceps* by the squamation on throat being dark chocolate and whitish (v. chestnut and buff), the squamation being more in the nature of scalloping than of longitudinal streaks. There is a

WOODPECKERS

181

slight decline in size from the northern parts of its range southward to Kerala and Ceylon.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	117-134	26-30	c. 24	61-65 mm
♀♀	117-130	27-30	c. 24	60-65 mm

(SA, HW, Koelz)

Kerala birds:

4 ♂♂	117-121	26-29	—	60-63 mm
2 ♀♀	117-120	27-28	—	62-63 mm

(SA)

Ceylon birds:

9 ♂♂	115-122	26-30	—	—
6 ♀♀	116-122	25-28	—	—

(HW)

Weight 4 ♂♂ 95-108 g (SA).

COLOURS OF BARE PARTS. Iris brownish red. Bill: upper mandible horny black, lower mandible white, horny at base; mouth greyish pink. Legs and feet bluish green; claws black.

Genus *PICUS* Linnaeus

Picus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 112. Type, by subsequent designation, *Picus viridis* Linnaeus

Nostrils concealed by harsh plumes. Culmen slightly curved: a nasal ridge (obsolete or distinct) nearer to the culmen than to commissure at base of bill. Foot with 4 toes, the outer front toe longer than the outer hind toe. Tail less than two-thirds length of wing, strongly graduated, the outermost feathers shorter than their coverts. Sexually dimorphic in details.

Key to the Species

	Page
A. Lower parts streaked; male with crimson, female with black cap Tail barred throughout..... <i>P. squamatus</i>	181
Tail not barred throughout..... <i>P. myrmecophoneus</i>	184
B. Lower parts practically uniform; crown crimson and occiput black in male, both black in female..... <i>P. canus</i>	186
C. Lower parts striped on throat only; a golden yellow nuchal collar <i>P. flavinucha</i>	190
D. Lower parts barred; a yellow nuchal spot..... <i>P. chlorolophus</i>	192

PICUS SQUAMATUS Vigors: SCALYBELLED GREEN WOODPECKER

Key to the Subspecies

Darker; under plumage feathers with broad dark brown edges..... <i>P. s. squamatus</i>
Much paler; edges of feathers of under plumage very narrow and pale..... <i>P. s. flavirostris</i>

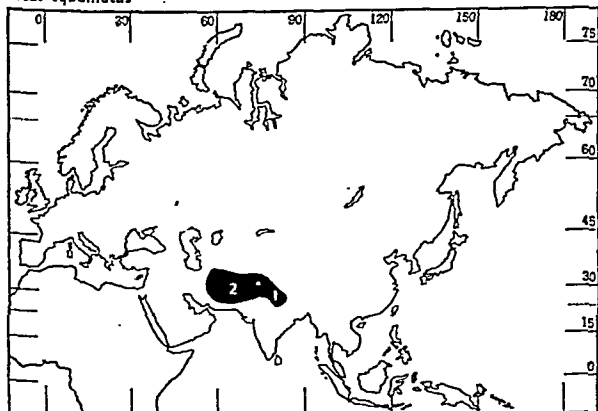
WOODPECKERS

183

Female. Similar to male but somewhat duller and less green. Crimson of crown replaced by black, speckled with leaden grey.

Young (immature) like female, but with the breast feathers also squamated like the abdomen though less boldly.

STATUS, DISTRIBUTION AND HABITAT. Resident. Common and fairly abundant; subject to slight winter-summer altitudinal movement: Western Himalayas from Chitral and Gilgit through Kashmir, Baltistan, Punjab Salt Range, Himachal Pradesh, Garhwal and Kumaon to central Nepal (Langtang Valley, Manangbhot); between c. 1000 and 3300 m. Affects open evergreen mixed oak and pine hill forest and the neighbourhood of clearings; frequents orchards near Srinagar and in other valleys in winter.

Picus squamatus

1 *P. s. squamatus* (807). 2 *P. s. flavirostris* (806).

GENERAL HABITS. Typical of the woodpeckers. Keeps in pairs, normally seen clinging to trunks of trees (occasionally to rocks and cliffs), the stiff pointed tail pressed against the bark functioning as the third leg of a tripod. Works its way up in a series of jerky spurts, directly or in spirals—occasionally sliding back in reverse to re-investigate—tapping with the bill from time to time to stampede insects lurking in the crevices and locate hidden pupal galleries of wood-boring beetles. The long, worm-like barbed-tipped tongue enables the grubs to be skewered out of the holes and crannies. Commonly descends to the ground, hopping about rather uncomfortably to pick up ants and termites which form a considerable proportion of its diet. These tiny insects are picked up in the tips of the mandibles. Flight swift and undulating, consisting of 4 or 5 rapid noisy flaps followed by a long dipping glide or bound.

FOOD. Mainly ants and termites, and larvae and pupae of wood-boring beetles. Also berries, especially in winter.

182

PICIFORMES

806. *Picus squamatus flavirostris* (Menzbier)

Gecinys flavirostris Menzbier, 1886, Bull. Soc. Imp. Nat. Moscou 62 (1): 439

(Murghab, Transcaspiya)

Gecinys gorii Hargitt, 1887, Ibis: 75 ('In Afghanistan meridionali')

Baker, FBI No. 1338, Vol. 4: 8

LOCAL NAMES. None recorded.

SIZE. Pigeon +; length c. 35 cm (14 in.).

FIELD CHARACTERS. As in 807. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. West Pakistan in the wooded NE. Baluchistan hills between c. 1300 and 3300 m (Zhob Valley, Ziarat, Quetta, and in Chagai dist.), in juniper, oak and poplar forest.

Extralimital. Transcaspiya to Afghanistan.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 807, q.v.

BREEDING. Favourite nesting localities in Chagai dist., Baluchistan, reported as Hazarganj Reserved Forest on Chiltan, Mari Chak Reserved Forest, Barshor and Surkhab valleys, and Kaisar jungle near Nushki 'which appears to be the western limit of this race in Baluchistan' (A. F. P. Christison MS.). Season curiously enough not mentioned though he found nests in pistachio, chilghuza, wild apricot, mulberry, juniper, willow, and even tamarisk scrub. In the last case the nest was '5 ft below ground level where the root was exposed in a nullah bank 7 ft from the bed'. No clutch size, description or measurements of eggs given!

MUSEUM DIAGNOSIS. Differs from nominate *squamatus* (807) in being much paler everywhere, with the pale markings broader and the dark markings narrower—especially the brown squamations on the underparts. Lower plumage much suffused with yellow.

MEASUREMENTS AND COLOURS OF BARE PARTS as in 807.

807. *Picus squamatus squamatus* Vigors

Picus squamatus Vigors, 1831 (1830-31), Proc. Zool. Soc. London (1): 8

(Himalayas, restricted to Simla-Almora dist. by Ticehurst & Whistler, 1924, Ibis: 471)

Baker, FBI No. 1337, Vol. 4: 7

Plate 62, fig. 6

LOCAL NAMES. *Tuktola* (Himachal Pradesh); *Koel makots* (Kashmir).

SIZE. Pigeon +; length c. 35 cm (14 in.).

FIELD CHARACTERS. A medium-sized green woodpecker with pale underparts boldly scalloped with black.

Male. Above, crown and crest crimson; a broad whitish supercilium bordered above and below with black lines; whitish cheeks and a prominent black moustachial streak. Upper plumage dull grass-green with a bright yellow rump. Below, throat and breast pale greyish; rest of underparts greenish white with scale-like black markings.

¹Synopsis No. 805, *Picus viridis bampurensis* (Zarudny), expunged as extralimital.

184

PICIFORMES

VOICE AND CALLS. A wild, ringing, rather melodious double-noted *klee-gu* or *pea-cock*; occasionally a single long-drawn nasal *cheent* or *peer* repeated every 10 or 15 seconds for many minutes continuously. In addition to these vocal sounds, produces a loud mechanical drumming by very rapid, 'vibratory' hammering with its bill on a selected 'sounding board' on a dead tree-trunk or branch. The male drums chiefly in the breeding season, evidently to advertise his territory.

BREEDING. Season, March to June, principally April and May. Nest, a circular hole about 6 cm across usually chiselled out in a large tree-trunk 2 to 6 metres from the ground—sometimes up to 15 metres or more—turning down into a vertical shaft 15 to 30 cm deep ending in a widened egg-chamber. Eggs, 5 or 6, white, broad ovals. Average size of 50 eggs 31 × 22.6 mm (Baker). Share of the sexes in excavation of nest-hole and incubation, and incubation period, unrecorded.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Above, darker than the Transcaspiya subspecies (806). Below, greyish white, less suffused with yellow, and with broader more prominent blackish scaly markings.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	155-172	27-33	c. 27	127-136 mm (Baker)

Weight 1 ♂ 185 g; 1 ♀ 170 g (Paludan).

COLOURS OF BARE PARTS. Iris in two rings, the inner red or crimson-pink, the outer paler pink. Bill horny yellow: dark at tip, more yellow on base of lower mandible. Legs dull yellowish green or greenish plumbeous.

808. Little Scalybelled Green Woodpecker. *Picus myrmecophoneus* Stresemann

Picus myrmecophoneus Stresemann, 1920, Verh. Orn. Ges. Bayern 14: 289 (Himalaya and Central India). New name for *Picus striolatus* Blyth, preoccupied

Brachylophus xanthopygerus 'Hodgs.' = J. E. & G. R. Gray, 1846, Cat. Spec. Mamm. Bds. Nepal and Tibet: 117 ex Hodgson in Gray, 1844, Zool. Misc. nomen nudum

quoted in synonymy of *Gecinys striolatus* (Blyth), preoccupied

Picus vittatus debae Baker, 1926, Bull. Brit. Orn. Cl. 45: 69 (Dhara Dun)

Picus vittatus darvae Van Tyne & Koelz, 1936, Occ. Papers Mus. Zool. Univ. Michigan, No. 334: 3 (Bhadwar, Kangra dist., Punjab, British India)¹

Baker, FBI No. 1339, Vol. 4: 10

Plate 62, fig. 7

LOCAL NAMES. (For all woodpeckers) *Mārāmlottī* (Malayalam); *Kerellā* (Sinhala); *Mārāmlottī*, *Thachcher kūrī* (Tamil).

SIZE. Myna +; length c. 29 cm (11½ in.).

FIELD CHARACTERS. A medium-sized typical woodpecker with stout chisel-shaped bill and stiff, pointed wedge-shaped tail.

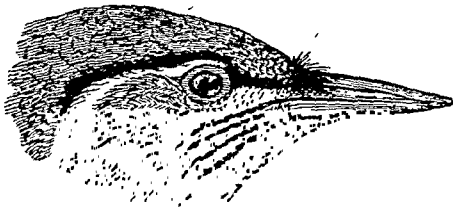
¹ Biswas (JENHS 58: 124) considers this a valid race.

WOODPECKERS

185

Male. Above, grass-green, with bright yellow rump; tail greenish brown, faintly and imperfectly barred with whitish. Crown and crest crimson; an orange-and-black patch on nape; a prominent white supercilium from eye backwards, bordered above by a black line; ear-coverts pale grey-brown; cheeks greyish white streaked with black. Below, pale greenish fulvous boldly scalloped or squamated with black; chin and throat fulvous-grey streaked with white.

Female similar but with crown and crest black instead of crimson.



x c. 1

STATUS, DISTRIBUTION AND HABITAT. Resident; fairly common locally, more or less throughout the Peninsula and Assam, east of a line from about Ambala to Mt. Abu; north to the Himalayan terai and foothills (up to c. 1700 m — rarely) from Punjab eastward through U.P., Nepal, Sikkim (?) and Bhutan (?). Also Ceylon (Dry zone) and East Pakistan. Semi-evergreen and moist-deciduous biotope. Affects sal, and mixed bamboo and deciduous forest, keeping to open secondary jungle, teak and other forest plantations, etc. (in S. India very partial to rubber plantations); from plains level to c. 1800 m in the peninsular and Ceylon hills.

Extralimital. Burma, SW. Thailand, Cambodia and South Vietnam.

GENERAL HABITS. Typical woodpecker; very similar in habits to 807, q.v. Perhaps feeds more commonly on the ground than most other woodpeckers.

FOOD. Largely ants and termites taken on the ground; also pecks at dry cattle dung for beetle larvae etc.; flower nectar when available (e.g. *Erythrina*, *Salmalia*); has been observed bibbing juice from a date palm tapped for toddy.

VOICE AND CALLS. Normally rather silent. A single-syllabled 'mild falsetto note' (Nichols), like that of 807, but seldom uttered. Also the characteristic mechanical drumming with the bill on a tree-trunk or bough.

BREEDING. Season, overall January to June, varying with locality — chiefly March, April and May on the mainland; April to September in Ceylon. Nest, a circular hole c. 5 cm across, cut in the bole of a tree turning downward into a vertical shaft up to c. 50 cm deep and ending in an expanded chamber. Nest-holes normally between 4 and 8 metres from the ground. Eggs, 3 to 5, pure white, broad ovals laid on the bare wood at the bottom of the shaft. Average size of 30 eggs 26.2 x 20.1 mm (Baker). Both sexes share in excavating the nest, incubation and feeding the young. Period unrecorded.

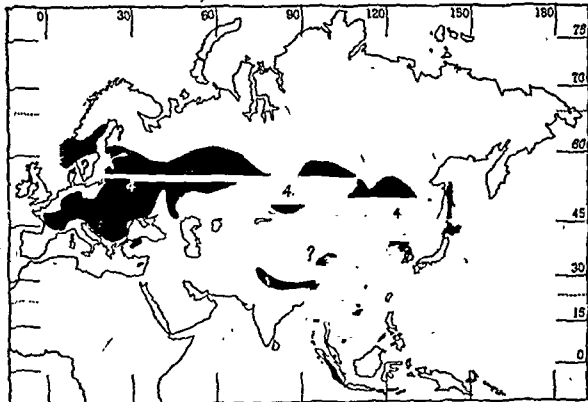
WOODPECKERS

187

STATUS, DISTRIBUTION AND HABITAT. Resident: common. The western Himalayas from Punjab (Murree) eastward through Himachal Pradesh, Garhwal and Kumaon to central Nepal (where it intergrades with 810). From the terai up to c. 2400 m, in moist subtropical and temperate forest biotope.

The species, in many geographical races, is widely distributed in Europe and Asia.

Picus canus



■ Breeding range

- 1 *P. c. sanguineus* (809).
- 2 *P. c. hessei* (810).
- 3 *P. c. sordidior* (811).
- 4 Other races (about 15) extralimital.

GENERAL HABITS. Typical of the woodpeckers and very similar to those of 807, q.v.

FOOD. Mainly ants and termites often taken on the ground, the termites being hacked out of ant-hills; also larvae and pupae of wood-boring beetles. Berries chiefly in winter; flower nectar as supplementary food in season.

VOICE AND CALLS. A nutty, high-pitched, rather musical peek, peek, peek, repeated in runs almost invariably of 4 or 5, fading out on the last note. Male drums frequently in the breeding season, commencing well before sunrise. Rattle loud but soft in tone — reminiscent of the dampened ring of an automatic telephone — in bursts two to three seconds long each, repeated every 10 to 15 (or 20) seconds. The drumming is punctuated more or less regularly from time to time by the vocal calls. The performance is given day after day from the same 'sounding board' near the top of a bare tree, and is sometimes kept up for over an hour in the early morning. Also has the typical chattering alarm cry of the family.

186

PICIFORMES

MUSEUM DIAGNOSIS. There is great individual variation in the size of bill and tail, partly due to wear, and also in plumage coloration. The latter is largely the result of abrasion which produces a peculiar silvery frosted appearance on the back. There is no spring moult in this species.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	124-138 (once 142)	28-38	22-26	76-97 mm
♀♀	124-134	25-35	21-26	78-93 mm (HW, SA)

Weight 1 ♂ 111 g (GD); 1 ♀ 98 g (SDR).

COLOURS OF BARE PARTS. Iris pinkish white with inner ring of brownish red. Bill horny slate, pale yellow on sides of lower mandible excepting tip; mouth greyish pink. Legs and feet greyish sage-green; claws horny.

PICUS CANUS Gmelin: BLACKNAPED GREEN WOODPECKER
Key to the Subspecies

A	Underparts green	Page
a	Above darker and more green; no bronze or golden sheen; below darker and greener.....	<i>P. c. sanguineus</i> 186
b	Above lighter with a strong bronze sheen; below more tinged with yellow.....	<i>P. c. hessei</i> 188
B	Underparts grey; rectrices very pale, no black.....	<i>P. c. sordidior</i> 189

809. *Picus canus sanguineus* Baker

Picus canus sanguineus Baker, 1926, Bull. Brit. Orn. Cl. 46: 70. New name for *Picus occipitalis* Vigors, preoccupied (Himalayas, Simla-Almora dist.) Baker, FBI No. 1343, Vol. 4: 13

Plate 62, fig. 5

LOCAL NAMES. None recorded.

SIZE. Pigeon ±; length c. 32 cm (12½ in.).

FIELD CHARACTERS. A largish green woodpecker with the typical stiff wedge-shaped tail and stout chisel-pointed bill.

Male. Above, dark green, tinged on the rump with bright yellow. Wing-quills dark brown with white bars; tail black, imperfectly barred paler. Forehead and forecrown crimson; hindcrown, occipital crest and nape black. Sides of head, including ear-coverts and supercilium grey, the last bordered above by a black line. Below, chin and throat greyish ashy, with a black malar stripe from lower mandible down each side. Rest of underparts dull yellowish olive-green, greyer on abdomen.

Female, like male but with whole forehead, crown and nape black, streaked with grey.

Young (immature), like female but duller, the tail-feathers more definitely barred. Underparts also more or less barred with whitish.

188

PICIFORMES

BREEDING. Season, principally May and June. Nest, the normal circular woodpecker cutting in a tree-trunk between 2 and 8 metres up, often under one metre. Recorded as low as 15 cm with the nest-chamber — in this case a natural hollow — actually below ground level. Eggs, 4 or 5, pure white broad ovals. Average size of 28 eggs 29.5 x 22.8 mm (Baker). Both sexes share in excavating the hole and feeding the young; evidently also in incubation. Period of incubation undetermined.

MUSEUM DIAGNOSIS. Differs from the east Himalayan *P. c. hessei* (810) in being larger and a purer green in coloration, less yellowish or bronze; it is also more heavily marked on the occiput. For subspecific determination only fresh-plumaged birds (after the complete post-nuptial moult) are useful since in worn dress abrasion gives a greyish cast to the feathers which is apt to be misleading. First-year birds are readily identified by the long first primary being rounded at the tip.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
Birds from Western Himalayas & Nepal:			
♂♂	157-165	46-49	— mm
(av. 160.6)*			(Greenway)†
* Size of sample not stated			
Birds from Central Nepal:			
9 ♂♂	145-152	40-44	98-108 mm
9 ♀♀	145-154	38-44	100-116 mm (BB)

Weight 5 ♂♂ 147-156; 6 ♀♀ 143-162 g (GD).

Central Nepal population intermediate between *sanguineus* and *hessei*.

COLOURS OF BARE PARTS. Iris crimson-brown. Bill horny black, plumbeous at gape. Legs and feet plumbeous slightly tinged with olive, or bluish slaty; claws horny brown; pads greyish white.

810. *Picus canus hessei* Gyldenstolpe

Picus canus hessei Gyldenstolpe, 1916, Orn. Monatsb. 24: 28
(Pak Koh and Den Chai, northern Siam)

Picus canus gyldenstolpei Baker, 1918, Bull. Brit. Orn. Cl. 39: 19
(Sadiya, north Lakhimpur, Assam)
Baker, FBI No. 1344, Vol. 4: 15

LOCAL NAMES. *Mong chok* (Lepcha); *Dao ja gadiya* (Cachari).

SIZE. Pigeon ±; length c. 32 cm (12½ in.).

FIELD CHARACTERS. As of 809. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. The eastern Himalayas from central Nepal (where it intergrades with *sanguineus*) eastward through Sikkim, Bhutan and NEFA: terai, duars and foothills up to c. 2100 m. Also Assam, Nagaland, Manipur, Mizo and Bangladesh (hill tracts). Specimen, Puri dist., Orissa (JBNHS 75: 924). Affects rather open mixed forest with bamboo in semi-evergreen biotope.

† Greenway, J. C., 1940: 'Oriental forms of *Picus canus*.' *Auk* 57: 550-60.

WOODPECKERS

189

Extralimital. The upper Chindwin area of Burma (Peters).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 809, q.v.

BREEDING. Season, chiefly May and June. Nest, eggs and breeding biology as in 809.

MUSEUM DIAGNOSIS. Differs from *sanguineiceps* in being smaller and having a strong golden or bronze sheen on the upper plumage; underparts also generally more yellow.

MEASUREMENTS

Wing	Bill (from skull)	Tarsus	Tail
Birds from North Cachar, Chin Hills, Naga Hills: 140-149	38-40	—	— mm
(av. 143.2)*			(Greenway)

* Size of sample not stated

Birds from Sikkim and Bhutan:

4 ♂♂	136-149	40-42	28-29	100-116 mm
7 ♀♀	140-150	36-40	26-32	99-110 mm
				(SA)

Weight 1 ♀ 137 g (Majumdar).

COLOURS OF BARE PARTS. As in 809.

811. *Picus canus sordidior* Rippon

Picus canus sordidior Rippon, 1906, Bull. Brit. Orn. Cl. 19: 32

(Yangtze River, W. Yunnan)

Gecinus guerinii kogo Bianchi, 1906, Bull. Brit. Orn. Cl. 16: 69.

(Bartschou, affluent fl. Nomu-tschu, tribut. fl. Mekong sup.)

Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Pigeon ±; length c. 32 cm (12½ in.).

FIELD CHARACTERS. As of 809. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. 'Very common in the Tsangpo Valley below Lilung' (Ludlow, 1944, *Ibis*: 368) in southeastern Tibet adjoining the Siang and Luhit Frontier Divisions of NEFA, and may occur within our limits. Has been collected between c. 2900 and 3550 m altitude. Affects fairly open conifer and deciduous forest.

Extralimital. Western China in provinces of Kansu and Sikang (Peters).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 809, q.v. Feeds much on the ground, taking fruits and berries as well as insects. Some of the specimens collected by Ludlow had been feeding on the fruits of an *Actinidia* shrub and their intestines were dyed indigo-blue as a result.

BREEDING. Unrecorded.

WOODPECKERS

191

FIELD CHARACTERS. A largish yellow-green woodpecker with rufous-banded dark brown wings and a conspicuous golden yellow nuchal crest, sometimes erected fanwise under excitement. Tail black, unbarred; underparts olive-grey.

Male has the chin and throat bright lemon yellow; foreneck rich brown streaked with white.

Female similar to male but with the chin and throat rufous brown instead of yellow.

STATUS, DISTRIBUTION AND HABITAT. Resident. Nepal, Sikkim, Bhutan, NEFA, Assam, Nagaland, Manipur, Mizo and Bangladesh (hill tracts). West Bengal, Bihar and Orissa (Simlipal Hills). Visakhapatnam dist., E. Ghats (JBNS 73: 394). From plains level to c. 2400 m in the Himalayas locally; preferential zone between c. 700 and 1500 metres. Affects open mixed evergreen and deciduous forest; partial to edge of cultivation clearings in foothills country.

Extralimital. Burma and southern Shan States. Widely distributed in other races in SE. Asia.

GENERAL HABITS. Keeps in separated pairs or scattered family parties of 4 or 5, often in close association with racket-tailed and other drongos with no ulterior motive apparent on either side! Feeds a great deal on the ground and rarely high up in trees.

FOOD. Ants, termites and grubs and wood-boring beetles, e.g. *Haplo-cerambyx spinicornis*, a destructive borer of the sal tree (*Shorea robusta*).

VOICE AND CALLS. 'A fairly loud, plaintive pee-ü . . . pee-ü (high/falling)'—Lister. A single metallic chēnk; when disturbed and flying off a rich 'laugh' rather like that of the Great Black Woodpecker (830) but less loud and more musical (SA).

BREEDING. Season, March to May. Nest, the usual shaft inside the bole of a tree with a round lateral entrance-hole 7 or 8 cm across, cut at heights of 3 to 5 or 6 metres from the ground. Eggs, 3 or 4, white, broad ovals. Average size of 40 eggs 28.8 × 22.2 mm (Baker). Both sexes share in excavating the hole, incubation, and feeding the young. Incubation period undetermined. Courtship, described by Baker, as follows: Birds of a pair continually chase one another with a little squeaking cry, finally alighting on a tree. Female crouches [on a branch ?] close against the bark. Male approaches her backwards, 'his head thrown right over his rump with beak held up and crest very widely expanded'. After getting within a few inches of her he sidles across to the other side and repeats the same action, the female squeaking and shivering with excitement during the entire performance. After a few repetitions of this manoeuvre copulation takes place. Details not very clear and needing amplification.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

'Juvenile male like adult above but the crest paler yellow; gular streak pale yellow; chin and throat white spotted with black; rest of underparts as adult but belly greyer' (Ticehurst).

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	163-177	40-45	27-32	114-127 mm
♀♀	166-173	37-42	29-30	113-135 mm
		(from skull)		(SA, BB)

(from skull)

190

PICIFORMES

MUSEUM DIAGNOSIS. Distinguished from *hessei* by the crown being conspicuously streaked with black, the black streaks coalescing to form a black patch on the nape.

MEASUREMENTS

	Wing	Bill (from skull)
6 ♂♂	149-156	42-44 mm
1 ♀	152	42 mm
		(Kinnear)

COLOURS OF BARE PARTS. As in 809.

PICUS FLAVINUCHA Gould: YELLOWNAPED WOODPECKER

Key to the Subspecies

Smaller; a yellowish gloss on the green of the upperparts *P. f. flavinucha*
 Much larger; no yellowish gloss on upperparts *P. f. kumaonensis*

812. *Picus flavinucha kumaonensis* (Koelz)

Chrysophlegma flavinucha kumaonensis Koelz, 1950, Amer. Mus. Novit., No. 1452: 4 (Kathgodam, Naini Tal dist., U.P.)

Baker, FBI No. 1353 (part), Vol. 4: 23

LOCAL NAMES. None recorded.

SIZE. Pigeon ±; length c. 33 cm (13 in.).

FIELD CHARACTERS. As of 813. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Garhwal and Kumaon in Uttar Pradesh, from about Dehra Dun to western Nepal (possibly): foothills and up to c. 1700 m. Affects sal and oak forest.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 813, q.v. In common with several other woodpecker species has the curious habit of digging parallel rows of small shallow holes or 'craters' round the stems of smooth-barked trees, like the American Sapsuckers (*Sphyrapicus* spp.). See A. E. Osmaston, JBNHS 24: 363-6.

BREEDING. Season, nest, eggs, etc. as in the nominate race.

MUSEUM DIAGNOSIS. Differs from *flavinucha* (813) in lacking the yellowish flush in the green of the upperparts and having the rufous bars on the primaries much wider. Is also larger in size: Wing over 180 mm; tail over 131 mm (Biswas).

COLOURS OF BARE PARTS. As in 813.

813. *Picus flavinucha flavinucha* Gould

Picus flavinucha Gould, 1834 (1833), Proc. Zool. Soc. London (1): 120

(Himalayas, Darjeeling)

Picus flavinucha marianae Biswas, 1952, *Ibis* 94: 213

(Mount Victoria, Chin Hills, upper Burma)

Baker, FBI No. 1353, Vol. 4: 23

Plate 62, fig. 4

LOCAL NAMES. *Mong kli ong* (Lepcha); *Daaja gadaiya* (Cachari).

SIZE. Pigeon ±; length c. 33 cm (13 in.).

192

PICIFORMES

Weight 5 ♂♂ 172-198 g; 3 ♀♀ 165-174 g (SA).

COLOURS OF BARE PARTS. Iris brownish crimson. Bill pale bluish grey, darker at base and gape, ivory colour at tips of both mandibles. Legs and feet greyish sage-green or plumbeous; claws plumbeous.

PICUS CHLOROLOPHUS Vicillot: SMALL YELLOWNAPED WOODPECKER

Key to the Subspecies

	Page
A Larger; wing over 125 mm	
a Wing mostly under 142 mm <i>P. c. chlorolophus</i>	193
b Wing mostly over 142 mm <i>P. c. simlae</i>	192
B Smaller; wing under 125 mm	
c Brighter above, with a distinct bronze wash on the wings <i>P. c. chlorigaster</i>	194
d Darker above, with no bronze wash on the wing <i>P. c. wellsi</i>	195

814. *Picus chlorolophus simlae* Meinertzhagen

Picus chlorolophus simlae Meinertzhagen, 1924, Bull. Brit. Orn. Cl. 44: 54 (Dehra Dun)

Baker, FBI No. 1347, Vol. 4: 18

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 27 cm (10½ in.).

FIELD CHARACTERS. As of 815. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. The lower Himalayas from Punjab (Dharmasala) through Himachal Pradesh, Garhwal, Kumaon and Nepal to an arbitrary boundary (the Arun Valley) at c. 87°E. long. Intergrades with *chlorolophus* over a considerable area from eastern Kumaon to east-central Nepal. Terai, bhabar and foothills, locally to c. 2100 m. Affects evergreen and moist-deciduous jungle.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 815, q.v.

BREEDING. Season, nest, eggs, etc. as in *chlorolophus*. Average of 4 eggs taken near Naini Tal 25.5 × 19.15 mm (Baker).

MUSEUM DIAGNOSIS. Like nominate *chlorolophus* but somewhat larger and with the nuchal crest usually a paler lemon-yellow r. orange-yellow. But the differences in size and colour between the West Himalayan and East Himalayan populations follow a continuous cline, hence the need for an arbitrary boundary as above.

MEASUREMENTS

♂ ♀ Wing 138-150 mm (mostly above 142) — Baker.			
Central Nepal birds (from the intergrading area) give:			
	Wing	Bill	Tail
		(from skull)	
8 ♂♂	135-146	30-33	96-104 mm
3 ♀♀	136-138	29-30	93-102 mm
			(Biswas)

Weight 1 ♂ 81 g; 2 ♀♀ 75, 83 g (Diesselhorst).

COLOURS OF BARE PARTS. As in 815.

WOODPECKERS

193

815. *Picus chlorolophus chlorolophus* Vieillot

Picus chlorolophus Vieillot, 1818, Nouv. Dict. d'Hist. Nat. 26: 78 (Bengal)

Baker, FBI No. 1346, Vol. 4: 17

Plate 62, fig. 2

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 27 cm (10½ in.).

FIELD CHARACTERS. A medium-sized yellowish green woodpecker with a golden yellow nuchal crest.

Male. Above, forehead, supercilia (continued behind to meet at nape) and a moustachial streak crimson; crown olive-green; nuchal crest golden yellow. Upper plumage bright yellowish green; wing-quills largely green and maroon-red. Tail brownish black with the central feathers edged bronze-green. Below, chin and throat brown, barred with whitish; breast olive-brown; rest of underparts barred brown and white.

Female. Similar to male but no crimson on forehead or malar stripe; crimson restricted to a short broad line from behind the eye to nape.

Young (immature) dull coloured above without any crimson on head. Underparts barred olive and white throughout.

STATUS, DISTRIBUTION and HABITAT. Resident. The lower Himalayas from about the Arun Valley in Nepal (c. 87°E.) eastward through Sikkim, Bhutan and NEFA. Assam, Nagaland, Manipur, Mizo, East Pakistan (hill tracts), lower Bengal, Bihar (Lohardaga). Terai, duars and foothills; locally to c. 2000 m. Affects mixed deciduous and evergreen secondary jungle.

Extralimital. Northern Burma and northern Shan States.

GENERAL HABITS. Typical woodpecker. Usually keeps in pairs, often in association with other woodpecker species or as a member of the itinerant mixed hunting parties of drongos, minivets, flycatchers, babblers and other insectivorous birds in forest. Commonly descends to the ground to pick ants etc.

FOOD. Insects, chiefly ants and termites; larvae and pupae of wood-boring and dung beetles. Berries as secondary food.

VOICE and CALLS. Advertising call (?) a plaintive, rather mournful-sounding, nasal single note *cheenk*, lasting c. ½ to 1 second—reminiscent of call of Black Bulbul—repeated monotonously every 15 to 30 seconds, often for 10 minutes or more at a stretch, while the bird is clinging motionless to a bare branch at the top of a forest tree. At each call the bill is raised to an angle of c. 45°, and head turned from side to side as if expecting a response, and yellow nape fluffed out into prominence. This call is given by both sexes. Other calls have been described as 'a most peculiar trill of 5 or more ascending notes, mistakable for some kind of cuckoo's', and a loud *quaaa* at intervals (Desirée Proud). Drums on wood in addition to the vocalizations.

BREEDING. Season, April–May. Nest, the usual woodpecker hole c. 5 cm in diameter in a dead or decaying tree-trunk, turned down into a vertical shaft up to 30 cm or more in depth and ending in a widened egg-chamber; no lining. The holes are often under 2 or 3 metres from the ground, but may be as high as 15 or 20. Eggs, 3 to 5, white, broad ovals. Average size of 50 eggs 24.3 × 19.0 mm (Baker). Both sexes share in excavating the hole, incubation, and feeding the young; incubation period undetermined.

WOODPECKERS

195

MUSEUM DIAGNOSIS. Differs from nominate *chlorolophus* in being smaller and much darker green above. Breast more or less spotted with white in all but the oldest birds. Extent of crimson on head much greater in both sexes; yellow on nuchal crest less in extent and much paler.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	120–128	26–32	20–24	78–89 mm
♀♀	119–128	26–30	20–23	77–84 mm

(SA, HW, Koelz)

Weight 4 ♂♂ 57–74 g; 3 ♀♀ 62–70 g (SA).

COLOURS OF BARE PARTS. Iris crimson. Bill horny brown or brownish black, yellow at sides of base, especially of lower mandible; mouth pink. Legs and feet greyish or dusky olive-green; claws horny.

817. *Picus chlorolophus wellsi* Meinertzhagen

Picus chlorolophus wellsi Meinertzhagen, 1924, Bull. Brit. Orn. Cl. 44: 56 (Ceylon)

Baker, FBI No. 1350, Vol. 4: 20

LOCAL NAMES. *Kondī kōhā kerellā* (Sinhala); *Mārāmkottī*, *Thachchan kūrēvī* (Tamil).

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. As of 815. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Endemic in Ceylon. Well distributed, in small numbers, throughout the low-country Wet zone (commonest in the foothills), and in some areas of the adjoining Dry zone; in the hills to c. 1800 m.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 815 and other Indian subspecies, 'Its call is a loud, harsh scream *queeter*, very reminiscent of one of the notes of the Indian Pitta' (Henry).

BREEDING. Season, February to July, chiefly March and April as in S. India. Nest and eggs as in *chlorigaster*, the latter approximately same size.

MUSEUM DIAGNOSIS. Differs from South Indian *chlorigaster* in being slightly smaller and with the upperparts a darker tinge of green, lacking most of the golden bronze sheen on the wings.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
1 ♂	118	26	20	80 mm
5 ♀♀	115–123	24–25	19–20	78–86 mm (Whistler)

'Wing from 111 mm in ♀♀ to 125 mm in ♂♂'; 'culmen " from 20 mm in ♀♀ to 25 mm in ♂♂' (Meinertzhagen).

Weight 1 ♀ 67 g (SDR).

COLOURS OF BARE PARTS. As in 816.

Genus *DINOPIUM* Rafinesque

Dinopium Rafinesque, 1814, Principes Fondamentaux de Somnologie: 2 of cover. Type, by monotypy, *Dinopium (Picoidea) erythraestus* Rafinesque based on 'le picolide à dos rouge' = *Picus javanensis* Ljungh

194

PICIFORMES

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Differs from West Himalayan *simlae* in averaging somewhat smaller with the nuchal crest bright orange-yellow r. pale lemon-yellow.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	126–142	21–28	c. 22–23	74–94 mm (Baker)

COLOURS OF BARE PARTS. Iris brownish crimson; bare skin round eye slaty plumbeous. Bill: upper mandible and tip of lower horny brown; upper mandible at gape, and basal portion of lower mandible, pale green. Legs and feet greenish plumbeous; claws brown.

816. *Picus chlorolophus chlorigaster* Jerdon

Picus chlorigaster Jerdon, 1844, Madras Jour. Lit. Sci. 13 (2): 139 (Southern India)

Baker, FBI No. 1349, Vol. 4: 19

Plate 62, fig. 3

LOCAL NAME. *Mārāmkottī* (Malayalam).

SIZE. Myna +; length c. 27 cm (10½ in.).

FIELD CHARACTERS. As of 815. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. The Sahyadri or Western Ghats complex from the Nabhada river (W. Khandesh, Surat Dangs) south to Kerala, including the Nilgiris, Palnis and associated hills in western Mysore (Malnaad). Extends east to the Shevaroy and Nallamalai hills, and thence northward in the Eastern Ghats to northern Andhra (Anantgiri, Lamasinghi) and Orissa (Mayurbhanj), in appropriate semi-evergreen and moist-deciduous biotope. From plains level to c. 1800 m; commoner in the foothills. Affects secondary jungle and mixed teak and bamboo forest. Partial to rubber and coffee plantations.

GENERAL HABITS. As in the other races, cf. 815.

FOOD. Ants and grubs; occasionally berries. Stomachs examined in a forest plantation area contained predominantly adults and larvae of *Cremastogaster* sp. (Formicidae), and larvae of *Hepalia machaeralis* (Pyralidae), a harmful defoliator of teak (*Tectona grandis*).

VOICE and CALLS. Usually silent on the wing. A single sharp mournful note *cheenk* or *cheek* as in 815. One described by Betts as 'a single sharp *chak*' is possibly a variant rendering of the same.

BREEDING. Season, overall January to May, chiefly March and April. Nest, the usual woodpecker hole excavated by the birds in the trunk or vertical branch of a forest tree, between about 5 and 7 metres from the ground. Frequently bored under one of the large plate-shaped fungi that project like brackets from the trunks of dead trees in damp localities. Often the entrance-hole is quite low down and hidden under the porch-like projection. Eggs, normally 2, exceptionally 3, white, blunt ovals. Average size of 12 eggs 25.8 × 18.8 mm (Baker). Breeding biology as in 815. Period of incubation undetermined.

196

PICIFORMES

Bill about same length as head; culmen slightly curved; nasal ridge not much developed, close to culmen; nostrils exposed. Hallux or inner hind-toe very small or absent; third and fourth toes about equal in length. Wings and tail proportionately longer than in *Micropternus*; outer tail-feathers longer than upper tail-coverts. A red occipital crest in both sexes; in male crown also red, in female black spotted with white.

Key to the Species

	Page
A Toes three	
1 A single black line down the centre of the throat.....	<i>D. javanense</i> 202
2 Two black lines down the sides of the throat divided by a brownish space	<i>D. shorii</i> 202
B Toes four	<i>D. benghalense</i> 196

DINOPIUM BENGHALENSE (Linnaeus): LESSER GOLDENBACKED WOODPECKER

Key to the Subspecies

1 Throat streaked with black and white	
a Back golden yellow	<i>D. b. benghalense</i> 197
b Back lemon-yellow	<i>D. b. dilutum</i> 196
2 Throat spotted black and white	
c Back orange-yellow	<i>D. b. puncticollis</i> 199
d Back golden olive-yellow	<i>D. b. lehmanni</i> 199
e Back darker, duller with a more olive wash; underparts creamy buff rather than white	<i>D. b. jeffernisi</i> 200
f Back mostly red	<i>D. b. psarodes</i> 201

818. *Dinopium benghalense dilutum* (Blyth)

Br. (achypternus) aurantius var. *Br. (achypternus) dilutus* Blyth, 1849, Cat. Bds.

Mus. Asiat. Soc.: 56 (Sind)

Brachypternus benghalensis girensis Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 23 (Sasan, Junagadh)

Baker, FBI No. 1396, Vol. 4: 69

LOCAL NAME. *Drakhan* (= carpenter, Sind).

SIZE. Myna +; length c. 29 cm (11½ in.).

FIELD CHARACTERS. As of 819. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; common but local. West Pakistan in Baluchistan, Sind, NW. frontier districts and southwest Punjab, possibly east to about Ferozepore (c. 74°E.); also Mt Abu and parts of W. Rajasthan; intergrading with adjoining races. Affects dry deciduous and thorn forest; partial to avenues of sheesham and babool trees, and date

The subspecific differences in this woodpecker follow a continuous cline. Moreover, the birds are subject to considerable individual variation in respect of the features upon which subspecific diagnosis is based. Therefore boundaries are difficult to assign, and in many intergrading areas only a certain percentage of extreme cases can be definitely identified.

WOODPECKERS

197

groves along roads and canals, in and around villages, and urban gardens and compounds.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 819, q.v.

BREEDING. *Season*, chiefly March and April. *Nest, eggs* and breeding biology as in 819 and other races. Old gnarled tamarisks and babool and sheesham trees are favoured for nest sites.

MUSEUM DIAGNOSIS. Crest very long. Differs, sex for sex, from nominate *benghalense* (819) in having the upperparts a much paler yellow with obsolete white spotting and indistinct dark flecking to the feathers; shoulders black with conspicuous white spotting; rump black. White of underparts purer and more extensive on chin, throat and foreneck, which are streaked with black.

MEASUREMENTS

	Wing	Bill (from feathers)
♂ ♀	142-147	28-37 mm (Baker)

COLOURS OF BARE PARTS. As in 819.

819. *Dinopium benghalense benghalense* (Linnaeus)

Picus benghalensis Linnaeus, 1758, Syst. Nat., ed. 10, 1: 113

(Benghala = Chandernagor ride Stresemann, 1952, Ibis 94: 517)

Brachypterus benghalensis palliatus Van Tyne & Koelz, 1936, Occ. Papers Mus.

Zool. Univ. Michigan, No. 334: 2 (Bhadwar, 2000 ft, Kangra dist., Punjab)

Baker, FBI No. 1394, Vol. 4: 67

LOCAL NAMES. All woodpeckers *Kāphāra* (Hindi); *Khidree* (Bastar, M.P.); *Sona kaktola* (M.P., Saugor); *Vādrāngi pitta* (Telugu).

SIZE. Myna +; length c. 29 cm (11½ in.).

FIELD CHARACTERS. Male. *Above*, crown and occipital crest crimson; upper plumage chiefly golden yellow and black. *Below*, white streaked with black, more boldly on breast. Chin, throat, and sides of head black, finely streaked and stippled with white.

Female similar to male but with forecrown black, stippled with white like the throat, and only the occipital crest crimson.

Young (immature) like female but duller and browner, and without the white stippling on crown or forehead.

STATUS, DISTRIBUTION and HABITAT. Resident; the commonest and most widely distributed woodpecker in the subcontinent as a whole. Punjab, Uttar Pradesh, Nepal lowlands, Bihar, W. Bengal, Assam, Manipur (?), East Pakistan, Orissa, northern Andhra (south to about Godavari river), Madhya Pradesh, Rajasthan, Gujarat and northern Maharashtra. Intergrades with *dilatatum* in Punjab and with *puncticollis* around its southern limits (see footnote, p. 196). Plains, foothills and up to c. 1000 m (c. 1700 m — Dharmasala) in dry- and moist-deciduous biotope. Affects every type of wooded country: light forest, forest plantations, groves of mango, palmyra (*Borassus*) palms and other trees about villages and cultivation, urban compounds, roadside avenues, etc.

WOODPECKERS

199

No consistent size difference in the sexes.

COLOURS OF BARE PARTS. Iris reddish brown; circumorbital skin sage green. Bill horny black; mouth slaty pink or greyish pink. Legs and feet greyish leaf-green; claws slaty.

820. *Dinopium benghalense puncticollis* (Malherbe)

Picus (Brachypternopicus) puncticollis Malherbe, 1845, Rev. Zool.: 404

(India = slopes of the Nilgiri Hills)

Baker, FBI No. 1395, Vol. 4: 69

LOCAL NAMES. *Sōn pāthi nūlar* (Marathi). Woodpeckers in general: *Mārāmbkōtti*, *Tachchan kūrūri*, *Mānu potūkū* (Tamil); *Vādrāngi pitta* (Telugu).

SIZE. Myna +; length c. 29 cm (11½ in.).

FIELD CHARACTERS. As of 819. See Museum Diagnosis.

Distinguished from the very similar Threethroated Goldenback (825), especially in flight, by its black lower back and rump v. crimson.

STATUS, DISTRIBUTION and HABITAT. Resident; common. Peninsular India south of the range of 819 (excluding Kerala), north to about Godavari R. in the east and Rajasthan in the west (but see footnote, p. 196). Affects dry- and moist-deciduous biotope, plains and hills to c. 1200 m — light forest, roadside avenues, mango topos around villages and cultivation, wooded urban gardens and compounds, coconut, date and palmyra groves, etc.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 819, q.v.

BREEDING. *Season*, chiefly March–April. *Nest, eggs* (c/3) and breeding biology as in the nominate subspecies.

MUSEUM DIAGNOSIS. Upperparts golden yellow, intermediate between *dilatatum* and *benghalense*; rump black; shoulders partly black with conspicuous creamy white spotting; chin, throat and breast black, with small white triangular spots; white of lower plumage pale creamy white.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
9 ♂♂	138-146	35-41	24-28	82-89 mm
11 ♀♀	137-146	37-40	25-26	80-92 mm
				(HW)

Weight 1 ♀ 132 g (SA).

COLOURS OF BARE PARTS as in 819.

MISCELLANEOUS. Parasitized by the ticks *Haemaphysalis spinigera* and *H. tortuosa* (Rajagopalan, JBNHS 69: 62).

821. *Dinopium benghalense tehinense* (Whistler & Kinnear)

Brachypterus benghalensis tehinense Whistler & Kinnear, 1934, Jour. Bombay nat.

Hist. Soc. 37: 293 (Rajampara, 1350 ft, Panthalam Hills, Travancore)

Brachypterus benghalensis woodi Koelz, 1939, Proc. Biol. Soc. Washington 52: 78

(Jagalbed, Bombay State)

Baker, FBI No. 1395 (part), Vol. 4: 69

LOCAL NAMES. All woodpeckers: *Mārāmbkōtti* (Malayalam).

SIZE. Myna +; length c. 29 cm (11½ in.).

198

PICIFORMES

GENERAL HABITS. Typical of the woodpeckers. Keeps in pairs or family parties, frequently with the mixed hunting associations of various insectivorous species, the woodpeckers following one another from tree to tree and clinging vertically with an upward glide to the trunks and boughs. Creeps up in short jerky spurts, directly or in spirals, tapping spasmodically with the bill to stampede lurking insects or locate hidden pupal galleries of wood-boring beetles. Will occasionally slide back 'in reverse gear' to re-investigate some promising crevice it has missed. Flight undulating, swift and noisy, consisting of a few rapid flaps followed by a long dipping bound with wings pressed to the sides; usually accompanied by a shrill, chattering 'laugh'. Commonly descends to the ground and hops about picking up ants and crawling insects.

FOOD. Insects and larvae, predominantly ants, picked off tree-trunks and boughs, and on the ground. Fruits and berries: has been observed clinging to a half-ripe mango on a tree, digging into the flesh and swallowing morsels. Also takes flower nectar regularly — *Erythrina*, *Salmaia*, *Acrocarpus*, *Grevillea* recorded. Among stomach contents analysed from an intensively cultivated area in Bihar the following insects identified in quantity: ants (Formicidae — *Crematogaster subnuda*, *Camponotus compressus*, *Oecophylla smaragdina*, *Phidole malinsi* (?), *Meranoplus bicolor*, *Myrmecocystus setipes*); weevils (Curculionidae — *Myllocerus discolor*, *Aslycus lateralis*), beetles (Tenebrionidae — *Mesomorpha villiger*, *Derospharus rugicollis*), geometrid caterpillars, and once a centipede and spider (Mason & Lefroy, 1912).

VOICE and CALLS. A loud, high-pitched cackling 'laugh', rather like the Whitebreasted Kingfisher's but less emphatic and more tinny. Drums on stems and boughs of trees in rather muffled bursts — *dr-r-r-r-r-r* — of 2 or 3 seconds duration, chiefly during the breeding season as advertisement. Nest-young emit a screechy hissing to deter a human intruder, while the parents flit distractedly from branch to branch in the vicinity, pecking viciously on the substrate in anger and frustration.

BREEDING. *Season*, February to July, chiefly March and April. Excavation often commences a month or more before egg-laying. Two successive broods sometimes raised. *Nest*, a neat round hole (c. 7 or 8 cm across) leading to the shaft and widened egg-chamber, usually cut between 3 and 6 metres from the ground, occasionally 10 or more. Mango, *Albizia*, *Erythrina* and other softwood trees, and stems of coconut and palmyra palms usually selected; sometimes a horizontal branch with entrance on the underside. *Eggs*, normally 3, china white with a glossy surface. Average size of 50 eggs 28.1 × 20.9 mm (Baker). Both sexes share all the domestic chores; period of incubation undetermined. Despite nest-sanitation practised by the parents, nests usually foul-smelling.

MUSEUM DIAGNOSIS. Upperparts rich golden yellow; rump black; shoulders black with conspicuous creamy white spotting; chin, throat and breast black, streaked with white; white of lower parts pure.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	136-148	31-43	23-27	89-93 mm (SA)

Weight 11 ♂ ♀ 89-121 (aver. 100.3) g — SA.

200

PICIFORMES

FIELD CHARACTERS. As in 819. See Museum Diagnosis.

Distinguished from the very similar Threethroated Goldenback (825), especially in flight, by its black lower back and rump v. crimson.

STATUS, DISTRIBUTION and HABITAT. Resident; common. West coast of India southward from c. 16°N. through Goa, western Mysore (Malnaad) and Kerala; low country and foothills, locally up to c. 1000 m. Affects light forest, wooded urban and rural compounds, fruit gardens surrounding the backwater homesteads, and rubber, cashew, and coconut plantations, etc.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 819 and other races, q.v.

BREEDING. *Season*, February–March and July–August; possibly staggering through the intervening months. *Nest, eggs* (c/3) and breeding biology as in 819.

MUSEUM DIAGNOSIS. Upperparts rich golden olive-yellow; black of rump much restricted and obscured by an olive wash; black of shoulders practically obscured by golden olive wash, the spots small or obsolete and yellowish cream in colour. Chin, throat and breast black with fine white spotting and barring; white of lower plumage with a creamy buff tinge.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
6 ♂♂	136-151	39-43	25-26	86-95 mm
8 ♀♀	138-149	39-41	23-25	85-94 mm
				(HW)

COLOURS OF BARE PARTS. Iris brown, brownish crimson, or crimson. Bill slaty brown (horny black), greyish laterally at base of lower mandible; mouth greyish pink. Legs and feet greenish grey; claws horny brown.

822. *Dinopium benghalense jaffnense* (Whistler)

Brachypterus benghalensis jaffnensis Whistler, 1944, Spolia Zeylanica 23: 206

(Iluppakkadavai, Ceylon)

Baker, FBI No. 1397, Vol. 4: 70

LOCAL NAMES. *Pita rāng kerellā* (Sinhala); *Mārāmbkōtti*, *Tachchan kūrūri* (Tamil, Ceylon).

SIZE. Myna ±; length c. 28 cm (11 in.).

FIELD CHARACTERS. As of 819; slightly smaller. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Race endemic in Ceylon. Moderately plentiful in the Jaffna peninsula and well-wooded areas to the north of Puttalam and Trincomalee; less common in the inland northern forest area, north of Kekirawa (North Central Province). Southwards, it meets and intergrades with the Redbacked Woodpecker (823) — Phillips. Largely a bird of open coastal areas.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 819 and the other peninsular races. See Museum Diagnosis.

BREEDING. *Season*, 'about April' (Wait). *Nest, eggs*, etc. doubtless as in 819 and 823, but very little definitely recorded.

MUSEUM DIAGNOSIS. Differs from peninsular *puncticollis* (820) in the darker and duller tint of the upperparts with their more olive wash both on mantle and wings,

WOODPECKERS

201

and by the smaller and more 'arrow-headed' spots on the wing-shoulders. Lower plumage creamy buff (v. white) with more heavily defined black markings from lower breast to under tail-coverts. Also by smaller size and lighter, more pointed bill. Very close to the Kerala population (821); separable from it chiefly on size and bill.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
7 ♂♂	130-138	34-39	24-25	78-85 mm
6 ♀♀	132-135	35-36	23-24	75-85 mm (HW)

COLOURS OF BARE PARTS. As in 821.

823. *Dinopium benghalense psarodes* (A. Lichtenstein)

Picus psarodes A. Lichtenstein, 1793, Catalogus rerum rarissimarum Hanburgi: 18 ('Ostindien', restricted to Ceylon by Meise, 1950, Ardea 38: 187)

Picus erithromorphos Vieillot, 1818, Nouv. Dict. d'Hist. Nat. 26: 73
(Java, *errone* = Ceylon)

Baker, FBI No. 1399, Vol. 4: 71

Plate 60, fig. 14

LOCAL NAMES. *Pita rāts kerellā* (Sinhala); *Mārāmkottā*, *Thachchan kūrūrī* (Tamil, Ceylon).

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. Similar, sex for sex, to the Goldenbacks (e.g. 819, 822) but with crimson replacing golden yellow in the upper plumage. Confusable with Ceylon Crimsonbacked Woodpecker (863), but slightly smaller size, brighter red back, bolder black and white markings on sides of head, shorter darker coloured bill, and different call-notes, diagnostic.

STATUS, DISTRIBUTION and HABITAT. Race endemic in Ceylon; the commonest woodpecker in the island. Plentiful throughout the well-wooded hills to c. 1700 m; also throughout the lowlands except the forested coastal area north of Puttalam, Kekirawa and Trincomalee where it meets and intergrades with the goldenbacked *jaffnese* (822)—Phillips. Affects coconut plantations, wooded gardens and open jungle; avoids heavy forest.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 822, and in 819 and other peninsular races.

BREEDING. Season, overall December to September, chiefly March to June and August-September. Nest, eggs (c/3) and breeding biology as in 819 and other races. Average size of 13 eggs 29 × 21.3 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies and Field Characters. Black on sides of head and lower plumage greater in extent, and white less than in the goldenbacked races; white markings on chin and throat confined to spots or narrow bars.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
12 ♂♂	135-141	35-39	23-24	83-90 mm
11 ♀♀	130-140	32-40	24-25	77-93 mm
Weight 1 ♀ 97 g (SDR).				(HW, SDR)

COLOURS OF BARE PARTS. As in 821.

WOODPECKERS

203

825. *Dinopium javanense malabaricum* Whistler & Kinnear

Dinopium javanense malabaricum Whistler & Kinnear, 1934, Jour. Bombay nat. Hist. Soc. 37: 294 (Manantoddy, Wynaad). New name for *Picus rubropygialis* auct., not of Malherbe, 1845

Baker, FBI No. 1400, Vol. 4: 73

Plate 60, fig. 16

LOCAL NAMES. *Mānu tolachhi* (Telugu); *Mārām tolachhi*, *Thachchan kūrūrī* (Tamil); *Mārāmkottā* (all woodpeckers, Malayalam).

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. Superficially rather similar to Kerala Goldenbacked Woodpecker (821), also with crimson crown and occipital crest in male, but golden olive of upperparts mixed with orange or scarlet, and lower back and rump crimson (v. black). A white supercilium to nape; sides of head boldly striped black and white. Below, buffy white with a black stripe down middle of chin and throat and prominent black scalloping or scale-like markings on breast and abdomen.

Female similar to male but crown and occipital crest black instead of crimson, and stippled with white.

May be confused in the field also with *Chrysocolaptes l. chersonesus* (862)—also with red rump—but its slightly smaller size and black nape (v. white in 862) are diagnostic. The calls of the two are also distinct.

STATUS, DISTRIBUTION and HABITAT. Range almost completely coincident with that of 821: southwestern India southward from c. 16°N. through Goa, western Mysore (Malnaad), western Tamil Nadu (Nilgiri and Palni Hills) and Kerala; low country and hills up to c. 2300 m. Affects moist-deciduous and evergreen forest, especially in the foothills—more humid facies than usual with 821.

The species *javanense*, like the several other Indo-Malayan elements in the fauna of the heavy-rainfall areas of southwestern India, has a remarkably disjunct range, the nearest related population in Assam (826) being separated from *malabaricum* by a gap of more than 1500 km.

GENERAL HABITS. Typical woodpecker. Keeps in pairs, often associated with mixed hunting parties of wood shrikes, racket-tailed drongos, and other insectivorous birds in forest.

FOOD. Ants, grubs of beetles, and other insects.

VOICE and CALLS. A rather weak tinny scream, quite distinct from the call of the commoner Goldenbacked (821). Also drums on wood like most other woodpeckers, particularly during the breeding season.

BREEDING. Season, overall January to April-May, chiefly February and March. Nest, the usual hole excavated in a tree-trunk or branch from under 2 metres to 10, normally below 5 m. Eggs, 2 or 3, white, oval, unmarked. Average size of 15 eggs 29.4 × 20.4 mm (Baker). Breeding biology not specifically recorded; presumably as in 821. Incubation period undetermined.

MUSEUM DIAGNOSIS. Differs from the spatially separated Assam-Burma subspecies (826) in its somewhat smaller size, and a strong olive wash in the golden colour of the upper plumage.

202

PICIFORMES

824. Himalayan Goldenbacked Threestoed Woodpecker. *Dinopium shorii shorii* (Vigors)

Picus shorii Vigors, 1832 (1830-31), Proc. Zool. Soc. London (1): 175 (Himalayas)
Baker, FBI No. 1401, Vol. 4: 74

LOCAL NAMES. None recorded.

SIZE. Pigeon ±; length c. 31 cm (12 in.).

FIELD CHARACTERS. A largish goldenbacked woodpecker with crimson crown and occipital crest (♂), crimson rump and black tail. Hindneck black, the black continued forward as a black stripe to behind eye; a prominent white supercilium to nape; a broad white band down either side of neck. Black moustachial streaks continued as a double line down centre of throat, with the intervening space pale brown. Below, breast and underparts buffy white boldly streaked and scalloped with black.

Female similar to the male but with forehead and forecrown brownish black instead of crimson; crown and crest black with long white streaks.

STATUS, DISTRIBUTION and HABITAT. Resident; from Garhwal eastward through Nepal, Sikkim, Bhutan and NEFA. Also Nagaland, Manipur and East Pakistan (hill tracts). Locally not uncommon in the Himalayan terai, bhabar, duars and foothills, up to c. 700 m. Co-existing with *Dinopium benghalense*, but evidently more narrowly restricted to climax forest and less adaptable than *benghalense* to conditions created by increasing deforestation, therefore less widespread. Affects tall deciduous and semi-evergreen forest.

Extralimital. Chin and Kachin hills, Arakan Yomas and Burmese hill ranges south to Thayemyo (Peters).

GENERAL HABITS, FOOD, VOICE and CALLS. As in other goldenbacked woodpeckers (cf. 819). Nothing specifically recorded.

BREEDING. Season, not definitely known; eggs have been taken apparently only thrice, all in the first half of April. Nest, the typical woodpecker boring in a tree-trunk. Eggs, 3 (sometimes 2 ?), white. Average size of 8 eggs 29.9 × 20.8 mm (Baker).

MUSEUM DIAGNOSIS. Hallux (inner hind-toe) absent. See Key to the Species.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
7 ♂♂	154-159	39-44	—	96-104 mm
7 ♀♀	152-164	37-41	—	99-104 mm (Bismar)

Baker gives

	(from feathers)		
♂♀	146-162	32-36	23-24

Weight 1 ♀ 101 g (Diesselhorst).

COLOURS OF BARE PARTS. Iris dark brown, reddish brown or crimson (age ?). Bill dark slaty or blackish. Legs and feet plumbeous or greenish brown; claws slaty; pads yellowish grey.

DINOPIUM JAVANENSE (Ljungh): INDIAN GOLDENBACKED
THREESTOED WOODPECKER

Key to the Subspecies

Larger..... *D. j. intermedium*
Smaller, with an olive wash on the yellow upperparts.....
..... *D. j. malabaricum*

204

PICIFORMES

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	135-143	31-32	22-24	87-95 mm
♀♀	137-143	27-32	22-24	83-94 mm (HW, SA)

COLOURS OF BARE PARTS. Iris reddish brown to brownish red. Bill slaty brown, grey at chin, gape and base of lower mandible; mouth greyish pink. Legs and feet greenish grey or greyish green; claws slaty brown.

MISCELLANEOUS. Parasitized by tick *Haemaphysalis spinigera* (Rajagopalan, JBNHS 69: 62).

826. *Dinopium javanense intermedium* (Blyth)

Picus (Tiga) intermedium Blyth, 1845, Jour. Asiat. Soc. Bengal 14 (1): 193 (Nepal, Assam, ... Tenasserim = Arakan, *sic* Baker, 1919. Restricted to Ranure Island by Robinson & Kloss, 1923, Jour. Nat. Hist. Soc. Siam 5: 187)

Baker, FBI No. 1399, Vol. 4: 72

LOCAL NAMES. None recorded.

SIZE. Pigeon +; length c. 30 cm (12 in.).

FIELD CHARACTERS. As of 825. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. Assam south of Brahmaputra R., Nagaland (?), Manipur, Tipperah and East Pakistan. Affects moist-deciduous biotope—plains and foothills forest, and wooded country around habitations.

Extralimital. Burma north of c. 10°N., Shan States, Thailand and the Indochinese countries.

GENERAL HABITS, FOOD, VOICE and CALLS. Typical woodpecker. Similar to 825 and other species, qq.v.

BREEDING. Season, March to June, chiefly March and April. Nest, the usual woodpecker hole in a tree-trunk. Eggs, normally 3, white. Average size of 12 eggs 29 × 19.1 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *malabaricum* (825) in being slightly larger and purer golden on the upperparts, lacking the olive wash.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	136-165	27-30	23-24	89-102 mm (Baker)

COLOURS OF BARE PARTS. Iris brown or hazel. Bill almost black, brownish or plumbeous on the basal half. Legs and feet dull brownish green.

Genus GECINULUS Blyth

Gecinulus Blyth, 1845, Jour. Asiat. Soc. Bengal 14 (1): 192. Type, by monotypy.

Picus grantia Horsfield

Only three toes present, the hallux or inner hind-toe lacking. Bill short, compressed; culmen blunt, nearly straight; nasal ridge obsolete. Nostrils close to base of bill; nasal plumes short. Tail-feathers broad, not acuminate; outer pair longer than coverts but much shorter than the rest, which are regularly graduated. Crest short, inconspicuous.

WOODPECKERS

209

Satpura mountain trend. This needs investigation. Not uncommon, but very local, in the heavy-rainfall zone north to Goa; thinly distributed, rare or sporadic elsewhere in its range — plains, foothills and up to c. 1200 m elevation. Affects climax and secondary forest in evergreen and moist-deciduous biotope. Partial to mixed bamboo jungle and to lofty natural shade trees in coffee and cardamom plantations in SW. India. Very sensitive to deforestation and disturbance by humans, soon forsaking localities where lumbering is in progress or the forest has been felled. Thus many gaps in its present range doubtless due to disappearance of appropriate habitats.

Extralimital. Represented in Burma by the closely similar subspecies *feddeni* (Plate 54) with scarlet-crimson (v. deep crimson) crown and nape.

GENERAL HABITS. Typical of the woodpeckers and very similar to those of the Great Slaty (829). Keeps in noisy pairs or loose family parties of 3 or 4 chiefly to large forest trees. Flight stately and unhurried, with deliberate wing-beats reminiscent of a crow's or blue jay's in silhouette.

FOOD. Chiefly ants (*Camponotus* and others), termites, and grubs and pupae of wood-boring beetles. Stomach of one example contained numerous small honey-bees (*Apis florea*) taken from a comb in a tree hollow; the bird's forehead and chin feathers were clotted with honey.

VOICE AND CALLS. A wild resounding metallic single note *chiank*, uttered by both sexes, every 2 or 3 seconds 3 or 4 times in succession, both while clinging to a tree-trunk and in flight from one part of the forest to another. A short ringing laugh or chuckle uttered on the wing, reminiscent of the cry of the Malabar Grey Hornbill (768). In addition a loud, resonant, far-carrying mechanical drumming like a burst of machine-gun fire, particularly in the breeding season, evidently to advertise its presence and territory: this responded to in like manner by other birds in the distance.

BREEDING. Season, principally January to March. *Nest*, the usual woodpecker hole, c. 14 cm in diameter, excavated in rotten trunks of large branchless trees at heights between c. 8 and 16 metres from the ground. The shaft and egg-chamber are often up to 50 or 60 cm deep. *Eggs*, normally 2, sometimes said to be 3 or 4, white broad ovals, measuring c. 35 × 23 mm. Both sexes take part in excavating the nest, incubation (?) and feeding the young. Incubation period undetermined. The squabs are greatly relished as food by the locals in Bastar dist., Madhya Pradesh, and eagerly sought; hence, probably, its rarity and inordinate shyness in that area.

MUSEUM DIAGNOSIS. See keys to the Species and Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	213-225	63-69	37-43	139-165 mm
♀♀	212-226	59-65	36-39	130-170 mm (SA)

COLOURS OF BARE PARTS. Iris yellowish white (adult ♂♀), or pearl grey (imm.). Bill horny slate, paler on sides of lower mandible. Legs and feet greyish slate; claws horny brown.

WOODPECKERS

211

832. *Hypopicus hyperythrus marshalli* (Hartert)

Dryobates hyperythrus marshalli Hartert, 1912, Vög. pal. Fauna 2 (7): 926 (Murree) Baker, FBI No. 1359, Vol. 4: 31

LOCAL NAMES. None recorded.

SIZE. Bulbul ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. As of 833. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. The western Himalayas from Kashmir and Ladakh eastward through Punjab and Himachal Pradesh to Kumaon, where it intergrades with the nominate race. Affects subtropical pine and moist temperate forest (horse-chestnut, silver fir, etc.), above c. 1600 m; breeding up to c. 3000 m.

GENERAL HABITS, FOOD. As in 833, q.v.

VOICE AND CALLS. Described as a long rattling, but not loud, cry, running down at the finish, 'May be likened to the rapid running down of the works of a small clock with a broken mainspring or to the rapid running out of a large fishing reel' (Magrath, JBNHS 19: 153).

BREEDING. Season, April-May. *Nest* and *eggs* (c/4 or 5 ?) as in 833. Average size of 13 eggs from Murree and the Galis 24.3 × 18.2 mm (Baker). Breeding biology as in 833.

MUSEUM DIAGNOSIS. Differs from nominate *hyperythrus* (833), sex for sex, in being larger. Also the male has the crimson on sides of neck and head more extensive.

MEASUREMENTS

	Wing	Bill (from feathers)
♂♀	126-136	25-27 mm (Baker)

COLOURS OF BARE PARTS. As in 833.

833. *Hypopicus hyperythrus hyperythrus* (Vigors)

Picus hyperythrus Vigors, 1831 (1830-31), Proc. Zool. Soc. London (1): 23 (Himalayas, restricted to the eastern Himalayas by Hartert, 1912)

Dryobates hyperythrus sikkimensis Ticehurst & Whistler, 1924, Ibis: 473 (Sikkim)

Dryobates hyperythrus minakorum Meise, 1934, Abh. Ber. Mus. Dresden 18 (2): 53

(Tatsienlu, Szechuan = Kangting, Sikkang, China)

Dryobates hyperythrus heinrichi Stresemann & Heinrich, 1940, Mitt. Zoolog. Mus. Berlin 24 (2): 235 (Mt Victoria, Chin Hills)

Hypopicus hyperythrus kaemmerhous Koelz, 1952, Jour. Zool. Soc. India 4: 44 (Karong, Manipur)

Hypopicus hyperythrus henricus Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 22 (Mawryngkneng, Khasi Hills)

Baker, FBI No. 1358, Vol. 4: 30

Plate 61, fig. 11

LOCAL NAME. *Daaja gadaia ko gejae* (Cachari).

SIZE. Bulbul ±; length c. 20 cm (8 in.).

210

PICIFORMES

831. *Dryocopus javensis hodgii* (Blyth)

Mulleripicus hodgii Blyth, 1860, Jour. Asiat. Soc. Bengal 29: 105 (Andaman Islands)

Baker, FBI No. 1415, Vol. 4: 91

Plate 62, fig. 9

LOCAL NAMES. None recorded.

SIZE. Pigeon +; length c. 38 cm (15 in.).

FIELD CHARACTERS. A large black woodpecker similar to 830 but smaller, with the black duller and more brownish and no white in the plumage. Forehead, crown, crest, and moustachial patch crimson in male; only hindcrown and nape in female.

STATUS, DISTRIBUTION AND HABITAT. Resident; fairly common. Andaman Islands, in high evergreen forest.

GENERAL HABITS. Very like 830, q.v. Frequents lofty trees in high forest. Each individual has two or three favourite dead stumps to which it repairs two or three times daily to drum at intervals on dead wood, producing an extraordinarily loud rattle audible for a mile or more and usually answered from several other parts of the forest (Butler, JBNHS 12: 560). Evidently descends to the ground on occasion to feed on ants etc. like other woodpeckers.

FOOD. Not specifically recorded; presumably as in 830.

VOICE AND CALLS. 'A loud chattering *kuk-kuk-kuk* (or *kik-kik-kik*) ending with a whistling *kui*' (HA).

BREEDING. Season, February-March. *Nest*, a hole drilled in a dead tree-trunk or large branch between c. 6 and 14 m up, in fairly open forest (BEO and Wickham). *Eggs*, 2, white. Average size of twelve 33.4 × 23.3 mm (Baker). No other particulars recorded.

MUSEUM DIAGNOSIS. See key to the Subspecies and Field Characters.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♀	180-190	41-47 (from feathers)	32-33	130-147 mm (Baker, HA)

COLOURS OF BARE PARTS. Iris creamy white to pale bright yellow. Bill plumbeous black; tip paler and translucent. Legs and feet greenish or plumbeous black.

831a. *Black Woodpecker*. *Dryocopus martius khamensis* (Buturlin)

(See Appendix, p. 259)

Genus *HYPOPICUS* Bonaparte

Hypopicus Bonaparte, 1854, Consp. Volut. Zygodact., No. 62: 8. Type, by original designation, *Picus hyperythrus* Vigors

Crest obsolete. Bill slender, compressed and truncated; culmen straight and angulate, with a short nasal ridge extending close down to commissure for rather less than half length of bill. Nostrils basal with short nasal plumes. Gonys long; chin angle close to gape and concealed by bristles. Fourth toe (outer posterior) slightly longer than 3rd (outer anterior). Outermost pair of rectrices shorter than tail-coverts.

HYPOPICUS HYPERYTHRUS (Vigors): RUFOUSBELLIED WOODPECKER

Key to the Subspecies

Smaller; wing 126 mm or less.....*H. h. hyperythrus*
Larger; wing 126 mm or more; red on head extends behind ear-coverts.....*H. h. marshalli*

212

PICIFORMES

FIELD CHARACTERS. A practically uncrested black-and-white and chestnut woodpecker.

Male. Above, crown and nape crimson. Upper plumage, to rump, broadly barred black and white; wings and tail black, largely spotted and barred with white. *Below*, chin grey; throat, sides of neck and underparts bright chestnut; under tail-coverts pale crimson.

Female. Crown and nape black spotted with white; rest as in male.

Young (immature). Like female but barred with dusky on underparts.

STATUS, DISTRIBUTION AND HABITAT. Resident. Eastern Kumaon and Nepal eastward in the Himalayas through Sikkim, Bhutan, and NEFA. Cachar, Nagaland, Manipur, Mizo and East Pakistan (hill tracts), from c. 800 to 4100 m. Affects pine, moist temperate and subtropical forest—rhododendron, oak, horse-chestnut, etc.

Extralimital. Northern Burma hills to western Yunnan and Sikkim; northern Thailand.

GENERAL HABITS. A quiet woodpecker keeping singly or in separated pairs, frequently in association with roving bands of insectivorous birds in Himalayan forest, usually working fairly high up on the trunks of large trees.

FOOD. Ants, grubs of beetles, and other insects. Has been observed catching white butterflies at chestnut flowers by Whistler.

VOICE AND CALLS. As in 832. Drumming on dead stumps commonly indulged in by both sexes.

BREEDING. Season, April-May. *Nest*, the typical woodpecker hole bored 5 to 6 m or so up in a tree-trunk. *Eggs*, clutch-size undetermined: believed to be 4 or 5, white. Average of 15 eggs 22.2 × 16.5 mm (Baker). Evidently both sexes incubate; other particulars unrecorded.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.; for subspecies Key.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	114-122	23-28	19-22	69-87 mm (SA)

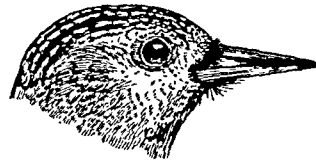
Weight 10 ♂♂ 42-53 g; 6 ♀♀ 42-50 g (SA, GD).

COLOURS OF BARE PARTS. Iris reddish brown. Bill: upper mandible black, lower greenish yellow. Legs and feet blackish grey (SDF).

Genus *PICOIDES* Lacépède

Picoides Lacépède, 1799, Tabl. Ois.: 7. Type, by subsequent designation, *Picus tridactylus* Gmelin, i.e. *Picus tridactylus* Linnaeus

Dendrocopos Koch, 1816, Syst. baierischen Zool. 1: xxvii, 72, pl. 1A, f. s. Type, by subsequent designation, *D. major* = *Picus major* Linnaeus



WOODPECKERS

213

Dryobates Boie, 1826, Isis von Oken, Bd. 2, col. 977. Type, by monotypy, *Picus pubescens* Linnaeus
Leucopicus Bonaparte, 1854, Ateneo Italiano 2: 123. Type, by monotypy, *Picus maharattensis* Latham
Yungipicus Bonaparte, 1854, Ateneo Italiano 2: 123. Type, by monotypy, *Picus hardwickii* Jerdon

Cf. Greenway, J. C., 1947, Proc. New England Zool. Club 24: 93. Voous, K. H., 1947, *Limosa* 20: 1-142. Delacour, J., 1951, *Act* 68: 50.

Very close to *Hypopicus* but bill comparatively stouter with a nasal ridge on each side extending over more than half its length and equidistant between culmen and commissure; gonyes sharply angulate. General coloration black or brown spotted and barred with white, and with crimson here and there. Wing long, pointed or slightly rounded. Outer hind toe longer than outer front toe. Crest more or less rudimentary.

Key to the Species

Page

I Toes four

A Back all black

1 Lower parts not streaked

a Scapulars black

i Under tail-coverts crimson contrasting with fulvous or grey abdomen..... *P. himalayensis* 216ii Under tail-coverts and abdomen crimson..... *P. major* 213b Scapulars white..... *P. assimilis* 215

2 Lower parts streaked

c Larger, wing over 120 mm..... *P. dargjensis* 218d Smaller, wing under 110 mm..... *P. cathpharius* 219

B Back barred with white

3 Crown and occiput crimson in male, black in female

e Wing under 113 mm..... *P. macri* 224f Wing over 113 mm..... *P. atratus* 2234 Crown umber-brown, occiput crimson and yellow in male, dull yellow in female..... *P. auriceps* 2215 Whole crown yellow..... *P. maharattensis* 226

6 Very small, length about 160 mm

g Crown brown..... *P. nanus* 231h Crown ashy grey..... *P. caniceps* 228II Toes three; back black streaked with white..... *P. tridactylus* 234834. Great Spotted Woodpecker. *Picoides major stresemanni* (Rensch)*Dryobates major stresemanni* Rensch, 1924, Abh. Ber. Mus. Dresden 16 (2): 38

(Tsalila, on the Yunnan-Sikang border)

Dryobates cabanisi stephensoni Baker, 1926, Bull. Brit. Orn. Cl. 46: 70

(Lichiang Range, Yunnan)

Baker, FBI No. 1362, Vol. 4: 34

Plate 61, fig. 14

LOCAL NAMES. None recorded.

SIZE. Myna; length c. 24 cm (9 in.).

WOODPECKERS

215

835. Sind Pied Woodpecker. *Picoides assimilis* (Blyth)*Picus assimilis* 'Natterer' = Blyth, 1849, Jour. Asiat. Soc. Bengal 18 (2): 803

(Himalayas, Rawal Pindi)

Picus scindicus 'Gould MS.' = Horsfield & Moore, 1858, (1856-1858), Cat. Bds.

Mus. E. I. Co. 2: 671, (Shikarpore, Sind)

Baker, FBI No. 1363, Vol. 4: 35

Plate 61, fig. 12

LOCAL NAMES. *Gihan* (Brahui); *Tukok* (Baluchi); *Burdi tkeri* (S. Kalat).

SIZE. Myna —; length c. 22 cm (8½ in.).

FIELD CHARACTERS. A medium-sized black and white woodpecker, very similar to the Kashmir Pied (836) but with the scapulars glistening white instead of black, making the shoulder-patches larger and even more prominent. Below, chin, breast and abdomen white; lower abdomen, vent and under tail-coverts crimson. Crown and occiput crimson in male, black in female.

STATUS, DISTRIBUTION and HABITAT. Resident; fairly common but local. West Pakistan (Baluchistan, Sind, W. Punjab west of Jhelum R., including Peshawar dist.). Generally at low elevations in comparatively arid areas, but recorded at c. 1600 m in the Salt Range, and at c. 2200 m in Khwaja Amran Range, Baluchistan (Christison). Affects babool and tamarisk jungle in riverain tracts (often among sand-dunes), euphorbia and thorn scrub in semi-desert biotope, and sheesham (*Dalbergia*) and other tree plantations in canal-irrigated desert colonization areas.

Extralimital. SE. Iran.

GENERAL HABITS. Typical woodpecker. Partial to seeking food near the ground on fallen trees and branches, euphorbia stems, wooden stakes, fence-posts and the like.

FOOD. Mainly ants, termites and grubs of beetles.

VOICE and CALLS. *Toi-whit, toi-whit, toi-whit* rapidly repeated (Whistler) at rest and in flight. A frequently uttered *tr-r-r-r* (T. R. Bell). In the breeding season, especially, both sexes drum in intermittent bursts at frequent intervals on a selected rotten branch, producing an inordinately loud rolling or kettle-drum effect.

BREEDING. Season, principally March and April. Nest, the usual woodpecker hole drilled in a babool, *kandi* (*Prosopis*), *Salvadora persica*, tamarisk or suchlike tree, between 1 and 4 metres from the ground. Eggs, 3 or 4, white. Average size of 12 eggs 22.2 × 17.0 mm (Baker). Both sexes evidently share all the domestic chores. Period of incubation undetermined.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	112-120	22-25	c. 20	67-73 mm (Baker)
		(from skull)		
7 ♂♂	114-123	28-31	—	71 (1) mm
8 ♀♀	111-120	24-27	—	65-70 (4) mm (CBT, HW)

COLOURS OF BARE PARTS. Iris brown to crimson. Bill dark slaty grey or bluish plumbeous, paler on lower mandible. Legs and feet greyish plumbeous.

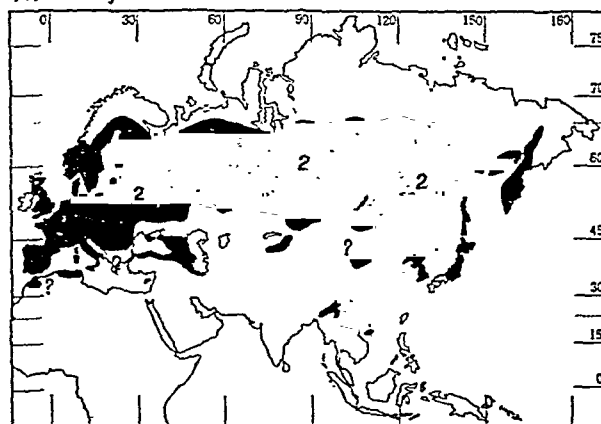
214

PICIFORMES

FIELD CHARACTERS. A medium-sized woodpecker, very similar to the Garhwal Pied (837), q.v., but with crown black (v. crimson) in male. See Key to the Species and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. Cachar dist. (Assam), Nagaland, Manipur and Mizo (?), between c. 2000 and 3000 m, in oak, pine and subtropical wet forest.

Extralimital. Western China in western Szechuan, eastern Sikang etc., extending north to c. 33° and southward into northern Burma (Peters).

Picoides major

Breeding range

1 *P. m. stresemanni* (834).

2 Other races (about 26) extralimital.

GENERAL HABITS, FOOD, VOICE and CALLS. Nothing specifically recorded in our limits.

BREEDING. Season unrecorded though *sic* Baker it breeds in Cachar and Manipur; presumably March and April as in adjacent northern Burma. Nest and eggs (c/3) as in 837. Average size of 12 Burmese eggs 27.6 × 19.6 mm (Baker).

MUSEUM DIAGNOSIS. Very similar to *P. himalayensis* (837) with the upperparts almost identical. Differs from it in having the crown black in male, the crimson confined to the occiput; crimson of under tail-coverts extending to abdomen.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	130-138	26-31	c. 20-21	79-87 mm (Baker)

COLOURS OF BARE PARTS. Iris crimson. Bill: upper mandible blackish lead colour, lower mandible paler lead colour. Legs brownish green (Baker).

PICIFORMES

216

PICOIDES HIMALAYENSIS (Jardine & Selby): HIMALAYAN PIED WOODPECKER

Key to the Subspecies

Paler below, more grey than fulvous..... *P. h. albescens*Darker below, more rufous or fulvous..... *P. h. himalayensis*836. *Picoides himalayensis albescens* (Baker)*Dryobates himalayensis albescens* Baker, 1926, Bull. Brit. Orn. Cl. 46: 70

(Goona [?], Kashmir)

Baker, FBI No. 1361, Vol. 4: 34

Plate 61, fig. 16

LOCAL NAMES. *Hür koel*, *Maköt*, *Koel kökür* (Kashmir); *Türkän* (Chamba).

SIZE. Myna ±; length c. 25 cm (9½ in.).

FIELD CHARACTERS. As of 837. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, fairly common; subject to some seasonal altitudinal movement. The Safed Koh and western Himalayas from the Afghanistan frontier through Chitral, Gilgit, Kashmir, northern Punjab and Himachal Pradesh. Between c. 1700 and 3300 m in summer; usually below c. 2000 m in winter. Where occurring together, generally occupies a higher zone than *P. auriceps* (842) or *P. macri* (845). Affects fir, oak, rhododendron and mixed hill forest with a predilection for chestnut trees for nesting.

Extralimital. Nuristan, NE. Afghanistan (Paludan).

GENERAL HABITS. Typical woodpecker. Keeps in pairs. Works energetically up and around tree-trunks and along the sides and undersurface of moss-covered branches in jerky spurts, occasionally sliding back a few spurts in 'reverse gear' to re-investigate a promising spot. Along with several other Himalayan woodpeckers has been observed to drill rows of neat small holes in parallel rings round the stems of medium-sized trees, a few centimetres apart, like the New World sapsuckers. The significance of this habit needs study.

FOOD. Insects, chiefly grubs of beetles collected from under the bark or moss. Largely also seeds of various conifers, e.g. the Chir pine (*Pinus longifolia*). Plucks and wedges the cones in a cleft of bark or in angle between stem and branch, hacks them open with the bill (often months before they would mature and open naturally), and extracts the seeds; also kernels of walnuts, hazelnuts and acorns treated in the same way.

VOICE and CALLS. 'A volley of loud ringing cries uttered in flight' (Bates). 'A persevering *tri-tri-tri-tri*' (Paludan). Both sexes, moreover, drum on dead tree-stems etc. — especially during the breeding season.

BREEDING. Season, April to June. By mid June most first broods have flown from the nest. Nest, the usual woodpecker boring in the main trunk or on the underside of a large sloping bough, between 2 and 15 m from the ground. The trees most commonly selected are pine, cherry, apricot, willow and chestnut, the last being preferred wherever available. Eggs, 3 to 5 — mostly 4 — pure white, glossy. Average size of 28 eggs 26.2 × 19.0 mm (Baker). Both sexes share in excavating the nest-hole, incubation and tending the young. Incubation period undetermined.

WOODPECKERS

217

MUSEUM DIAGNOSIS. Sex for sex similar to *P. h. himalayensis* (837) but much paler below; chin, throat and breast white or greyish white, and entire underparts much less fulvous. White bars on the tail somewhat broader and purer white.

MEASUREMENTS

	Wing	Bill (from feathers)	
♂ ♀	127-136	28-32	mm
		(Baker)	

Wing 3 ♂♂ 132-137; 5 ♀♀ 128-133 mm. Weight 3 ♂♂ 72-74 g; 6 ♀♀ 59-67 g (Paludan).

COLOURS OF BARE PARTS. As in 837.

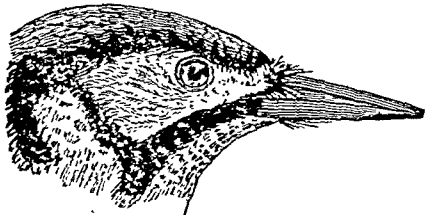
837. *Picoides himalayensis himalayensis* (Jardine & Selby)

Picus himalayensis Jardine & Selby, 1836, in Jardine's Ill. Orn. 3, Sig. D., pl. 116 and text (Mussoorie, 6500 feet)
Baker, FBI No. 1360, Vol. 4: 32
Plate 61, fig. 15

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 25 cm (9½ in.).

FIELD CHARACTERS. A medium-sized pied woodpecker.



♂, x c. 1

Male. Above, crown and crest crimson; lores, a narrow supercilium, cheeks and ear-coverts whitish with a broad black moustachial streak below extending to sides of neck. Back and upperparts black with a prominent white elongate patch on each shoulder and small white spots and barring on the wing-quills. Below, fulvous, paler on chin and throat, darker on breast and abdomen; under tail-coverts crimson.

Female. Similar but with crown and occiput black instead of crimson.

Young (immature). Like female but darker below with faint streaks or narrow dark edges to the feathers. Crown in ♂ crimson tipped with black.

STATUS, DISTRIBUTION AND HABITAT. Resident, fairly common; subject to some seasonal altitudinal movement. The Garhwal, Kumaon and western Nepal Himalayas between c. 1000 and 3000 m: commonest above c. 2000 m. Affects hill forest of fir, oak, rhododendron, etc.

WOODPECKERS

219

VOICE AND CALLS. Little and unsatisfactorily recorded. 'An occasional low *put* . . . *put*' (Lister), and the characteristic drumming, chiefly in the breeding season.

BREEDING. Season, April-May. Nest, the typical woodpecker boring in a tree-trunk, 1 or 2 metres up, in dense forest commonly between c. 2000 and 3000 m alt. Eggs, 2 to 4, white. Average size of 20 eggs 27.8 × 19.8 mm (Baker). Details of breeding biology not recorded.

MUSEUM DIAGNOSIS. See Key to the Species; for details of plumage Baker, loc. cit.

Young (both sexes) in early phase like female, with the crown black. In a later phase immature male has entire crown tipped with orange-red or crimson.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	123-135	31-35	22-25	76-86 mm
Weight (winter) 5 ♂♂ 70-80 g; 5 ♀♀ 61-73 g.				(SA, SDR)

COLOURS OF BARE PARTS. Iris reddish brown to crimson; orbital skin slaty grey. Bill plumbeous, blackish on upper mandible. Legs and feet dull green or greenish plumbeous; claws horny.

PICOIDES CATHPHARIUS (Blyth): CRIMSONBREASTED PIED WOODPECKER
Key to the Subspecies

	Page
A Crimson on breast absent or obsolete. <i>P. c. cathpharius</i>	219
B Crimson on breast well marked. <i>P. c. ludlowi</i>	220
C Crimson on breast developed into a full gorget. <i>P. c. pyrrhithorax</i>	221

840. *Picoides cathpharius cathpharius* (Blyth)

Picus (Dendrocopos) cathpharius 'Hodgson' = Blyth, 1843, Jour. Asiat. Soc. Bengal 12 (2): 1006 (Darjeeling)
Baker, FBI No. 1365, Vol. 4: 37
Plate 61, fig. 13

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. A smallish pied woodpecker, superficially a smaller replica of 838.

Male. Above, back and tail black, the latter with the outer feathers barred whitish. Crimson of hindcrown and occipital crest extending to entire sides of neck. Below, also streaked with black as in Darjeeling Pied, but underparts darker and more fulvous with a diffuse crimson patch on breast. Under tail-coverts fulvous, streaked with black, edged and tipped with crimson.

Female. Like male but with the entire crown black; sides of neck whitish, faintly tinged with crimson.

218

PICIFORMES

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 836, q.v.
BREEDING. Season, chiefly April and May. Nest, eggs and breeding biology as in 836.

MUSEUM DIAGNOSIS. See keys to the Species and Subspecies; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	123-135	29-33	c. 23-24	77-85 mm (Baker)

COLOURS OF BARE PARTS. Iris brown or red-brown. Bill: upper mandible almost black, lower mandible plumbeous grey, blackish at tip. Legs and feet dull green or greenish brown.

838, 839. *Darjeeling Pied Woodpecker. Picoides darjellensis darjellensis* (Blyth)

Picus (Dendrocopos) darjellensis Blyth, 1845, Jour. Asiat. Soc. Bengal 14 (1): 196 (Darjeeling and Nepal)

Dendrocopos darjellensis fumidus Ripley, 1951, Postilla, Yale Peabody Mus., No. 6: 3 (Mt Japvo, Naga Hills, Assam)

Dendrocopos darjellensis diatropus Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 22 (Blue Mountain, Lushai [Mizo] Hills)
Baker, FBI No. 1364, Vol. 4: 36
Plate 61, fig. 18

LOCAL NAME. *Sadyer mong prek* (Lepcha).

SIZE. Myna ±; length c. 25 cm (9½ in.).

FIELD CHARACTERS. A medium-sized pied woodpecker. Back entirely black; middle tail-feathers black, outer barred with white. Underparts yellowish fulvous, streaked with black; vent and under tail-coverts light crimson. Hindcrown and nape crimson in male, black in female.

STATUS, DISTRIBUTION AND HABITAT. A high-elevation woodpecker. Resident between c. 1700 and 3500 m even in winter; in summer up to c. 4000 m. From west-central Nepal eastward through Sikkim, Bhutan and NEFA. Assam in the higher hills of Cachar dist., Nagaland, Manipur and Mizo. Affects pine, oak, rhododendron and subtropical wet forest.

Extralimital. N. Burma, Shan States and N. Vietnam.

GENERAL HABITS. Typical woodpecker. Keeps singly or in pairs. Hunts high up on moss-covered tree-trunks and branches amongst the canopy foliage, frequently in association with the itinerant bands of small insectivorous birds. Also searches for food on decaying storm-blown trees bestrewn the forest floor.

FOOD. Larvae of beetles and other insects.

¹ Re-examination of the type series of 839, *Picoides darjellensis fumidus* (Ripley) from Nagaland compared with material from Nepal within a year, shows that the sole difference is a darker, more smoky colour on the lower breast. This is probably clinal, and it seems unwise to maintain the subspecies on this single colour difference (SDR).

PICIFORMES

220

Young (immature) male like female but with the whole crown more or less tipped with crimson.

STATUS, DISTRIBUTION AND HABITAT. A high-elevation woodpecker with a more or less overlapping altitudinal range with *P. darjellensis* (838) both summer and winter. Nepal eastward through Sikkim, Darjeeling dist., Bhutan, and NEFA; from c. 700 to 4000 m in moist-deciduous and evergreen forest — oak, rhododendron, etc.

GENERAL HABITS. Not appreciably different from 838, q.v. Behaviour rather like a tree-creeper's, flying from dead tree to dead tree and searching each methodically.

FOOD. Insects and grubs. Also nectar of flowers, e.g. rhododendron, procured by the 'short-cut' method, i.e. boring hole at base of corolla (SA).

VOICE AND CALLS. 'Loud for the size — a rather monotonous chip uttered at intervals when searching a tree, and rather more quickly when flying' (Cranbrook). 'Occasional rather soft, clear *putik*' (Lister).

BREEDING. Season, April-May. Nest (in dense tree jungle) and eggs (c/2-4) typical of the woodpeckers. Average size of 12 eggs 23.3 × 16.8 mm (Baker). Breeding biology not specifically recorded.

MUSEUM DIAGNOSIS. See Field Characters, and keys to the Species and Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	97-103	18-21	17	57-66 mm
			(remarkably consistent!)	(SA, BB, SDR, Stresemann)

Weight (winter) 1 ♂ 35 g; 2 ♀♀ 26, 28 g (SA).

COLOURS OF BARE PARTS. Iris brown or reddish brown. Bill pale plumbeous, darker on culmen and tip. Legs and feet plumbeous or greenish plumbeous.

840a. *Picoides cathpharius ludlowi* (Vaurie)

Dendrocopos cathpharius ludlowi Vaurie, 1959, Amer. Mus. Novit., No. 1946: 23 (Tseira, Pome, 'southeastern Tibet' = southeast Sikkim)
Not in Baker

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. As of 840. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Valley of the Po Tsangpo, SE. Tibet, between c. 95°5' and 95°15'E., therefore doubtless encroaching into our limits in that sector of NEFA.

GENERAL HABITS, FOOD, VOICE AND CALLS. Nothing specifically recorded.

BREEDING. Unrecorded.

MUSEUM DIAGNOSIS. Similar to *cathpharius* and *pyrrhithorax* (840, 841) in having the ear-coverts bordered posteriorly with red in both sexes, very broadly so in the male. Red patch on breast much more well marked and under tail-coverts much redder than in nominate *cathpharius* (Vaurie).

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 840.

WOODPECKERS

221

841. *Picoides cathpharius pyrrhorthorax* (Hume)

Picus pyrrhorthorax Hume, 1881, Stray Feathers 10: 150
(Aimole, eastern Manipur Hills)

Dendrocopos cathpharius cruentipictus Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 22 (Sangau, Lushai Hills)
Baker, FBI No. 1366, Vol. 4: 38

LOCAL NAME. *Khupi uoiu* (Angami Naga).

SIZE. Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. As of 840. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Assam hills south of Brahmaputra R. (Khasi and Cachar), Nagaland, Manipur and Mizo hills, above c. 1300 m. In mixed deciduous, tropical semi-evergreen and subtropical wet forest.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 840.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Male differs from that of nominate *cathpharius* (840) in having a broad crimson gorget on foreneck and upper breast, and under tail-coverts nearly all crimson; black striations on underparts also broader.

Female like ♀ *cathpharius* but with more crimson on upper breast and under tail-coverts.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	97–101	16–17	c. 15	59–60 mm (Baker)

COLOURS OF BARE PARTS. Iris lac-red. Bill leaden dusky, paler at base of lower mandible. Legs and feet dull sap-green (Hume).

PICOIDES AURICEPS (Vigors): BROWNHEADED PIED WOODPECKER

Key to the Subspecies

- Larger; wing c. 114–121 mm.....*P. a. auriceps*
Smaller; wing c. 105–115 mm.....*P. a. incognitus*

842. *Picoides auriceps auriceps* (Vigors)

Picus auriceps Vigors, 1831 [Apr. 6], (1830–31), Proc. Zool. Soc. London (1): 44
(Simla, restricted by Baker, 1921, JBNHS 28: 97)

Picus brevifrons Vigors in Gould, 1831, Century of Birds, Himalayan Mts, text to pl. 52 (Hilly districts of India = Simla ride Rand & Fleming, 1956, tom. cit.)
Baker, FBI No. 1370, Vol. 4: 42

Plate 61, fig. 6

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. A smallish pied woodpecker.

Male. *Above*, forehead and forecrown umber-brown; occipital crest golden yellow in front, crimson behind; a broad brown moustachial streak extending down side of neck. Upperparts brownish black, transversely barred with white. *Below*, fulvescent white, longitudinally streaked with

WOODPECKERS

223

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. As for 842. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; fairly common. Nepal, eastward from around 81°30'E. (Dailekh dist.) to the region of Kathmandu; from c. 700 to 2400 m, occasionally higher and evidently breeding to c. 3000 m. In open dry and moist temperate and pine forest.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 842.

BREEDING. Season, nest and eggs as in *auriceps*.

MUSEUM DIAGNOSIS. Similar to nominate *auriceps* but smaller. In both sexes forecrown more fulvous, less brownish, and streaking on breast slightly more conspicuous. Some females are brighter yellow, more golden less brownish on nape than females of *auriceps*, but this difference not constant.

MEASUREMENTS. Wing: 14 ♂♂ (Nepal) 105–115 (av. 109.9) mm against 13 ♂♂ (Simla) 114–121 (av. 117.4) mm — Vaurie.

Weight (summer) 3 ♂♂ 38–44 g; 3 ♀♀ 38–40 g (Dieselhorst).

COLOURS OF BARE PARTS. As in 842.

844. *Stripectus* Pied Woodpecker. *Picoides atratus* (Blyth)

Picus atratus Blyth, 1849, Jour. Asiat. Soc. Bengal 18 (2): 803 (Tenasserim)
Baker, FBI No. 1369, Vol. 4: 41

Plate 61, fig. 8

LOCAL NAMES. None recorded.

SIZE. Bulbul ±; length c. 21 cm (8 in.).

FIELD CHARACTERS. A smallish pied woodpecker, very similar to Fulvous-breasted Pied (845), also with crimson crown and crest in male, black in female. Barely distinguishable from it in the field by its whiter sides of head and neck and more boldly black-streaked underparts. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Khasi and Cachar hills, Nagaland (?), and hills of eastern Manipur; up to c. 2000 m. Probably also Mizo and East Pakistan hill tracts. Affects open pine and oak forest, and stunted trees on mountainsides and ridges.

Extralimital. Chin Hills, Arakan Yomas, Karen hills, S. Shan States, Tenasserim, N. Thailand and Laos (Peters). In the Mt Victoria region ranges between 1400 and 2800 m altitude; much commoner above 2000 m than below (Heinrich).

GENERAL HABITS. Typical woodpecker. Very similar to *P. auriceps* (842).

FOOD. Chiefly insects and grubs of beetles etc.

VOICE and CALLS. A shrill descending whinny as characteristic of the small woodpeckers (Deignan). A curious creaking, grating sound (by ♂) very like that produced by two rough pieces of wood — trunks or branches of trees — when pressed by wind and rubbing slowly against each other (Hume).

BREEDING. Season, end March to early May. Nest, the typical woodpecker hole cut in a small tree standing in a cultivation clearing in forest, usually under 4 metres from the ground. Eggs, 4 or 5, white. Average size of 22 eggs 21.3 × 16.9 mm (Baker). A curious habit observed by Baker at one nest was of both male and female sitting on the eggs at the same time. How general this habit may be is not known.

222

PICIFORMES

black; middle of abdomen tinged with yellow, lower abdomen and under tail-coverts crimson-pink.

Female. Like male but without the golden yellow and crimson on occiput.

Young (immature) like female but duller and more grey below. Crown umber-brown, each feather centred with yellow.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. Baluchistan, and from the Afghan frontier and Chitral eastward along the Himalayas through Punjab, Kashmir, Himachal Pradesh, Garhwal and Kumaon to western Nepal (to c. 81°E.); from c. 700 to 3300 m in open dry and moist temperate and pine forest — partial to oaks, deciduous, and mixed stands.

Extralimital. NE. Afghanistan (Nuristan).

GENERAL HABITS. Typical woodpecker. Common at most west-Himalayan hill stations, freely frequenting gardens and orchards. A pair has been observed roosting nightly during September on top of a veranda pillar in a P.W.D. Rest House, and a single bird in a nest-box in a hill garden for several weeks in February. The curious habit of drilling sapsucker-like holes in horizontal rings round medium-sized tree-stems has been noted also in this species: cf. 812 and 836 (A. E. Osmaston, JBNHS 24: 364).

FOOD. Insects, caterpillars and grubs. Also considerable quantities of seeds of Chir pine (*Pinus longifolia*), and pulpy fruit, e.g. mulberry (*Morus*), pear, apricot, etc.

VOICE and CALLS. 'A peculiar rather shrill and long cry at short intervals, reminiscent of the alarm call of *Halcyon smyrnensis*' (Scully). 'Note resembles that of *Hypopitius hyperythrus*' (Magrath). 'Drums for considerable periods during March–April' (Desirée Proud).

BREEDING. Season, chiefly April and May, sometimes into June. Nest-hole mostly under 8 metres from the ground; occasionally higher. Eggs, normally 4, rarely 5, white. Average size of 50 eggs 23.4 × 17.4 mm (Baker). Both sexes feed the nest-young; other facets of breeding biology not recorded.

MUSEUM DIAGNOSIS. See keys to the Species and Subspecies, and Field Characters; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	112–118	21–24	18–20	68–73 mm (Baker)

COLOURS OF BARE PARTS. Iris brown (♀) to crimson (ad. ♂). Bill bluish horny, darker on culmen, paler at base of lower mandible. Legs and feet dull greyish green.

843. *Picoides auriceps incognitus* (Scully)

Picus incognitus Scully, 1879, Stray Feathers 8: 246 (Valley of Nepal)

Dendrocopos auriceps conoveri Rand & Fleming, 1956, Fieldiana, Zool. 39: 1
(15 miles west of Tansen, West Nepal, 5500 ft alt.)
Baker, FBI No. 1370 (part), Vol. 4: 42

LOCAL NAMES. None recorded.

PICIFORMES

224

MUSEUM DIAGNOSIS. Very similar to *P. macei* (845); differs from it, sex for sex, in having the sides of the head and neck, chin, throat and foreneck more white, less fulvous. Underparts from throat to vent boldly streaked with black, with only a faint indication of barring on the flanks. Black band on hindneck and upper back usually broader.

Young (immature) of both sexes have the feathers of the crown black, tipped, with crimson.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	114–122	24–26	18–19	65–72 mm (Baker)

Weight ♂ ♀ c. 42–52 g (Hume).

COLOURS OF BARE PARTS. Iris brown (♀) to lac-red (♂). Bill greenish horny, darker on culmen and tip. Legs and feet dusky leaden or plumbeous green.

PICOIDES MACEI (Vieillot): FULVOUS-BREADED PIED WOODPECKER

Key to the Subspecies

- Breast faintly streaked; middle tail-feathers all black....*P. m. macei*
Breast boldly spotted; middle tail-feathers barred with white....
.....*P. m. endamanensis*

845. *Picoides macei macei* (Vieillot)

Picus Macei Vieillot, 1818, Nouv. Dict. d'Hist. Nat. 26: 80 (Bengal)

Picus enalis 'Temm.' = Bonaparte, 1850, Conspectus Av. 1: 137 (Java)

Picus Westerni Blyth, 1870, Ibis: 163 ('Himalaya' restricted to Simla by Biswas, 1961, JBNHS 58: 131)

Dendrocopos macei humei Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 22 (Mawryngkneng, Khasi Hills)

Baker, FBI No. 1368, Vol. 4: 39

Plate 61, fig. 10

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 19 cm (7½ in.).

FIELD CHARACTERS. A smallish pied woodpecker, with white-barred black back; bright crimson crown and crest in male, black in female. Very similar to Stripectus Pied (844), q.v.; confusion with it likely in the restricted Manipur area of Assam where both occur together. *Macei* has the throat and foreneck uniform pale rufous-brown and only the breast faintly black-streaked; *atratus* has the entire underparts, except chin, boldly striated with black.

STATUS, DISTRIBUTION and HABITAT. Resident. Common. The Himalayas from c. Murree eastward through Kashmir (?), Himachal Pradesh, U.P., Nepal, Sikkim, Bhutan and NEFA. Assam hills south of Brahmaputra R., Cachar, Nagaland, Manipur, Mizo, East Pakistan, W. Bengal, Orissa south to c. 18°N. lat. in northern Andhra (Sankrametta). Affects all types of open forest and wooded country, plain and hill, up to c. 2000 m altitude (recorded at c. 2800 m in Nepal — Proud).

WOODPECKERS

229

FIELD CHARACTERS. Broadly as of 849. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. The lower Himalayas from Murree (Rawalpindi dist.) eastward through N. Punjab, Himachal Pradesh, Garhwal, Kumaon and Nepal; from the terai up to c. 1700 m. Affects openly wooded country and scattered trees in cultivation, in tropical dry- and moist-deciduous and subtropical pine forest biotope. Intergrades with *semicoronatus* (849) in Nepal.

GENERAL HABITS, FOOD, VOICE and CALLS. As in *P. n. hardwickii* (852), q.v.

BREEDING. Season, chiefly April-May. Nest and eggs (c/4 or 5) as in 849. MUSEUM DIAGNOSIS. See Key to the Subspecies. Upper back and innermost secondaries barred with white.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	85-89	17-18	14-15	40-47 mm
♀♀	84-94	17-18	14-15	42-50 mm (Biswas)

Weight (summer) 3 ♂♂ 20-24 g; 2 ♀♀ 21-22 g (GD); (spring) 1 ♀ 27 g (SA). COLOURS OF BARE PARTS. As in 849.

849. *Picoides canicapillus semicoronatus* (Malherbe)

Picus semicoronatus Malherbe, 1849 (1848-9), Bull. Soc. Nat. Moselle, 5e cahier: 22 in text (Himalayas = Darjeeling)

Dendrocoptes nanus gigantisculus Koelz, 1952, Jour. Zool. Soc. India 4: 44 (Mawryngkneng, Khasi Hills)
Baker, FBI No. 1376, Vol. 4: 49

LOCAL NAME. *Daaja gadaiya mibhārang* (Cachari).

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. A diminutive pied woodpecker.

Male. Above, forehead and crown ashy grey; short occipital crest scarlet, surrounded by black. A broad whitish supercilium from behind eye continued as a wide band down sides of neck. Upper back black; wings, lower back, and rump black broadly barred with white. Upper tail-coverts and two central pairs of rectrices black; lateral rectrices more or less barred with white. Below, chin and throat whitish streaked with ashy; rest of underparts fulvous-brown, streaked with black.

Female similar to male but scarlet of hindcrown replaced by black.

STATUS, DISTRIBUTION and HABITAT. Resident; fairly common. Nepal (where it intergrades with *mitchellii*) through Darjeeling dist., Sikkim, Bhutan and northern Assam (intergrading with *canicapillus* in Cachar and Nagaland); terai, duars, foothills and up to c. 1700 m — occasionally to 2000 m. Affects open oak forest and mixed secondary jungle.

GENERAL HABITS, FOOD, VOICE and CALLS. Very similar to *P. n. hardwickii* (852), q.v.

BREEDING. Season, chiefly April-May. Nest, a shaft c. 10 to 20 cm deep bored in a thin branch between c. 5 and 10 m up in open forest. Tiny

WOODPECKERS

231

PICOIDES NANUS (Vigors): PIGMY WOODPECKER

Key to the Subspecies

	Page
Crown brown; upper tail-coverts barred black and white	
a Underparts unstreaked or very indistinctly so.... <i>P. n. gymnophthalmus</i>	233
b Underparts distinctly streaked	
1 Paler; crown very pale, streaks on underparts pale and diffused	
..... <i>P. n. nanus</i>	231
2 Darker; streaks on underparts coarse and dark.... <i>P. n. hardwickii</i>	231
3 Darkest; crown dark brown, streaks on underparts very fine and light..... <i>P. n. cinereigula</i>	233

851. *Picoides nanus nanus* (Vigors)

Picus nanus Vigors, 1832 (1831-2), Proc. Zool. Soc. London (1): 172 (Himalayas)
Xingipicus hardwickii brunneiceps Baker, 1926, Bull. Brit. Orn. Cl. 61: 42 (Udaipur-Jodhpur road, near Jelwara, Rajputana)
Baker, FBI No. 1381, Vol. 4: 53 (= *brunneiceps*)

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As of 852. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. From Rawalpindi dist. in W. Pakistan (Kahuta, c. 73°27'E. — Whistler, JBNHS 22: 626) eastward through Uttar Pradesh, Rajasthan, Nepal terai, Bihar, W. Bengal and East Pakistan, south to Orissa; foothills, terai, and plains. Affects light secondary forest and groves of mango and other trees around cultivation.

GENERAL HABITS, FOOD, VOICE and CALLS. As in *P. n. hardwickii* (852), q.v.

BREEDING. Season, principally February to early April. Nest and eggs (c/3 or 2) as in 852.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Differs from *P. n. hardwickii* (852), sex for sex, in being much paler overall with the crown almost yellowish brown; more white in upperparts, especially on upper tail-coverts; underparts paler with pale brown streaks.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	74-81	15-17	13-15	35-39 mm
♀♀	76-83	15-17	13-14	36-42 mm (Biswas)

COLOURS OF BARE PARTS. As in 852.

852. *Picoides nanus hardwickii* (Jerdon)

Picus (Dendrocoptes) Hardwickii Jerdon, 1844, Madras Jour. Lit. Sci. 13 (2): 138 (Southern India = Goomsoor, Ganjam)
Baker, FBI No. 1380, Vol. 4: 52

LOCAL NAME. *Chitta switi padhi* (Telugu).

SIZE. Sparrow —; length c. 13 cm (5 in.).

230

PICIFORMES

entrance-hole, c. 3 to 4 cm in diameter, drilled mostly on the underside of sloping or horizontal branches. Eggs, 4 or 5, white, glossy, roundish ovals. Average size of 30 eggs 18.6 × 14.4 mm (Baker). Both sexes share in drilling the nest-hole, incubation, and tending the young. Period of incubation not definitely ascertained; believed by Baker to be 12 or 13 days.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Upper back and central rectrices unbarred black, upper tail-coverts usually so; if any white present on latter, confined to a few feathers only.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	80-90	16-18	13-16	38-46 mm
♀♀	82-91	16-19	14-15	39-48 mm (Biswas)

Weight (spring) 1 ♀ 27 g — SA.

COLOURS OF BARE PARTS. Iris biscuit coloured or greyish brown ('reddish brown' — Biswas). Bill horny brown, plumbeous on c. basal two-thirds of lower mandible. Legs and feet olive-plumbeous; claws horny brown.

850. *Picoides canicapillus canicapillus* (Blyth)

Picus canicapillus Blyth, 1845 (after 12 July), Jour. Asiat. Soc. Bengal 14 (1): 197 (Arrakan; type from Ramree Island)
Baker, FBI No. 1379, Vol. 4: 51
Plate 61, fig. 3

LOCAL NAMES. *Daaja gadaiya kashiba*, *Daaja gadaiya mibhārang* (Cachari).

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Broadly as of 849. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. Manipur, Mizo, Tripura and East Pakistan (hill tracts); plains, foothills and up to c. 1700 m. Affects thin open forest in tropical semi-evergreen biotope.

Extralimital. Burma, Thailand and the Indochinese countries.

GENERAL HABITS, FOOD, VOICE and CALLS. Very similar to *P. n. hardwickii* (852), q.v.

BREEDING. Season (April-May), nest and eggs (c/4 or 5) as in 849.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Differs from *semicoronatus* (849) in having the upper tail-coverts barred, and central rectrices spotted with white. Scarlet of occiput confined as a streak on either side as in *mitchellii* (848).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	80-94	16-19	13-16	34-46 mm
♀♀	80-92	16-19	13-16	39-45 mm (once 49) (Biswas)

COLOURS OF BARE PARTS. As in 849.

232

PICIFORMES

FIELD CHARACTERS. A diminutive brown and white woodpecker.

Male. Upperparts barred dark brown and white; crown umber brown with a narrow scarlet streak on either side of occiput. A conspicuous broad white stripe from above eye down sides of neck. Below, brownish white streaked with blackish.

Female. Similar to male but lacking the scarlet streaks on sides of hindcrown.

STATUS, DISTRIBUTION and HABITAT. Resident; fairly common locally. All peninsular

India (excluding the range of *cinereigula* in the southwest) northward to the southern limit (undefined) of *nanus* in Gujarat: through Madhya Pradesh and east to Orissa. Intergrades with *nanus* in Saurashtra and over a large part of Madhya Pradesh and Orissa, and with *cinereigula* in Coorg dist., Mysore. Affects light deciduous and bamboo forest, secondary jungle, and groves of trees in and around cultivation; plains and foothills up to c. 1200 m.

GENERAL HABITS. Usually keeps in pairs, frequently in association with the roving bands of small insectivorous birds such as nuthatches, tits, flycatchers and warblers. Actions and behaviour very like a nuthatch, for which it may casually be mistaken. Partial to woody stems of shrubs close to the ground; also to slender overhanging branches and bare topmost twigs of tall forest trees. Hardly ever seen on large tree-trunks or boughs. Creeps actively along and around a twig like a nuthatch tapping energetically with the bill as it progresses, and hops or flits from one twig to another like a sparrow. Flight rather sparrow-like, lacking the characteristic bounds and undulations of its larger relatives. May often be seen sunning itself in the early morning on the topmost bare twigs of tall forest trees, clinging inert for long periods. Has been observed roosting at night in the crotch of a leafless upright twig in a small tree at an angle of c. 45°.

FOOD. Chiefly insects and grubs. Stomach analyses showed ants (*Crematogaster compressus*, *Oecophylla smaragdina*, *Crematogaster subnuda*), bees (*Apis florea*), weevils (*Torymus* spp.), various elatrids, caterpillars, and geometrid and buprestid larvae (Mason & Lefroy, 1912). Also eats pulp of fruits and berries (*Ficus* figs, *Buchanania latifolia* drupes) and of *Mimosa* flowers (*Madhuca indica*), and flower-nectar, e.g. of *Salmalia malabarica*, *Erythrina indica* and spp., and *Butea monosperma*. Often has pollen adhering to chin and forehead feathers suggesting its implication in cross-pollination.

VOICE and CALLS. An occasional feeble, mousy *click-r-r* (contact call?) while creeping along the twigs. A soft but far-carrying drumming, usually on a bare end-twig at the top of some large tree overlooking the surrounding jungle.

BREEDING. Season, February to July, chiefly March and April, varying locally. Nest, a tiny hole, under 3 cm in diameter, drilled in a small dead branch between 2 and 12 metres up, in open forest or a mango grove; it leads down 5 to 10 cm to a somewhat widened unlined egg-chamber. In horizontal branches the entrance-hole is placed on the underside. Eggs, 3 or 4, white, glossy, roundish ovals measuring c. 18 × 14 mm. Both sexes



WOODPECKERS

233

share in excavating the nest, incubation, and feeding the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. See Key to the Subspecies; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	74-80	14-16	13-15	33-40 mm
♀♀	75-81	14-16	13-15	34-40 mm (SA, BB)

Weight 1 ♀ 15 g (SA).

COLOURS OF BARE PARTS. Iris pale lemon-yellow; eyelids and circumorbital skin magenta. Bill horny grey, dusky on culmen; mouth greyish pink. Legs and feet dark slate or purplish brown; claws brown.

853. *Picoides nanus cinereigula* (Malherbe)

Picus cinereigula Malherbe, 1849, Rev. et Mag. Zool. (2), 1: 531

(Madras = Alleppy, Travancore)

Baker, FBI No. 1380 (part), Vol. 4: 52

LOCAL NAME. *Mārmākkoti* (for all woodpeckers — Malayalam).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As for 852. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; fairly common locally. From Coorg dist. in Mysore (where it intergrades with *hardwickii*) and the Nilgiris and Palnis, southward through Kerala. Affects secondary jungle in deciduous and semi-evergreen biotope; from plains level to c. 1200 m.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 852, q.v.

BREEDING. Season, January to March. Nest, eggs and breeding biology not specifically recorded; doubtless as in 852.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Intermediate between *hardwickii* of peninsular India and *gymnophthalmus* of Ceylon: upperparts brown rather than black, but darker than in *hardwickii*; crown very dark; streaking below, though definite, is so fine and light that in some specimens the underparts appear almost unicolorous, dirty white.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	71-76	15-17	13-14	33-37 mm
♀♀	71-77	15-16	12-13	32-36 mm (SA, BB)

COLOURS OF BARE PARTS. As in 852.

854. *Picoides nanus gymnophthalmus* (Blyth)

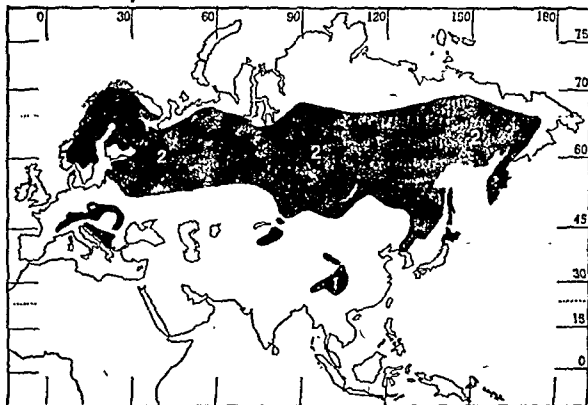
Picus gymnophthalmus Blyth, 1849, Jour. Asiat. Soc. Bengal 18 (2): 804 (Ceylon)

Baker, FBI No. 1382, Vol. 4: 54

LOCAL NAMES. *Māi kerellā*, *Chuti kerellā* (Sinhala); *Siru mārāmkotti* (Tamil).

WOODPECKERS

235

Picoides tridactylus

■ Breeding range
1 *P. t. funebris* (855).
2 Other Eurasian races (about 7) extralimital.

MEASUREMENTS

	Wing	Bill (from skull?)
3 ♂♂	130	31-33 mm
4 ♀♀	124-130	29-31 mm (Kinnear)

COLOURS OF BARE PARTS. Not recorded.

Genus HEMICIRCUS Swainson

Hemicircus Swainson, 1837, Classif. Bds. 2: 306

Type, by monotypy, *H. concretus* Pl. col. 90 = *Picus concretus* Temminck

Bill straight, laterally compressed towards tip; nasal ridge well marked, beginning at base about halfway between culmen and commissure and extending half the distance to tip; nostrils covered with plumes. Feet very large; hallux well developed; fourth toe longer than third. Tail very short, barely exceeding tail-coverts and only about one-third length of wing. Rectrices rounded at the end, the outer pair distinctly shorter than the rest.

The genus differs from all Indian woodpeckers in that the hyoid horns are curved round the right bulbous oculi. For a comparative study of the tongue of this and some other Indian woodpeckers see Steinbacher, J., 1934, Jour. f. Orn. 82(3): 359-408. Cf. Ali, Salim, 1951, IBNHS 49: 786.

234

PICIFORMES

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As of 852. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Subspecies endemic in Ceylon. Plentiful but locally distributed, throughout the lowlands and in the hills to over c. 1200 m. Affects secondary dry- and moist-deciduous jungle, neglected overgrown plantations, etc.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 852, q.v.

BREEDING. Season, February to June; occasionally in October and December (Phillips). Nest and eggs (c/2 or 3) as in *hardwickii*, the latter measuring c. 16 × 14 mm.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Differs from *hardwickii* (852) in having the upperparts sooty black throughout (v. sooty brown), this difference particularly conspicuous on the crown. Underparts dirty white, faintly washed with yellowish fulvous and practically unstreaked.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	72-77	14-17	13-15	33-37 mm
♀♀	74-77	14-15	13-14	33-35 mm (Riwas)

Weight 1 ♂ 15 g; 1 ♀ 17 g (SDR).

COLOURS OF BARE PARTS. As in 852.

855. Threetoed Woodpecker. *Picoides tridactylus funebris* Verreaux

Picoides funebris J. Verreaux, 1870, Nouv. Arch. Mus. Hist. Nat. Paris, 6 Bull.: 33 (Mountains of Chinese Tibet = Sikang)

Not in Baker, FBI

Plate 61, fig. 7

LOCAL NAME. *Nakpo tungla* (Tibetan).

SIZE. Myna ±; length c. 23 cm (9 in.).

FIELD CHARACTERS. A medium-sized black and white woodpecker with no trace of crimson in the plumage, even in male. Above. Crown yellow in male, black in female; upperparts black with narrow broken white streaks. Below, chin, throat, foreneck to upper breast white; rest of underparts almost entirely black with small white flecks. Outer tail-feathers narrowly barred with white.

STATUS, DISTRIBUTION and HABITAT. Moderately common in conifer and deciduous forests in Kongbo and Takpo districts of SE. Tibet adjoining NEFA, therefore probably occurs also within our limits. Collected by Frank Ludlow at between c. 3300 and 4000 m, June to September (*Ibis* 1944: 369).

Extralimital. Western China in provinces of Kansu, Sikang, Szechuan and Yunnan (Peters).

GENERAL HABITS, FOOD, VOICE and CALLS. Tame and very silent. Has 'a low single note' (Ludlow).

BREEDING. Not recorded in our limits.

MUSEUM DIAGNOSIS. Toes only three. *Funebris* differs from all other subspecies of *P. tridactylus* in being much blacker, especially on the underparts.

236

PICIFORMES

856. Heartspotted Woodpecker. *Hemicircus canente canente* (Lesson)

Picus canente Lesson, 1830, Cent. Zool.: 215, pl. 73 (Pegu)

Picus cordatus Jerdon, 1840, Madras Jour. Lit. Sci. 11 (1): 211

(Forests of Malabar and in the Wynad)

Baker, FBI Nos. 1409, 1410, Vol. 4: 84, 85

Plate 61, fig. 4

LOCAL NAME. *Pülli mārāmkotti* (Malayalam).

SIZE. Sparrow +; length c. 16 cm (6½ in.).

FIELD CHARACTERS. A smallish, squat, black and buff woodpecker with short, very slender neck, large crested head, and a strikingly short and broad rounded tail.

Male. Above, forehead, crown, and crest black, the first two minutely speckled with white. Back black with a broad buff band on either side (wing-coverts and tertiaries) marked with heart-shaped black spots; rump buffy white. Below, chin, throat, foreneck and sides of neck buffy white; rest of underparts dusky olive and black.

Female similar to male but has the forehead and crown buffy white; crest black as in ♂.

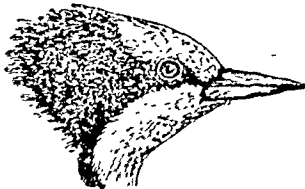
Young (both sexes) like ♀ but much darker below, being, in the earlier stages, blackish brown or chocolate with no olive tinge.

STATUS, DISTRIBUTION and HABITAT. Resident; sparsely distributed, but locally not uncommon.

The Sahyadri or Western Ghats complex (including Nilgiri and Palni hills) from Kerala northward through Mysore, Goa and Maharashtra to the Tapi river (c. 21°N. lat., S. Gujarat) and Khandesh. Thence eastward across the forested hill tracts of Madhya Pradesh (the Satpura trend) through Chanda and Bastar districts, Orissa, W. Bengal, East Pakistan, Assam south of Brahmaputra river, and Manipur; plains, foothills and up to c. 1300 m. Affects moist-deciduous and secondary evergreen forest biotope. Partial to teak and bamboo jungle, and to shade trees in S. Indian coffee plantations.

Extralimital. Burma, Malay Peninsula, Thailand (chiefly lowlands of the eastern provinces) and southern Indochinese countries (Peters).

GENERAL HABITS. Keeps singly or in pairs, commonly amongst the mixed hunting parties of small insectivorous birds. Like the pygmy woodpeckers hunts on thin terminal branches up in tall trees rather than on the trunks and boughs. Creeps actively up, along, and around the twigs with jerky bobbing movements, very like some mechanical toy, tapping repeatedly with its bill here and there to dislodge insects from the cracks, occasionally digging into rotten wood with energy and determination. The constantly uttered squeaky calls give the first indication of its presence in a tree or grove. Commonly perches crosswise on twigs like a passerine bird, a habit which, combined with the large crested head, attenuated neck and stumpy



♀. × c. 1

WOODPECKERS

237

rounded tail identifies its silhouette a long way off. Flight weak and undulating, an exaggerated caricature of the characteristic bounding flight of the woodpecker family.

FOOD. Ants, termites, grubs, and other insects.

VOICE and CALLS. A squeaky chattering scream (or long drawn *chur-r*) frequently repeated. A characteristic rather pleasant — sharp but not loud — *tree, tree, tree*, sometimes strung out into a trill of 7 or 8 notes (Betts). A harsh jerky call somewhat like the wryneck's (SA). A thin, plaintive *su-rie* uttered with the head stiffly lowered and repeated 10 or 12 times, each *su-rie* accompanied by a bow or bob; a sharp double *ichlik-ichlik* given in flight (K. K. Neelakantan). The individual interpretation of these calls has not been attempted. Also recorded drumming during the breeding season.

BREEDING. Season, chiefly November to April. Nest, a tiny hole c. 3 to 4 cm in diameter drilled in a dead branch usually between 3 and 4 metres up, sometimes considerably higher. It passes obliquely downward to a depth of 15 or 20 cm or so, into a somewhat widened egg-chamber. Nests in Kerala recorded in rotting wooden fence-posts adjacent to a used plantation footpath 1 to 1.5 metres from the ground. Eggs 3, sometimes only 2, white, unmarked, measuring about 24 × 18 mm. Other facets of breeding biology not recorded.

MUSEUM DIAGNOSIS. There is no difference in coloration between birds from western India and the Assam-Burma population. There is, however, a continuous cline in size from south-west to north-east as shown by Salim Ali (loc. cit.), but no advantage is to be gained by upholding the smaller Kerala race *cordatus* hitherto recognized.

Both sexes have a tuft of bristly feathers in the middle of the back invariably clotted with a viscid resinous substance with a decidedly pleasant smell. The origin and purpose of this peculiar feature, which disappears in preserved skins, calls for investigation.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♂	92-103	20-25	17-20	28-37 mm
♀♀	85-98	17-21	16-19	28-38 mm
		(from skull)		(SA, HW)

Weight 2 ♂♂ 35, 38 g; 1 ♀ 30 g (SA).

COLOURS OF BARE PARTS. Iris olive-brown. Bill dark horny brown; mouth greyish pink. Legs, feet and claws blackish slate or brownish black.

MISCELLANEOUS. Parasitized by tick *Haemaphysalis spinigera* (Rajagopalan, JBNHS 69: 62).

Genus BLYTHIPICUS Bonaparte

Blythipicus Bonaparte, 1854, *Ateneo Italiano* 2: 124. (Separately paged reprint, *Consp. Volucr.* Zygodact. 1854: 9.) Type, by subsequent designation, *Picus* (i.e. *Hemicircus*) *rubiginosus* Swainson

Bill long and stout, the culmen angulate and almost straight. Nasal ridge strongly developed, nearer to culmen than to commissure. Nostrils exposed. Chin angle about halfway between gape and tip of bill. Wing rounded: primaries just exceeding secondaries in length. Outer pair of rectrices longer than coverts. Hind toe well developed; fourth toe a little longer than third.

WOODPECKERS

239

strident *churra-cha-churra-cha-churra*”) uttered while flying agitatedly from tree-trunk to tree-trunk around the intruder, accompanied by an excited flicking of the wings on alighting.

BREEDING. Season, principally May and June. Nest, the typical woodpecker hole in a living or dead tree-trunk or stump in heavily wooded ravines etc., normally between 1 and 4 metres from the ground. Eggs 3, sometimes 2 or 4, white, long ovals. Average size of 25 eggs 29.7 × 21.2 mm (Baker). Both sexes take part in drilling the nest-hole, incubation, and feeding the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Breast in adult has a rusty wash, in juvenile dull earthy brown.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
		(from skull)		
♂♂	145-153	48-54	29-30	82-98 mm
♀♀	137-151	45-51	—	c. 82-85 mm
				(SA, BB, Stresemann)

Weight 1 ♂ 170 g; 1 ♀ 155 g (SA).

COLOURS OF BARE PARTS. Iris dull crimson; orbital skin olive-brown. Bill greenish yellow, more greenish at base of lower mandible. Legs and feet and claws horny brown.

Genus CHRYSOCOLAPTES Blyth

Chrysocolaptes Blyth, 1843, *Jour. Asiat. Soc. Bengal* 12 (2): 1004. Type, by subsequent designation, *C. strictus* = *Picus strictus* Horsfield

Bill long and straight. Nasal ridges strongly developed, commencing at base of bill and about half-way between commissure and culmen. Nostrils long and expanded. Feet exceptionally strong with the hallux well developed; claws long and strong. Outer tail-feathers slightly exceeding coverts in length.

Key to the Species

	Page
1 Crown of male red, of female yellow; back black..... <i>C. festivus</i>	239
2 Crown of male red, of female spotted with white; back golden olive..... <i>C. lucidus</i>	242

CHRYSOCOLAPTES FESTIVUS (Boddaert): BLACKBACKED WOODPECKER

Key to the Subspecies

Larger and paler; forehead white; white centres of chest feathers more pronounced..... <i>C. f. festivus</i>
Smaller and darker; much more blackish on upperparts; black borders of feathers on lower parts broader..... <i>C. f. lentus</i>

858. *Chrysocolaptes festivus festivus* (Boddaert)

Picus festivus Boddaert, 1783, *Table Pl. enlum.*: 43 (Goa ex Daubenton, pl. 696) Baker, FBI No. 1403, Vol. 4: 77 Plate 60, fig. 12

LOCAL NAMES. None recorded.

238

PICIFORMES

857. Redeared Bay Woodpecker. *Blythipicus pyrrhotis pyrrhotis* (Hodgson)

Picus Pyrrhotis Hodgson, 1837, *Jour. Asiat. Soc. Bengal* 6: 108 (Nepal) *Blythipicus pyrrhotis porphyreus* Koelz, 1954, *Contrib. Inst. Regional Exploration*, No. 1: 23 (Nongpoh, Khasi Hills) *Blythipicus pyrrhotis pyrrhotipira* Koelz, 1954, *Contrib. Inst. Regional Exploration*, No. 1: 23 (Karong, Manipur) Baker, FBI No. 1383, Vol. 4: 55 Plate 62, fig. 13

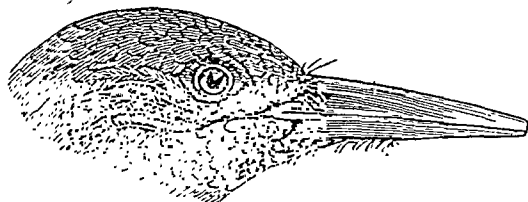
LOCAL NAMES. *Fi-ing* (Lepcha); *Das gadaiya gojao* (Cachari).

SIZE. Pigeon —; length c. 27 cm (11½ in.).

FIELD CHARACTERS. A medium-sized barred rufous and black woodpecker with a prominent scarlet cross-band on nape extending to sides of neck behind the ear-coverts, and greenish yellow bill.

Female. Similar to male but without the scarlet nape-band. Could casually be mistaken for Rufous Woodpecker (803), but larger size, greenish yellow bill, and evergreen forest habitat diagnostic.

Young (immature). Underparts duller than in female, but everywhere faintly barred with rufous. Head, nape, and sides of neck blackish with broad chestnut median streaks.



× c. 1

STATUS, DISTRIBUTION and HABITAT. Resident. From central Nepal eastward through Sikkim, Bhutan and NEFA. Also Assam hills south of the Brahmaputra, Nagaland, Manipur, Mizo and East Pakistan (hill tracts); plains, duars, foothills and up to c. 2000 m. Affects dense evergreen climax forest and adjacent secondary jungle with bamboo.

Extralimital. Burma, northern Thailand, North Vietnam.

GENERAL HABITS. Almost always met with in pairs — rarely 3 or 4 together. Keeps fairly low down in bamboo thickets and undergrowth in dense forest, avoiding the open parts. Hops on the ground feeding among the roots and clinging to the bases of stems and decaying stumps, its presence usually betrayed only by its distinctive calls, or when flushed from the ground. Less commonly hunts also on higher trunks and branches.

FOOD. Mainly white ants, and beetle larvae.

VOICE and CALLS. An unmusical but not unpleasant *chake, chake, chake*, *chake* uttered slowly and deliberately four or five times, falling off in loudness as increasing in tempo towards the end. A loud chattering when flushed from undergrowth, *keret-keret-keret* (rendered by Smythies as a 'harsh

240

PICIFORMES

SIZE. Pigeon —; length c. 29 cm (12½ in.).

FIELD CHARACTERS. A medium-sized woodpecker rather like the Golden-backed (819) on a casual glimpse.

Male. Above, crown and crest crimson. Sides of hindneck white, running down to unite in a prominent white V on middle of upper back. Lower back and tail black. Upperparts of wings golden olive. Below, cheeks, chin, throat and foreneck fulvous-white with five narrow longitudinal black streaks. Rest of underparts buffy white, the feathers edged with black forming a bold scaly pattern on breast.

When only the head and neck of the bird are visible from behind a tree-trunk the 5-striped pattern on the white cheeks and throat (v. black streaked with white in Goldenbacked Woodpecker [819]) is diagnostic.

Female. Similar to male but crown and crest golden yellow instead of crimson.

STATUS, DISTRIBUTION and HABITAT. Resident; widely but sparsely distributed everywhere: practically all peninsular India with the exception of Sind, western Rajasthan, Kutch and most of Saurashtra in the west, and Assam and E. Pakistan in the east, thus roughly between longitudes 72° and 88°E., and south of latitude 28°N. Affects deciduous forest — low country and foothills with scrub and scattered trees.

GENERAL HABITS. Keeps singly or in pairs — sometimes trios (with the single young of the year?) — in open deciduous tree and bamboo forest. Feeds on tree-trunks as well as ground; partial to charred patches where the grass has been recently burnt. In non-breeding season roosts at night in disused nest-holes in tree-trunks, each bird occupying one of the several usually chiselled out one above the other 30 to 60 cm apart, in successive years. Whether the 'apartments' are occupied on an 'ownership' basis by birds themselves raised in the same hole, and whether the same individuals occupy the same hole night after night, are interesting points for investigation.

FOOD. Chiefly ants and grubs of wood-boring beetles.

VOICE and CALLS. A loud chattering 'laugh' similar to the Golden-back's, particularly to that of the Larger, *C. lucidus* (850-62), but different in timbre; the two confusable if heard independently and at different times. A rapidly repeated unmetallic *kuirri-rr-rr-rr* uttered in runs of 6 or 7 every few minutes (K. K. Neelakantan).

BREEDING. Season, overall November to March, varying locally. Nest, the typical woodpecker hole chiselled out in a tree stem between 2 and 7 metres from the ground. A fresh hole is excavated each year so that often four or more holes may be found in the same stem one above the other in apartment-house fashion, though only the latest is occupied for nesting.

WOODPECKERS

241

Holes usually distinctive — pear- or 'horse-collar'-shaped rather than circular as in most woodpeckers, measuring c. 11×8 cm in diameter and 25–30 cm deep. Eggs, normally a singleton, rarely 2, white, unmarked. Average size of 5 eggs 31.2×24.1 mm. Both sexes share in excavating the hole and all other domestic chores. Incubation period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young (immature). Crown and crest flame-coloured in male; black, spotted with white in female.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	152–162	44–54	30–31	72–85 mm
♀♀	149–158	43–51	26–30	72–81 mm (SA, HW)

COLOURS OF BARE PARTS. Iris creamy orange to crimson (brown in young birds); circumorbital skin pale flesh colour. Bill slaty or brownish black. Legs and feet greenish plumbeous; claws horny brown.

859. *Chrysocolaptes festus tantus* Ripley

Chrysocolaptes festus tantus Ripley, 1946, *Spolia Zeylanica* 24: 214
(Embilipitiya, Ceylon)

Baker, FBI No. 1403 (part), Vol. 4: 77

LOCAL NAMES. *Māhā-rāṅg kērellā* (Sinhala); *Mārāmkottī, Thāchchan kūrūrī* (Tamil).

SIZE. Pigeon —; length c. 29 cm ($12\frac{1}{2}$ in.).

FIELD CHARACTERS. As for 858. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Subspecies endemic in Ceylon. Locally distributed in small numbers, in a few well-wooded areas in the North Central Province in the northern half of the island, and in the Hambantota and Embilipitiya districts of the Southern Province (Phillips).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 858, q.v.

BREEDING. Season, January to March; occasionally in September. Nest, frequently drilled in decaying trunks of coconut palms near villages, and eggs (c) 1 or 2 as in 858.

MUSEUM DIAGNOSIS. Differs from the Indian population (858) in being smaller and darker. Black stripes on chin and throat noticeably broader, as are also the black borders to the feathers on breast and abdomen.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
1 ♂	150	52	29	75 mm
2 ♀♀	144, 147	49 (1) (from feathers) 43 (1)	28 (1)	76, 79 mm (HW, SDR)

COLOURS OF BARE PARTS. As in 858.

WOODPECKERS

243

861. *Chrysocolaptes lucidus guttaeristatus* (Tickell)

Picus guttaeristatus Tickell, 1833, *Jour. Asiat. Soc. Bengal* 2: 578

(Jungles of Borabhum and Dholbhum)

Indopicus delesserti Malherbe, 1849 (1848–9), *Mém. Acad. Nat. Metz* 30: 343
(India, restricted to Calcutta by Ripley)

Baker, FBI No. 1404, Vol. 4: 78

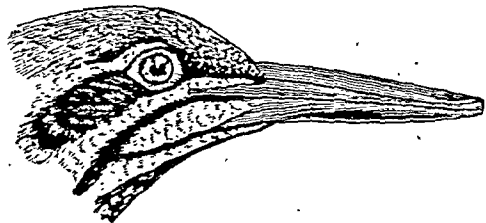
Plate 60, fig. 17

LOCAL NAMES. *Tashi-on-bau* (Lepcha); *Dauja gadaiya* (Cachari).

SIZE. Pigeon; length c. 33 cm (13 in.).

FIELD CHARACTERS. A medium-sized goldenbacked woodpecker.

Male. Above, crown and crest crimson; nape and hindneck white. Back and mantle golden olive; rump crimson; upper tail-coverts and tail black. Below, buffy white as in *festus* (858) but with foreneck and breast very dark, the scaly pattern looking more like white spots on a black background. Cheeks and chin white; two black stripes on either cheek meeting on sides of throat and continuing; a fifth broader black stripe down centre of chin and foreneck (see figure).



♂, x c. 1

Female similar to male but with the crown and crest black, stippled with white.

Casually confusable, sex for sex, with Himalayan Threetoed Goldenback (824), but different pattern of the black throat-stripes diagnostic, q.v.

Young (immature) has crown and crest as in female, the male first acquiring the crimson occipital crest and later the crimson crown.

STATUS, DISTRIBUTION AND HABITAT. Resident; fairly common in the appropriate biotope. East-central Nepal eastward through Sikkim, Bhutan, NEFA and Assam; Nagaland, Manipur, Mizo, East Pakistan, W. Bengal, Bihar, Orissa, eastern Andhra (Vaisakhapatnam Ghats); south to Bastar dist. in eastern Madhya Pradesh. Affects well-wooded moist-deciduous and semi-evergreen forest areas, especially in broken foothills country; chiefly below c. 700 m, sparingly up to 1600 m.

Extralimital. Burma, Shan States, Thailand south to the Lankawi Islands; S. Vietnam.

GENERAL HABITS. Typical woodpecker. Keeps in noisy pairs, occasionally family parties, flying swiftly from tree to tree with the characteristic

242

PICIFORMES

CHRYSOCLAPTES LUCIDUS (Scopoli): LARGER GOLDENBACKED WOODPECKER

Whistler has drawn attention to the fact that in this species the top of the bill has on each side, between the nasal groove and the culmen ridge, a series of fine transverse ridges closely resembling the match-striker found on old-fashioned silver match-boxes. The function of this feature needs investigation.

Key to the Subspecies

	Page
A Back golden yellow or olive, only rump crimson	
1 Back more gold, less olive	
a Smaller.....	<i>C. l. guttaeristatus</i> 243
b Larger.....	<i>C. l. sultaneus</i> 242
2 Back dark, more olive, less gold.....	<i>C. l. chersonesus</i> 244
B Back as well as rump crimson.....	<i>C. l. stricklandi</i> 245

860. *Chrysocolaptes lucidus sultaneus* (Hodgson)

Picus sultaneus Hodgson, 1837, *Jour. Asiat. Soc. Bengal* 6: 105 (Nepal, restricted to Simra, central Nepal, Ripley, 1950, *JBNHS* 49: 380)

Baker, FBI No. 1405, Vol. 4: 80

LOCAL NAMES. None recorded.

SIZE. Pigeon; length c. 33 cm (13 in.).

FIELD CHARACTERS. As in 861. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Garhwal and Kumaon east to central Nepal where the population intergrades with *guttaeristatus* (861). Affects evergreen forest: terai, duns and up to c. 1600 m.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 861, q.v.

BREEDING. Season, nest, eggs and breeding biology as in 861.

MUSEUM DIAGNOSIS. Differs from adjoining *guttaeristatus* (861) in being larger, with a comparatively larger bill.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	172–190 (aver. 180.5)	50–64 (mostly 60 or over)	30–31	92–102 mm (Baker)

Central Nepal birds (intermediate) give:
(from skull)

5 ♂♂	171–180 (aver. 175)	56–62	—	80–100 mm
3 ♀♀	174–180 (aver. 177.5)	53–58	—	98–99 mm (Birwas)

Weight (spring) 3 ♂♂ 188–233 g; 3 ♀♀ 182–195 g (Diesselhorst).

COLOURS OF BARE PARTS. As in 861.

PICIFORMES

244

bounds and undulations, alighting low on a trunk and working upwards in jerky spurts and spirals. Seldom, if ever, feeds on the ground. Very agile in dodging behind tree-trunks to escape observation, and could thus be easily missed unless first seen alighting. Usually shows no more of itself from behind the stem than the head and neck, when the pattern of the stripes on cheeks and foreneck is a useful pointer to its identity. A pair has been observed hawking winged termites in company with drongos, launching out in the air, hovering like a Pied Kingfisher clumsily, making half a dozen captures in the bill and returning to the tree (Hume quoting Capt. Fielden, SF 3: 64–5).

FOOD. Insects, grubs, etc. Also nectar, e.g. of *Salmaia* and *Erythrina* flowers, as a subsidiary item.

VOICE AND CALLS. A discordant trilling 'laugh' or scream, rather like that of the commoner Goldenbacked Woodpecker (819) but shriller and more 'tinny', uttered chiefly in flight. Also drums energetically in the breeding season.

BREEDING. Season, chiefly March to May. Nest, the typical woodpecker hole in a tree-trunk, vertically oval in shape rather than circular, 2 to 5 metres up, in practically every type of wooded country — mango groves near villages or within humid forest. The same cavity is often used for many successive years, with fresh entrances cut each time all leading to the same chamber, but whether by the same or other birds is not known. Eggs, 4 or 5, white, unmarked. Average size of 40 eggs 30.0×22.1 mm (Baker). Period of incubation, *vide* Baker, 14 to 15 days, and fledging period 24 to 26 days.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Differs from West Himalayan *sultaneus* (860) in being slightly smaller with a comparatively smaller bill.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	157–178	43–56 (from skull)	30–31	85–97 mm (Baker)
4 ♂♂	165–172	48–50	31–33	90–97 mm
4 ♀♀	168–173	47–49	31–32	83–90 mm (SA)

COLOURS OF BARE PARTS. Iris creamy orange or fawn colour. Bill horny brown or black, plumbeous at gape and base of lower mandible. Legs and feet greenish plumbeous; claws horny brown.

862. *Chrysocolaptes lucidus chersonesus* Kloss

Chrysocolaptes strictus chersonesus Kloss, 1918, *Ibis* 113 (Johore, Malaya)
Chrysocolaptes guttaeristatus socialis Koels, 1939, *Proc. Biol. Soc. Washington* 52: 78
(Jabalbad, Bombay Presidency)
Baker, FBI No. 1406, Vol. 4: 80

LOCAL NAMES. For woodpeckers in general: *Mārāmkottī* (Malayalam); *Thāchchan kūrūrī* (Tamil).

WOODPECKERS

245

SIZE. Pigeon \pm ; length c. 31 cm (12½ in.).

FIELD CHARACTERS. As of 861. See Museum Diagnosis.

May be confused with the superficially similar Threetoed Woodpecker (825)—also crimsonbacked—but the slightly larger size, white hindneck (v. black), and distinctive cheek markings will distinguish this bird.

STATUS, DISTRIBUTION and HABITAT. Resident; not uncommon in the appropriate biotope. Kerala and northward along the Western Ghats complex (including the Nilgiri and Palni hills) through Mysore, Goa, Maharashtra and Gujarat to the Tapi river, and Khandesh; from plains level up to c. 1800 m. Affects evergreen and moist-deciduous biotope; partial to scrub and mixed secondary jungle in the moist intermediate zone; rare or absent in the coastal belt.

EXTRALIMITAL. Extreme southern part of Malay Peninsula, Singapore island, Riau Archipelago, Sumatra, western and central Java (Peters).

This is one more example (cf. Great Pied Hornbill [776]) of the fact that birds of the same species at the extremities of the 'Indo-Malayan horseshoe', i.e. Ceylon-India-Burma-Malaya, are closely alike.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 861, q.v. Has been observed roosting at night on a bare branch at an angle of 45° to the trunk, squatted along it as when searching for food, but completely 'frozen'.

BREEDING. Season, overall December to March. Nest, similar to that of Blackbacked Woodpecker (858), a pear-shaped or vertically oval hole c. 8 cm wide in a tree-trunk at heights between 2 and 20 metres, running in horizontally at first, then turning to vertical for 30 cm or so and ending in a slightly bulbous chamber. The lower edge of the entrance-hole is usually bevelled off into a slope. Eggs, normally a singleton, very rarely 2, white, unmarked, measuring c. 28 × 20 mm.

MUSEUM DIAGNOSIS. Differs from *guttacristatus* (861) in being somewhat smaller, with the upperparts more olive, less golden, making them appear decidedly darker. The crimson of the rump usually extends slightly further up the back.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	149-158	42-52	30-31	77-91 mm
♀♀	147-157	41-50	27-30	80-89 mm (SA, HW)

Weight 2 ♀♀ 163, 164 g (SA).

COLOURS OF BARE PARTS. Iris cream colour with a pinkish tinge (more precisely, a fine outer ring reddish, inner ring pinkish cream colour). Bill dark horny brown, plumbeous at chin; mouth slaty pink. Legs and feet greyish green or greenish plumbeous; claws dark horny brown.

863. *Chrysocolaptes lucidus stricklandi* (Layard)

Brachypterus Stricklandi Layard, 1854 (June), Ann. Mag. Nat. Hist. 13 (3): 449 (Gillymale, Ceylon)

Indopicus Carlotta Malherbe, 1854 (July), Rév. et Mag. de Zool., ser. 2, 6: 379 (Ceylon)

Baker, FBI No. 1407, Vol. 4: 81
Plate 60, fig. 18

LOCAL NAMES. For woodpeckers in general: *Mikālāṅ kērellā* (Sinhala); *Mārām-kētti*, *Thachchen kētti* (Tamil).

BROADBILLS

247

the shafts. Rictal bristles present. Bill broad and flat, comparatively small, with sides of upper mandible straight, not overhanging near gape. Nostrils rounded, exposed, at base of culmen. Scutellation of tarsus in front almost obsolete; inside of tarsus covered with an undivided lamina. Sexually dimorphic.

864. Collared Broadbill. *Serilophus lunatus rubropygius* (Hodgson)

Raja Rubropygia Hodgson, 1839, Jour. Asiat. Soc. Bengal 8: 36 (No locality = Nepal)
Baker, FBI No. 1334, Vol. 3: 470

Plate 63, fig. 3

LOCAL NAMES. *Kāi sīyā* (Nepali); *Reb kyul* (Lepcha); *Das hungari* (Cachari).

SIZE. Bulbul \pm ; length c. 19 cm (7½ in.).

FIELD CHARACTERS. A sluggish arboreal ashy grey bird with a short recumbent crest overhanging the nape. Lower back chestnut. Wings black with contrasting chestnut, blue, and white markings. Tail black, graduated, the lateral rectrices white-tipped. Prominent yellow skin around eye.

Female. Similar to male, but with a demi-gorget of white-tipped feathers on either side of neck.

STATUS, DISTRIBUTION and HABITAT. Resident; Nepal eastward through Bhutan and

NEFA, Assam, Nagaland, Manipur, Mizo and East Pakistan (hill tracts): terai, plains, foothills and up to c. 1700 m. In tropical semi-evergreen and evergreen biotope. Affects sal and mixed secondary tree and bamboo jungle.

EXTRALIMITAL. Arakan, Chin Hills, and northern and western Burma.

GENERAL HABITS. Arboreal and somewhat crepuscular. Keeps in parties of 5 to 20 or so to the better wooded parts, the individuals loosely together. Very active in the morning and at dusk, but also hunts lethargically during the day. Tame and confiding to the point of stupidity, even after being fired at. Perches very erect, the tail kept well down and frequently twitched. Takes insects off the branches and foliage of trees in clumsy but agile fluttering sallies. Bounces lightly from branch to branch using the wings as a parachute—an action reminiscent of the Common Wood Shrike.

FOOD. Grasshoppers, mantises and other insects. Tiny land shells have been found crammed in a stomach dissected.

VOICE and CALLS. A soft rather musical whistle, and a low *chir-r-r-r* uttered both at rest and in flight have been described. Also a loud mouse-like squeaking when alarmed.

BREEDING. Season, March to May or June. Nest, a bulky untidy ball c. 15 cm in diameter of coarse grass, weeds or moss bound together with black hair-like roots, with a round lateral entrance c. 5 cm across overhung by a porch—rather like an enlarged sunbird's nest. Lined with broad bamboo or grass leaves or draped on the exterior with spiders' egg-cases



♀, x c. 1

PASSERIFORMES

246

SIZE. Myna \pm ; length c. 29 cm (11½ in.).

FIELD CHARACTERS. As of 861, sex for sex, but with entire back crimson instead of rump only. See Museum Diagnosis.

May be confused with the superficially similar Redbacked Woodpecker (823); distinguishable from it by the deeper crimson back and wings, longer and paler coloured bill, and more high-pitched and tinny call-note.

STATUS, DISTRIBUTION and HABITAT. Subspecies endemic in Ceylon. Moderately plentiful, but locally distributed, throughout the forests and well-wooded areas of the lowlands and hills to over 2100 m (Phillips).

GENERAL HABITS, FOOD, VOICE and CALLS. As in 861, q.v.

BREEDING. Season, October to April; chiefly December and January. Nest and eggs (c/1 to 3) as in 861.

MUSEUM DIAGNOSIS. Differs from *guttacristatus* (861) and *chersonesus* (862) in having the whole back crimson (v. rump only), and the wings rather duller crimson instead of golden or olive-yellow. The black on the head is greater in extent, and the white less.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♀	142-150	42-45 (from feathers)	30-31	90-95 mm (Baker)
4 ♂♂	145-149	46-49	27-30	80-83 mm
3 ♀♀	148	45-47 (from skull)	27-28	79-82 mm (HW)

Weight 1 ♀ 138 g (SDR).

COLOURS OF BARE PARTS. Iris yellowish white, yellow, buff, or buff with an outer reddish ring. Bill horny brown or plumbeous brown at base, paling towards tip where it is almost white and tinged with green in the centre. Legs and feet dull greenish brown or greenish slate (Baker).

Order PASSERIFORMES

For morphology and characters see Stressemann, E., 1927-34, *Acer*: 843-4; Baker, E. C. S., 1922, FBI 1: 10-17; for general account Thomson, A. L. (ed.), 1964, *New Dict. Birds*, London and New York (Article 'Passeriformes'). In almost all Passeriformes the order of wing (primaries) moult is strictly descending. This widespread mode seems to be primitive (Stressemann).

Family EURYLAIMIDAE: Broadbills

For description see Van Tyne, J. and Berger, A. J., 1959: 486; Baker, E. C. S., 1926, FBI 3: 459-60; Mackworth-Praed, C. W., 1964, Article 'Broadbill' in Thomson, A. L. (ed.) *New Dict. Birds*, London and New York.

Key to the Indian Genera

	Page
Tail shorter than wing.....	<i>Serilophus</i> 246
Tail longer than wing.....	<i>Psarisomus</i> 248

Genus SERILOPHUS Swainson

Serilophus Swainson, 1837, *Classif. Birds* 2: 262. Type, by monotypy, '*S. lunatus* Zool. Tr. 1, pl. 25' = *Eurylaimus lunatus* Gould

Plumage very soft and lax. Tail much graduated. Wings rounded, much longer than tail. Secondaries and inner primaries truncated and emarginate at the ends of

248

PASSERIFORMES

etc., an untidy 'beard' of loose material dangling below. Suspended by a slender attachment from a branch or bamboo twig, normally 2 to 4 metres up, almost invariably overhanging some trickle or pool in a ravine; usually quite conspicuous. Eggs normally 5, sometimes 4, white tinged with pale creamy pink or claret; usually speckled with minute reddish brown or purplish black dots, more densely at the broad end. Average size of 100 eggs 23.6 × 17.3 mm (Baker). Both sexes partake in building the nest, incubation, and feeding the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young (immature) described from a single juvenile as similar to adult but chestnut of rump extending further up on to mantle; grey of head and hindneck also faintly washed with chestnut; silvery white marks on sides of neck indicated, but less broad and clear (Garthwaite & Ticehurst, JBNHS 39: 559).

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂♀	83-88	(from skull) 15-17	c. 21	66-71 mm (SDR, SA)

Weight (winter) 2 ♀♀ 33, 35 g (SDR).

COLOURS OF BARE PARTS. Iris brown; orbital skin bright yellow. Bill: upper mandible blue with pale edges and tip; lower mandible blue at base, yellowish green on gony. Legs and feet bright yellowish green; claws plumbeous.

Genus PSARISOMUS Swainson

Psarisomus Swainson, 1837, *Classif. Birds* 2: 261. Type, by monotypy, '*P. dalhousiae* Wilson, Ill. Zool.' = *Eurylaimus dalhousiae* Jameson

Bill broad and flat; edge of upper mandible straight, not overhanging. No rictal bristles, but oral feathers directed forward. Tail longer than wing; steeply graduated, the outermost feathers being about one-third the length of the middle. Wing rounded; 3rd or 4th primary (as.) longest. Scutellations of tarsus indistinct on outer front, obsolete on inside. Sexes alike.

865. Longtailed Broadbill. *Psarisomus dalhousiae dalhousiae* (Jameson)

Eurylaimus dalhousiae Jameson, 1835, *Edinburgh New Philos. Jour.* 18: 589 (Northern India, probably near Simla)

Baker, FBI No. 1335, Vol. 3: 472

Plate 63, fig. 1

LOCAL NAMES. *Rāi-i* (Nepal); *Dang-mo-mith*, *Dang-rat-pho* (Lepcha); *Das hungari raja* (Cachari).

SIZE. Bulbul \pm ; length c. 27 cm (10½ in.).

FIELD CHARACTERS. A showy grass-green arboreal bird with a longish graduated tail largely bright blue above, black below. Bright yellow chin and throat produced up sides of neck as a collar broken behind. Crown black with an oblong yellow spot on either side, and a bright blue patch in the centre. A white patch on the black underside of wings prominent in flight. Sexes alike.

BROADBILLS

249

Young (immature) like adult, but has no blue on head, and chin and throat greenish yellow.



x c. 1

STATUS, DISTRIBUTION and HABITAT. Resident, subject to seasonal local movements. The Himalayas from Garhwal (Mussooree) through Kumaon, Nepal, Sikkim, Bhutan and NEFA; south through Assam, Nagaland, Manipur, Mizo and East Pakistan (hill tracts); in tropical and subtropical evergreen biotope from terai and plains level to c. 2000 m. Affects

mixed forest and secondary growth with bamboo, riverain jungle, etc.

Extratropical. Burma, Thailand and the Indochinese countries. The species extends to Malaysia, Sumatra and Borneo.

GENERAL HABITS. Arboreal and sociable. Keeps in flocks of 15 to 30, moving about in the foliage canopy or middle storey in forest in sprawling follow-my-leader style from tree to tree. Flight-silhouette when overhead, as well as upright stance when perched, and habit of fluttering in front of sprigs to take insects and spiders, very reminiscent of the minivets (*Pericrocotus*), though actions more sluggish. When perched upright switches tail like a shrike. Often launches out to take a winged insect in the air, flying on to another perch after the capture. Like the Collared Broadbill is stupidly tame and trusting even after being fired at and several of the flock killed. Close hunting association with Haircrested and other drongos has been frequently observed, the drongos swooping upon any moths or other winged insects flushed from the foliage by the fluttering broadbills.

FOOD. Large black ants, bugs (Hemiptera), green grasshoppers and other orthopterous insects, and spiders.

VOICE and CALLS. A distinct loud sharp whistle *tsay, tsay, tsay* repeated continuously 5 to 8 times with little change in pitch, usually in flight. Silent while feeding except for an occasional single note *tsay* or *tswee*.

BREEDING. Season, April-May-June. Nest, a well-made pear-shaped pouch of bamboo leaves, grass, roots, moss and creeper stems, etc. with a ragged 'beard' of loose material hanging from the bottom, and decorated on the outside with spiders' egg-cases, scraps of green moss, etc. Overall length including suspension and beard c. 1 metre; size of globe containing egg-chamber c. 25 x 15 cm. Suspended by a thin plant attachment from branches usually overhanging wooded ravines, 2 to 10 metres from the ground. Telegraph lines spanning forested nullahs appear to be favourite sites, the nest being suspended well out along the open wire, away from any vegetation, and very conspicuous. Eggs, 5 or 6, variable in coloration — white to salmon-pink blotched with pale brick-red, brick-pink, or deep rich red-brown, and secondary lilac-grey markings. Average size of 200 eggs 27.4 x 19.4 mm (Baker). Both sexes take part in building the nest, incubation, and evidently also in feeding the young. Incubation period undetermined.

PITTAS

251

In low cross-flight from one thicket to another, silhouette very like a waterhen's (*Amaurornis*).

STATUS, DISTRIBUTION and HABITAT. Resident, subject to seasonal dispersal movements, largely altitudinal. Central Nepal eastward through Sikkim, W. Bengal (Darjeeling dist.), Bhutan and NEFA. Assam, Nagaland, Manipur, Mizo, and East Pakistan (hill tracts). From plains level and duars up to c. 2000 m. Affects tropical and subtropical secondary evergreen and bamboo jungle, and densely overgrown clearings.

Extratropical. Arakan Yomas, northern Burma, North Vietnam.

GENERAL HABITS. Almost entirely terrestrial, and a great skulker. Keeps singly or in separated pairs in dense shrubbery, flicking aside the fallen leaves or digging into the mulch with its stout bill for food. Progresses on the ground in swift long hops, like a rat in a hurry, and on a fleeting glimpse could easily be mistaken for one. Ventures on to the edge of forest paths etc. in the early mornings and at dusk, withdrawing precipitately into the undergrowth on alarm.

FOOD. Ants, beetles, and other insects, grubs, worms, lizards and various small animals.

VOICE and CALLS. 'A magnificent double whistle, uttered both on the ground and when on a tree, most often in the early mornings and late evenings' (Baker). Baker also records 'a very soft chuckle' between a feeding pair.

BREEDING. Season, April to August, chiefly May and June. Nest, a large oblong domed structure like a Rugby football in shape, of loosely put-together bamboo leaves, coarse roots and grass, with entrance at one end. Placed on the ground in the base of a bamboo clump or other dense bush; sometimes a couple of metres or so up in the forking branch of a tree. Eggs, normally 4, sometimes 5 or even 6; rather spherical, glossy china white sparingly spotted with primary markings of reddish brown and secondary ones of lilac or lavender-grey. Average size of 100 eggs 29.5 x 22.4 mm (Baker). Both sexes share in building the nest, incubation, and feeding the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Underparts considerably variable in depth of coloration in male, some individuals having a beautiful fulvous-pink flush on throat and foreneck. Many, but not all, Assam and Manipur birds have black centres to the scapulars and feathers of back, rump and upper tail-coverts, absent in topotypical birds from Nepal and Sikkim.

Nesting. Above, dark brown, each feather with a large central patch of pale fulvous and blackish edges. Below, very pale fulvous-pink, the feathers of chin, throat, and foreneck with obsolete dark edges. Feathers of rest of underparts with black bases and narrow black borders, the former showing everywhere but most boldly on breast and flanks (Baker).

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	116-129	22-26	51-59	61-68 mm (Baker)
		(from skull)		
4 ♂ ♂	120-124	30-31 (2)	—	55-65 (2) mm
3 ♀ ♀	122-127	—	—	— mm
			(SDR, Heinrich, Sreemanna)	

250

PASSERIFORMES

MUSEUM DIAGNOSIS

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	103-116	21-23	28-30	116-132 mm
♀ ♀	96-105	21-24	28-30	116-127 mm (BB, SA)

The apparent sexual dimorphism in wing-length can be verified only by measuring many more correctly sexed specimens.

Weight 1 ♀ (winter) 67 g (SDR).

COLOURS OF BARE PARTS. Iris brown or khaki; fine circumorbital rim greenish yellow. Bill sage-green: upper mandible bluish at gape; underside of lower mandible pinkish orange at chin and basal two-thirds, bluish green at tip. Legs and feet sage-green; claws horny brown.

Family PITTIDAE: Pittas

For description see Van Tyne, J., and Berger, A. J., 1959: 497; Baker, E. C. S., 1926, FBI 3: 441; Mackworth-Fraser, C. W., 1964, Article 'Pitta' in Thomson, A. L. (ed.), *New Dict. Birds*, London & New York.

Genus PITTA Vieillot

Pitta Vieillot, 1816, Anal. nouv. orn.: 42. Type, by subsequent designation, *Corvus brachyurus* Linnaeus

Wing with ten primaries, the first (as.) very long and reaching almost to tip of wing. Tail of twelve feathers, very short; feathers of crown very full and erectile, forming a short thick crest, not apparent unless the bird is excited. Tarsus exceptionally long and strong, the anterior surface entire and smooth.

Key to the Species

	Page
A Lower plumage plain fulvous.....P. <i>nipalensis</i>	250
B Lower plumage cross-barred.....P. <i>yanca</i>	256
C Lower plumage marked with brilliant crimson	
a Breast and abdomen grey.....P. <i>sordida</i>	254
b Breast and abdomen fulvous or buff	
1 Under wing-coverts black.....P. <i>moluccensis</i>	253
2 Under wing-coverts with a large patch of white.....P. <i>brachyura</i>	252

866. Bluenaped Pitta. *Pitta nipalensis nipalensis* (Hodgson)

Paludicola nipalensis Hodgson, 1837, Jour. Asiat. Soc. Bengal 6: 103 (Nepal)

Baker, FBI No. 1317, Vol. 3: 444

Plate 63, fig. 10

LOCAL NAME. *Dao hui yegashi* (Cachari).

SIZE. Quail +; length c. 25 cm (10 in.).

FIELD CHARACTERS. A dumpy stub-tailed terrestrial bird, largely blue and greenish brown above, plain fulvous below. Nape and hindneck bright blue; tail brown tinged with green.

Female. Above, similar to male but hindcrown rufous-fulvous instead of blue, and hindneck green. Below, like male but throat usually more whitish.

252

PASSERIFORMES

COLOURS OF BARE PARTS. Iris brown; eyerim pale salmon. Bill horny brown, paler at tip. Legs and feet brownish flesh; claws paler.

867. Indian Pitta. *Pitta brachyura brachyura* (Linnaeus)

Corvus brachyurus Linnaeus, 1766, Syst. Nat., ed. 12, 1: 158 (Moluccas = Ceylon)

— *Pitta brachyura pulchra* Koelz, 1939, Proc. Biol. Soc. Washington 52: 77

(Bhadwar, Kangra, Punjab)

Baker, FBI No. 1323, Vol. 3: 453

Plate 63, fig. 12

LOCAL NAMES. *Noorāng* (Hindi); *Shumcha* (Bengal); *Polānki pitta* (Telugu); *Anu-māni kūriri*, *Thōūd kālān*, *Kāhūlūchi* (Tamil); *Kāvi* (Malayalam); *Avichhiya* (Sinhala); *Dao hui yegashi* (Cachari).

SIZE. Quail ±; length c. 19 cm (7½ in.).

FIELD CHARACTERS. A gaudily coloured stub-tailed thrushlike terrestrial bird — green, bright blue, black, white and fulvous with crimson-pink abdomen, vent, and under tail-coverts. In flight a round white patch near tip of wings conspicuous. Sexes alike.

Young (immature) has the crown darker, the feathers edged with black; back very dark, much duller and browner than in adult; underparts duller and browner with but little pink on belly and vent.

STATUS, DISTRIBUTION and HABITAT. Resident, with far-ranging seasonal migratory and dispersal movements not properly worked out. Practically the entire subcontinent including Assam, Manipur and East Pakistan, from the sub-Himalayas to Kanyakumari (excluding Sind and the more arid parts of Rajasthan); low country and foothills, occasionally up to 1700 m. Breeds over a wide area in northern and central India from about Kangra (Punjab) in the west to Cachar (Assam); sporadically elsewhere, e.g. Gir forest (Saurashtra) and Bombay environs. Mainly an abundant southwest monsoon or winter visitor and/or passage migrant in peninsular India. Winter visitor also to Ceylon from c. October to March-April. Affects scrub jungle, semi-cultivation and patches of light deciduous and evergreen forest. One unprecedented sight record near Islamabad, Pakistan, 17.vi.1978 (JBNS 75: 924-5).

MIGRATION. Vast numbers are observed on regular passage all about the same time but not in flocks every year — locally almost to the date — through south and peninsular India northward in May and June, heralding the advance of the SW. monsoon; in the opposite direction, towards Ceylon, in September-October marking the end of the rainy season. Details of the movements have not yet been studied.

GENERAL HABITS. Mainly terrestrial, but roosts in low trees. Hops about on the ground like a thrush, rummaging amongst the dead leaves and digging into the wet earth with the bill for insects and grubs. On disturbance flies up into a branch with a whirr of wings, sitting motionless, only the stumpy tail wagging very slowly and deliberately up and down like some mechanical toy.

FOOD. Insects, grubs and worms. In the neighbourhood of villages commonly fly maggots pecked out from human excreta.

VOICE and CALLS. A loud clear double whistle *wheet-tlee* or *wheet-pyeen* uttered mostly in the early morning and late evening; throughout the day

PITTAS

253

in cloudy overcast weather. The calling bird pulls itself upright and jerks its head well back as when swallowing water; it is jerked forward again with the concluding *tiu*—an action altogether very like the crowing of a cock. The calls are repeated at the rate of 3 or 4 in 10 seconds, and sometimes kept up for 5 minutes or more at a stretch, several birds answering one another in the distance. A variant of this call is a single long-drawn *whewer*, similarly answered by others. Has, in addition, several harsh monosyllabic *chers* and *meus*.

BREEDING. *Season*, May to August. *Nest*, a large globular structure, c. 20 cm long × 15 cm wide, of twigs, roots, grass, etc. with the entrance at one end. It is placed in the forked branch of a small tree usually between 3 and 4, but sometimes even 8 or 9 metres from the ground; rarely on the ground itself in scrub jungle, under shelter of a bush. *Eggs* 4 to 6, glossy china white with sparse spots, specks and occasionally fine hair lines of dull or dark purple. Average size of 50 eggs 24.7 × 21.2 mm (Baker). Both sexes evidently take part in all the domestic chores. Incubation period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Undergoes complete post-nuptial moult in August-September; has no spring moult.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	101-111	22-26 (from skull)	35-39	36-40 mm (Baker, SA, HW)

Weight 2 ♂♂ 57, 65 g (Kensch); 25 ♂♂ 47-66 g (aver. 55.5) — SA.

COLOURS OF BARE PARTS. Iris brown. Bill brown with orange tinge, brighter orange at gape and on basal half of lower mandible; mouth brownish, yellow, and pink. Legs and feet pinkish flesh colour; claws dusky.

MISCELLANEOUS. Parasitized by tick *Haemaphysalis spinigera* (Rajagopalan, JBNHS 69: 62). Vast numbers killed for food on southern Tamil Nadu coast during migration, especially autumn. On return migration (northward) from Ceylon the birds are attracted to the lights of residential buildings on foggy nights, as many as ten sometimes being taken in one particular Rest House (Ella) during a single evening (CBCN April 1982).

868. **Bluewinged Pitta.** *Pitta moluccensis megarhyncha* Schlegel

Pitta megarhyncha Schlegel, 1863, Vög. Ned. Ind., Pitta: 32 (Banka)
Baker, FBI No. 1322, Vol. 3: 452
Plate 63, fig. 11

LOCAL NAMES. None recorded.

SIZE. Quail; length c. 23 cm (9 in.).

FIELD CHARACTERS. A brightly coloured dumpy stub-tailed terrestrial bird. Very like the nominate race of S. Burma (illustrated), but larger and with a larger bill.

Adult. *Above*, whole crown fulvous-brown; lores, cheeks, ear-coverts, a stripe over eye, and a broad band round back of head black; a dark brown coronal stripe from forehead to nape. Upper back and mantle dull green; rump, upper tail-coverts and smaller upper wing-coverts ultramarine blue. A white patch on black primaries, particularly conspicuous in flight. *Below*,

PITTAS

255

Young (immature) like adult but with the crimson of abdomen and vent pale.

STATUS, DISTRIBUTION and HABITAT. Chiefly resident, but with some seasonal altitudinal and dispersal movements. The Himalayas from the adjacent plains through the terai, duars and foothills up to c. 2000 m—Uttar Pradesh, Nepal, Bihar, Sikkim, West Bengal, Bhutan and NEFA. Assam, Nagaland, Manipur, Mizo and East Pakistan (hill tracts). Affects subtropical moist-deciduous and evergreen secondary forest and scrub jungle.

Extralimital. Burma, Malaysia, and the Indochinese countries.

GENERAL HABITS, and FOOD. As in Indian Pitta (867), q.v.

VOICE and CALLS. Described by Baker as 'a loud musical whistle'.

BREEDING. *Season*, chiefly April-May-June. *Nest*, like that of 867, a loosely put-together oval ball of bamboo leaves, lined with grass and leaves. Normally placed on the ground in thick cover, e.g. under bamboo clumps etc. in dense secondary jungle. *Eggs*, 4 or 5, indistinguishable from those of Indian Pitta (867), q.v. Average size of 50 eggs 27.1 × 21.0 mm (Baker). Both sexes share in building the nest, incubation, and presumably also tending the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Nestling. Brown of crown rather duller; black of chin, sides of head and narrow collar also duller; upperparts brown washed with green; upper tail-coverts dull pale greenish blue; tail dark brown washed with green; lesser wing-coverts dull green with narrow brown rims; median coverts white, with greenish brown concealed bases and very narrow brown margins; greater coverts dull green; quills as in adult but duller; throat brownish white; rest of underparts dull brown, paling to pink on abdomen, vent and under tail-coverts (Baker).

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	109-119	(from feathers) 20-22	38-42	39-42 mm (Baker)
		(from skull)		
9 ♂♂	108-118	25-27	—	37-41 mm
4 ♀♀	110-118	25-26	40 (1)	37-40 mm (BB, SA)

Weight ♂♂ 2.2-5 oz. (= c. 57-71 g) — Davison.

COLOURS OF BARE PARTS. Iris dark brown; eyelids plumbeous. Bill black; mouth brownish fleshy. Legs and feet dark slate; claws yellowish grey.

870. *Pitta sordida abbotti* Richmond

Pitta abbotti Richmond, 1902, Proc. U.S. Nat. Mus. 25: 298 (Nicobars)
Baker, FBI No. 1326, Vol. 3: 457

LOCAL NAMES. None recorded.

SIZE. Quail; length c. 19 cm (7½ in.).

FIELD CHARACTERS. As of 869. See Museum Diagnosis.

254

PASSERIFORMES

ruddy buff with a broad bright crimson stripe down abdomen, vent, and under tail-coverts. Sexes alike.

Young (immature) has the feathers of head margined with black; back dull brownish green; underparts duller and browner, with little or no indication of the crimson abdominal stripe.

STATUS, DISTRIBUTION and HABITAT. An eminently migratory pitta, chiefly extralimital. Only a single record within our area: a specimen collected in March 1925 in East Pakistan — Barisal, 22°41'N., 90°20'E. (Whistler, JBNHS 37: 222), doubtless on migration.

Extralimital. Southern Burma (Tenasserim), Malay Peninsula, Sumatra.

GENERAL HABITS. More or less as in Indian Pitta (867). Frequents thin tree jungle with sparse undergrowth, mangrove swamps, gardens and plantations, etc.

FOOD. Ants and their larvae, other insects, grubs and land shells.

VOICE and CALLS. A fine clear double note, constantly uttered in the morning and evening from high tree-tops; often all day and also during moonlit nights (Davison, SF 6: 241).

BREEDING. Extralimital. Breeding biology as of the pittas in general.

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	114-120	(from feathers) 29-34	39-41	40-43 mm (Baker)

Weight 4 oz. (= c. 113 g) — Davison.

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet dark fleshy; claws more whitish.

PITTA SORDIDA (F. L. S. Müller): HOODED OR GREENBREASTED PITTA

Key to the Subspecies

Brighter and paler above and below.....*P. s. cucullata*
Darker both above and below.....*P. s. abbotti*

869. *Pitta sordida cucullata* Hartlaub

Pitta cucullata Hartlaub, 1843, Rev. Zool.: 65 (Malacca)
Baker, FBI No. 1325, Vol. 3: 455
Plate 63, fig. 9

LOCAL NAME. *Phattim pho* (Lepcha).

SIZE. Quail; length c. 19 cm (7½ in.).

FIELD CHARACTERS. A multicoloured, largely green, dumpy, stub-tailed terrestrial bird. *Above*, crown and nape rich rufous-brown; lores, cheeks, ear-coverts, chin, throat and collar surrounding the head black. Mantle, back, and rump dark glossy bluish green; upper tail-coverts and a patch on wing-shoulder (lesser coverts) bright ultramarine blue; primaries black with a prominent white patch; tail black tipped with blue. *Below*, breast and sides of body pale greenish blue; abdomen black; lower abdomen, vent and under tail-coverts bright crimson. Sexes alike.

256

PASSERIFORMES

STATUS, DISTRIBUTION and HABITAT. Endemic in the Great and Little Nicobar islands. Keeps to the ground in heavy forest.

GENERAL HABITS, FOOD, VOICE and CALLS. Nothing specifically recorded as different from 869 and other pittas, though reported to perch less in trees and keep more to the ground than Indian Pitta.

BREEDING. Not recorded.

MUSEUM DIAGNOSIS. Differs from *P. s. cucullata* (869) in being darker above and below, lighter blue on upper tail- and wing-coverts and having a dark median line on crown. White patch on primaries much smaller and confined to six feathers instead of seven.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
♂ ♀	103-110	(from feathers) 22	40	39 mm
		(from gape) 27		(Richmond)

COLOURS OF BARE PARTS. Iris dark brown. Bill black; gape pale orange. Legs and feet pale brownish fleshy (Richmond).

871. *Blue Pitta.* *Pitta cyanea cyanea* Blyth

Pitta cyanea Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 1008 (Arrakan)
Baker, FBI No. 1320, Vol. 3: 448
Plate 63, fig. 8

LOCAL NAME. *Daobui getanglili* (Cachari).

SIZE. Quail +; length c. 23 cm (9 in.).

FIELD CHARACTERS. A brightly coloured pitta largely blue overall.

Male. *Above*, forehead and crown greenish grey changing to scarlet on short nuchal crest; a broad black streak from bill through eye to nape; a black median streak on crown; black moustachial-streaks on either side of whitish throat; upperparts and tail blue. A white patch at base of black flight-quills, concealed at rest prominent in flight. *Below*, pale blue (yellowish on breast) spotted and brokenly barred with black.

Female differs from male chiefly in having the upperparts dull brownish suffused with pale blue, changing gradually to pure blue on rump, upper tail-coverts, and tail.

Young (immature) like female but retains the fulvous tips to wing-coverts and often shows faint signs of barring above.

STATUS, DISTRIBUTION and HABITAT. Resident, and seasonal local migrant; extent and details of movements not yet worked out. Nowhere common: the lower eastern Himalayas in Bhutan and NEFA. Also Assam, Nagaland, Manipur, Mizo, and East Pakistan (hill tracts); chiefly plains, duars and foothills, sparingly up to c. 2000 m. Affects dank ravines and scrubby undergrowth in mixed tree and bamboo forest in evergreen biotope.

Extralimital. Burma south to Tenasserim, and Thailand. The species extends to the Indochinese countries.

GENERAL HABITS. Largely as in Indian Pitta (867), q.v. Keeps singly on the ground in undergrowth, hopping about, turning over or flicking aside the dry leaves like a thrush, and digging into the damp soil with its bill for

PITTAS

257

food. When alarmed disappears into cover by long swift jumps like some small rodent, or flies up into a tree whence it soon descends again.

FOOD. Ants and other insects, grubs, land snails, etc.

VOICE AND CALLS. 'A clear, full double whistle' (Davison).

BREEDING. Season, principally May-June-July. Nest, as of Indian Pitta—an oval ball of loosely put-together bamboo leaves, roots and rubbish c. 30 × 25 cm with the entrance-hole at one end; placed on the ground or sometimes on top of a rock or dead tree-stump in a moist overgrown ravine or scrub and bamboo jungle. Eggs, normally 4 or 5, glossy white, broad ovals as characteristic of the pittas, speckled, spotted or blotched variably from pale reddish to deep purple-black. Average size of 50 eggs 27.6 × 20.9 mm. Breeding biology and incubation period not recorded.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

'Nestling' (= juvenile?). Above brown, the head almost black, each feather with a fulvous centre, bright and broad on crown and nape reduced to dull narrow lines on back; wing-coverts with terminal fulvous spots; rump and upper tail-coverts bluish; tail blue. Below, chin and throat white, each feather narrowly edged with black; breast and underparts dark brown, each feather broadly streaked with fulvous; centre of abdomen and under tail-coverts almost white (Baker).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	106-116	22-24	43-45	57-62 mm (Baker)

Weight ♂ ♀ 3.5-4.25 oz. (= c. 99-120 g) — Davison.

COLOURS OF BARE PARTS. Adult. Iris dark reddish brown; eyelids plumbeous. Bill black; mouth dusky fleshy. Legs pinkish flesh colour. Juvenile ('nestlings and young birds' — Baker). Bill fleshy scarlet; culmen and base mottled with horny brown. Legs and feet paler than in adult.

APPENDIX

p. 12

672a. *Caprimulgus indicus jota* Temminck & Schlegel

Caprimulgus jota Temminck and Schlegel, in Siebold's
Fauna Jap., Aves, 1847, p. 37, pl. 12 ♂, pl. 13 ♀
(Japan)

Caprimulgus innominata [sic] Hume, Stray Feath. 3,
1875, p. 318, note
(Near Meegui, Tenasserim)
Baker, FBI No. 1626, Vol. 4: 367

SIZE AND FIELD CHARACTERS. As of 670, q.v., but darker and greyer.

STATUS, DISTRIBUTION AND HABITAT. Presumably a winter visitor. Uncommon? A specimen taken at sea north of Andaman Is. (JBNHS 67: 331) and another near Port Blair (ibid. 69: 125). A third at Phuntsholing, Bhutan (ibid. 68: 451).

APPENDIX

259

p. 210

831a. *Black Woodpecker*. *Dryocopus martius khamensis* Buturlin

Picus khamensis Buturlin, 1909, Annuaire Mus. Zool. Acad. Sci.,
St Petersburg, 13 (1908): 229
(‘eastern slope of the great plateau of Tibet’)
Not in Baker, FBI

SIZE. House Crow +; length c. 46 cm (18 in.).

FIELD CHARACTERS. A large all-black woodpecker, similar to 831. Male with slightly crested crimson crown; female with restricted crimson patch on back of head. Eyes pale yellow.

STATUS, DISTRIBUTION AND HABITAT. Resident in the Tsangpo valley (SE. Tibet) between c. 93° and 95°E., in conifer forest between c. 2800 and 3800 m. Presumably also occurring in adjoining Arunachal Pradesh.

EXTRALIMITAL. The species (in several races) ranges over continental Europe eastward to Kamchatka and W. China.

GENERAL HABITS, etc. Those of the family.

MUSEUM DIAGNOSIS. ‘Similar to nominate *martius* but darker, purer black, and slightly more glossy in fresh plumage; bill proportionately shorter and averaging weaker. Wing length 15 ♂ & 246-260 (251.5) mm’ (Vaurie, *Bds. Pal. Fauna*, 2: 697).

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258

APPENDIX

EXTRALIMITAL. SE. Siberia, China, Japan. Wintering in Indonesia, Malay peninsula, Java, Sumatra, Borneo.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
2 ♂ ♂	213, 213	22 (from skull) 11.5 (from feathers)	14, 16	130, 143 mm (SA, HA)

p. 14

673a. *Egyptian Nightjar*. *Caprimulgus aegyptius arnicolor* Severtzov
• *Caprimulgus aegyptius* Lichtenstein, 1823, Verz. Doubl. Zool. Mus. Berlin: 59
(Upper Egypt)

SIZE. Myna; length c. 25 cm (10 in.).

FIELD CHARACTERS. Very similar to *Caprimulgus maharattensis* (674). Above, uniform pale sandy, lightly vermiculated on wings and head. Below, same colour faintly streaked with blackish; a white chin-spot. White spots on primaries confined to inner webs. Sexes nearly alike: two outer rectrices of male with buff tips; these obsolete in female.

STATUS AND DISTRIBUTION. Believed to breed in N. Baluchistan. A specimen collected at Robat on the Baluchistan-Iran-Afghanistan frontier on 12 April 1939 and another seen (A. E. P. Christison, JBNHS 43: 483).

EXTRALIMITAL. Breeds in Transcaspia, Turkestan, Afghanistan, E. and S. Iran, N. Egypt and Sudan (Peters).

MEASUREMENTS. Wing 197-218 mm (Meinertzhagen). Tail c. 130 mm (HA).

p. 82

727a. *Malay Threetoed Forest Kingfisher*. *Ceyx erithacus rufidorsus* Strickland

Ceyx rufidorsus Strickland, 1846 (1847), Proc. Zool. Soc. London, pt. 14, p. 99 (Malacca)

FIELD CHARACTERS. Overall as 727, but upperparts uniformly rufous washed with lilac. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Aberrant straggler? A single specimen from the Sikkim terai in BNHS collection (Abdulali, 1964, JBNHS 61: 439).¹

EXTRALIMITAL. This form ranges through most of the Philippines and Malaysian subregion and the Indo-Australian archipelago (R. W. Sims, 1959, *Jour. Linn. Soc. London*, Vol. 44).

MUSEUM DIAGNOSIS. ‘Above red washed with lilac, heaviest on head and rump; below deep yellow, strongest across the breast; chin and upper throat white washed with yellow; wing-coverts like the back; primaries and secondaries black; first primary and the secondaries edged with rufous; wing lining yellow. Iris dark brown; bill and feet red. Wing 58; tail 23; culmen from base 40; tarsus 8; middle toe with claw 16’ (Hachisuka).

¹ How the bird reached the Sikkim terai seems a mystery. However, the possibility should not be overlooked that this is a rare polytypic mutant, a phenotype of reddish *rufidorsus* type appearing in a wild population of typical *erithacus*.

260

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(Other references in the text)

Order PASSERIFORMES (cont.)

Family ALAUDIDAE: Larks

For description see Van Tyne, J. & Berger, A. J., 1959 : 502 ; Baker, E. C. S., 1926, FBI 3: 302; Vaurie, C., 1951, Bull. Amer. Mus. Nat. Hist. 97: 435-526; Meinertzhagen, R., 1964, Article 'Lark' in Thomson, A. L. (ed.) *New Dict. Birds*, London and New York.



Skylark (903)

Key to the Genera

- | | |
|--|------|
| I Wing with nine primaries, the first ¹ reaching to about the tip of wing | Page |
| A A tuft of narrow feathers on each side of the crown..... <i>Eremophila</i> | 32 |
| B No tuft of feathers..... <i>Calandrella</i> | 19 |
| II Wing with ten primaries, the first always very small | |
| C First primary exceeding primary-coverts in length | |
| 1 Bill as long as head..... <i>Alaemon</i> | 16 |
| 2 Bill much shorter than head | |
| a Nostrils not covered by plumelets..... <i>Mirafra</i> | 2 |
| b Nostrils quite concealed by plumelets..... <i>Ammonomanes</i> | 12 |
| D First primary not exceeding primary-coverts | |
| 3 Crest absent, or short and covering whole crown | |
| c Hindclaw long and straight | |

¹ Ascendant (as.), i.e. counting inwards.

1

LARKS

3

(spike-like) aspect of tail v. more spread-out and blacker; from Small Skylark by greater amount of mimicry in its song.

STATUS, DISTRIBUTION AND HABITAT. Resident; not uncommon but extremely local. West Pakistan (Sind, NW. frontier dists., Punjab including the Salt Range), Kashmir, Himachal Pradesh, Uttar Pradesh, Madhya Pradesh, Bihar and West Bengal (East Pakistan?); southward throughout the Peninsula (not yet recorded in Kerala). Absent in Assam; also in Nepal, Sikkim, Bhutan and Ceylon. Affects dry bush-covered undulating plains and foothills country, locally up to c. 350 m — grassland, fallow cultivation, and sparsely scrubbed sandy semi-desert.

Extralimital. The species in other races occurs in Burma, Thailand, Vietnam, Borneo, Java and Bali.

GENERAL HABITS. Keeps singly or in pairs or small scattered parties, running about on the ground picking seeds and insects. In the breeding season the song-flight of the male is a remarkable performance. The bird rises about 30 m up in the air — a lower ceiling than the Skylark's — and hovers on stiffly quivering wings in the style of the Skylark drifting hither and thither on the breeze, and back and forth over an extensive area for considerable periods (once timed 40+ minutes). He then descends rather precipitately to the ground, alighting on a bush or clod, the performance being repeated after a while.

FOOD. Grass- and weed seeds, ants, weevils and other insects.

VOICE AND CALLS. Flight-song, remarkably spirited and sustained; very similar to the Small Skylark's in tone and quality and almost identical with that of Sykes's Crested Lark, incorporating imitations of the calls of practically every bird that shares its habitat. The following species recorded in the mimicry in Kutch: Common Babbler, Tailor Bird, Franklin's, Rufous-fronted and Jungle wren-warblers, Redwinged Bush Lark, Wood Shrike, Purple Sunbird and Rain Quail; elsewhere the chatter of an annoyed Laggar Falcon and the shrill call of Pied Crested Cuckoo have also been heard. The imitations follow one another in rapid succession without the slightest pause, and the song may commonly be heard also during the night, both dark and moonlit.

BREEDING. Season, March to September, chiefly from mid June. Nest, a saucer or shallow cup of grass, lined with finer grasses; sometimes more or less domed. Placed on the ground in a clump of grass on the side of a nullah or in thin scrub jungle, usually well concealed. Eggs, 2 to 4, variable; greyish, greenish-, or yellowish white, sparsely or densely speckled and blotched all over with various shades of brown. Average size of 40 eggs 20.1 x 15.4 mm (Baker). Nuptial display similar to that of *Mirafra assamica* (873), q.v. Share of the sexes in the domestic chores, and incubation period, undetermined.

MUSEUM DIAGNOSIS. Primaries and secondaries with nearly the entire outer web deep rufous or chestnut. Middle pair of rectrices brown, broadly margined with rufous; the next three pairs almost entirely brown; penultimate pair brown on the inner web, rufescent white on the outer; outermost pair rufescent white with a blackish band on inner margin of inner web. For further details of plumage see Baker loc. cit.

In summer (breeding) the pale edges to the feathers of the upperparts get completely abraded, making them look much darker and more rufous.

- | | |
|--|------|
| i Wings long, reaching almost to tip of tail; inner secondaries falling short of tip of wing by more than length of tarsus.... | Page |
| <i>Melanocorypha</i> | 29 |
| ii Wing shorter, falling decidedly short of tip of tail; inner secondaries falling short of tip of wing by less than length of tarsus..... | 41 |
| <i>Alauda</i> | |
| d Hindclaw short and more curved..... | 8 |
| <i>Eremopterix</i> | |
| 4 A crest formed of a few long feathers springing from centre of crown..... | 36 |
| <i>Galerida</i> | |

Genus MIRAFRA Horsfield

Mirafra Horsfield, 1821, Trans. Linn. Soc. London 13: 159. Type, by monotypy, *Mirafra javanica* Horsfield

Bill thick and short; nostrils fully exposed. Wing of ten primaries. First primary between half and two-thirds the length of second; 3rd and 4th primaries, sometimes also 5th, longest and subequal. Hindclaw as long as, or longer than hindtoe; gently curved.

Key to the Species

- | | |
|--|---|
| A Inner web of outer rectrices largely white or very pale rufous..... | 2 |
| <i>M. javanica</i> | |
| B Inner web of outer rectrices all brown | |
| a Rufous on inner and outer webs of primaries separated by a brown band..... | 4 |
| <i>M. assamica</i> | |
| b Rufous on inner and outer webs of primaries confluent..... | 6 |
| <i>M. erythroptera</i> | |

872. Singing Bush Lark. *Mirafra javanica cantillans* Blyth

Mirafra cantillans Blyth, 1844-5, Jour. Asiat. Soc. Bengal 13: 960 (Bengal)

Mirafra cantillans bangri Koelz, 1939, Proc. Biol. Soc. Washington 52: 76

(Hospet, Madras Presidency)

Baker, FBI No. 1229, Vol. 3: 334

Plate 64, fig. 1

LOCAL NAMES. *Agün*, *Agin* (Hindi); *Burutta pitta*, *Agin pitta* (Telugu).

SIZE: Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. A brown hen-sparrowlike bird of open country with much rufous or chestnut in the wings. This particularly noticeable in flight which is undulating and rather pipit-like, also showing the white outer tail-feathers. Underparts fulvous, with the breast streaked with triangular brown marks. Sexes alike.

Difficult to distinguish from other similar larks except by its habits and behaviour. When aloft in song-flight may easily be confused with both Small Skylark (907, 908) and Sykes's Crested Lark (902). Possibly distinguishable from the latter, virtually its 'double', by narrowed down



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ALAUDIDAE

4

Young. Boldly barred above with black and pale fulvous; more profusely and boldly marked with black on breast.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	74-82	c. 10-11	20-21	47-52 mm (Baker)
		(from skull)		
3 ♂♂	75-81	13-14	—	49-55 mm
1 ♀	80	14	22	51 mm (SA)

COLOURS OF BARE PARTS. Iris hazel brown. Bill horny brown, paler on lower mandible and commissure; mouth bright lemon-yellow. Legs and feet pale brownish flesh colour.

MIRAFRA ASSAMICA Horsfield

Key to the Subspecies

- | | |
|--|-----------------------|
| Upperparts ashy brown with dark centres; no tinge of rufous on back..... | <i>M. a. assamica</i> |
| Upperparts not very dark but very rufous..... | <i>M. a. affinis</i> |

873. Bengal Bush Lark. *Mirafra assamica assamica* Horsfield

Mirafra assamica Horsfield, 1839, Proc. Zool. Soc. London: 162 (Assam)

Baker, FBI No. 1231, Vol. 3: 336

Plate 64, fig. 2

LOCAL NAMES. *Aggiā* or *Aggin* (Hindi); *Bhiriri* (Bengal).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Above, ashy brown streaked with blackish with some chestnut prominent in wings, especially in flight. Below, fulvous, coarsely streaked with triangular brown marks. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident; common. From Haryana (Jagadhri, Ambala dist., Jones, JBNHS 31: 1004) eastward through Uttar Pradesh, Nepal (lowlands), Jalpaiguri duars, Bihar and W. Bengal to Assam and Manipur; south to northern Orissa and northern Madhya Pradesh. East Pakistan. Affects open grassland and cultivation; not ascending the hills to any height.

Extralimital. Burma. Other races in Thailand and the Indochinese countries.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 874, q.v.

BREEDING. Season, overall March to August, principally May and June. Nest, a shallow cup of grass, lined with finer grasses — as typical of most larks. Occasionally domed by the grass growing around it, either arching over naturally or twisted and interlaced by the birds. Placed on the ground in a shallow depression or in an old hoof-print of cattle. Eggs, 3 or 4 similar to those of the Singing Bush Lark (872) — greyish-, greenish-, or yellowish white speckled and blotched with brown. Average size of 60 eggs 20.3 x 15.3 mm (Baker).

LARKS

5

Nuptial flight thus described: From a prominent raised perch the bird launches itself into the air, fluttering its wings very quickly and singing a sweet but not powerful song. When it has risen some 50 feet or so, it stretches both wings out very stiffly and makes a long sliding stoop towards the ground but, before reaching it, again flutters upward. The glide and rise are repeated two or more times before the bird actually drops to the ground or to its original perch, where it often sings for a few seconds after its arrival' (Baker).

MUSEUM DIAGNOSIS. See Key to the Species. Primary-coverts dark brown, externally rufous. Primaries and outer secondaries dark brown, most of them externally margined with chestnut and all of them with a large portion of the inner web chestnut. Tail blackish brown broadly margined with rufous, the penultimate and outer feathers with the greater part of the outer web pale rufous. For other details see Baker, loc. cit.

Differs from *M. a. effinis* (874) in being ashy brown above with no tinge of rufous, the feathers dark-centred.

Young. Above, feathers fringed with rufous-white and with subterminal black bars; below, pale fulvous, streaked with black on breast.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	82-84	c. 13-14	24-25	45-50 mm (Baker)

Weight 2 ♂♂ 26, 32 g (GD).

COLOURS OF RARE PARTS. Iris brown. Bill: upper mandible dark horny brown, nearly black at tip, yellowish near gape; lower mandible yellowish horn. Legs and feet pinkish- or yellowish brown, or dull flesh colour.

874. Madras Bush Lark. *Mirafra assonica affinis* Blyth

Mirafra affinis 'Jerdon' = Blyth, 1845, Jour. Asiat. Soc. Bengal 13: 959 (Southern part of the peninsula of India)

M. (irafra) affinis Jerdon, 1845, Madras Jour. Lit. Sci. 13 (2): 136 (Goomsoor)

Mirafra affinis cylorensis Whistler, 1936, Jour. Bombay nat. Hist. Soc. 38: 769 (Colombo, Ceylon)

Baker, FBI No. 1233, Vol. 3: 339

Plate 64, fig. 3

LOCAL NAMES. *Chirchira* (Hindi); *Eli jitta* (Telugu); *Vānāmpādi kūrūti* (Tamil); *Leper* (Madhya Pradesh); *Gomritā* (Sinhala); *Cherampati* (Malayalam).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 873, but prevailing tone of coloration rufous-brown instead of ashy brown. The large rufous or chestnut patch in the wing conspicuous in flight, and diagnostic. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident and common. Southern Orissa, southern Madhya Pradesh and Andhra, south through Tamil Nadu, Mysore and Kerala. Ceylon in the low-country Dry and Wet zones. Affects cultivation, sparse stony scrub-and-bush jungle and fallow land in open plains and plateau country. Commonly found on laterite and moorland soil where its coloration is remarkably obliterative.

LARKS

7

875, 876. Sind Redwinged Bush Lark. *Mirafra erythroptera sindiensis* Ticehurst

Mirafra erythroptera sindiensis Ticehurst, 1920, Bull. Brit. Orn. Cl. 41: 56 (Karachi, Sind)

Mirafra erythroptera farca Koelz, 1951, Amer. Mus. Novit., No. 1510: 2 (Sihor, Kathiawar)

Baker, FBI No. 1236, Vol. 3: 342

LOCAL NAME. *Agriji āgūn* (Gujarati).

SIZE. Sparrow; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As in 877, q.v., but paler and greyer. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; common. West Pakistan from the Baluchistan frontier east through Sind and Punjab (including Jhelum and Rawalpindi dists. — Waite, JBNHS 59: 961). Western Rajasthan and northern Gujarat (including Kutch dist.). Affects stony sparsely scrubbed semi-desert — fallow fields, grazing land, with scattered *Euphorbia* clumps etc.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 877.

BREEDING. Season, April to September, chiefly June and July (in Kutch). Nest and eggs as in 877.

MUSEUM DIAGNOSIS. Differs from nominate *erythroptera* (877) in being paler and greyer, less ruddy overall. Rufous on wing-quills, flanks, axillaries and under wing-coverts much paler. Intermediates along the boundaries of the subspecies difficult to place.

MEASUREMENTS. Not different from the nominate form.

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	73-84	13-15	21-23	46-56 mm (SA)

COLOURS OF RARE PARTS. As in 877.

877. Redwinged Bush Lark. *Mirafra erythroptera erythroptera* Blyth

Mirafra erythroptera Blyth, 1845, Jour. Asiat. Soc. Bengal 13: 958

(Northern portion of the peninsula of India = northern Deccan)

Baker, FBI No. 1235, Vol. 3: 341

Plate 64, fig. 4

LOCAL NAMES. *Agriji* (Hindi); *Jhijhira* (Saugor, M.P.); *Chinna eli jitta* (Telugu).

SIZE. Sparrow; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Above, fulvous brown, streaked with blackish. Bright rufous or chestnut prominent in the wings, especially in flight. Below, chin and throat whitish; rest of underparts pale fulvous, the breast spotted with triangular blackish marks. Sexes alike.

Very similar to and easily confused with Madras Bush Lark (874). See Museum Diagnosis.

6

ALAUDIDAE

GENERAL HABITS. Keeps singly or in pairs or small loose parties, running about quietly on the ground or perched on bushes, rocks, fenceposts and the like, sometimes quite high up in a leafless tree. The most characteristic habit of this and the closely related Redwinged Bush Lark (877) is perhaps their spectacular song- or display-flight chiefly in the breeding season. From some elevated perch the male suddenly flutters vertically up in the air for 10 metres or so, uttering a feeble mousy though spirited *steeet-steeet* etc. (or *siriririririri* . . .). This is immediately followed by a squeaky *wisee* (or *yusee*)-*wisee-wisee-wisee* etc. getting slower and slower in tempo and fading off towards the end. With this the bird floats or parachutes down in spirals or zigzags or more or less vertically back to the same or a nearby perch, wings held motionless and stiffly upstretched in a wide V above the back, and legs dangling below. In a stiff breeze the bird may sometimes be wafted backward, in 'reverse gear' as it were, or rotated and blown about this way and that. The entire performance lasts about 20 seconds, and at the height of the breeding season is repeated again and again every few minutes throughout the day, and presumably even at night, judging from the song to be heard in the darkness.

FOOD. Grass- and weed seeds, weevils, tiny beetles and other insects.

VOICE and CALLS. Normal call, uttered from a perch, a quick-repeated mousy *chip-chip-chip* (something between the low *cheep* of the Small Minivet and *chik-chik* of Tickell's Flowerpecker). Song as above.

BREEDING. Season, in South India December to May, chiefly March onwards; in Ceylon March to August, chiefly May, occasionally September. Nest and eggs (c/3 or 4) indistinguishable from those of 873. Average size of 50 eggs 20.6 × 15.5 mm (Baker). When disturbed off nest with hardest eggs or small chicks, parent performs 'broken-wing' distraction display, fluttering and dragging on the ground piteously within a few feet of the observer.

MUSEUM DIAGNOSIS. See keys to the Species and Subspecies. Differs from nominate *assamica* (873) in being more rufous above (i.e. greyish brown) and brighter fulvous below.

No prenuptial moult. Postnuptial moult begins with the body plumage and tertiaries, then spreads to the wing-quills and finally to the tail, the tail beginning sometimes after the body and wing moult is nearly finished. This order is apparently also observed in the postjuvinal moult, which is complete (HW).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	77-88	15-18	24-27	42-52 mm
♀♀	75-82	13-17	24-28	39-45 mm (SA, HW)

Weight 11 ♂♂ 20-30 (av. 26.2) g — SA, SDR.

Birds from Ceylon and Kerala tend to have a sensibly larger bill.

COLOURS OF RARE PARTS. As in 873.

MIRAFRA ERYTHROPTERA Blyth

Key to the Subspecies

Paler; more grey, less rufous above *M. e. sindiensis*
Darker; more tinged with rufous above *M. e. erythroptera*

ALAUDIDAE

8

STATUS, DISTRIBUTION and HABITAT. Uttar Pradesh, Bihar and West Bengal. Southern Gujarat (intergrading with *sindiensis* in Kutch and Saurashtra) and eastward through Madhya Pradesh to Orissa; south through Maharashtra, Andhra Pradesh, Tamil Nadu, and Mysore. Not recorded from Kerala. Affects same biotope as 874 — stony and gravelly sparse scrub-and-bush jungle and fallow land, in open plains and plateau country. On laterite and moorland soil its coloration particularly obliterative.

GENERAL HABITS, FOOD, VOICE and CALLS. Almost identical with Madras Bush Lark, including the parachuting display-flight, q.v.; the two species indistinguishable unless in the hand.

BREEDING. Season, overall March to October. Nest, very like that of Madras Bush Lark (874) — a shallow cup of grass lined with finer grasses, often domed over by the growing grass around it. Placed on the ground in a small depression or hoof-print of cattle at the base of a thorn bush or grass tuft, in open scrub or arid waste land. Eggs, 2-4, indistinguishable from those of other *Mirafra*s — greyish-, greenish-, or yellowish white, speckled and blotched all over with brown. Average size of 50 eggs 19.5 × 14.5 mm (Baker). Many published nesting records possibly vitiated through confusion in the field with Madras Bush Lark.

MUSEUM DIAGNOSIS. *M. erythroptera* differs from the species *M. assamica* mainly in the pattern of the chestnut on the wings. In the present species the chestnut on the outer and inner webs of the primaries is confluent instead of divided by a brown band or wedge. For distinguishing from *M. e. sindiensis* see Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	75-84	13-15	21-24	47-55 mm (SA, HW)

Weight 13 ♂♂ 17-27 (av. 21.3) g (SA).

COLOURS OF RARE PARTS. Iris hazel brown. Bill horny brown on culmen, pale flesh on lower mandible and commissure; mouth pale pink. Legs and feet pale flesh colour; claws dusky.

Genus EREMOPTERIX Kaup

Eremopterix Kaup, 1836, Das Thierreich 2: 139. Type, by original designation.

Fringilla ocleuca Temminck = *Alauda melanocorypha* Lichtenstein

Pyrrhuloxia Swainson, 1873, Classif. Bds. 2: 125. New name for *Megalops* Swainson.

1827. Type, by original designation, *Fringilla ocleuca* Temminck

Bill very short and deep with culmen well rounded. Nostrils densely covered with plumbeous. Wing of 10 primaries: first primary (as.) very small, not exceeding the primary-coverts; 2nd, 3rd and 4th longest and subequal. Hindclaw short and well curved.

Key to the Species

Forehead and crown ashy brown *E. grisea*
Forehead white, crown blackish *E. nigripit*

LARKS

9

878. Ashycrowned Finch-Lark. *Eremopterix grisea* (Scopoli)

Alauda grisea Scopoli, 1786, Del. Flor. et Faun. Insubr. 2: 95
(Gingee, S. Arcot Dist., India)

Pyrrhulauda grisea siccata Ticehurst, 1925, Bull. Brit. Orn. Cl. 45: 87
(Deesa, Rajputana [= Banaskantha, Gujarat])

Eremopterix grisea ceylonensis Whistler & Kinnear, 1934, Jour. Bombay nat. Hist. Soc. 37: 105 (Eight miles north of Palatupana, east coast, Ceylon)
Baker, FBI No. 1245, Vol. 3: 353

Plate 64, fig. 5

LOCAL NAMES. *Diyora*, *Dūri*, *Dooli*, *Dūbāk chiri*, *Jothauli* (Hindi); *Māth charāi*, *Dhula chata* (Bengali); *Poti pichikā*, *Piyada pichikā* (Telugu); *Gotoarli* (Bihar mirshikars); *Gomerrittā* (Sinhala); *Vānāmpādī kūrūti*, *Mānām vānāmbādī* (Tamil); *Kūrimpāndi* (Malayalam); *Bhōn chikli* (Gujarati).

SIZE. Sparrow—; length c. 13 cm (5 in.).



x c. 1

FIELD CHARACTERS. A small, squat, thick-billed, crestless lark.

Male. Above, sandy brown with ashy crown, whitish cheeks, and a black streak from chin to eye. Below, brownish black.

Female. Sandy brown hen-sparrowlike.

STATUS, DISTRIBUTION AND HABITAT. Resident, common; subject to local seasonal withdrawals in the monsoon from heavy rainfall areas. West

Pakistan (Baluchistan, Sind, Bahawalpur, NW. frontier districts, Salt Range) and East Pakistan (Chittagong, Farcidpur, etc.). All India from the Himalayan foothills and terai (including Nepal terai) eastward to W. Bengal and Assam; south throughout the Gangetic Plain and the Peninsula to Kanyakumari; up to c. 1000 m. Also Ceylon in the low-country Dry and Wet zones. Affects stony sparsely scrubbed waste land; cultivation environs and village grazing grounds, paddy stubbles and ploughed fields, scraggy grass-covered sandy stretches by rivers and dry tidal mudflats near the coast, etc.

GENERAL HABITS. Keeps in pairs or small parties; in winter sometimes in largish scattered flocks. Is particularly fond of squatting and feeding on dusty cart-tracks, its coloration camouflaging the bird in a remarkable way. The birds shuffle along, body held low, in short jerky zigzag spurts in search of food. Parties roost at night on open sandy or gravelly ground, the birds squatting individually in tiny saucer-like depressions. Flight undulating—a series of rapid wing-beats (as in hovering) punctuated by momentary pauses. Male has a very spectacular song-flight and aerial display. From his perch on a stone on the ground he soars up vertically for 30 metres or so to hover in wide circles and sing in the typical skylark pattern. On completion of the song the performer nose-dives perpendicularly for a distance with wings pressed to the sides. At the bottom of the dive he suddenly pulls round to face the sky, and using the momentum aided by a few rapid wing-beats, zooms up a few metres once more. On the crest of the wave he reverses to repeat the nose-dive and descend a step lower, and so on (once 40+ dives counted over a stretch of c. 100 metres). Just when perilously near to crashing he opens his wings and flattens out to alight

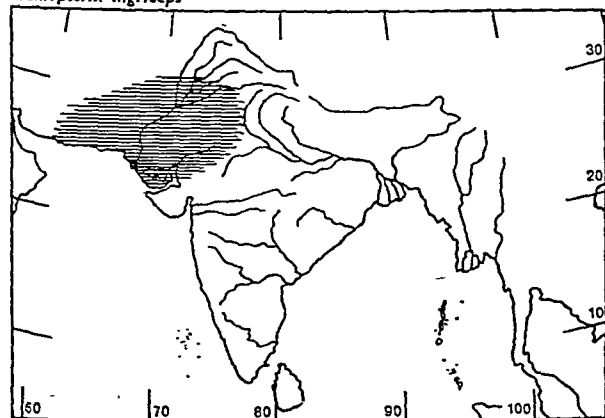
LARKS

11

Female like female 878, but paler and more sandy above; whiter below, more distinctly streaked with brown.

Young (immature) has sandier and paler upperparts than juvenile *grisea*.

STATUS, DISTRIBUTION AND HABITAT. Resident and also locally migratory. West Pakistan [Baluchistan on the Makran coast (Ormara, Pasni), Sind, Bahawalpur, Punjab Salt Range]. NW. India in Punjab, Haryana and Western Rajasthan (Jodhpur, Jaisalmer—very common). Has once been

Eremopterix nigriceps

Distributional range

E. n. affinis (879).

identified near Delhi (Najafgarh, February—Frome), and two specimens taken in northern Kutch (Kuar Bet, March 1960—SA). Status in the last two uncertain; possibly breeds in N. Gujarat, including Saurashtra and Kutch (Shivraj Kumar, JBNHS 66: 625). Affects sandy wastes and the neighbourhood of canal-fed desert cultivation.

EXTRALIMITAL. Persian Baluchistan, S. Iraq, Arabia, Somalia, Ethiopia, parts of western Egypt and Sudan (Vaurie).

GENERAL HABITS. Met with in scattered parties running about crouching to feed. Frequents a more arid sandy biotope than 878 where its pale coloration is even more remarkably adaptive and camouflaging. Courtship flight described as 'a short soar, not very high or of long duration, singing the whole time, followed by a sudden drop to earth' (Meinertzhagen, 1954). Strangely enough no mention is made of the spectacular aerobatics so characteristic of its Ashycrowned congener (878)! This needs verification.

FOOD. Grass- and weed seeds, and insects.

VOICE AND CALLS. Inadequately described.

BREEDING. Season, irregular, stretching chiefly between February and September. Nest and eggs (c/2) as in Ashycrowned Finch-Lark, usually

10

ALAUDIDAE

airily on a clod or stone. The whole performance may occupy 3 to 5 minutes, and the extravagant aerobatics are repeated at short intervals throughout the day.

FOOD. Grass- and weed seeds, ants, weevils and other insects.

VOICE AND CALLS. Song: a spirited trilling warble of the skylark pattern delivered in soaring-hovering flight, punctuated by a long-drawn clear whistle *wheteech* accompanying each nose-dive—a miniature 'screaming bomb'!

BREEDING. Season, irregular; continues more or less throughout the year, the principal months varying locally: chiefly February to September in the Peninsula, May and June in Ceylon. Nest, a deepish saucer-like depression in the ground (c. 5 cm diameter), maybe merely a hoof-print of cattle, neatly lined with fine grasses, hair or feathers, frequently rimmed around with a parapet of gravel. Placed in the shelter of a stone or small bush in open country—sometimes several nests a few metres from one another. Eggs, 2 or 3, pale yellowish- or greyish white, blotched and speckled with brown and lavender. Evidently female alone lines the nest, but male assists in incubation and tending the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young (immature). Like female, but with the feathers of upperparts broadly margined with pale rufous.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	74-80	11-13	15-17	40-46 mm
♀♀	72-79	11-13	15-17	37-44 mm
				(SA, HW)

Weight 11 ♂♀ 14-18 (av. 16) g—SA.

COLOURS OF BARE PARTS. Adult. Iris yellowish brown, reddish brown, or brown. Bill pale horny grey, dusker on culmen; mouth pale pinkish (with admixture of yellow in young birds). Legs, feet and claws brownish flesh colour.

NESTING. Iris brown. Bill greyish white, a black point each at tip of upper and lower mandible; gape and mouth bright orange; a black spot at tip of tongue and one on either side of its base.

879. Blackcrowned Finch-Lark. *Eremopterix nigriceps affinis* (Blyth)

Pyrrhulauda affinis Blyth, 1867, Ibis: 185 (Madras, emended to Karachi, Ticehurst, 1921, Jour. Bombay nat. Hist. Soc. 28: 235)

Baker, FBI No. 1246, Vol. 3: 353

Plate 64, fig. 6

LOCAL NAMES. *Duri*, *Dūbāk chiri* (Hindi).

SIZE. Sparrow—; length c. 13 cm (5 in.).

FIELD CHARACTERS. Male very like male Ashycrowned Finch-Lark (878) but much paler and sandier above, with white forehead and chocolate-black crown and nape. Ear-coverts pure white & dirty white.

ALAUDIDAE

12

placed at the foot of a grass-tuft in open sandy country, 'invariably on the northern side evidently to be sheltered from the hot wind' (Sind. Doig, SF 9: 281). Average size of 30 eggs 19.2 × 13.8 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	78-83	c. 12	16-17	46-51 mm
				(Baker, HW)

COLOURS OF BARE PARTS. Iris brown. Bill pale horny, darker on culmen, paler and bluish on lower mandible. Legs and feet pale whitish brown.

Genus *AMMOMANES* Cabanis

Ammomanes Cabanis, 1831, Mus. Hein. 1: 125. Type, by original designation, *Alauda arvensis* Sundevall

Bill thick, slightly curved: nostrils covered by plumelets. Wing of 10 primaries: 1st primary (as.) one-third the length of second; 3rd, 4th and 5th primaries subequal and longest. Hind claw about equal to hind toe and not much curved.

Key to the Species

Tail brown throughout tinged with rufous..... *A. deserti*
Tail deep rufous tipped with black..... *A. phoenicurus*

880. Indian Desert Finch-Lark. *Ammomanes deserti phoenicuroides* (Blyth)

M. (irafra) phoenicuroides Blyth, 1853, Jour. Asiat. Soc. Bengal 22: 583 (Kashmir)
Baker, FBI No. 1244, Vol. 3: 352

Plate 64, fig. 7

LOCAL NAMES. *Dāshti-chājok* (Baluchi); *Kompi* (Brahui).

SIZE. Sparrow; length c. 16 cm (6 in.).

FIELD CHARACTERS. Above, pale earthy brown tinged with pinkish rufous on upper tail-coverts, and with much rufous in the brown wings and tail; cheeks and ear-coverts greyish brown. Below, chin, throat and upper breast fulvous-white, faintly dark-streaked. Rest of lower plumage greyish rufous-pink. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident. Common in West Pakistan (Baluchistan, Sind, Bahawalpur, Punjab including the Salt Range); in NW. India in Kashmir and Jammu. Affects desolate barren country—stony hill-slopes and nullahs, and rocky ground along the base of the foothills, to c. 2000 m. Also fallow land in desert canal cultivation, e.g. Bahawalpur.

EXTRALIMITAL. Adjoining portions of eastern Afghanistan. Numerous other races in Iran, Iraq, Arabia and northern Africa.

GENERAL HABITS. Similar to Rufoustailed Finch-Lark (882), q.v. Keeps in pairs or small family parties of 3 or 4 in bare stony environments where its plumage gives it perfect camouflage. In winter loose flocks of 20 or so. Observed drinking at a desert rain-puddle regularly in the morning at about 9.00 hrs., not in flocks like sandgrouse but in relays of 2 or 3 birds

at a time (SA — Bahawalpur). Whether also drinks at other times of day not known. In waterless tracts, the requisite moisture probably imbibed from dew.

FOOD. Seeds of various desert plants and grasses such as *Setaria verticillata* and *Panicum ramosum*. Also insects.

VOICE AND CALLS. Call-note 'a curious plaintive, dreamily uttered peef-peef-peef'. Song, delivered during a hesitating mounting flight with deeply flapping wings, a broken collection of disconnected notes syllabified as peef-peef-peef-peef-peef (Whistler); somewhat reminiscent of that of *Anthus similis* (C. H. T. Whitehead).

BREEDING. Season, April to July, chiefly May and June. Nest and eggs (c/3 or 4) as in 882. Average size of 16 eggs 22.1 × 16.4 mm (Baker). Fledging period about 20 days (Whistler). No other details of breeding biology.

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters. Nestling. Covered with thick long white down.

Young (immature). Paler above, the feathers with indistinct subterminal dark bars and pale tips. First primary (as.) longer, broader and blunter than in adult. Primary- and greater coverts, wing- and tail-quills with broader pale edges than in adult, and more rufous in colour.

MEASUREMENTS				
	Wing	Bill (from skull)	Tarsus	Tail
♂♂	98-107	15-16	22-23	65-70 mm
♀♀	96-101	15-16	22-23	62-66 mm
			(SA, HW)	

Weight 13 ♂♂ 22-29 g (Paludan).
COLOURS OF BARE PARTS. Iris hazel brown. Bill upper mandible dark horny brown; lower pale horny yellow. Legs and feet pale yellowish brown.

AMMOMANES PHOENICURUS (Franklin)

Key to the Subspecies

		Page
A	More rufous, less grey above and below.....	A. p. testaceus 16
B	Less rufous, more grey above and below	
a	Larger; wing mostly over 100 mm.....	A. p. phoenicurus 14
b	Smaller, wing mostly under 100 mm.....	A. p. zarudnyi 13

881. **Persian Rufostailed Finch-Lark.** *Ammomanes phoenicurus zarudnyi* Hartert

Ammomanes cinctura zarudnyi Hartert, 1902, Bull. Brit. Orn. Cl. 12: 43
(Mudjinabad, E. Iran)

Baker, FBI No. 1243, Vol. 3: 351
Plate 64, fig. 10

LOCAL NAMES. None recorded.
SIZE. Sparrow; length c. 16 cm (6 in.).
FIELD CHARACTERS. A thick-billed rufous-brown uncrested lark-like 882, q.v. See keys to the Species and Subspecies.

SIZE. Sparrow; length c. 16 cm (6 in.).
FIELD CHARACTERS. A rather squat, rufous-brown, stout-billed uncrested lark, with bright rufous tail ending in a black band, particularly conspicuous in flight. Sexes alike. Coloration very obliterative on laterite soil.

STATUS, DISTRIBUTION AND HABITAT. Resident; locally common; subject to some seasonal local movements especially in the monsoon. West Pakistan (Jhelum and Shahpur dists., Waite, JBNHS 59: 961). Mainly south and east of a line roughly from northern Kutch through Ajmer to Delhi; east to W. Bengal (south of Ganges R.) and south to a line from Hubli through Bellary — roughly the 15th parallel: thus in Gujarat (including Kutch and Saurashtra), Rajasthan, Delhi, Haryana, Uttar Pradesh, Bihar, Orissa, West Bengal, Maharashtra, Madhya Pradesh and northern Andhra. Affects open stony scrub-and-bush plains and plateau country, ploughed fields, fallow land, and the neighbourhood of cultivation, perching freely on telegraph wires rather than on bushes.

GENERAL HABITS. Keeps in pairs (very often trios) or small loose parties — sometimes in larger flocks of up to 50 or more. Runs about squatly in short zigzagging spurts in search of food. When disturbed flies off with a curious uncertain twisting flight and soon settles again. Frequently stampedes lurking insect prey from the unevennesses in the ground by a sudden flicking open and shut of the wings. Has a very impressive aerial display, the bird rising 30 m or so up in the air, flying around with deeply flapping wings and singing for several minutes, then rocketing down to earth with wings pulled in at the sides in a series of steps — steep nose-dives and 'wave-crests'. Pattern of the aerobatics very similar to that of Ashycrowned Finch-Lark (878), q.v.

FOOD. Grass- and weed seeds, grains of paddy and other cereals, and insects.

VOICE AND CALLS. A pleasant flight-song of several syllables comprising sweet thrush-like notes, tee-hoo, and low-pitched husky whistles and chirrups. Frequently parts of this song also uttered from a clod or stone on the ground.

BREEDING. Season, overall February to May, principally March and April. Nest, a cup-like hollow in a bank, or depression in the ground — often in a newly ploughed field — under shelter of a clod of earth or tiny bush. Usually padded with fine soft grass and often parapeded round the rim with pebbles, bits of sticks and other rubbish. Eggs, 2 to 4, creamy or greyish white in ground colour, freckled and spotted with reddish brown, umber-brown or inky purple, more densely at the broad end, forming a cap. Average size of 50 eggs 21.2 × 15.7 mm (Baker). Both sexes take part in lining the nest, incubation (?), and tending the young. Incubation period undetermined.

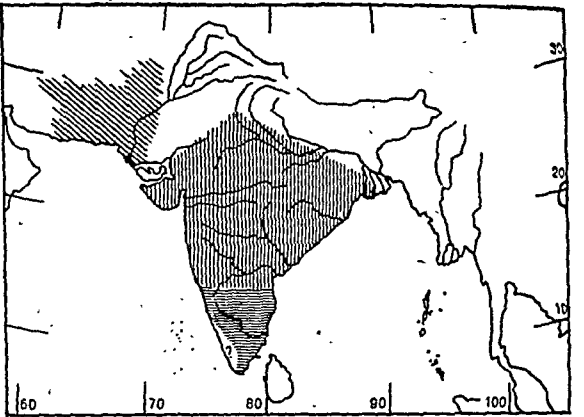
MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

MEASUREMENTS				
	Wing	Bill (from skull)	Tarsus	Tail
♂♂	100-110	15-17	21-24	57-64 mm
♀♀	98-104	15-16	21-23	52-63 mm
			(SA, HW)	

Weight 4 ♂♂ 24-28.5; 1 ♀ 23; 1 ♂ 27 g (BB).

STATUS, DISTRIBUTION AND HABITAT. West Pakistan; status uncertain. A specimen obtained by Blanford south of Sehwan in Sind, December 1873 (now in British Museum). Common and resident in western Chagai, Baluchistan, as far east as Ras Koh foothills (Christison, *Ibis* 1941: 544). Commoner in Zhob and Loralai than in other districts and probably occurs all over Baluchistan in suitable localities. Biotope as in 882, more rocky and barren wastes.

Ammomanes phoenicurus



Distributional ranges
phoenicurus (882). testaceus (883). zarudnyi (881).

EXTRALIMITAL. Eastern Iran from Kirman and southern Khorasan through southern Afghanistan (Vauric).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 882, but recorded as perching on bushes and telegraph wires to sing, not soaring (Christison MS.)! This anomaly needs verifying.
BREEDING. As in 882, but not recorded within our limits.

MUSEUM DIAGNOSIS. Differs from nominate *phoenicurus* in being somewhat smaller and much paler with the underparts creamy rufous instead of deep rufous.
MEASUREMENTS. Wing ♂♂ c. 97-102 mm (Hartert); 2 ♂ 92, 93 mm (Baker).
COLOURS OF BARE PARTS. As in 882.

882. **Indian Rufostailed Finch-Lark.** *Ammomanes phoenicurus phoenicurus* (Franklin)

Mirastra phoenicea Franklin, 1831, Proc. Zool. Soc. London: 119
(Between Calcutta and Benares)
Baker, FBI No. 1242 (part), Vol. 3: 350
Plate 64, fig. 9

LOCAL NAMES. Aggiā, Rāḥl (Hindi); Lāl tharāt (Bengali); Khāḍrīyō (Gujarati); Āmbḍī jorī gādu, Dova pitta (Telugu); Vāṇḍāḍḍī kūrūvi (Tamil).

COLOURS OF BARE PARTS. Iris hazel brown. Bill horny brown, darker on upper mandible and tips; mouth dull orange, orange-pink, or flesh colour (age ?). Legs and feet brown; claws darker.

883. **Southern Rufostailed Finch-Lark.** *Ammomanes phoenicurus testaceus* Koelz

Ammomanes phoenicurus testaceus Koelz, 1951, Amer. Mus. Novit., No. 1510: 3
(Salem, Madras)
Baker, FBI No. 1242 (part), Vol. 3: 350

LOCAL NAMES. Āmbḍī jorī gādu, Dova pitta (Telugu); Vāṇḍāḍḍī kūrūvi (Tamil).
SIZE. Sparrow; length c. 16 cm (6 in.).

FIELD CHARACTERS. As in 882, q.v. See Museum Diagnosis.
STATUS, DISTRIBUTION AND HABITAT. Resident, subject to some seasonal local shifts. Peninsular India south of c. 15°N. lat., including Mysore, southern Andhra and Tamil Nadu. Oddly enough not yet recorded from Kerala, though doubtless occurring there in the appropriate biotope. Absent in Ceylon. Affects open stony scrub-and-bush country, fallow land, and the neighbourhood of cultivation.

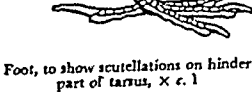
GENERAL HABITS, FOOD, VOICE AND CALLS. As in 882.
BREEDING. Season, nest, eggs and breeding biology as in the nominate subspecies (882).

MUSEUM DIAGNOSIS. More rich rufous, less grey, above and below than nominate *phoenicurus*.
MEASUREMENTS AND COLOURS OF BARE PARTS. As in 882.

Genus ALAEMON Keyserling & Blasius

Alaemon Keyserling & Blasius, 1840, Die Wirbelth. Europas: 36. Type, by monotypy, *Alauda desertorum* Stanley

Distinguished by large size and long slender bill, slightly curved in its terminal half. Nostrils fully exposed. Wing long, of 10 primaries: 1st primary (as.) just exceeding the primary-coverts; 3rd, or 3rd and 4th primaries longest. Tarsi long and stout, scutellated behind; toes and claws short, the latter curved and blunt. 'Tongue bifid at tip' (Ticehurst).



884. **Large Desert Lark.** *Alaemon alaudipes doriae* (Salvadori)

Certhilauda doriae Salvadori, 1868, Atti R. Accad. Torino 3: 292 (Iran)
Baker, FBI No. 1205, Vol. 3: 304
Plate 64, fig. 8

LOCAL NAMES. Rāṇ chāṇḍū (Gujarati). Alternative English names 'Hoopoe-Lark' or 'Bifasciated Lark'.

LARKS

17

size. Myna —; length c. 23 cm (9 in.).

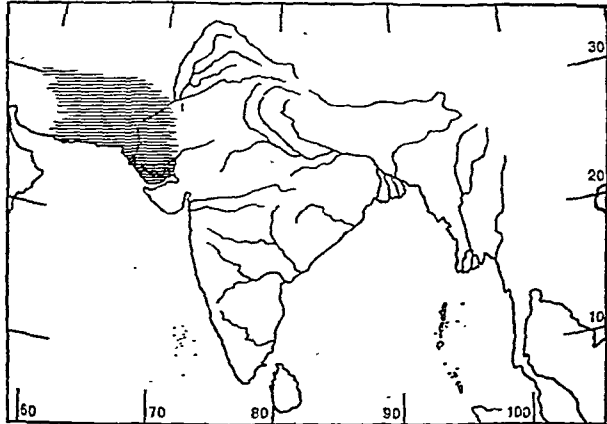
FIELD CHARACTERS. A large sandy grey lark with whitish underparts,



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black-streaked on breast. Long slightly curved black bill and china-white legs. General effect on the ground between Crested Lark and Desert Courser. In flight, usually low above the ground, the broad white double band on the black wings and the black-and-white tail very striking, even at long range when the coloration of the bird otherwise masks it completely in the sandy environment. Sexes alike, but female smaller.

STATUS, DISTRIBUTION and HABITAT. Resident. Not uncommon, but local and very thinly scattered. West Pakistan in Baluchistan, Sind and Punjab (Bahawalpur and Multan dists.), and NW. India in and around

Alaemon alaudipes

■ Distributional range *A. a. doriae* (1884).

the Great and Little Rann of Kutch. Affects desert areas — undulating swells and mounds of drift sand with sparse bushes of *Salsola* and *Suaeda*, etc., or absolutely bare sunbaked salt-encrusted *pāts*.

Extralimital. Eastern Arabia, Iraq, southern Iran and Afghanistan. Other races in the Sahara and northern Africa.

LARKS

19

COLOURS OF BARE PARTS. Iris brown. Bill horny greenish grey: upper mandible pale plumbeous or pale brown, lower paler and more flesh coloured. Legs and feet china-white; claws greenish brown.

Genus *GALANDRELLA* Kaup

Calandrella Kaup, 1829, Skizz. Entw. Nat. Syst.: 39. Type, by monotypy,

Alauda brachydactyla Leister

Alauda Horsfield & Moore, 1858, Cat. Bds. Mus. E.I. Co. 2: 471. Type, by monotypy, *Alauda royal* Blyth

Bill rather short and deep. Nostrils concealed by plumelets. Wing of nine primaries: first primary (as.) long, reaching to tip of wing and more or less subequal with the next two or three. Inner secondaries long, reaching almost to tip of wing. Hindclaw a little longer than hindtoe and almost straight.

Key to the Species

	Page
A Inner secondaries falling short of wing-tip	
1 2nd primary about equal to 3rd and 4th (1st is minute)..... <i>C. royal</i>	26
2 2nd primary shorter than 3rd and 4th..... <i>C. rufescens</i>	25
B Inner secondaries reaching tip of wing	
3 5th primary decidedly shorter than 2, 3 and 4..... <i>C. cinerea</i>	19
4 5th primary about equal to 2, 3 and 4..... <i>C. acutirostris</i>	22

GALANDRELLA CINEREA (Gmelin)¹

Key to the Subspecies

Upperparts strongly suffused with reddish; underparts fulvous.....*C. c. dukhunensis*
 Upperparts not strongly suffused with reddish; underparts whitish washed with fulvous-brown on breast.....*C. c. longipennis*

883. Yarkand Short-toed Lark. *Calandrella cinerea longipennis* (Eversmann)

Alauda longipennis Eversmann, 1848, Bull. Soc. Imp. Sci. Nat. Moscou 21: 219 (Sangara, Dzungaria)

Baker, FBI No. 1221, Vol. 3: 325

LOCAL NAMES. *Pillāk*, *Bāghārī* (Hindi); *Akoniā* (Bihar *mirshikars*).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. A sparrow-like bird seen in large flocks in winter in open semi-desert country. Above, sandy or greyish brown streaked with blackish; a pale supercilium. Tail blackish with the two outer pairs of feathers largely white. Below, dull white, the breast washed and finely striated with brown. Sexes alike.

Gregarious habit (large flocks) and white underparts contrasting with the black tail in flight, distinguish this species from most other larks of this size. *C. acutirostris* (887-8) looks very similar, but has a rufous wash on the rump.

¹ Both Meinertzhagen and Vaurie (loc. cit., p. 1) combine this species with *brachydactyla*.

18

ALAUDIDAE

GENERAL HABITS. Usually met with singly or in widely separated pairs, often enormous distances out in flat featureless desert. Actions and behaviour very reminiscent of Desert Courser (439). Runs about hither and thither with mincing steps, stopping abruptly from time to time to pull itself erect or to pick up some morsel from the ground. Trusts to its legs for escape, taking wing reluctantly and only when pressed. Is a very swift runner, and if shot and merely winged it takes all-out sprinting to retrieve the bird! Flight wandering, similar to that of the Crested Lark; also reminiscent of the Hoopoe's, the resemblance being heightened by the black-and-white wing and tail pattern.

FOOD. Tiny beetles (Coleoptera) and other insects mostly picked off grasses; also seeds of *Suaeda* and suchlike desert plants.

VOICE and CALLS. Display. From the top of a bush or sand-mound the male springs up on fluttering wings more or less vertically for maybe 3 or 4 metres and nose-dives back to the perch, singing at the same time and displaying the striking black-and-white patterned wings and tail to best advantage. This manoeuvre is repeated again and again at short intervals. The song is a clear high-pitched mellow 3-noted whistle *tee-tee-tee* followed by a prolonged *tee-hoo* while nose-diving. 'The bird generally rises from the top of a sandhill after a preliminary tuning up of *too-too-tee-tee* whistled rather plaintively and deliberately and softly. The *too* is also an alarm cry' (T. R. Bell, MSS.).

BREEDING. Season, March to July, possibly straggling into September. Nest, a large untidy-looking structure of sticks etc. with a deepish cup in the centre (diam. c. 75, depth c. 40 mm) lined with fine twigs, grass stems, and feathers. Usually placed in a diminutive bush up to 60 cm or so from the ground, in desert country with a thin sprinkling of coarse grass clumps and bushes of *Suaeda* etc. Difficult to find but for the male displaying in its vicinity or the incubating female running away from the holding bush. Nest sometimes built in a straggly lone bush in a vast expanse of sunbaked *pāt*. Eggs, 2 or 3, longish oval, white to pale buff, blotched, spotted and speckled with reddish brown and faintly marked with lavender and grey — more densely at the broad end. Average size of 15 eggs 23.8 × 17.5 mm (T. R. Bell). Incubation by female alone (apparently); incubation period undetermined. Young, while still flightless, very fast runners. Mother bird gives distraction display, running in front of observer with dragging wings as if grievously injured.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. When freshly killed the hindcrown is a delicate dove-grey. This colour disappears soon after death. In summer the plumage becomes very abraded and the spots on breast much more prominent.

Juvenile. Upperparts barred with blackish brown, each feather edged paler. No spots on breast. Wings and tail as in adult.

Nestling covered with very long pale buffy white down (Ticehurst).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	126-137	30-35	34-37	79-99 mm
♀♀	116-119	c. 27	30-32	c. 75 mm (SA)

ALAUDIDAE

20

STATUS, DISTRIBUTION and HABITAT. Common and abundant winter visitor (September to April) throughout the northwestern desert and semi-desert portions: Baluchistan, Sind, Punjab (NW. frontier districts, Bahawalpur, Salt Range, etc.), Haryana, Delhi, western Uttar Pradesh, Rajasthan, northern Gujarat (including Kutch and Saurashtra), and northern Madhya Pradesh (Gwalior, Bhopal, Indore, etc.). Affects open stony scraggy grassland, flat barren *pāts* among sand-dunes and in semi-desert country, fallow cultivation in sandy riverain tracts, dry tidal mudflats in coastal areas, etc.

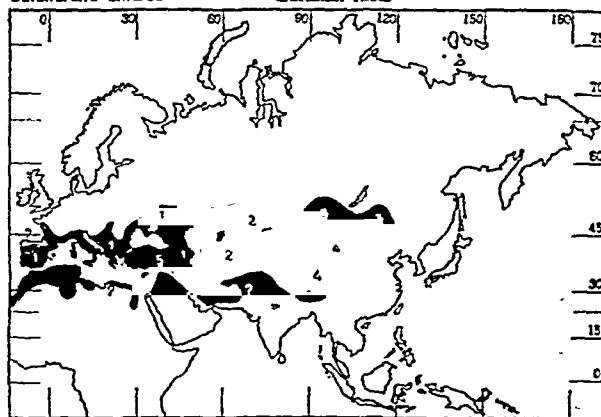
Extralimital. Breeds from southern Russian Altai eastward through northern Mongolia to Transbaikalia, northeastern Mongolia and northwestern Manchuria. Winters also in Afghanistan (Vaurie).

MIGRATION. No ringing data. Recorded on southward passage through Drosh and Chitral in large numbers, first week October; very common on return passage northward in April (Fulton, JBNHS 16: 56; Perreau, ibid. 19: 916). Passes southward through Kohat and Kurram Valley in September; common on return passage between last week February and mid April (Whitehead, JBNHS 20: 798). The observational data may also include 886.

GENERAL HABITS. Keeps in straggly flocks running about and feeding on the ground or moving restlessly around the countryside in undulating

Calandrella cinerea

Eurasian races



■ Breeding

For winter ranges see text

- 1 *brachydactyla* } (885). 4 *dukhunensis* (886).
 2 *longipennis* } (885). 5 *hermannensis* (RE).
 3 *orientalis* (RE).

pipit-like flight. The flocks are sometimes densely packed and of enormous size — 'clouds' of many hundreds, or thousands — e.g. upon their first arrival in winter quarters and again prior to emigration. The birds are

often seen feeding in the most barren-looking places with hardly a blade of grass growing, but where the ephemeral monsoon vegetation has evidently left an abundant supply of scattered seeds before dying down. The flocks fly out, sometimes considerable distances, to drink at favourite spots on river banks and the like every morning. They roost at night on bare open flats, each individual squatting separately in a round little depression in the soil.

Short-toed Larks become excessively fat before emigration and are then netted everywhere in vast quantities, being in great demand as an epicurean delicacy. They also constitute the staple diet of many of the resident as well as wintering birds of prey.

FOOD. Grass- and weed seeds: those of *Eleusine aristata* and *Eragrostis plumosa* (grasses), and *Trianthema pentandra* (a ficoid), identified among stomach contents (Ticehurst). Also eats insects.

VOICE and CALLS. Very silent in winter; only an occasional chirp.

BREEDING. Extralimital. Breeding biology as in 887-8.

MUSEUM DIAGNOSIS. 4th visible primary (as.) distinctly shorter than the first three. Upperparts greyer than in *dukhunensis* (886); underparts whiter.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail (SA)
♂♂	95-100	12-15	20-21	54-65 mm
♀♀	88-94	12-14	20-21	53-57 mm

Weight 2 ♂♂ (winter) 19, 21.5; 3 ♀♀ (winter) 18-18.5 g (BB).
Wing 24 ♂♂ 91-98 (av. 93.8); 9 ♀♀ 85-90 (av. 87.7) mm } Paludan,
Weight 23 ♂♂ 19-25 (av. 22.3); 9 ♀♀ 19-22 (av. 19.9) g } Afghanistan
COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible horny brown, darker on culmen; lower mandible yellowish horny. Legs and feet fleshy brown.

886. Rufous Short-toed Lark. *Calandrella cinerea dukhunensis* (Sykes)

Alauda dukhunensis Sykes, 1832, Proc. Zool. Soc. London: 93 (Dukhun)
Baker, FBI No. 1222, Vol. 3: 326
Plate 64, fig. 14

LOCAL NAMES. *Püllāk*, *Bāghēri* (Hindi); *Ākōnā* (Bihar mīshikars).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 885, but less grey more tawny; doubtfully distinguishable unless in the hand. See Museum Diagnosis.



× c. 1

STATUS, DISTRIBUTION and HABITAT. Probably breeds in Ladakh. Common and abundant winter visitor (September to April) from all along the base of the Himalayas, south through the Gangetic Plain and the Peninsula to Kerala. Less common in Assam and East Pakistan (?). By and large absent in West Pakistan and the adjoining arid semi-desert portions, but virtually replacing the Yarkand

887. Karakoram or Hume's Short-toed Lark. *Calandrella acutirostris acutirostris* Hume

Calandrella acutirostris Hume, 1872, Lahore to Yarkand: 265 (Balakchi, upper Karakash Valley, north of Sughet Pass, Karakoram)
Baker, FBI No. 1223, Vol. 3: 327

LOCAL NAME. *Bāghēri* (Hindi).

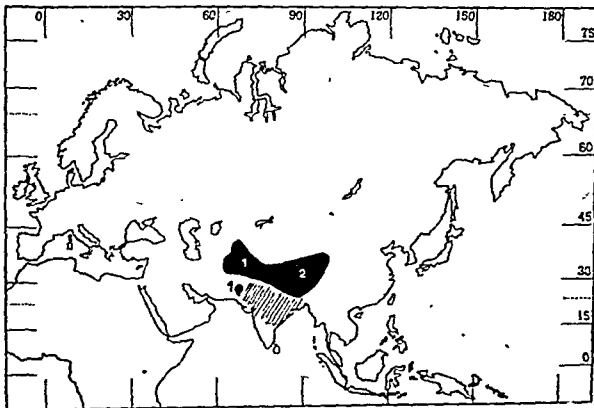
SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 885, q.v.; not distinguishable from it unless in the hand. Sexes alike. See keys to the Species and Subspecies.

On a good view, in flight, the rufous wash on rump sometimes helps to distinguish this species from *C. cinerea*, especially from the greyer subspecies *longipennis* (885) which otherwise looks identical with it.

STATUS, DISTRIBUTION and HABITAT. Breeds in Baluchistan, Gilgit, and the Sughet Range in Kunlun Shan to Zaskar and Rupshu (up to c. 5000 m), where it intergrades with *tibetana* (888). Chiefly winter visitor to West Pakistan and India south to northern Punjab, Uttar Pradesh and Madhya

Calandrella acutirostris



■ Breeding ▨ Winter *acutirostris* (887).
tibetana (888).

Pradesh. However, the two races are so close to each other that it is not always possible to assign even museum specimens with certainty. The situation is further complicated by the intermediates, and the extensive overlapping that occurs in their winter ranges. Sight records unsupported by specimens are quite worthless. Affects open, semi-desert country and fallow land, low stony foothills with scanty herbaceous vegetation, etc.

Extralimital. Breeds also in eastern Iran, north, central and eastern Afghanistan, and Badakhshan (Vaurie).

form (885) in central, eastern and southern India. Affects open stony, scraggy grass-covered country, cultivated tracts, ploughed fields, paddy stubbles, and dry tidal mudflats in coastal areas, etc.

Extralimital. 'Tibet, and Lop Nor to Ala Shan' (Vaurie).

GENERAL HABITS, VOICE and CALLS. As in 885, q.v. The various Short-toed Larks are notoriously difficult to identify in the field; assertions as to the occurrence, distribution, migration and breeding of this or that species or form, when unsupported by specimens, need to be treated with caution. However, their general habits, behaviour and food are almost identical, as is also the low chirping note occasionally heard in the winter quarters.

FOOD. Among stomach contents of birds from an intensively cultivated area in Bihar, in addition to grass- and weed seeds the following insects were commonly identified: weevils (*Tanymecus indica*, *T. hispidus*, and others), beetles (*Myllocerus discolor*, *Mesomorpha villiger*, and other species, and Aphodiids), ants (*Phidole malini*, *Oecophylla smaragdina*, *Camponotus compressus*, and ant pupae), small snails (*Corbicula* and *Planorbis* spp.), and geometrid caterpillars. Weevils constituted the major item (Mason & Lefroy, 1912).

BREEDING. Mainly extralimital. Only once recorded within our area, in the Suru Valley, Ladakh, between c. 3300 and 4000 m in July, by a reliable ornithologist. However, since apparently no specimen was collected, the subspecies remains in doubt and may as well be *longipennis*. Nests, several were found in a colony with those of the Horned Lark (*Eremophila a. longirostris*, 896) on a gentle mountain slope with scattered *Artemisia* and *Trollius* growth; described as a slight depression in the ground made by the bird in the shelter of a tiny plant, lined with a few blades of dry grass and a layer of fine, very soft vegetable down. Eggs, 3, in some cases 2, 'putty colour' mottled all over with yellowish brown. Average size 20.7 × 14.4 mm (B. B. Osmaston, JBNHS 31: 191).

MUSEUM DIAGNOSIS. Wing formula as in *longipennis* (885). Differs from it in being more rufescent brown above and on flanks; less white, more buff, on the underparts.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	95-103	13-14	20-22	59-60 mm
♀♀	92-98	13-14	20-21	51-56 mm

(SA, HW, Koelz)

Weight 14 ♂♀ 18-23 (av. 20) g — SA.

COLOURS OF BARE PARTS. As in 885.

CALANDRELLA ACUTIROSTRIS Hume

Key to the Subspecies

White on tail less extensive and suffused with fulvous.....
..... *C. a. acutirostris*
White on tail more extensive and purer in colour. *C. a. tibetana*

GENERAL HABITS, FOOD, VOICE and CALLS. As in 888.

BREEDING. Season, May to July. Nest and eggs as in 888, but normal clutch in Baluchistan said to be of 4 (Williams, JBNHS 33: 607).

MUSEUM DIAGNOSIS. First four visible primaries (as.) nearly subequal, and longest. Differs from *tibetana* in having the white wedge on inner web of outer tail-feather less in extent, and white outer margin of 2nd tail-feather narrower.

MEASUREMENTS	Wing	Weight
11 ♂♂	89-96 mm	19-23 g
7 ♀♀	84-90 mm	18-21 g

(Paludan, Afghanistan)

COLOURS OF BARE PARTS. Iris brown. Bill yellowish horny, blackish on culmen and tip. Legs and feet fleshy brown; claws darker.

888. Tibet Short-toed Lark. *Calandrella acutirostris tibetana* Brooks

Calandrella tibetana Brooks, 1879, Stray Feathers 8: 488 (Tibet, beyond Sikkim)
Baker, FBI No. 1224, Vol. 3: 328

LOCAL NAME. *Bāghēri* (Hindi).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 887, q.v.; not distinguishable from it or from 885 unless in the hand. See keys to the Species and Subspecies.

STATUS, DISTRIBUTION and HABITAT. From Balistan, Zaskar, Rupshu, and Lahul (where it intergrades with 887), east through Ladakh, Nepal (recorded at c. 5000 m in May — Biswas, 1961, JBNHS 58: 443), N. Bhutan and SE. Tibet; breeding above c. 3400 m. Winter visitor to Punjab, Uttar Pradesh, Nepal, Sikkim, Madhya Pradesh, Bihar, West Bengal, Assam and East Pakistan. Affects open semi-desert country, fallow cultivation and waste land, low stony foothills with scanty herbaceous vegetation, etc.

GENERAL HABITS. Very like those of 885 and other Short-toed Larks, q.v. In its wintering range keeps in large straggly flocks running about and feeding on bare ground or flying about restlessly. Aerial display in breeding season, when in pairs, consists of a series of wandering wagtail-like flights after soaring aloft for 50 metres or so, each spurt ending in a short hovering and accompanied from time to time by a series of faint disjointed musical notes, mostly the normal sharp *tree*. This performance may continue for ten minutes or more, and ends with a vertical dive of the bird to the ground (Ludlow, SA).

Extralimital. Eastern Tibet and Sikkim to Koko Nor (Vaurie).

FOOD. Weed seeds and insects.

VOICE and CALLS. Normal note, a sharp *tree*. Song (as under General Habits) poor and monotonous; also uttered from the top of a rock or stone.

BREEDING. Season, in Ladakh end May to July. Nest, a slight depression in the ground scantily lined with dry grass and compactly felted within with very fine vegetable down or wool (usually white); diameter c. 60 mm, greatest depth c. 35 mm; sometimes parapetted round the rim with gravel. Placed in the shelter of a small plant or stone; frequently in quite exposed situations. Eggs, normally 3, sometimes 2, greyish white faintly stippled

LARKS

25

or splashed with pale brown, somewhat more densely at the broad end, there tending to form a ring. Average size of 25 eggs 20 × 14.5 mm (Ludlow). Both nest and eggs are smaller replicas of those of the Horned Larks (*Eremophila*) which share the same barren environments. Both sexes partake in collecting material and lining the nest; apparently also incubation. Incubation period undetermined. Parent performs 'broken wing' distraction display when nest with chicks approached.

MUSEUM DIAGNOSIS. Wing formula as in the species *acutirostris* (see Key, p. 19). Differs from the nominate race (887) in having the white wedge on inner web of outer tail-feather more extended, and white outer margin of second tail-feather wider.

MEASUREMENTS. Not different from 887.

Whistler (*Ibis*, 1932: 479) gives for a series of carefully sexed birds of the two forms together, as under:

	Wing	Bill (from skull)	Tarsus	Tail
33 ♂♂	98-100	13-15	19-22	54-58-65 mm
12 ♀♀	85-92	13-14	19-21	54-60 mm

COLOURS OF BARE PARTS. As in 887.

88Ca. Persian Short-toed Lark. *Calandrella rufescens persica* (Sharpe)

Alaudula persica Sharpe. 1890, Cat. Bds. Brit. Mus. 13: 590 (Niris, Iran)
Baker, FBI No. 1227, Vol. 3: 332
Plate 64, fig. 13

LOCAL NAME. *Bāghēri* (Hindi, for Short-toed Larks generally).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As of 885; distinguishable from it at close range by spotted breast, but usually not unless in the hand. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Winter visitor to West Pakistan — Baluchistan (this race and/or *seebahini*), Bahawalpur (JBNHS 42: 730) and elsewhere in Punjab (Peshawar and Hissar dists.), and possibly Sind. May be commoner than the records suggest, but overlooked amongst the other more abundant Short-toed Larks. Affects open sandy semi-desert country.

EXTRALIMITAL. 'Iranian Plateau, W. Iran (Zagros in Luristan), S. Iran. Scistan to SE. Afghanistan, S. Iraq' (Vaurie).

GENERAL HABITS, FOOD, VOICE and CALLS. Indistinguishable from 885 in winter.

BREEDING. Extralimital. More or less as in 885; described by Blanford. 1876, in *Eastern Persia* 2: 243 (under the name *C. pipioletta*).

MUSEUM DIAGNOSIS. In the species *C. rufescens* the secondaries are markedly shorter than wing-tip — always more than 15 mm. Breast more or less distinctly spotted; black spot on either side of throat (as in *acutirostris* and *cincera*) lacking. Subspecies *persica* is brown-streaked rufous sandy above; whitish below, spotted on breast. Outer tail-feather largely white.

A specimen of the very pale grey form *C. r. leucophaea* Severtzov has also been obtained in Baluchistan, in November, by Meinertzhagen (Ticehurst, JBNHS 11: 875).

LARKS

27

890. Saurashtra Sand Lark. *Calandrella raytal krishnakumarsinhji* Vaurie & Dharmakumarsinhji

Calandrella raytal krishnakumarsinhji Vaurie & Dharmakumarsinhji, 1954, Jour. Bombay nat. Hist. Soc. 52: 3 (Bhavnagar, Saurashtra)
Not in Baker

LOCAL NAME. *Ritāl* (Hindi).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 891. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. So far known only from the type-locality Bhavnagar in Saurashtra (Gujarat). Affects dry tidal mudflats along the coast (Gulf of Cambay) with scanty growth of rank grasses and saline plants (*Suaeda* etc.).

GENERAL HABITS, FOOD, VOICE and CALLS. As in 891. Common call-note a characteristic *cheruk-cheruk* (Dharmakumarsinhji).

BREEDING. Season, March to September, mainly from June on. Nest and eggs as in the nominate subspecies. Some nests sheltered under discarded dry coconut husks, a favourite site being the railway embankment across the mudflats.

MUSEUM DIAGNOSIS. Differs from both *adamsi* (889) and *raytal* (891) in being more heavily streaked and much darker in all plumages — dark grey above instead of sandy. Bill as in *adamsi*, shorter and thicker than in the nominate form. For details of plumage see Vaurie & Dharmakumarsinhji, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
11 ♂♀	76-85	12-13	42-50 mm (Vaurie)

COLOURS OF BARE PARTS. As in 891, but 'bill blackish above and below'.

891. Ganges Sand Lark. *Calandrella raytal raytal* (Blyth)

Alauda raytal 'Buch.-Hamilton' = Blyth, 1845, Jour. Asiatic Soc. Bengal 13: 962 (Lucknow)
Calandrella raytal vauriei Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 20 (Palasbari, Assam)
Baker, FBI No. 1225, Vol. 3: 329
Plate 64, fig. 15

LOCAL NAME. *Ritāl* (Hindi).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. Like Short-toed Lark (885) but smaller. Above, greyish sandy, narrowly streaked with dark brown. Below, white, sparsely and indistinctly dark-streaked on sides of breast. A white supercilium and cheeks. Shortish black-and-white tail. Sexes alike.

26

ALAUDIDAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	96-105	11-13	20-22	60-64 mm (SA, Baker)

COLOURS OF BARE PARTS. Iris grey-brown or brown. Bill horny grey, darker on culmen, yellowish on lower mandible. Legs and feet fleshy brown.

CALANDRELLA RAYTAL (Blyth)

Key to the Subspecies

		Page
A	More heavily streaked; much darker and greyer	
B	Less heavily streaked; paler and more sandy	
a	Bill slenderer and longer	C. r. raytal 27
b	Bill thicker and shorter	C. r. adamsi 26

889. Indus Sand Lark. *Calandrella raytal adamsi* (Hume)

Alauda adamsi Hume, 1871, Ibis 13: 405 (Agore Valley, Hazara)
Baker FBI No. 1226, Vol. 3: 331

LOCAL NAME. *Ritāl* (Hindi).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 891, q.v. See Museum Diagnosis.

When in flocks in non-breeding season, may be distinguished from Short-toed Larks, with which they do not associate, by their greyer and whiter appearance, and silvery tinkling note (Ticehurst).

STATUS, DISTRIBUTION and HABITAT. Resident. Baluchistan (Makran coast), Sind, Punjab and Haryana east to the Jumna R., and Kutch. Affects bare sandy banks and islets in the larger northwestern rivers; salt-pan environs and dry open salty mudflats on the sea coast.

EXTRALIMITAL. Persian Baluchistan, west to c. 56° E. long. (Bandar Abbas).

GENERAL HABITS, FOOD, VOICE and CALLS. As in the nominate race (891).

BREEDING. Season, March to September, chiefly June to August. Nest, eggs, and breeding biology as in 891.

MUSEUM DIAGNOSIS. Differs from the nominate race (891) only in having a shorter and thicker bill with the culmen more curved. *C. r. krishnakumarsinhji* (890) has a similar bill but is distinctly darker, greyer, and more heavily streaked.

Juvenile undergoes a complete moult in autumn; in fresh plumage upperparts tinged with isabelline (Ticehurst).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	80-89	11-13	19-20	48-56 mm
♀♀	77-82	11-13	19-20	46-50 mm

(CBT, HW, SA)

COLOURS OF BARE PARTS. As in 891.

28

ALAUDIDAE

STATUS, DISTRIBUTION and HABITAT. Resident. Northern India east of Jumna R. from Delhi and Haryana south and east through Uttar Pradesh, Nepal terai and plains, Bihar, northern W. Bengal, Bhutan foothills, the Brahmaputra Valley in Assam, and East Pakistan. Affects sandy river banks and islets in streams.

EXTRALIMITAL. Burma, along the lower Irrawady, Chindwin and other large rivers in the dry zone.

GENERAL HABITS. Keeps singly or in scattered twos and threes — frequently small flocks of 20 or 30 in non-breeding season — running about and feeding on bare sandy flats in the characteristic zigzag jerky spurts of the family. In breeding season male has an imposing song-flight. He soars aloft some 30 metres or so and flies aimlessly here and there while singing, not by a continuous hovering like the skylark but by intermittent series of rapid wing-flaps and pauses. The performance is short, lasting only a few minutes. The bird thereafter parachutes to the ground in a succession of 5 to 10 steps, wings and tail stiffly open, hovering momentarily at each step — reminiscent of the Tree Pipit's song-flight. In the final step of the descent, he shoots down vertically with closed wings, flattening out when within a metre or so of the ground to settle lightly on a clod or stone.

FOOD. Weed seeds and insects.

VOICE and CALLS. Song — usually uttered in flight, sometimes from a stone or mound — rather similar to that of Sykes's Crested Lark (902) but short and disjointed: a few tinkling notes . . . pause . . . a few more notes . . . pause, and so on. It is commonly interlarded with perfect imitations of the calls of many birds that share its habitat, e.g. the Redwattled Lapwing and Green Sandpiper. When singing from the ground, the crest is raised.

BREEDING. Season, February to May, chiefly March and April before the snow-fed northern rivers come in flood. Nest, a deepish cup-like depression in the ground at the base of a tamarisk seedling, or small arenicolous plant such as *Argemone*, or in the middle of a tuft of grass growing on a sandy river-bed or bank, sometimes in the shelter of a clod of river silt; lined with fine grasses, rootlets, goat's hair or vegetable down. Eggs, normally 3, sometimes 2, yellowish or greyish white with pale specks, freckles and small patches of greyish brown or pale reddish brown; they are small replicas of eggs of the Large Pied Wagtail. Average size of 20 eggs 20.1 × 14.6 mm (Baker). Evidently both sexes take part in all the domestic chores. Incubation period undetermined.

MUSEUM DIAGNOSIS. See Field Characters. Differs from *adamsi* (889) only in having a slenderer and slightly longer bill.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	74-83	c. 11-12	19-20	41-47 mm (Baker)

Bill from skull 12-14 mm (SA).



× c. 1

LARKS

29

Weight 3 ♂♂ 18-19 g (BB).

COLOURS OF BARE PARTS. Iris brown; Bill horny brown with a yellow or green tinge, blackish at tip. Legs and feet fleshy yellow.

Genus MELANOCORYPHA Boie

Melanocorypha Boie, 1828, Isis, col. 322. Type, by subsequent designation, *Alauda yelloniensis* J. R. Forster

Bill very thick and gently curved. Nostrils covered by plumelets. Wing very long, of ten primaries; first primary (as.) very minute; tertiaries not elongated. Hindclaw long and straight.

Key to the Species

Wing over 140 mm; first primary white on outer web.....	<i>M. maxima</i>	30
Wing under 130 mm; first primary brown on outer web, narrowly edged fulvous.....	<i>M. bimaculata</i>	29

892. Eastern Calandra Lark. *Melanocorypha bimaculata torquata* Blyth*Melanocorypha torquata* Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 476 (Afghanistan) Baker, FBI No. 1210, Vol. 3: 312

Plate 64, fig. 11

LOCAL NAME. Jāl (Kashmir).

SIZE. Sparrow +; length c. 16 cm (6½ in.).

FIELD CHARACTERS. A large, rather dumpy lark with a very thick bill. General coloration rather like Rufous Short-toed Lark (886).



x c. 1

Above, dark brown, each feather edged sandy. A broad white supercilium and a dark line from lores to eye; cheeks and ear-coverts rufous-brown, streaked paler. Tail blackish brown edged paler, all rectrices except central pair white-tipped. Below, chin, throat, and sides of neck white. A large black spot on each side of upper breast tending to meet

across throat like a gorget; lower breast fulvous, streaked with brown. Rest of underparts white, washed with fulvous on flanks. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Fairly common winter visitor to Baluchistan (Quetta Valley, coastal Makran), Sind, Kashmir, Punjab, Haryana, Rajasthan and Uttar Pradesh (east to about Jumna river). A specimen collected in Kutch, February (Himmatsinhji, JBNHS 57: 408); another in December (SA). Chiefly passage migrant in Chitral and Gilgit, a few staying on in mild winters. Affects barren semi-desert, sparse cultivation, harvested and fallow fields, and margins of jheels; dry tidal mudflats in coastal areas.

EXTRALIMITAL. Transcaaspia, eastern Iran (Khorasan), N. and NE. Afghanistan; probably eastern Russian Turkestan and Kirghiz steppes (Vaurie).

MIGRATION. No ringing data. Passes through Gilgit in small numbers in October (Scully, SF 10: 134). Return passage starts about February.

LARKS

31

SIZE. Myna —; length c. 21 cm (8 in.).

FIELD CHARACTERS. As in the nominate form (894), q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Within our limits so far procured only in Ladakh (Rupshu) at c. 4350 m (Hanle) in July, so presumably breeding there. Affects grassy, humpy marshland in the vicinity of the high-elevation lakes in typical Tibetan plateau facies, between 4300 and 4600 m.

EXTRALIMITAL. Western, northern and eastern Tibet, Sikang (north of Kham), and Tsinhai to Kansu (Vaurie).

GENERAL HABITS. Largely as in 894. In breeding season SA found it singly or in scattered twos and threes keeping to the dry humpy margins of lakes and snow-fed bogs in the Manasarovar region of western Tibet. Males sing from the top of a grassy hump, twitching open the wings excitedly, drooping them at the sides of the partially cocked tail, and turning lightly from side to side. In chasing off a rival the bird flies at him low above the ground with leisurely-looking but deliberate and meaningful wing-beats. Before alighting to supplant, wings held up stiffly in a wide V above back and tail spread out, displaying the white pattern prominently. (For a fuller account of its ecology and biology see Schäfer, 1938: 187-90.)

FOOD. Seeds and insects.

VOICE and CALLS. Song rather feeble, of disconnected strophes interlarded with perfect mimicry of other birds' calls, e.g. Redshank (*Tringa totanus*) and Green Sandpiper (*T. ochropus*).

BREEDING. Unrecorded within our limits. In adjacent western Tibet (Lake Manasarovar area) SA found it breeding abundantly in June-July. Nest, a cup-like hollow in the ground lined with green grass; sited among the drier humps on the fringe of a seepage bog with spongy semi-floating grassy hummocks ('islets'). Eggs, 2 or 3, rather elongate, olive-creamy densely freckled with brown, almost masking the ground colour. Size c. 29 × 19 mm (SA).

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters. Differs from the nominate form (894) only in being paler.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 894.

894. Sikim Longbilled Calandra Lark. *Melanocorypha maxima maxima* Blyth*Melanocorypha maxima* Blyth, 1867 (January), Ibis: 46, footnote (Afghanistan, errors, restricted to borders of Sikim by Hartert, 1904)

Baker, FBI No. 1209 (part), Vol. 3: 311

Plate 64, fig. 16

LOCAL NAMES. None recorded.

SIZE. Myna —; length c. 21 cm (8 in.).

FIELD CHARACTERS. A dumpy thick-billed lark, similar to Eastern Calandra (892), but larger, with much more white in tail, and less prominent black spot on sides of breast.

Above, brown, tinged with rufous on head and rump, each feather dark-centred and pale-edged; supercilium and cheeks whitish; ear-coverts golden rufous. Tail brown, all rectrices except middle pair broadly white-tipped, the

30

ALAUDIDAE

Flocks of many thousands reach Kohat and Attock districts in February and early March (Whitehead, Ibis, 1909: 245), and Gilgit and Chitral by end February. By middle of March all the birds have moved on. Very plentiful in Chitral during end February and beginning March on northward migration (Fulton, JBNHS 16: 56), large flocks passing up the main valley in early March (Perreau, JBNHS 19: 916).

GENERAL HABITS. Met with in flocks while in its winter quarters, often of considerable size just prior to emigration ('hundreds'), usually in company with Short-toed Larks. The birds keep up a constant 'warbling' while squatted or running about on the ground.

FOOD. Seeds and insects.

VOICE and CALLS. 'Has a melodious call note' (Jones). Song not heard in winter.

BREEDING. Extralimital. Nest, a roughly put-together cup of grasses etc. on the ground; c/3 or 4.

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters; for details of plumage, Baker loc. cit. Very similar to the nominate form *M. b. bimaculata* (of Transcaucasia, W. and S. Iran) but paler, greyer, and less heavily streaked.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	116-126	17-18	26-27	50-61 mm (Baker, SA)

Weight 3 ♂♂ 47-60 g (Paludan). 1 o ? (December) 48 g — SA.

COLOURS OF BARE PARTS. Iris light to dark brown. Bill: upper mandible brown to black; lower mandible greenish horny, yellowish at base. Legs and feet yellowish or brownish flesh colour, darker on the joints.

MISCELLANEOUS. Is excessively fat during the season of spring migration, when the birds are extensively netted, snared and shot in Kashmir and all along the migration route as an epicurean delicacy. Is also a very favourite cage-bird in those parts on account of its sweet rich song, similar to the skylark's — likewise interlarded with mimicry of other birds' calls — but richer and louder.

MELANOCORYPHA MAXIMA Blyth

Key to the Subspecies

Upperparts darker.....	<i>M. m. maxima</i>
Upperparts paler.....	<i>M. m. holdereri</i>

893. Ladakh Longbilled Calandra Lark. *Melanocorypha maxima holdereri* Reichenow*Melanocorypha holdereri* Reichenow, 1911, Orn. Monatsb. 19: 34 (Kloster Shins, Kansu)*Melanocorypha maxima subgrisea* Stegmann, 1937, Orn. Monatsb. 45 (2): 55 (Oring Nor, east Nanhuan)*Melanocorypha maxima kashmirica* Koeltz, 1939, Proc. Biol. Soc. Washington 52: 127 (Hanle, Rupshu, Kashmir)

Baker, FBI No. 1209 (part), Vol. 3: 311

LOCAL NAMES. None recorded.

ALAUDIDAE

32

outermost feather nearly all white. Below, dull white washed with ashy on breast and with fulvous on flanks. A blackish spot on each side of breast; sometimes also a few ill-defined brown spots in the middle. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident. Northern Sikim and northern Bhutan in the Tibetan plateau facies; above c. 3600 m. Affects barren steppe country and humpy marshland around upland lakes and bogs.

EXTRALIMITAL. Adjoining southern Tibet (except in the far west where 893 replaces it) and southeastern Sikang (Kham) — Vaurie.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 893, q.v. 'When disturbed it utters a succession of loud musical whistles' (Ludlow).

BREEDING. Not recorded within our limits, but breeds plentifully in suitable situations in adjoining Tibet. Season, nest and eggs (c/2 or 3) as in 893. Average size of 5 eggs 29.3 × 18.5 mm (Ludlow).

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species. The nominate form differs from that of Ladakh (893) only in being darker.

Young (immature). Above, blackish brown, each feather edged with yellow or yellowish white. Below, chin and throat distinctly yellow; rest of underparts washed with yellow, the breast heavily spotted with dark brown.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	143-154	21-24	29-30	83-93 mm (Baker)

COLOURS OF BARE PARTS. Iris dark brown, bill whitish horny or yellow, black at tip. Legs and feet dark brown or 'black mottled with dull red' (Walton).

Genus EREMOPHILA Brehm

Eremophila Brehm, 1828, Isis, col. 322. Type, by subsequent designation, *Alauda alpestris* Linnaeus*Olbcoris* Bonaparte, 1838, Nouv. Ann. Sci. Nat. Bologna 2: 407. Type, by subsequent designation, Gray, 1842, *A. alpestris* Linnaeus

Distinct from all other larks in the possession of 'horns' composed of a few lengthened feathers on either side of the crown in both sexes. Bill of medium length, rather stout. Nostrils densely covered by plumelets. Wing of only 9 primaries: first 3 (as.) subequal, the 2nd generally a fraction the longest. Tarsus strong, of moderate length; hindclaw straight, pointed, about same length as hindtoe or slightly longer. Sexes dimorphic in colour.

Cf. Whistler, H., 1925, Birds of Lahul. Ibis: 190-92 (Horned Lark).

Whistler, H., 1932, On some Larks of the Kashmir State. Ibis: 470-79.

EREMOPHILA ALPESTRIS (Linnaeus)

Key to the Subspecies

Males

		Page
A	Black sides of head connected with black of breast.....	<i>E. a. albigula</i> 33
B	Black sides of head divided from black of breast by a white band	
a	Larger, wing over 120 mm; less vinous and more strongly streaked above.....	<i>E. a. longirostris</i> 34
b	Smaller, wing (usually) under 120 mm; more vinous with less distinct streaks above.....	<i>E. a. alpestris</i> 33

LARKS

33

895. Pamir Horned Lark. *Eremophila alpestris albigula* (Bonaparte)

Otocoris albigula Bonaparte, 1850, *Consp. Gen. Av.* 1: 246 (Russian Alps, restricted to Hissar Range by Meinertzhagen, 1928, *Ibis*: 523)

Otocorys diluta Sharpe, 1890, *Cat. Bds. Brit. Mus.* 13: 670 (Kashgar and Yarkand) Baker, *FBI No.* 1206, Vol. 3: 307
Plate 64, fig. 18

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. A largish high-elevation lark, chiefly pinkish or vinaceous ashy brown above, white below. Face and throat whitish, with contrasty black cheeks running into a broad gorget across upper breast. A black band across crown and two tufts of long narrow feathers on either side (the 'horns') confirm its identity.

Female has the crown ashy brown without the distinctive black-and-white markings but more or less streaked with black. Black of face and breast duller



x c. 1

and more restricted.

STATUS, DISTRIBUTION and HABITAT. Resident in Gilgit and Chitral, moving altitudinally with season. Very common down at c. 1500 m between October and April whence, after forming large flocks ('of over a hundred') it suddenly disappears (Biddulph, *SF* 9: 354; Scully, *ibid.* 10: 134). Probably breeding in Chitral at the head of Turikho Valley c. 4000 m and upwards in July (Fulton, *JBNHS* 16: 56); spotted juveniles taken in August (Biddulph, *SF* 10: 274). A solitary straggler obtained in Rawalpindi dist., Punjab in March (Whistler, *JBNHS* 32: 218). Affects grassy pasture lands, banks of rivers, old moraines, and barren stony steppe country.

Extralimital. Iran in Yezd, and NE. Iran eastward from Gurgan through Khorasan, the mountains of Afghanistan, Transcaspiia, Pamirs, and western Tien Shan south to Kashgar and Yarkand in W. Sinkiang (Vaurie).

GENERAL HABITS, FOOD, VOICE and CALLS. As in 896 q.v.

BREEDING. As in 896.

MUSEUM DIAGNOSIS. Black areas of cheeks and upper breast confluent; forehead, face and throat in male always white, not yellowish.

Young (immature). Above, fulvous-brown, each feather tipped with white and subtipped blackish. Supercilium, sides of head, chin and throat yellowish; lores and ear-coverts mottled with brown. Below, breast brownish white with black spots; rest of underparts pure white.

MEASUREMENTS

		Wing	Bill (from skull)
10	♂♂	112-119	15-17 mm
4	♀♀	105-109	15-16 mm
(Ludlow & Kinnear)			
		Wing	Weight
20	♂♂	116-124 mm	34-39 g
10	♀♀	104-116 mm	32-42 g
(Paludan, Afghanistan)			

COLOURS OF BARE PARTS. As in 896.

LARKS

35

yellowish buff in ground colour densely freckled and mottled with some shade of dark brown. Average size of 11 eggs 24.5 × 17.4 mm (Osmaston). Female does (at least most of) the nest lining and incubation; male helps in feeding the young. Period of incubation undetermined.

MUSEUM DIAGNOSIS. See Key to the Subspecies; for details of plumage, Baker loc. cit. Frontal band in ♂ entirely white. Nasal plumes white at base, black at tip.

Chick (newly hatched) clothed in sparse straggly creamy white down. Supra-orbital, occipital, humeral, spinal, alar, and femoral tracts present. One terminal and two basal tongue-spots.

Young (immature), able to fly. ♂♀: Entire upperparts dark earthy brown each feather fringed or tipped with a pale yellowish buff spot, giving a spotted appearance. Lores and a patch behind eye yellowish white. Ear-coverts coalescing with a narrow moustachial streak earthy brown with pale yellowish buff fringes. Chin, throat, and a partial collar extending behind ear-coverts pale yellowish white. Breast yellowish buff, faintly spotted with blackish brown; abdomen, flanks and under tail-coverts white. Wings and coverts dark brown, all feathers broadly edged with yellowish or rufous-buff, this edge being white on basal half of second primary. Tail dark brown, the feathers edged and tipped with pale yellowish buff, most broadly on the outermost feather; central pair of tail-feathers mottled with rufous-brown. Mouth and gape yellow; no tongue-spots as in the chick. Bill, ♂ horny yellow, tip blackish; ♀ horny. Legs plumbeous-horn, soles yellowish (Whistler).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	125-131	17-20	22-24	85-92 mm
♀♀	115-124	18-20	22-24	76-85 mm
(HW)				

COLOURS OF BARE PARTS. Iris brown. Bill black, base of lower mandible livid slate (in ♀ entire bill livid slate); mouth livid. Legs and feet black; soles horn colour.

897. Sikkim or Elwes's Horned Lark. *Eremophila alpestris eluesi* (Blanford)

Otocoris Eluesi Blanford, 1872, *Jour. Asiat. Soc. Bengal* 41 (2): 62
(Kongra Lama Pass, Sikkim)
Baker, *FBI No.* 1208, Vol. 3: 310
Plate 64, fig. 17

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. Both sexes as in 896, q.v. — also with a white band separating black cheeks from the broad pectoral gorget. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to some altitudinal movement in winter. From Rupshu and central Ladakh [where it intergrades with *longirostris* (896) in the region of Leh], eastward through Ladakh and the Himalayas, including Nepal, Sikkim, Bhutan and NEFA; from

34

ALAUDIDAE

896. Longbilled Horned Lark. *Eremophila alpestris longirostris* (Moore)

Otocoris longirostris Moore, 1856 (February), *ex* Gould MS., *Proc. Zool. Soc. London*

23: 215, pl. 3 ('Neighbourhood of Agra' corrected to Kulu)

Eremophila alpestris desai R. & A. Meinertzhagen, 1926, *Bull. Brit. Orn. Cl.*

46: 84 (Deosai Plateau, between Baltistan and Kashmir)

Baker, *FBI No.* 1207, Vol. 3: 309

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 21 cm (8½ in.).

FIELD CHARACTERS. As in 895 but with a white band separating black cheeks from the broad pectoral gorget. See Museum Diagnosis.

Female like male but with no black band across forehead. Whole crown streaked dull black; 'horns' little more than black border to white supercilium; black of cheeks and gorget duller and more restricted.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to some altitudinal movement in winter. Baluchistan and NW. Kashmir from the Karakoram

south to Baltistan, Zaskar, Lahul and Spiti, Kulu; intergrading with *eluesi* (897) in Rupshu (SE. Kashmir); from c. 3500 m up to snowline. Affects barren, stony steppe country, with scanty tufts of grass and herbaceous plants — *Artemisia* etc.; occasionally also alpine meadows.

GENERAL HABITS. One of the commonest and most abundant birds in its characteristic stony upland habitat where its coloration is remarkably oblitative. Keeps in pairs or trios; in non-breeding season in scattered flocks, sometimes of considerable size — 50 or more. Usually unafraid and confiding, running about in short spurts like a small plover or wagtail to feed, frequently in close proximity of caravans and encampments. Under excitement, as when facing up to a rival, the horns are raised. Flies with deliberate leisurely-looking full wing-beats, reminiscent of the Crested Lark (*Galerida cristata*, 899).

FOOD. Weed seeds and insects; occasionally barley gleaned in harvested upland fields.

VOICE and CALLS. A single rather mournful note *peo* occasionally uttered in flight, also reminiscent of Crested Lark's. In breeding season male sings from a rock a short, insignificant squeaky song of disjointed strophes of the volume and tone quality of a leaf-warbler's trill; 'somewhat resembles that of the Corn Bunting, and also song of the Indian Redstart' (Osmaston). Apparently has no song-flight.

BREEDING. Season, May to July. Nest, a cup-like depression in the ground about 7 cm across and 4 cm deep, neatly felted with dry grass, hair, wool or vegetable down usually white in colour. Placed in the shelter of a tiny plant or stone, usually on its leeward side as protection from the prevailing gales; sometimes quite in the open. Eggs, normally 3, sometimes 2, longish ovals, slightly glossy and often sharply pointed at the smaller end; pale

36

ALAUDIDAE

c. 3600 m up (obtained at c. 5500 m by Blanford). Descending to c. 3000 m in winter, occasionally lower (obtained at c. 1500 m in Sikkim by SA and BB). Affects bleak stony hillsides and barren windswept steppes, thinly dotted with scanty tufts of grass, *Artemisia* plants and *Caragana* bushes — the typical Tibetan Plateau facies.

Extralimital. Northern Sikkim on the steppes on the upper course of the Hwang ho, Yalung, and Yangtze, and westward through southern Tibet to Ladakh.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 896.

BREEDING. Season, nest, eggs (c/2 or 3) and breeding biology as in 896. Average size of 4 eggs 23.5 × 16.5 mm (Ludlow).

MUSEUM DIAGNOSIS. A small-billed race; paler, less streaked and more vinous above than *longirostris* (896). However, in fresh plumage upperparts darker and warmer than in *albigula* or *longirostris*; deeper pink on nape, this colour extending further down on the back and more so than in either of the above (Meinertzhagen).

MEASUREMENTS (of more or less topotypical Sikkim and Bhutan birds)

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	114-123	13-15	22-23	76-89 mm
♀♀	109-112	13-15	22-23	73-87 mm
(HW, SA, BB, RM)				

Weight 5 ♂♂ 32-37; 3 ♀♀ 29-34 g (GD).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible horny black; lower plumbeous, brownish at tip. Legs, feet, soles and swollen pads under joints of toes greyish white; claws dark horny brown.

Genus GALERIDA Boie

Galerida Boie, 1828, *Isis*, col. 321. Type, by subsequent designation, *Alauda cristata* Linnaeus

Bill long and powerful. Nostrils covered by short plumelets. Head adorned with a thin but long upstanding crest. Wing of 10 primaries: first primary (as.) very small; 2nd reaches to nearly tip of wing; 3rd, 4th and 5th subequal and longest: in some individuals 2nd = 3rd. Hindclaw very straight, of about same length as hind toe.

Key to the Species

	Page
A Bill from skull usually over 19 mm; general colour above grey-brown	
..... <i>G. cristata</i>	36
B Bill from skull under 18 mm; general colour rufous	
a Wing under 90 mm; pectoral streaks few and narrow..... <i>G. lea</i>	40
b Wing over 92 mm; pectoral streaks numerous and broad..... <i>G. maleberica</i>	39

GALERIDA CRISTATA (Linnaeus)

Key to the Subspecies

Generally bigger; wing usually over 105 mm..... <i>G. c. magna</i>	37
Smaller; wing usually under 102 mm..... <i>G. c. chendoola</i>	37
Size intermediate; wing 97-105 mm; much greyer..... <i>G. c. lyonsi</i>	39

898. Baluchistan Crested Lark. *Galerida cristata magna* Hume

Galerida magna Hume, 1871, Ibis: 407 (Yarkand)
Baker, FBI No. 1238, Vol. 3: 345

LOCAL NAMES. *Chindil* (Hindi for all Crested Larks); *Chigak*, *Chotib*, *Chigiz* (Baluchi); *Kerzlek* (Persian).

SIZE. Sparrow +; length c. 18 cm (7 in.).

FIELD CHARACTERS. As in 899, q.v. Indistinguishable from it unless in the hand. But when both races side by side in the field (winter) may be identified by its larger size and more sandy colour. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Breeds in Baluchistan [Kalat, Quetta and Fort Sandeman dists.; probably central Makran where intergrading with *chindola* (899) occurs]. Also breeds in the frontier mountains of West Pakistan (Kohat dist. and Chitral), above c. 2300 metres. Winters in Sind and NW. Punjab (Peshawar dist., where most numerous on spring and autumn passage. Briggs, JBNHS 32: 755). Affects desert tracts as well as cultivated semi-desert areas, often in the environs of towns and villages.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 899.

BREEDING. Season, March to mid May. Nest, eggs (cf 4 or 5) and breeding biology as in the Indian bird. Average size of 60 eggs 22.6 × 17.1 mm (Baker).

MUSEUM DIAGNOSIS. Paler and more sandy than *chindola* (899) and with a slightly thicker bill; but differs from it chiefly in being larger.

MEASUREMENTS

	Wing	Bill (from skull)
♂♂	109-116	20-22 mm
♀♀	106-109	20-22 mm
		(CBT, Sind)
18 ♂♂	Wing 105-116 mm (110-7)	Weight 31-43 g (39.0)
11 ♀♀	100-106 mm (103.1)	37-51 g (av. of 9, 41.9 g) (Paludan, Afghanistan)

COLOURS OF BARE PARTS. As in 899.

899. Indian Crested Lark. *Galerida cristata chindola* (Franklin)

Alauda Chindola Franklin, 1831, Proc. Zool. Soc. London: 119
(Between Calcutta and Benares)
Baker, FBI No. 1237, Vol. 3: 343
Plate 64, fig. 20

LOCAL NAMES. *Chindil* (Hindi, for all Crested Larks); *Ghughis chindil* (Gujarati).

SIZE. Sparrow +; length c. 18 cm (7 in.).

FIELD CHARACTERS. A largish lark with a jaunty, upstanding pointed crest.

COLOURS OF BARE PARTS. Iris hazel brown. Bill horny greyish white or brownish flesh-colour, dusker on culmen; mouth yellowish flesh. Legs and feet brownish flesh; claws horny brown.

900. Gilgit Crested Lark. *Galerida cristata lynesi* Whistler

Galerida cristata lynesi Whistler, 1928, Bull. Brit. Orn. Cl. 49: 52 (Gilgit)
Not in Baker

LOCAL NAMES. None recorded.

SIZE. Sparrow +; length c. 18 cm (7 in.).

FIELD CHARACTERS. As in 899, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Known so far only from Gilgit Valley, western Kashmir. Presumably resident.

GENERAL HABITS, FOOD, VOICE and CALLS. Not specifically recorded; doubtless as in 898 and 899.

BREEDING. Not recorded.

MUSEUM DIAGNOSIS. Less brown, greyer and colder in tint than *chindola* (899).

MEASUREMENTS and COLOURS OF BARE PARTS. As in 899.

901. Malabar Crested Lark. *Galerida malabarica* (Scopoli)

Alauda malabarica Scopoli, 1786, Del. Flor. et Faun. Insubr. 2: 94 (Malabar)
Galerida malabarica profingus Koelz, 1939, Proc. Biol. Soc. Washington 52: 76
(London, Bombay)

Cf. Koelz, W., 1954, Contrib. Inst. Regional Exploration, No. 1: 33 (further comments on *profingus*)

Baker, FBI No. 1241, Vol. 3: 348
Plate 64, fig. 21

LOCAL NAMES. *Chinna chindil* (Telugu); *Kondai rani-baddi* (Tamil); *Komban rai-baddi* (Malayalam).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. A rufous-brown lark with an upstanding pointed crest very similar to the larger and sandier Indian Crested Lark (899), q.v. Sexes alike. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, apparently with some seasonal local movements, not worked out. Western peninsular India from c. 23°N. in Gujarat (Ahmedabad — 3 specimens, Hume coll. in B.M.), southward through western Maharashtra, western Mysore, western Tamil Nadu, and Kerala; plains and hills up to c. 2000 m. Affects open sparse scrub jungle, forest clearings, cultivation environs, grass-covered stony hill slopes with sheet-rock outcrops, etc. in dry- and moist-deciduous biotope; treeless downs in the S. Indian hills and grassy edges of tidal mudflats in coastal areas. Both this species and the next (902) usually found on dark soils matching the general tone of their plumage.

GENERAL HABITS. Very similar to those of Indian Crested Lark (899). In non-breeding season keeps in scattered parties of 5 to 8 birds or flocks of up to 30 or so. Wanders a great deal locally according to season, but pattern of movements not yet understood.



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Above, sandy brown streaked with blackish. Below, white, fulvous and boldly streaked with dark brown on breast. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident; subject to some seasonal local movements. From Sind and the NW. frontier districts of West Pakistan, east through Kashmir foothills, Punjab (including Salt Range),

Haryana, Delhi, Uttar Pradesh, Nepal plains, Bihar and northern Madhya Pradesh; south in Rajasthan, northern Gujarat (including Saurashtra and Kutch). Affects open sandy or salt-encrusted semi-desert country, chiefly plains, and the neighbourhood of cultivation in such; grassy sandy riverain tracts; dry tidal mudflats in coastal areas.

GENERAL HABITS. Keeps in pairs or small scattered flocks. Pointed crest generally carried erect as the bird runs about picking food on the ground. Perches freely on bushes, fence-posts, and telegraph wires, etc. It is a favourite cage-bird for its song, and thrives well in captivity.

FOOD. Grains, weed seeds and insects — locust hoppers, ground beetles, ants, earthworms, etc.

VOICE and CALLS. Normal note a liquid, rather plaintive *tee-ee* or *tee-err*. Song, a clear pleasant warbling, also with occasional imitations of other birds interlarded, but of short, disjointed repeated strophes and comparatively colourless. Delivered during a modest song-flight, the bird fluttering up a few metres, flying about rather aimlessly over a circumscribed area with a leisurely fluttering or hovering action, then planing down to earth on stiffly outspread slightly quivering wings to alight on a stone or clod. The song is also uttered from a perch.

BREEDING. Season, overall March to August, chiefly April to June. Nest, a shallow cup of grass and roots in a hollow scraped in the ground, or old hoof-print of cattle, lined with finer grasses or hair. Concealed under a clod in a ploughed or fallow field, or at the foot of a grass-tuft or small plant (e.g. *Sida*) in sandy country; often banked up round the edge with flakes of unbaked earth or cowdung. Eggs, 3 or 4, dull yellowish- or greenish white, speckled and blotched with brown and purple, usually more densely at the broad end. Average size of 50 eggs 21.5 × 16.4 mm (Baker). Both sexes take part in building the nest, incubation, and feeding the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. See keys to the Species and Subspecies. Differs from *magna* (898) in being darker and browner (less sandy) and having a slightly slenderer bill; but chiefly in being smaller.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	98-105	19-23	23-26	54-63 mm
♀♀	92-98	19-23	23-27	51-55 mm (SA)

Weight 10 ♂♀ 24-32 (av. 28) g — SA, BB.

FOOD. Weed seeds, often plucked off the living plant; paddy grains gleaned in stubbles, and insects — grasshoppers, ground beetles, ants, etc.

BREEDING. Season, varying with locality, practically all the year except perhaps the months of heaviest rainfall. Nest, a shallow cup of grass and rootlets lined with finer material, in a small depression in the ground, sheltered by a stone or grass-tuft. Eggs, 2 or 3, greyish white or creamy buff freely speckled all over with various shades of brown, with underlying specks and spots of lavender and grey. Average size of 40 eggs 21.5 × 15.5 mm (Baker). Breeding biology as in 899.

MUSEUM DIAGNOSIS. Smaller than 899 and with the upperparts rufous-brown instead of grey-brown. Differs from *G. deta* (902) in being larger, with the breast more heavily streaked with blackish.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	92-105	16-18	23-24	49-58 mm
♀♀	91-94	16-17	23-24	46-52 mm (SA)

COLOURS OF BARE PARTS. Iris hazel brown. Bill horny brown, paler on lower mandible; mouth chrome yellow (in nestling bright orange-red). Legs and feet fleshy brown; claws horny brown.

902. Deccan or Sykes's Crested Lark. *Galerida deta* (Sykes)

Alauda deta Sykes, 1832, Proc. Zool. Soc. London: 92 (Dukhun)
Mirafra cantillans bangsi Koelz, 1939, Proc. Biol. Soc. Washington 52: 76
(Hospet, Madras)
Baker, FBI No. 1240, Vol. 3: 347
Plate 64, fig. 19

LOCAL NAME. *Chinna chindil* (Telugu).

SIZE. Sparrow +; length c. 13 cm (5 in.).

FIELD CHARACTERS. A small rufous-brown lark with an upstanding pointed crest, similar to 899 and 901, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; with some little understood seasonal local movements. Eastern Rajasthan, northern Gujarat and Kutch, east through the Gangetic Plain to c. 82°E. long. and south through the Peninsula, chiefly the central plateau, to southern Mysore (Rameswaram island?, Biddulph, JBNHS 40: 244); plains and hills to c. 1000 m. Affects stony, sparsely scrubbed ghat and plateau country, dry cultivation, etc. — usually dark coloured soils.

Range and habitats overlap those of 901 in many areas, but by and large this occupies the central plateau country farther inland from the coast. Some sight records almost certainly vitiated by confusing similarity, especially in song-flight, with *Mirafra j. cantillans* (872) and also Small Skylark (*Alauda fulgens*).

GENERAL HABITS. Similar to the Indian and Malabar Crested Lark (899 and 901), but song-flight and song entirely different: almost identical with those of Singing Bush Lark (872) and Small Skylark (907, 903) q.v. In one recorded case presence of Yellow-eyed Babbler in an apparently unlikely

LARKS

41

locality in Kutch initially suggested by this lark's vocal mimicry leading to subsequent confirmation (SA).

FOOD. Weed seeds and insects.

VOICE and CALLS. Song—delivered in soaring, hovering, wandering flight—almost identical with that of Singing Bush Lark (872) q.v. Of similar pattern and only slightly inferior, if at all, to the spirited melody of the Skylark, also embracing the same rapid succession of mimicked calls of other birds.

BREEDING. Season, overall March to September, chiefly May to August. Nest, site, and eggs (c/2 or 3, rarely 4) as in 901; the last smaller and somewhat more finely stippled with brown. Average size of 50 eggs 19.9 × 14.6 mm (Baker). Breeding biology as in 899.

MUSEUM DIAGNOSIS. Differs from Malabar Crested Lark (901) in being smaller, with the underparts darker and more rufous, without the whitish abdomen. Streaking on breast sparser and narrower.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	84-92	13-15	20-21	46-54 mm
♀♀	78-86	13-15	20-21	43-50 mm (SA)

Weight 5 ♂♂ 18-22 g (SA).

COLOURS OF BARE PARTS. Iris hazel brown. Bill pale flesh colour, horny brown on culmen; mouth pinkish yellow. Legs and feet brownish flesh.

Genus *ALAUDA* Linnaeus

Alda Linnaeus, 1758, Syst. Nat., ed. 10, 1: 165. Type, by original designation *Alda arvensis* Linnaeus

Bill slender and feeble, more so than in *Calandrella*. Nostrils covered by plumbelets. Wing of 10 primaries: first primary (as.) minute, of variable length in different subspecies; 2nd, 3rd and 4th primaries also variable in length, but wing always short, not reaching beyond middle of tail. Inner secondaries very long, but shorter than wing-tip. Tarsus long and fairly stout; hindclaw very long and nearly straight.

Key to the Species

	Page
Fifth primary falls short of tip of wing by more than 5 mm....	
..... <i>A. arvensis</i>	41
Fifth primary falls short of tip of wing by less than 5 mm....	
..... <i>A. gulgula</i>	43

ALAUDA ARVENSIS Linnaeus

Key to the Subspecies

Upperparts paler, more sandy.....	<i>A. a. dulcivox</i>
Upperparts darker, less sandy.....	<i>A. a. cantarella</i>

Cf. Vaurie, C., 1951, Bull. Amer. Mus. Nat. Hist. 97: 510.

LARKS

43

903a. *Caucasian Skylark. Alauda arvensis cantarella* Bonaparte

Alda cantarella Bonaparte, 1850, Consp. Gen. Av. 1: 245 (Central Italy: restricted to Gubbio in the Roman Apennines by Meinertzhagen, 1951)

Alda arvensis arvensis Bogdanov, 1879, Trudy Obshchestva Estest. Imp. Kazan Univ. 8 (4): 74 (Akhalyzh, Tiflis, Transcaucasia)

Alda subtilis Ehmcke, 1904, Ann. Hist.-Nat. Mus. Natl. Hungarici 2: 301 (Podgorica, Montenegro [Titograd, Yugoslavia])

Not in Baker, FBI

Plate 64, fig. 23

LOCAL NAMES. None recorded.

SIZE. Sparrow +; length c. 18 cm (7 in.).

FIELD CHARACTERS. As of 903, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Winter visitor. Possibly more frequent than the only two specimens collected in W. Pakistan (Bahawalpur, February)¹ would suggest, but overlooked amongst *dulcivox*.

EXTRALIMITAL. Southern Europe from Spain eastward through the Balkan Peninsula, Greece and Bulgaria to Crimea, Caucasus, Transcaucasia, northern Iran, etc. For details see Vaurie, 1959, 2: 55.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 903.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Slightly darker than *dulcivox*, less sandy in fresh plumage.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
1 ♂	115	15	70 mm
1 ♀	108	14	67 mm (HW)

COLOURS OF BARE PARTS as in 903.

ALAUDA GULGULA Franklin

Key to the Subspecies

	Page
A. Belly white; pale rufous wash across chest and flanks; upperparts pale sandy grey.....	<i>A. g. inconspicua</i> 44
B. Belly rufous; darkest and most richly coloured on upperparts. Wing male c. 91-102; female 88-92 mm.....	<i>A. g. australis</i> 47
C. Belly rufous; upperparts not so dark as next. Wing averages smaller; male c. 88-95; female 82-89 mm.....	<i>A. g. gulgula</i> 46
D. Belly white or paler than last two; upperparts darker above than last but not so dark as <i>australis</i> . Wing averages larger; male c. 96-105; female 90-99 mm.....	<i>A. g. temnyi</i> 48
E. Not so heavily streaked and much greyer than B, C, or D	
1 Wing averages larger: male c. 101-112; female 92-101 mm.....	<i>A. g. inopinata</i> 45
2 Similar in coloration to last except in fresh plumage when it is a little darker and slightly more rufous. Wing averages smaller: male c. 98-108; female 92-96 mm.....	<i>A. g. thamarum</i> 44

¹ Identified earlier as *A. a. intermedia* Swinhoe (Whistler, JBNHS 42: 729-30).

ALAUDIDAE

42

903. *West Siberian Skylark. Alauda arvensis dulcivox* Brooks

Alda Dulcivox Brooks, 1873, Stray Feathers 1: 484 ('Himalayas and plains of North-Western Punjab', emended to Djarkent, Russian Turkestan by Vaurie, 1951, loc. cit.: 511)

Alda cinerascens Ehmcke, 1904, Jour. f. Orn.: 313 (Barnaul, west Siberia) Baker, FBI No. 1211, Vol. 3: 315

LOCAL NAME. *Bhārū* (Hindi).

SIZE. Sparrow +; length c. 18 cm (7 in.).

FIELD CHARACTERS. A dark-streaked sandy brown lark, mistakable for a pipit but of squatter build and with relatively short tail; also with outer rectrices white. A short crest visible more clearly when raised. Sexes alike. See Key to the Species, and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Winter visitor, fairly common and abundant between November and March in West Pakistan and India—Baluchistan [valleys and plains: Quetta, Chagai (subspecies?), probably central Makran], Chitral, Gilgit, Punjab (NW. frontier districts), northern Kashmir, Himachal Pradesh, Haryana, and western Uttar Pradesh south to c. 28°N., Central Nepal—December (Fleming, 1969, JBNHS 65: 329). From plains level to c. 1500 m in winter; c. 3000 m and higher in summer. Affects grassy meadows and the neighbourhood of cultivation.

EXTRALIMITAL. Western Siberia, SE. Russia... south along the borders of Russian Turkestan through western and central Altai, western Tien Shan and Pamirs to N. Afghanistan. (For details see Vaurie, 1959, 2: 55-6.)

GENERAL HABITS, FOOD, VOICE and CALLS. As in the Small Skylark (907, 908), but song louder and more musical. Gregarious in winter; often large flocks. In song-flight does not hover with continuous quivering wing-beats like *A. gulgula* but with intermittent momentary pauses, more reminiscent of Sand Lark (*Calandrella raytal*, 891).

BREEDING. Extralimital. No authentic record of nesting within our limits. A full fledged young obtained by Fulton at c. 3300 m in Chitral in June (Perreau, JBNHS 19: 916), but no other evidence. 'All records of any *arvensis* breeding in Baluchistan are erroneous' (Ticehurst, ibid. 31: 874).

MUSEUM DIAGNOSIS. See Key to the Species. Besides the longer wing-tip *A. arvensis* differs from *A. gulgula* in having much more spotting on the breast.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂♂	114-120	15-16	24-25	66-76 mm
9 ♀♀	104-120	14-16	24-25	61-70 mm (HW)

COLOURS OF BARE PARTS. Iris hazel or dark brown. Bill: upper mandible horny brown; lower yellowish horny. Legs and feet fleshy brown or yellowish brown.

ALAUDIDAE

44

Geographical variation in this species is clinal and single specimens notoriously difficult—often impossible—to identify subspecifically. Series in comparable plumages are not usually available, hence there has been much confusion in published literature concerning the taxonomy, nomenclature and ranges of the various races. The present arrangement also will doubtless need minor readjustments as more precise knowledge becomes available.

904. *Turkestan Small Skylark. Alauda gulgula inconspicua* Severtzov

Alda inconspicua Severtzov, 1873, Verh. Turkest. Zhivotn.: 142 (Turkestan)

Alda gulgula punjaubi Whistler, 1936, Jour. Bombay nat. Hist. Soc. 38: 767 (Ferozepore, Sutlej River)

Baker, FBI No. 1219, Vol. 3: 322

LOCAL NAMES. *Bhārū*, *Chāndīl* (Hindi).

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in the nominate race (907), q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to local migratory and nomadic movements. Baluchistan (breeding below c. 2000 m), Sind, Gujarat (including Kutch and Saurashtra), Rajasthan, Haryana, and eastward through southern Uttar Pradesh and Bihar to about long. 85°E. (Dinapore), intergrading marginally with adjacent populations. Affects open grassy and cultivated areas.

EXTRALIMITAL. Iran, Afghanistan, Transcaspiia and Russian Turkestan.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 907.

BREEDING. Season (in Baluchistan), May-June. Nest, site, eggs (normally c/3), and breeding biology, as in the nominate subspecies.

MUSEUM DIAGNOSIS. Differs from *A. g. gulgula* (907) in its markedly paler coloration, both above and below, in fresh as well as worn plumage. Above, pale fringes to feathers of upperparts colder in tint; dark central streaking narrower and less intense. Below, buff not extending from breast to vent, but largely replaced by white on abdomen. Size slightly larger.

MEASUREMENTS

	Wing	Bill (from skull)
♂♂	90-101	16-17 mm
♀♀	86-98	15-17 mm

(HW, CBT)

Weight 19 ♂♂ 24-30; 7 ♀♀ 24-29 g (Paludan, Afghanistan). 4 ♂♂ 24-30 g (SA., Bharatpur).

COLOURS OF BARE PARTS. As in 907 and other races.

905. *Kashmir Small Skylark. Alauda gulgula thamarum*

R. & A. Meinertzhagen

Alda arvensis thamarum R. & A. Meinertzhagen, 1926, Bull. Brit. Orn. Cl. 46: 100 (Ladak)

Alda guttata Brooks, 1872, Jour. Asiat. Soc. Bengal 41: 84 (Kashmir) nec *Alda guttata* Lafrenaye, 1839, Rev. Zool.: 259

Baker, FBI No. 1214, Vol. 3: 318

LOCAL NAME. *Bhārū* (Hindi); *Dider*, *Didra* (Kashmiri).

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in the nominate race (907), q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to seasonal local migratory and nomadic movements, altitudinal as well as spatial. The western Himalayas in Gilgit, Baltistan, Ladakh, Zaskar, rest of Kashmir, Himachal Pradesh (Spiti, Lahul), Garhwal, Kumaon and Nepal (winter visitor to the Valley). Breeding in summer from c. 1600 m in Kashmir up to c. 4300 m in Ladakh (Indus, Nubra, Dras and Suru valleys). Affects grassy margs, upland pastures, newly ploughed fields and cultivation, etc.

Extralimital. Pamirs.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 907.

BREEDING. Season, May to July. Nest and eggs (c/3 or 4) as in the nominate race. Average size of 41 eggs 23.1 x 16.3 mm (Osmaston). Site usually a grass meadow or a lucerne or young barley field.

MUSEUM DIAGNOSIS. Similar to *A. g. gulgula* (907) but larger, darker, and less rufous on the upperparts. Spotting on breast larger, more blackish and with a tendency to coalesce at the sides in a large black spot. Differs from *inconspicua* (904) in being darker, browner and less sandy; more heavily and broadly dark-streaked on the upperparts.

MEASUREMENTS

	Wing	Bill (from skull)
♂♂	98-108	13-16 mm
♀♀	93-97	14-15 mm (HW)

COLOURS OF BARE PARTS. As in 907 and other races.

906. Tibetan Small Skylark. *Alauda gulgula inopinata* Bianchi

Alauda japonica inopinata Bianchi, 1905, Ann. Mus. St Pétersbourg
9: 24, 30, 31 (Tibet)

Baker, FBI No. 1212, Vol. 3: 316

LOCAL NAMES. Cho-mo, Nam-che = 'sky bird' (Tibet).

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in the nominate race (907), q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Breeds in SE. Tibet and NEFA (?). Winter visitor to Nepal, Darjeeling dist. (northern W. Bengal), Sikkim, Bhutan, northern Assam plains. Affects upland pastures, moist grassland, and cultivation.

Extralimital. Northern Kansu, southwestward through Tsinghai and Sikang (south to northern Yunnan) to S. Tibet. In winter also to N. Burma (Vaurie).

GENERAL HABITS, FOOD, VOICE and CALLS. As in 907.

BREEDING. Extralimital. As in 905 and other races.

MUSEUM DIAGNOSIS. Larger than *thamum* (905) and duller, less dark and rufous in fresh plumage.

dangling loosely below — singing as he mounts higher and higher till almost lost to sight. He remains suspended in the heavens more or less stationary at this pitch, hovering on vibrating wings and wafted here and there by the wind, while he continues to pour forth an unbroken torrent of spirited loud and clear melodious warbling. This exuberant performance may last for over ten minutes without an instant's pause; at the end of it the singer closes his wings and drops like a stone for some distance, opens them out to hover a little, drops once more, and so on step by step, until when within a few metres of the ground he flattens out at a tangent and lightly comes to rest near the starting-point. Several birds frequently perform over the same bit of grassland as if in vocal rivalry. Snatches of the song sometimes also delivered from a perch on a clod or stone. Both song-flight and song very similar to those of Singing Bush Lark (872) and Sykes's Crested Lark (902) and may be easily confused with either when the bird is soaring aloft.

VOICE and CALLS. Song as above — a sustained, continuous, melodious warbling, interlarded (perhaps less freely than in the other two) with convincing mimicry of the calls of numerous other birds.

FOOD. Weed seeds, tiny root bulbs and insects; frequently some grit present in stomachs.

BREEDING. Season, overall March to August, principally April, May and June. Nest, a cup-like scrape or depression in the ground lined with grass, under shelter of a clod or grass-tuft in cultivation or grassland. Eggs, 3, sometimes 2 and rarely 4, rather variable in colour, usually greyish- or yellowish white densely and finely spotted with yellowish brown or purplish brown. Average size of 65 eggs 20.6 x 15.3 mm (Baker). Both sexes share all the domestic chores. Period of incubation undetermined.

MUSEUM DIAGNOSIS. See keys to the Species and Subspecies, and Field Characters; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	87-93	14-16	22-26	49-56 mm
♀♀	82-88	13-15	21-25	49-51 mm (HW)

COLOURS OF BARE PARTS. Iris hazel brown. Bill: upper mandible horny brown, lower pinkish flesh; mouth pink, or yellowish flesh. Legs, feet, claws brownish flesh colour.

908. Nilgiri Small Skylark. *Alauda gulgula australis* Brooks

Alauda australis Brooks, 1873, Stray Feathers 1: 486 (Ootacamund, Nilgiris)
Baker, FBI No. 1216, Vol. 3: 320

LOCAL NAMES. Bhārdī (Hindi); Bhārdīa pitta, Niala pichikā (Telugu); Vāndāmbādi kūrū (Telugu); Vānampākkilī (Malayalam); Gomarittā (Sinhala).

FIELD CHARACTERS. As in 907, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. Nilgiri, Palni and associated hills, Kerala, and Ceylon in the Hill zone of Central and Uva Provinces. From the coastal plain (in Kerala) to at least c. 1600 m. Two specimens

MEASUREMENTS

	Wing	Bill (from skull)	Tail
8 ♂♂	102-108	15-16	60-68 mm
3 ♀♀	96-99	15-16	54-60 mm (Kinnear, BB)

COLOURS OF BARE PARTS. As in 907 and other races.

907. Indian Small Skylark. *Alauda gulgula gulgula* Franklin

Alauda gulgula Franklin, 1831, Proc. Zool. Soc. London: 119
(The Ganges between Calcutta and Benares)

Baker, FBI No. 1215, Vol. 3: 319
Plate 64, fig. 22

LOCAL NAMES. Bhārdī (Hindi); Jhūnti bhārdī (Bengali); Bārdīa pitta (Telugu); Vāndāmbādi kūrū (Tamil); Gomarittā (Sinhala).

FIELD CHARACTERS. Above, brown, each feather centred blackish and edged tawny. An indistinct tuft on crown, visible more clearly when partially erected. Below, pale fulvous-buff; darker fulvous on breast, faintly streaked and spotted with blackish. Sexes alike. See Museum Diagnosis.

Doubtfully distinguishable from Siberian Skylark (903), but is slightly smaller with the markings on breast less prominent and outer rectrices rufescent-white *contra* pure white. When crest invisible can be told from Indian Pipit (1859, 1860), also confusingly similar, by the lark's somewhat dumpy build, relatively shorter tail, and more crouching stance on ground.

STATUS, DISTRIBUTION and HABITAT. Resident; subject to some seasonal local movements. Peninsular India south of the range of *inconspicua* (excluding that of *australis*, q.v.), i.e. from northern Maharashtra (c. 20°N.) to Mysore, east through Tamil Nadu, Andhra, Madhya Pradesh, Orissa, Bihar (east of c. 85°E.), Nepal (Fleming & Traylor, 1961, *Fieldiana*, Zool., 35: 474), West Bengal, Assam and East Pakistan; plains and foothills. Also Ceylon, in the low country. Peripheral intergrading with adjacent populations renders exact boundaries undefinable. Affects damp open grassland on the edge of tanks and jheels, young wheat fields and ground crops (lucerne, gram, vetches, etc.), stretches of rank grass bordering salt pans and tidal mudflats in coastal tracts; even maidans and playing fields in built-up urban localities.

Extralimital. Northern Burma.

GENERAL HABITS. Keeps in twos and threes or small scattered parties running about on grassland in short spurts with the typical crouching gait of larks. When approached, squats tight making full use of its obliterative coloration, springing up suddenly when almost trod upon, to fly away with its characteristic fluttering undulating flight. The skylark's chief claim to distinction is in its remarkably lively, beautiful and sustained aerial song. It is delivered by the male chiefly in the breeding season but sporadically also throughout the year. From a perch on a clod or stone, the bird soars almost vertically up on rapidly quivering wings — legs

identified from Hyderabad and Chanda in south Deccan (Whistler, JBNHS 36: 913-14). Affects damp grassy tank margins, rolling downs and grassy rounded hilltops, e.g. in Nilgiris, Kerala, Ceylon; cultivation environs, dry paddy stubbles in coastal and backwater areas (Kerala).

GENERAL HABITS, FOOD, VOICE and CALLS. As in 907 and other races.

BREEDING. Season, chiefly November to April/May; in Ceylon chiefly March and April. Nest, site, and eggs (normally c/3) and breeding biology as in the nominate race. Average size of 20 eggs 21.7 x 15.9 mm (Baker).

MUSEUM DIAGNOSIS. Differs from nominate *gulgula* (907) in being larger and darker, with the upperparts brighter and more rufous; from *inconspicua* by darker coloration.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	90-102	14-17	22-26	49-56 mm
♀♀	84-93	13-17	22-25	48-54 mm (HW, SA)

COLOURS OF BARE PARTS. As in 907 and other races.

909. Yunnan Small Skylark. *Alauda gulgula vernayi* Mayr

Alauda arvensis vernayi Mayr, 1941, Ibis: 375 (Changyinkhu, Burma-Yunnan border)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 907, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Winter visitor? Eastern Bhutan and NEFA in the hills above c. 1600 m.

Extralimital. Southern Tibet, northern Burma, Yunnan.

GENERAL HABITS, FOOD, VOICE and CALLS. Presumably as in 907 and other races.

BREEDING. Extralimital? Not recorded. May breed in the Assam hills north of Brahmaputra river.

MUSEUM DIAGNOSIS. A very dark and richly coloured race with broad and heavy markings, darker and more rufous than *thamum* or *inopinata* (Vaurie).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	96-105	14-16	25-27	58-68 mm
♀♀	90-98	c. 15	25-26	54-65 mm (SA, Mayr)

Weight 4 ♂♂ 27-33; 2 ♀♀ 29, 29 g (SA).

COLOURS OF BARE PARTS. Not recorded. Doubtless as in 907.

Family HIRUNDINIDAE: Swallows

For characters and other particulars see Baker, E.C.S., 1926, FBI 3: 225; Thomsen, A. L. (ed.), 1964, *New Dict. Birds*, London & New York (Article 'Swallow'); Van Tync, J. & Berger, A. J., 1959: 503; Witherby *et al.*, 1938, 2: 226.

Cf. Mayr, E. (in Mayr, E., & Bond, J.), 1943, *Ibis* 85: 334-9; Vaurie, C., 1951, *Amer. Mus. Novit.*, No. 1529: 1-47.

SWALLOWS

49

Key to the Genera

	Page
A Tarsus and toes feathered..... <i>Delichon</i>	73
B Tarsus and toes bare, or with a tuft of feathers only	
a Upper plumage unglossed brown; tail-feathers without spots	<i>Riparia</i> 49
b Upper plumage glossy blue-black; tail with or without spots, or unglossed brown with tail-spots..... <i>Hirundo</i>	52

Genus *RIPARIA* Forster

Riparia Forster, 1817, Syn. Cat. Brit. Bds.: 17. Type, by monotypy, *Hirundo riparia* Linnaeus



Bill short, wide at gape, flat and triangular. Tarsi bare or merely with a single small tuft of feathers on the posterior edge. Tail forked in varying degree, never very deeply. Plumage pale and dull; tail-feathers never spotted with white. Nests in holes (burrows) in vertical earth banks.

x c. 1

Key to the Species

	Page
A tuft of feathers behind tarsus; a well-defined collar across breast..... <i>R. riparia</i>	49
Tarsus quite bare; collar across breast obsolete or absent..... <i>R. paludicola</i>	51

RIPARIA RIPARIA (Linnaeus)

Key to the Subspecies

Paler; edgings to wing-quills sandy grey..... <i>R. r. diluta</i>	
Darker; edgings to wing-quills whiter and more conspicuous..... <i>R. r. ijimae</i>	

910. *Siberian Collared Sand Martin*. *Riparia riparia diluta* (Sharpe & Wyatt)

Cotile diluta Sharpe & Wyatt, 1893, Monogr. Hirund. 1: 63 (Chimkent north of Tashkent)

Cotile subsocata Adams, 1859, Proc. Zool. Soc. London: 176, *nomen nudum*. (Quoted in synonymy of *Riparia sinensis* by Horsfield & Moore, 1854)

Riparia riparia plumipes Zarudny, 1916, Mess. Orn.: 34 (Turkistan)

Riparia riparia indica Ticehurst, 1916, Ibis: 71 (Jhelum, Punjab)

Riparia riparia taczanowskii Stegmann, 1925, Compt. Rend. Acad. Sci. URSS., ser. A: 39 (Sidemi, near Vladivostok)

Riparia riparia tibetana Stegmann, 1925, Compt. Rend. Acad. Sci. URSS., ser. A: 39 (Dza Chu R., Sikang, restricted by Meise, 1937, Jour. f. Orn. 85: 575)

Baker, FBI No. 1145, Vol. 3: 232

Plate 65, fig. 2

LOCAL NAME. *Ababil paki* (Sind).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. A small swallow, smoky grey-brown above, darker on wing- and tail-quills. Below, white, with a broad smoky grey band across

SWALLOWS

51

Weight 18 ♂ ♀ 10–14 (av. 11.5) g — SA. 3 ♂ ♂ 14–15; 2 ♀ ♀ 14, 15 g (Paludan, Afghanistan).

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet dark brown.

911. *Eastern Collared Sand Martin*. *Riparia riparia ijimae* (Lönnerberg)

Circulica riparia ijimae Lönnerberg, 1908, Jour. Coll. Sci. Tokyo 23 (14): 38

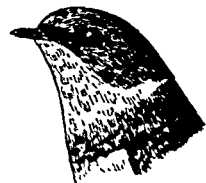
(Tretia Padi, Sakhalin)

Baker, FBI No. 1147, Vol. 3: 234

LOCAL NAMES. Not recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 910, q.v.



x c. 1

STATUS, DISTRIBUTION and HABITAT. Not uncommon but sporadic. Resident and partly migratory. Assam and adjoining areas of East Pakistan (Sylhet); NEFA (?); Nagaland (?), Manipur. Affects open riverain tracts with vertical sandy banks to the streams.

Extralimital. Transbaikalia eastward to Amurland and N. Japan. In winter Thailand, Burma, Indochinese countries, etc. (For details see Vaurie, 1959, 2: 3.)

GENERAL HABITS, FOOD, VOICE and CALLS. As in 910.

BREEDING. Season, in Assam October–November with a recrudescence in March and April. Nest and eggs (c/4–6) as in 910. Average size of 20 eggs 17.5 × 11.9 mm (Baker). Baker found both species of *Riparia* nesting in the banks of Brahmaputra river at Dibrugarh, but each species kept entirely to itself and he never noted mixed colonies.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	99–107	c. 5–6	c. 12	49–52 mm (Baker)

COLOURS OF BARE PARTS. As in 910.

912. *Indian Greythroated Sand Martin*. *Riparia paludicola chinensis* (J. E. Gray)

Hirundo chinensis J. E. Gray, 1830, Ill. Indian Zool. 1 (2), pl. 35, fig. 3 (China)

Hirundo brevicaudata Horsfield, 1839, Proc. Zool. Soc. London: 156 (Assam)

Circulica bilkeritshi Zarudny, 1910, Orn. Monatsb. 18: 147 (Termez)

Baker, FBI No. 1148, Vol. 3: 235

Plate 65, fig. 3

LOCAL NAMES. *Abāli*, *Abābil* (Hindi); *Nakuti* (Bengali).

SIZE. Sparrow —; length c. 12 cm (4½ in.).

50

HIRUNDINIDAE

breast; sides of neck, throat and flanks more or less suffused with smoky grey. Sexes alike.

Young (immature). Feathers of upperparts conspicuously edged with pale rufous; chin and throat fulvous.

STATUS, DISTRIBUTION and HABITAT. Widely but sporadically distributed; partly migratory, partly resident; subject also to considerable local movements as yet little understood. Baluchistan, Sind, NW. frontier districts of West Pakistan, Kashmir, Ladakh (?), Himachal Pradesh, Haryana, Uttar Pradesh, Nepal (?), Bihar, northern West Bengal and Bhutan: plains level to c. 4500 m. Breeds over most of this range. Affects the neighbourhood of large streams and rivers with vertical earth cliffs affording potential nesting sites.

Extralimital. SW. Siberia, E. Iran, Afghanistan, Russian Turkestan, NE. China, Burma, etc. (For details see Vaurie, 1959, 2: 4.)

GENERAL HABITS. Highly gregarious. Keeps in large flocks of 50 to a hundred birds or more, often in association with Cliff and other swallows and swifts. Huge congregations collect at reed-bed roosts (sometimes shared with swallows) and for colonial nesting. The birds fly about individually and in scattered parties, sometimes quite high up in the air, hawking insects in open riverain tracts, by marshes and tanks, or above fired grass fields. Commonly seen perched in long close-packed rows along telegraph wires sunning and preening themselves in the morning.

FOOD. Insects: Diptera and small beetles (Coleoptera) etc. taken on the wing.

VOICE and CALLS. When flying around nest colony, a hard *ret* or *errit*. Song, a short grating twittering.

BREEDING. Season, November to May, chiefly February to April. Nest, a pad of dry grass, straw and roots lined with a few feathers. Placed at the end of a horizontal tunnel often a metre or more deep; in large colonies, often a hundred holes or more honeycombing steep sandy banks of rivers; sometimes in company with Bank Mynas. An occupied colony presents a scene of great bustle and activity, the birds clinging to the cliff face or fluttering outside the holes, constantly coming and going and flying around uttering twitters and chirrups. Eggs, 3 or 4, glossless pure white, small replicas of those of the House Martin (*Delichon*). Average size of 40 eggs 16.5 × 12.1 mm (Baker). Both sexes partake in digging the tunnel and incubation. Incubation period undetermined.

MUSEUM DIAGNOSIS. See Field Characters and Key to Subspecies; for details of plumages and morphology (also bionomics) of the extralimital nominate race — which is darker on the underparts and with a more clear-cut breast-band — Witherby *et al.*, 1938, 2: 239–42.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂ (99)	102–108	c. 6	c. 10	46–51 mm
♀ ♀	102–108			(Baker, SA)

† The material of the nominate race is methodical of the two of confusion and ambiguity.

52

- HIRUNDINIDAE

FIELD CHARACTERS. Similar to 910 but somewhat smaller and without the dark breast-band.

Adult. Above, greyish brown, rather darker on crown and paler on rump; wing-quills and tail darker brown. Below, chin to lower breast smoky grey; rest of underparts white. Sexes alike.

Young (immature). Feathers of upperparts, wings and tail broadly margined with pale rufous. Grey of throat and breast paler.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to local movements. Indian range largely overlapping that of Collared Sand Martin (910, 911), but see footnote under 910. West Pakistan (Baluchistan, Sind, Punjab) and northern India from the Himalayan foothills including Nepal (terai, Kathmandu Valley, etc.), Bengal duars, Bhutan foothills (?); south through Rajasthan, Gujarat and Maharashtra to Bombay, Nasik, Satara (c. 18°N.), etc., east through Madhya Pradesh and Orissa to Assam and East Pakistan. Affects riverain tracts with vertical sandy banks along the streams, and alluvial cliffs — potential nesting-sites.

Extralimital. Russian Turkestan, E. Afghanistan, Burma, N. Thailand, S. Yunnan, the Indochinese countries, Formosa and N. Luzon. Resident or wandering locally (Vaurie). Other races in Africa.

GENERAL HABITS, FOOD, VOICE and CALLS. As in Collared Sand Martin (910), q.v.

BREEDING. Season, over most of its Indian range October to February. Rarely, as in Assam, a second brood may be raised in April and May (Baker). Nest and eggs (c/2–4; in Assam 5–6) as in 910. Average size of 100 eggs 17 × 12 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Species.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	90–96	c. 8	10–11	37–45 mm (SA, GD)

Weight 1 ♂ 10; 2 ♀ ♀ 9.5, 10 g (GD).

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet dark brown.

Genus *HIRUNDO* Linnaeus

Hirundo Linnaeus, 1758, Syst. Nat., ed. 10, 1: 191. Type, by subsequent designation, *Hirundo rustica* Linnaeus

Cecropis Boie, 1826, Isis (10), col. 971. Type, by subsequent designation, *Hirundo capensis* Gmelin = *Hirundo cucullata* Boddaert

Pyronoprogne Reichenbach, 1850, Syst. Av., Pl. 67, fig. 6. Type, by monotypy, *Hirundo rupestris* Scopoli

Erimachelidon Walden, 1876, Ibis: 356. Type, by subsequent designation, *Hirundo concolor* Sykes (Baker, 1930, FBI 7: 255)

Comprises the true swallows. Bill short, wide at gape, flat and triangular. Tarsi and feet unfeathered. Wings very long and pointed reaching beyond angle of tail-fork. In the majority upperparts deep glossy steel-blue and tail deeply forked, the lateral pair of rectrices greatly elongated, with the terminal half attenuated. In some (Crag Martins) upperparts dull brown and tail nearly square or only slightly forked as in *Riparia* but always showing white spots on rectrices. Nests built of mud, attached to substrate.

SWALLOWS

53

Key to the Species

Page

- I Upper plumage unglossed brown
- A Chin and throat streaked or spotted
- 1 Tail over 50 mm; under tail-coverts much darker than abdomen.....*H. rupestris* 53
- 2 Tail under 50 mm; under tail-coverts and abdomen concolorous.....*H. concolor* 55
- B Chin and upper throat unstreaked.....*H. obsolata* 56
- II Upper plumage glossy blue-black
- C Rump blue or brown; lower parts not streaked
- 3 White spots on tail
- a A complete or semi-complete pectoral band.....*H. rustica* 56
- b No trace of pectoral band
- i Chin, throat and foreneck white.....*H. smithii* 63
- ii Chin, throat and foreneck chestnut.....*H. tahitica* 61
- 4 No white spots on tail; chin, throat and breast profusely streaked with blackish.....*H. fluvicola* 64
- D Rump chestnut; lower parts streaked
- 5 Shaft-streaks on rump absent or obsolete; lower parts decidedly tinged with rufous with fine striations.....*H. daurica* 66
- 6 Shaft-streaks on rump distinct; lower parts nearly white with coarse striations.....*H. striolata* 73

913. Crag Martin. *Hirundo rupestris* Scopoli*Hirundo rupestris* Scopoli, 1796, *Annus I*, Hist. Nat.: 167 (Tyrol)

Baker, FBI No. 1149, Vol. 3: 236

Plate 65, fig. 5

LOCAL NAMES. Not recorded.

SIZE. Sparrow; c. 14 cm (5½ in.).

FIELD CHARACTERS. Very like Dusky Crag Martin (914), q.v. Slightly larger and paler (ashy brown) above, with much paler (almost whitish) underparts and blackish under tail-coverts, clearly contrasting in overhead flight. Sexes alike.

Young (immature) has feathers of upperparts margined with rufous. Entire underparts pale dull rufous. (For details see Museum Diagnosis.)

STATUS, DISTRIBUTION AND HABITAT. A montane form, breeding in the Himalayas in West Pakistan (Rawalpindi and Peshawar dists.), and through Chitral, Gilgit, Ladakh, Kashmir, Himachal Pradesh, Garhwal, Kumaon, Nepal, Sikkim (?), and Bhutan, between 1600 and 5000 m. Also in northern Baluchistan (Quetta and Ziarat dists.) between 2000 and 3500 m. Winters throughout the hilly portions of the Indian subregion (Sahyadris or Western Ghats, Satpuras, Nilgiris, Palnis and other peninsular hills) — south to Mysore and Tamil Nadu; probably also Kerala whence not yet recorded. Records from eastern parts of the Peninsula scarce or lacking. Affects grassy hills with crags and precipices; is a regular *habitué* of ancient hill-forts.

SWALLOWS

55

914. Dusky Crag Martin. *Hirundo concolor concolor* Sykes*Hirundo concolor* Sykes, 1833, Proc. Zool. Soc. London: 83 (Dukhun)

Baker, FBI No. 1150, Vol. 3: 237

Plate 65, fig. 6

LOCAL NAMES. *Chātān ābābil* (Hindi); *Katrikappakshi* (Malayalam).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. A sooty brown swallow with short square-cut tail. Underparts only slightly paler than upper; chin, throat and foreneck dull rufous finely streaked with blackish. A roundish white spot on all tail-feathers except the middle and outermost pairs, conspicuous when the bird banks or wheels in flight. Sexes alike.

Similar to 913 but somewhat smaller and with darker underparts.

STATUS, DISTRIBUTION AND HABITAT. Resident. Widely but patchily distributed, and subject to local movements. Along the base of the Himalayas and southward through the entire Peninsula to extreme Tamil Nadu and Kerala. From Haryana, Rajasthan, N. Gujarat and Kutch, in the west, to Bihar and West Bengal in the east. Plains and hills to at least 1800 m. Affects the neighbourhood of rocky hills with crags and ancient fortifications; old buildings, preferably of stone, deserted or occupied, even in the midst of noisy populous cities, e.g. Bombay.

Extralimital. A darker subspecies [*sintlaungensis* (Stuart Baker)] in Burma and N. Thailand.

GENERAL HABITS. Similar to those of the migratory species (913). Usually seen in pairs or small parties hawking insects round crags and old buildings, resting betweenwhites on ledges and cornices etc., sometimes even inside verandas. Very much at home among rock-cut caves and ancient hill-forts (e.g. Ajanta, Ellora, Daulatabad) and old buildings in deserted historical cities like Mandu in Madhya Pradesh, and Fatehpur Sikri.

FOOD, VOICE AND CALLS. As in 913.

BREEDING. Season, varies somewhat with locality, but over its range covers more or less the entire year except perhaps November and December; in two well-marked peaks February–March and July–August. Often two broods (or more?) raised. Nest, like that of 913 — a deepish oval saucer of mud, c. 12 cm long × 8 cm wide, attached bracketwise to a vertical wall or rock face, lined with fine grass, tow, and feathers. As a rule single; sometimes in a small scattered colony. Built under eaves, archways and road culverts, or against rafters in deserted or occupied dwellings, old mosques and tombs and on ceiling of rock-cut caves as well as on natural cliffs, usually sheltered by an overhang. Same site used in subsequent years, not necessarily by same pair. Eggs, 2 to 4, white, minutely speckled and spotted with various shades of reddish brown. Average size of 100 eggs 17.6 × 12.8 mm (Baker). Both sexes take part in nest-building, incubation, and feeding the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. See Key to the Species.

Young (immature). Like adult but upperparts and wings narrowly margined with rufous-grey. Chin and throat paler, and dark streaks absent.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	105–113	9–11	9–10	42–46 mm (SA, HW)

HIRUNDINIDAE

54

Extralimital. S. Europe, NW. Africa through C. Asia (including Iran and Afghanistan) to Manchuria. (For details see Vaurie, 1959, 2: 6.) Not recorded in winter in Burma or Thailand.

MIGRATION. No ringing data. By end of March has mostly departed from peninsular India. Arrives in Gilgit and Chitral between third week March and mid April; remains till October, breeding between c. 1600 and 4000 m (Scully, SF 10: 100; Fulton, JBNHS 16: 55; Perreau, *ibid.* 19: 914).

GENERAL HABITS. In its winter quarters keeps in loose parties, flying about scattered individually in company with Dusky Crag Martins and other swallows around and in the environs of crags and precipices, and ancient hill-forts. Flight swallow-like — flaps interspersed with sailing glides and much agile banking and turning, punctuated by swoops to capture an insect, sometimes from near the ground or the surface of water; also drinking thus. Spends most of the day foraging on the wing; rests for short periods in between on ledges of rocky cliffs or fort walls. Roosts in company at night in similar situations.

FOOD. Dipterous insects, small flying beetles, etc.

VOICE AND CALLS. A soft low *chit-chit* uttered at rest and in flight. Song not recorded in India.

BREEDING. Season, April to June; at the highest elevations later and up to July. Nest, similar to the Western Swallow's (916), a deepish oval saucer of conglomerated mud pellets collected when wet; lined with grass and feathers. Attached like a bracket to a rock face, usually sheltered by an overhang. Built singly or in small colonies usually on inaccessible rocky cliffs and the vertical sides of narrow gorges, often directly over a stream. Eggs, 3 or 4, also like Swallow's — white boldly speckled and spotted with pale chocolate-brown with a few underlying purplish grey markings. Average size of 20 Indian-taken eggs 21.2 × 14.3 mm (Baker). Both sexes share in incubation and feeding the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. See Key to the Species. A large white spot on inner web of all tail-feathers except the central and outermost pairs.

Young (immature). Like adult but upperparts and all coverts, except primary- and under-tail, with narrow rufous-ashy tips, more pronounced on rump and upper tail-coverts, tips of wing-coverts and tertials. White spots on rectrices smaller.

In contrast with other migratory swallows the adults moult before leaving the breeding area. For particulars of moult see Stresemann, E., & V., 1969, J. Orn. 110 (1): 39–42.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	127–134	11–12	11–12	53–57 mm (SA)

Weight 7 ♂ ♀ 17–21 (av. 19) g — Paludan.

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet pale fleshy brown.

HIRUNDINIDAE

56

Weight 4 ♂ ♀ 12–14 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill blackish brown; mouth pinkish grey. Legs and feet pinkish brown; claws brown.

915. Pale Crag Martin. *Hirundo obsolata pallida* (Hume)*Pionoprogne pallida* Hume, 1872, *Stray Feathers* 1: 1 (Along the Gaj... Sindh...)

Kurachee... Mekan coast — Sind)

Baker, FBI No. 1151, Vol. 3: 238

Plate 65, fig. 4

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. A sandy version of Dusky Crag Martin (914). Above, pale brownish grey; wings and tail darker. Below, rusty cream colour, more albescent on chin and throat. Sexes alike. Confusable with *H. rupestris* (913). See Key and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to local movements. West Pakistan [Baluchistan, Sind (Khirthar range), and Punjab in the NW. frontier districts], breeding chiefly in the foothills and higher up. Also Kutch (Stoliczka), whence however not recently reported. Affects bare hilly country with crags and precipices.

Extralimital. Extends westward through S. Afghanistan and SE. Iran. Other races in Iraq, E. Arabia and N. Africa.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 913 and 914, q.v.

BREEDING. Season, nest and eggs apparently as in 914, but imperfectly known. 'Average size of [?] eggs 18.2 × 13.3 mm' (Williams, JBNHS 33: 606). Apparently breeding in Fort Munro and Quetta districts of Baluchistan, but the records equivocal. May breed in Khirthar hills of Sind.

MUSEUM DIAGNOSIS. Axillaries and under wing-coverts ashy brown, the latter with pale tips. Flanks, vent and under tail-coverts pale brownish grey, the last with pale tips. White 'mirrors' on all but central and outer pairs of rectrices towards the tips.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
8 ♂ ♂	116–125	7–8	c. 10	49–52 mm (CBT)
12 ♀ ♀	116–123			
12 ad. ♂ ♀	118–125	—	—	— mm (Vaurie)

COLOURS OF BARE PARTS. As in 914.

HIRUNDO RUSTICA Linnacus

Key to the Subspecies

Page

- A Pectoral band almost complete; chin and throat chestnut, abdomen pale rufous.....*H. r. rustica* 57
- B Pectoral band broken; chin and throat chestnut; abdomen practically white.....*H. r. gutturalis* 59
- C Pectoral band broken; chin, throat and abdomen deep chestnut.....*H. r. tyndri* 60

SWALLOWS

57

916. Western Swallow. *Hirundo rustica rustica* Linnaeus

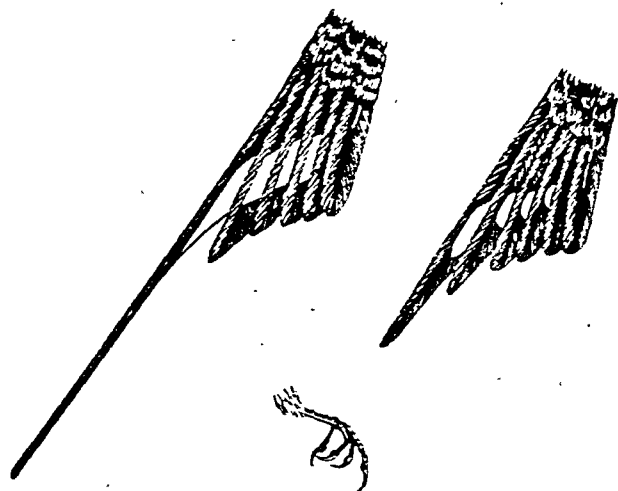
Hirundo rustica Linnaeus, 1758, Syst. Nat., ed. 10, 1: 191 (Sweden)
Hirundo rustica afghanica Koelz, 1939, Proc. Biol. Soc. Washington 52: 75
 (Baghlan, Afghanistan)
 Cf. Ticehurst, C. B., 1927, JBNHS 32: 349.
 Baker, FBI No. 1152, Vol. 3: 240
 Plate 65, fig. 11

LOCAL NAMES. *Abūtil* (Hindi and Bengali — generally for all swallows, martins and swifts); *Katij* (Kashmir); *Kir kishi*, *Tetaki* (Brahui — Baluchistan); *Telci illātha kūrūri*, *Adai källān kūrūri*, *Tām-pādi* (Tamil); *Wārā kovela* (Telugu); *Peras pitta* (Gond); *Wēhi līhīniya* (Sinhala); *Veyalkūti* (Malayalam).

SIZE. Sparrow \pm , with long forked tail; overall length c. 18 cm (7 in.).

FIELD CHARACTERS. Adult. Glossy steel-blue above, pale pinkish white below with the typical deeply forked swallow tail (outer rectrices greatly elongated and attenuated on terminal half). Forehead, chin, and throat chestnut, the last bordered below by a blue-black pectoral or breast band. Sexes alike.

In banking flight white spots on tail-feathers (all but the central pair) clearly visible.



One half of tail: adult (left), juvenile (right) and right foot, $\times 1$

Young (immature) browner, less glossy above; pectoral band brown; chestnut parts much paler. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Breeds in Baluchistan north and west of a line from Gwadar (c. 25°N., 62°E.) to Sibi, Bannu, Chitral (probably also Gilgit and Ladakh), Kashmir (Srinagar Valley), Himachal

SWALLOWS

59

puddle while wet, drying to terracotta hardness; sometimes lined with grass and straw, and a few downy feathers. Attached like a bracket to a wall near the ceiling or side of a beam or rafters within a building, frequently a dwelling house or bazaar shop, within arm's reach of the human inmates. In Kashmir a favourite site is the beams under the hull of a houseboat just above water line. The same site, and often the same nest repaired, is used in successive seasons. Eggs, 4 to 6, white, dotted and speckled with reddish- or purplish brown, more densely at the broad end. Average size of 78 Kashmir eggs 19.6 \times 13.7 mm (Osmaston). Both sexes take part in building the nest and feeding the young. Incubation chiefly by female; period 14–16 days. Flying young commonly fed in mid-air.

MUSEUM DIAGNOSIS. For details of plumages and structure (also bionomics) see Witherby *et al.*, 1938, 2: 226–33. Differs from the eastern subspecies *gutturalis* (917) in having the blue-black pectoral band (below chestnut of throat) unbroken in the middle. Most dependable diagnostic character is the wing length: over 120 mm c. (usually) under 118 in *gutturalis*.

Young (immature). Like adult but upperparts, wings, and tail much less glossy; forehead nearly white; chin and throat pale rusty; pectoral band grayish black. Fork of tail less deep. Outermost pair of rectrices always broader than in adult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail central outer
♂♂	120–129	10–12	10–13	93–122 mm
♀♀	116–128	—	—	40–48 76–107 mm

Outermost pair of rectrices usually broader in female than in male but sometimes equally narrow. (Witherby)

Weight 10 ♂♂ 16–22 (av. 18.1); 6 ♀♀ 16–20 (av. 18.3) g (Paludan).

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet black.

917. Eastern Swallow. *Hirundo rustica gutturalis* Scopoli

Hirundo gutturalis Scopoli, 1786, Del. Flor. et Faun. Insubr. 2: 95
 (New Guinea, *error*, Panay = Philippines, Hartert, 1910)
Hirundo rustica ambigua Stresemann, 1940, Orn. Monatsb. 48: 83 (Sikkim)
 Baker, FBI No. 1153, Vol. 3: 241

LOCAL NAMES. As for 916.

SIZE. Sparrow \pm , with long forked tail; overall length c. 18 cm (7 in.).

FIELD CHARACTERS. As in 916, q.v. Subspecies indistinguishable in the field. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Breeds in the Himalayas from Nepal (where it intergrades with nominate *rustica*) eastward through Darjeeling, Sikkim, Bhutan, and NEFA, to c. 3000 m; also in the Assam hills south of Brahmaputra river. Winters south to the extreme tip of the Peninsula and in Ceylon, largely overlapping the winter range of *rustica*. Winters also in the Laccadive, Maldiva, Andaman and Nicobar islands. Affects open country — cultivation, jheel environs, coastal backwaters, etc.

58

HIRUNDINIDAE

Pradesh, Garhwal, Kumaon and Nepal (Kathmandu Valley); plains and hills to c. 3000 m. Winters (c. September/October to March/April) more or less throughout the subcontinent, intermixed with the eastern subspecies *gutturalis* (917). Indistinguishable from the latter unless in the hand, and then only in good plumage. Affects open country, in the neighbourhood of rivers, jheels, cultivation and human habitations. A single record from Ceylon (Whistler, 1944: 190). In summer common around many west Himalayan hill-stations and upland villages.

EXTRALIMITAL. Europe north to between 60 and 70°N. (including Great Britain, Mediterranean countries and islands), and western Asia: Transcaucasia, Asia Minor, Iraq, E. Arabia, Iran, Afghanistan, Russian Turkistan. (For further details see Vaurie, 1959, 2: 9.)

MIGRATION. No ringing data. Begins arriving in Baluchistan and over most of its breeding range late February/early March, continuing into April. Autumn exodus commences by end August; the majority have departed for the wintering grounds by end September.

GENERAL HABITS. Highly gregarious in winter. When first arrived on migration, often seen in enormous close-packed swarms occupying long stretches of several strands of telegraph wires, widely scattered over the entire range, sunning themselves in the mornings. The restless congregation launches out in the air from time to time and gradually returns to the perch. Hawks winged insects usually low over meadows, standing crops, reed-beds, or open water in company with other swallows and swifts. Flight swift: a few rapid wing-beats followed by a graceful glide or swoop, with agile banking and turning movements. Loose parties beat back and forth over water, almost skimming the surface, with slow deliberate wing-beats as they fly upwind, scooping up floating insects. At the end of the beat the bird wheels round and shoots back non-stop downwind to the starting point. The slow upwind hunt is resumed, taking full advantage of the resistance to scan the surface. In upcountry towns and villages commonly seen hawking insects in congested bazaars among the bustling shoppers and traffic, the birds shooting up and down at high speed — almost skimming — close above the narrow horse-dung littered streets in pursuit of flies and midges, (clocked at 23–30 m.p.h.), twisting and turning adroitly, weaving in and out amongst tongas, loiterers, sacred cows and miscellaneous obstacles. Vast congregations collect to roost in partially submerged reed- and tamarisk beds, sugarcane fields, coastal mangroves, and the like, sometimes sharing these with wagtails and sand martins. The swallows arrive in the late gloaming looking like a dense swarm of midges, and after milling around high overhead for a few moments drop suddenly into the reeds, first by ones and twos, then by scores and hundreds, like thick flurries of falling leaves.

FOOD. Chiefly midges, gnats and other dipterous insects captured in the air or scooped off water; sometimes ants on the ground by alighting and shuffling about.

VOICE AND CALLS. Pleasant twittering notes uttered on the wing and while at perch. Song, a rather feeble musical twittering by male in the breeding season, lasting up to 15 seconds or more.

BREEDING. Season, chiefly mid April to end May. Nest, very like the Crag Martin's: a deepish saucer of conglomerated mud pellets collected at a

HIRUNDINIDAE

60

EXTRALIMITAL. Breeds in Tibet, Burma (?), China, Japan; winters over most of SE. Asia. For particulars see Vaurie, 1959, 2: 10.

MIGRATION. No ringing data in India. Arrives in Mysore and the Nilgiris between mid September and first week October (Betts); in Ceylon from 3rd or 4th week September (Phillips); in the Andamans about 3rd week September. Departs from the Andamans in April (Osmaston).

That our winter visitors may also derive from a very extensive area is suggested by the Eastern Swallows ringed in Bangkok City in winter from a single roosting congregation, recovered in such far-flung places as Siberia, North and South Korea, Taiwan and Malaya (McClure, H. E., 1968, Report No. FE-315-2, Migratory Animals Pathological Survey: 133).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 916. Roosting in vast congregations on power transmission wires and pylons in suburban Bombay reported (George, P. V., JBNHS 62 (1): 160).

BREEDING. Season, May to June/July. Nest, eggs (c/4–6) and breeding biology as in 916.

MUSEUM DIAGNOSIS. Differs from nominate *rustica* (916) in having the blue-black pectoral band usually broken in the middle or with the chestnut of throat encroaching on it. Best diagnostic character is the shorter wing, usually under 118 mm.

Young (immature) recognizable from juvenile *rustica*, on a series, by the pectoral band not being so solidly dark, and the underparts whiter, not pale buff (Ticehurst, 1938: 623).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail central outer
♂♂	110–123	11–12	9–13	27–46 72–96 mm
♀♀	108–113	11–13	10–13	39–55 67–73 mm

Weight 36 ♂♂ (possibly mixed with some *rustica*) 12–20 (av. 16) g — SA.

COLOURS OF BARE PARTS. As in 916.

918. Tytler's or Chestnutbellied Swallow. *Hirundo rustica tytleri* Jerdon

Hirundo Tytleri Jerdon, 1864, Bds. India 2 (3): 870 (Dacca)
 Baker, FBI No. 1154, Vol. 3: 242
 Plate 65, fig. 12

LOCAL NAMES. As for 916 where applicable. *Lāl ātāhī* (Bengali).

SIZE. Sparrow \pm , with long forked tail; overall length c. 18 cm (7 in.).

FIELD CHARACTERS. As of 916, q.v., but entire underparts chestnut instead of pinkish white. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Irregular winter visitor abounding in some years, scarce or absent in others — Bhutan, NEFA, Assam, Nagaland, Manipur and East Pakistan. Common and regular in winter at the Salt Lakes near Calcutta along with *rustica* and *gutturalis* (BB). Affects open well-watered country, cultivation, broad sandy river banks, etc.

EXTRALIMITAL. Winters also in northern Burma. Breeds in extreme NE. Asia and Kamchatka.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 916. On Logtak Lake, Manipur, large numbers observed in January roosting together with *H. r.*

SWALLOWS

61

gutturalis on loosely drifting rafts of water hyacinth (*Eichhornia*) on open water. Hawking insects commenced in the misty morning as soon as there was sufficient light (SA).

BREEDING. Extralimital. Breeding biology as in 916, 917.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail central outer
♂ ♀	115-124	10-13	11-12	32-35(41) 74-79(105) mm (SA)

COLOURS OF BARE PARTS. As in 916.

HIRUNDO TAHITICA Gmelin

Key to the Subspecies

Upper plumage glossed with purple-blue; bill much larger.....

..... *H. t. javanica*

Upper plumage glossed with green; bill much smaller... *H. t. domicola*

919. Nilgiri House Swallow. *Hirundo tahitica domicola* Jerdon

Hirundo domicola Jerdon, 1844, Madras Jour. Lit. Sci. 13: 173 (Nilgiri Hills)
Baker, FBI No. 1156, Vol. 3: 244
Plate 65, fig. 13

LOCAL NAMES. Kānāvārikakkili (Malayalam); Wēhi lūhinyā (Sinhala); Tāmpādi Talai illāda kūrūri (Tamil).

SIZE. Sparrow —, with deeply forked tail; length c. 13 cm (5 in.).

FIELD CHARACTERS. Adult. Above, forehead chestnut; rest of upperparts, including deeply forked tail, black with a metallic green gloss. Below, chin, throat and upper breast chestnut; rest of underparts pale ashy. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident; largely sedentary. Hills of southwest India from the Nilgiris southward through Kerala, and Ceylon; from c. 700 to 2400 m. In Ceylon visits the Wet zone foothills to as low as 300 m when not breeding (Phillips). Affects grassy hill slopes around tea and coffee plantations and the proximity of bungalows, factory sheds, labour barracks, etc.

GENERAL HABITS, FOOD, VOICE AND CALLS. Similar to 916. Parties frequently seen perched huddled together on bare upper branches of dead trees in clearings. Tame and confiding, nesting freely within inhabited bungalows and sheds, flying in and out of verandas and living-rooms regardless of noisy inmates and blaring radios. Flying juveniles fed by parent in mid-air, both birds fluttering and halting momentarily while food transferred to youngster's gape.

BREEDING. Season, in S. India chiefly March to May; in Ceylon December to June, chiefly February to April. Nest, a half-saucer of mud pellets, as in 916, attached to wall or rock-face, under road culverts or in tunnels; most commonly under eaves or against ceiling beams and rafters in houses; sometimes two or three nests in the same shed or veranda. Same site and nest (repaired if necessary) often used year after year. Eggs, 2 or 3, very

SWALLOWS

63

921. Indian Wiretailed Swallow. *Hirundo smithii filifera* Stephens

H. (irundo) filifera Stephens, 1825, in Shaw's Gen. Zool. 13: 78 (India, ex Latham)
Hirundo smithii bobrikskoi Stachanow, 1930, Orn. Monatsb. 38: 76 (Tchubek, Bokhara)
Baker, FBI No. 1157, Vol. 3: 245
Plate 65, fig. 9

LOCAL NAME. Leishra (Hindi).

SIZE. Sparrow ±; length c. 14 cm (5½ in.) excluding tail-wires.

FIELD CHARACTERS. Adult. Glossy steel-blue above, with a bright chestnut cap. Readily distinguished from other swallows both at rest and in flight by glistening pure white underparts and two long fine 'wires' projecting from tail. Sexes alike, but tail-wires of female shorter.

STATUS, DISTRIBUTION AND HABITAT. Summer (breeding) visitor to the cold-winter parts of W. Pakistan and northern India — northern Baluchistan, upper Sind, NW. frontier districts, Punjab, Kashmir, Himachal Pradesh, etc. Also Nepal, Sikkim, Bhutan and NEFA (?). Normally to c. 1500 m in the Himalayas, but has been recorded breeding up to c. 2700 m, above Chakrata [Vaid, 1965, *Indian Forester* 91(11)]. Resident elsewhere in the Peninsula subject to local movements, east to Assam and E. Pakistan, breeding south to N. Kerala (Cannanore dist.) and the Nilgiris. A straggler recorded in Ceylon (Wynell-Mayow, 1966, JBNHS 63: 442). Affects open country, cultivation and habitations essentially in the neighbourhood of water — rivers, jheels, reservoirs, etc.

Extralimital. Russian Turkestan, Afghanistan, Burma, N. Thailand, Laos, central Vietnam. Nominate *smithii* in tropical Africa.

GENERAL HABITS. Similar to other swallows, cf. 916, but is more narrowly attached to the vicinity of water; rarely met away from canals, jheels, reservoirs and the like. Loose parties skim the water surface or shoot along close to the ground over adjacent meadows or cultivation, hawking insect prey. Flight swift — a few rapid wing-flaps punctuated with graceful swoops and glides and agile turning and banking movements. Roosts in partially submerged tamarisk- and reed-beds in association with wagtails, reed warblers and other swallows.

FOOD. Small flying insects, mainly midges, gnats and other Diptera; winged ants and termites, etc.

VOICE AND CALLS. A cheerful low *chit-chit* while flying about. Song of male, a musical twittering double *chirik-weet*, *chirik-weet* repeated every two seconds or so from perch near nest. A sharp angry *chichip*, *chichip*, reminiscent of wagtail's, by way of 'war cry' while attacking an intruder, e.g. nest-pirating sparrow.

BREEDING. Season, overall March to September, the principal periods varying locally. Nest, as of Crag Martin or Swallow, an oval mud saucer c. 13 × 8 cm, lined with fine grass and feathers, attached bracketwise to a vertical surface, e.g. wall or rafter in a veranda, under arch of bridge or culvert, or under rock overhang flanking a stream. In the last situation often less than a metre above the water, and frequently in proximity of nest of Large Pied Wagtail which builds in identical situations. Wet mud collected by the birds at a puddle and plastered on substrate very gradually, pellet by pellet, to allow for hardening into a firm foundation; thus nest may take

62

HIRUNDINIDAE

like Crag Martin's or Western Swallow's, white, minutely spotted and speckled with various shades of reddish brown. Average size of 50 eggs 17.4 × 12.5 mm (Baker). Both sexes take part in nest-building, incubation, and feeding the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. Differs from *H. t. javanica* (920) in having a smaller bill, and upper plumage glossed with green v. purple-blue.

Young (immature). Like adult but upperparts less metallic; chestnut forehead less defined. Chestnut of chin, throat, and breast softer and paler; rest of underparts faintly washed with pinkish white. Tertiaries and their coverts, and under tail-coverts broadly edged at tips with pinkish white. Outer rectrices blunter at tip than in adult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail (outer)
♂ ♀	99-105	10-11	c. 11	44-47 mm (SA)

Breadth of bill at forehead c. 6 mm (Baker).

COLOURS OF BARE PARTS. Adult. Iris brown. Bill brownish black; mouth yellowish pink. Legs and feet horny brown; claws like bill. Immature. Iris brown. Bill horny brown, yellow near gape; mouth and gape yellow. Legs and feet pinkish brown; claws horny brown.

920. Javan House Swallow. *Hirundo tahitica javanica* Sparrman

Hirundo javanica Sparrman, 1789, Mus. Carls., fasc. 4, pl. 100 (Java)
Baker, FBI No. 1155, Vol. 3: 243

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As of 919, q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION AND HABITAT. Breeding, and apparently resident: Andaman Islands. Not recorded in the Nicobars. Affects open country along sea coast.

Extralimital. Southern Burma from Arakan to Tenasserim. The species ranges over Malay Peninsula and Indonesia.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 916 and 919, qq.v.

BREEDING. Season, in Andamans, as yet known, May and June. Nest and eggs (c/2-4) as in 919. Built in verandas of houses (Port Blair, Butler, JBNHS 12: 557) and caves on the shore (North Button I., Osmaston, ibid. 17: 161). Average size of 40 eggs 17.5 × 12.7 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	97-107	c. 10.5	c. 10-12	— mm

Breadth of bill at forehead c. 7.5 mm.

(Baker)

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet brownish black.

HIRUNDINIDAE

64

over a week to complete. Nest usually single; occasionally several close to one another but not clustered. Same site and nest (repaired or rebuilt) used year after year; two, sometimes three, successive broods raised in a season. In urban localities even occupied nests frequently usurped by House Sparrows. Eggs, 3 to 5, very like Western Swallow's, white or pinkish white minutely speckled and spotted with reddish brown. Average size of 120 eggs 18.4 × 13.1 mm (Baker). Both sexes partake in building the nest and feeding the young. Flying young fed in mid-air. Incubation apparently by female alone: 14 or 15 days. Young leave nest on 15th or 16th day but return to it to roost at night until driven off by hostile demonstrations and 'war cries' of the parents wanting it for the next brood.

MUSEUM DIAGNOSIS. See Key to Species.

Young (immature). Crown paler and browner; upperparts dull sooty brown, showing the steel gloss in patches here and there. No wires in tail. Underparts tinged with fulvous. Fledgling leaves nest in this dress, which is retained till it moults into adult plumage.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail central outer (including 'wire')
♂ ♂	113-122	11-12	9-11	30-36 109-173 mm
♀ ♀	108-116			30-36 51-71 mm (SA, HW)

COLOURS OF BARE PARTS. Iris brown. Bill blackish brown; mouth pale lemon-yellow. Legs, feet and claws blackish brown.

922. Indian Cliff Swallow. *Hirundo fluvicola* Blyth

Hirundo fluvicola Blyth, 1855, Jour. Asiat. Soc. Bengal 24: 470 (Bundelkund ex Jerdon)
Baker, FBI No. 1158, Vol. 3: 246
Plate 65, fig. 17

LOCAL NAMES. Nāhār ābābil (Hindi); Bhākhād ābābil (Gujarati).

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. A small swallow with a very slightly forked tail. Above, glossy steel-blue with dull chestnut forehead and crown, and pale brown rump. Below, fulvous white, profusely streaked with blackish on sides of head, chin, throat and breast. Sexes alike.

For young see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Status unclear; apparently, like Wiretailed Swallow, a summer (breeding) visitor — end February to September — to cold-winter areas in northern W. Pakistan and NW. India. Elsewhere resident — common in the Gangetic Plain — but with marked local movements: east and south of a line from about Rawalpindi through Sambhar Lake (Rajasthan) to the Gulf of Cambay, with a western extension into Saurashtra (breeding in Jamnagar) and Kutch. Eastward along the lower Himalayas up to c. 700 m from Jammu and S. Kashmir to Gonda and Mirzapur districts, U.P.; Bihar (?), and southward through

SWALLOWS

65

the Peninsula to c. 11°N. (Coimbatore). Not recorded east of c. 84°E. — in Bengal, Assam or E. Pakistan. Stuart Baker's 'east to Sikkim' is shown to be erroneous (Whistler, JBNHS 36: 841), while its breeding in Baluchistan (Williams, *ibid.* 33: 606) is incredible and probably due to mistaken identity. Confirmation desirable. One sight record in Ceylon (Phillips, JBNHS 47: 740). Affects open country and cultivation in the vicinity of water — rivers, canals, moats, reservoirs, etc.

Extralimital. Eastern Afghanistan.

GENERAL HABITS. Highly gregarious. Usually keeps in large flocks, hawking midges etc. in close proximity of water along with other swallows. On wintry mornings often seen sitting in densely packed rows on telegraph wires near or over water till the sun is well up. At one point the congregation suddenly 'explodes' as to a given signal, and the birds disperse to feed in small groups. Flight comparatively feeble and wandering, with fewer glides and swoops than in Western Swallow.

FOOD. Midges, gnats and other dipterous insects.

VOICE AND CALLS. A sharp *trr, trr* uttered in flight. A twittering chirp in uneven chorus while clinging outside nest and shivering wings. Song, if any, not described.

BREEDING. *Season*, in cold-winter northern districts chiefly March to June; elsewhere practically all year with peak periods December to April and July to October. Often two (or three?) successive broods. *Nest*, colonial — a large agglomeration of mud, reminiscent of an untidy honeycomb or a cluster of potter wasp nests — sometimes of a hundred or more 'pots' fused together, each with a short narrow outwardly projecting entrance-tube, 5 to 12 cm long. Egg-chamber cosily lined with grass and feathers. The whole mass attached under masonry bridges spanning rivers, canals, and moats of ancient forts, under gateway arches of archaeological monuments and the like, usually above or close to water, often within populous towns. The same colony, with the nests repaired and some replaced, is occupied year after year, the site becoming traditional if left unmolested.

Breeding biology needs detailed study. Superficial observation suggests polygyny or promiscuity, many seemingly promiscuous copulations taking place on the ground while a party is collecting mud at a rain puddle. Two cases reported of a large proportion of fledged young in a colony being unaccountably found dead within the nests, in every case with the desiccated remains protruding from the narrow entrance-hole (Begbie, JBNHS 16: 512; Young, *ibid.* 16: 753).

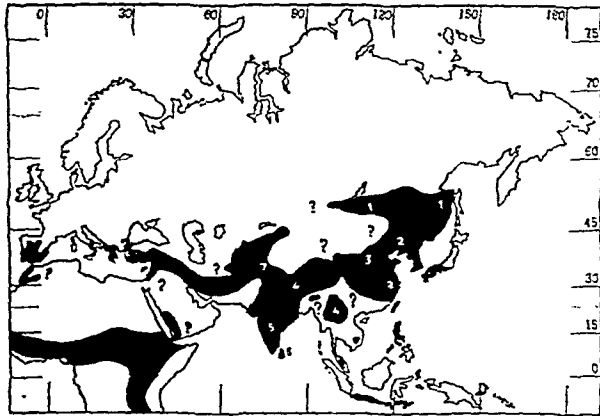
Parties of some 20 or 30 birds fly out together to collect wet mud pellets, and back to the colony. The traffic continues all day, especially morning and afternoon. The returning birds mill around the nests in a jumble, entering and leaving the spouts; how each recognizes its own nest is a puzzle. *Eggs*, generally 3, occasionally 4, white, sometimes smudged with yellowish brown or pale sepia spots. Average size of 125 eggs 18.5 × 13.1 mm (Baker). Both sexes share in building the nest and feeding the young; apparently also in incubation. Period undetermined.

MUSEUM DIAGNOSIS. See Key to the Species.

Young (immature). Head brownish; feathers of mantle margined with rufous; of rump and wings with fulvous.

SWALLOWS

67

Hirundo daurica

■ Breeding

For winter ranges see text

- | | |
|--------------------------|------------------------------|
| 1 <i>daurica</i> (923). | 4 <i>nipalensis</i> (925). |
| 2 <i>japonica</i> (926). | 5 <i>erythrogygia</i> (927). |
| 3 <i>gephyra</i> (RE). | 6 <i>hyperythra</i> (928). |
| 7 <i>rufula</i> (924). | |

BREEDING. *Extralimital.* *Nest*, eggs and breeding biology as in 925 and 927.

MUSEUM DIAGNOSIS. * More heavily streaked below than *rufula* [924] and with the rufous nuchal band interrupted with blue; less heavily streaked below, the streaks narrower than in *japonica* [926]; ground colour of the underparts more buffy than in *nipalensis* [925]; averages larger than the other three* (Vaurie). Differs from *erythrogygia* (927) in markedly larger size and broader streaking of underparts.

MEASUREMENTS

♂ ♀ Wing 125–138 mm (Hartert)

♂ ♀ Wing 121–133; tail 93–119 mm (Vaurie)

COLOURS OF BARE PARTS. As in 927.

924. European Striated or Redrumped Swallow. *Hirundo daurica rufula* Temminck

Hirundo rufula Temminck, 1835, Man. d'Orn. 3: 298 (Egypt)

Lillia temminckii Hume, 1877, Stray Feathers 5: 259. New name for *rufula*

Hirundo scullii Seebold, 1883, This: 167 (Gülit)

Baker, FBI No. 1163, Vol. 3: 252

LOCAL NAMES. As for 927; *Phairi* (Kashmir).

SIZE. Sparrow ±; length c. 19 cm (7½ in.) including long tail.

66

HIRUNDINIDAE

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail	
				central	outer
♂ ♀	89–94	c. 6	9–10	—	40–44 mm (Baker)
		(from skull)			
2 ♂ ♂	93, 96	9	11	38	44 mm (SA)

Weight 14 ♂ ♀ 8–12 (av. 9.7) g — SA.

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet blackish brown to black.

HIRUNDO DAURICA Linnaeus

Key to the Subspecies

	Page
I Lower plumage pale rufous or albescent rufous	
*A Rump and upper tail-coverts of practically the same colour throughout	
1 Wing mostly 120 mm or over	
a Lower parts less heavily streaked; rump unstreaked	66
b Lower parts more heavily streaked; rump with faint streaks	70
2 Wing mostly under 120 mm	
c Striations on lower plumage much broader than the shafts	68
d Striations on lower plumage hardly broader than the shafts	70
B Rump paler posteriorly and becoming creamy white on the upper tail-coverts	67
II Lower plumage chestnut	72

923. Daurian Striated or Redrumped Swallow. *Hirundo daurica daurica* Linnaeus

Hirundo daurica Linnaeus, 1771, Mantissa Plant.: 528 (Siberia)

Lillia substriolata Hume, 1877, Stray Feathers 5: 268 (Cachar)

Baker, FBI No. 1159, Vol. 3: 248

LOCAL NAME. *Midli* (Khasia).

SIZE. Sparrow ±; overall length c. 20–23 cm (7½ in.) depending on length of tail.

FIELD CHARACTERS. As of 927, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Apparently rare winter visitor to the Himalayas, in Nepal, Sikkim (?), Bhutan, and NEFA.

Extralimital. Southern Siberia, eastward through the Baikal region, northern Mongolia and Transbaikalia; central western China. (For details see Vaurie, 1959, 2: 14.) Winters also in the Indochinese countries.

GENERAL HABITS, FOOD, VOICE and CALLS. As in Indian Striated Swallow (927), and other races.

68

HIRUNDINIDAE

FIELD CHARACTERS. As of 927, q.v., but rump much paler, almost whitish. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident and/or summer visitor (March to September/October). Northern Baluchistan, Punjab (NW. frontier districts), Gilgit, Chitral, Kashmir, Himachal Pradesh; between c. 1000 and 3300 m. Affects open but broken hilly country, near and away from human habitations.

Extralimital. Breeds in parts of southern Europe and eastward through western Asia (Middle-East countries) to Afghanistan and Russian Turkestan. (For details see Vaurie, 1959, 2: 12.)

GENERAL HABITS, FOOD, VOICE and CALLS. As in 927.

BREEDING recorded in N. Baluchistan (Quetta and Fort Sandeman districts), Punjab (Fort Munro), Chitral, Kashmir and Himachal Pradesh. *Season*, chiefly April to July. *Nest*, eggs (c/3 or 4) and breeding biology as in Indian Striated Swallow (927).

MUSEUM DIAGNOSIS. * Underparts varying from buffy to whitish with very narrow, faint or obsolete dark shaft-streaks* (Vaurie). Differs from *erythrogygia* (927) in having finer striations on underparts, and chestnut on rump paling off to creamy white posteriorly.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail	
				central	outer
♂ ♀	112–126	9–10	12–14	39–47	85–102 mm (HW)

♂ ♀ Wing 113–127; tail 91–108 mm (Vaurie)

Weight 4 ♂ ♂ 14–17 g (Paludan, Afghanistan).

COLOURS OF BARE PARTS. As in 927 and other races.

925. Himalayan Striated or Redrumped Swallow. *Hirundo daurica nipalensis* Hodgson

Hirundo Nipalensis Hodgson, 1836, Jour. Asiat. Soc. Bengal 5: 780 (Nepal)

Baker, FBI No. 1161, Vol. 3: 250

LOCAL NAMES. As for 927; *Phairi* (Kashmir).

SIZE. Sparrow ±; length c. 19 cm (7½ in.) including long tail.

FIELD CHARACTERS. As in 927, q.v. but with paler chestnut rump. See Key to the Subspecies and Museum Diagnosis.

Large gatherings huddled on telegraph wires in winter.

SWALLOWS

69

STATUS, DISTRIBUTION AND HABITAT. Breeds in the Himalayas from Kulu in Himachal Pradesh eastward through Garhwal, Kumaon, Nepal, Sikkim, Bhutan and NEFA; between c. 1200 and 3200 m in the western Himalayas, in a lower zone in the eastern. Winters (October/November to February/March) more or less throughout the Peninsula from Uttar Pradesh southward to Kerala, and from Gujarat and Rajasthan eastward to Orissa. In winter several subspecies are found side by side in the Indian plains, impossible to differentiate in the field with certainty: hence their movements and non-breeding ranges remain unclear. Affects cultivation, forest clearings and lightly scrubbed open country in winter; in summer (when nesting) grassy slopes and rocky hills around upland pastures and scattered homesteads, as well as populous hill villages and hill-stations.

Extralimital. Extends eastward to southwestern Sikang. Winters also in Burma.

GENERAL HABITS. Very gregarious in winter; scattered pairs or family parties in summer. Great influx of Himalayan migrants in the north and central Indian plains and Deccan from about November. Enormous congregations (swarms) commonly met with on winter mornings perched in close-packed rows of hundreds, or thousands, on telegraph wires often occupying several adjacent strands of wire over stretches of 200 metres or more, sometimes even overflowing on to neighbouring trees or the ground. Frequently the swarms settle sprawled out on damp, sandy river beds and shoals, or in newly ploughed fields. From time to time the birds launch out spontaneously to fly around in a dense rabble and gradually re-settle. The gathering disperses to hawk insects as the sun gets warmer. The sunning congregation becomes smaller day by day, gradually splitting up into smaller parties and moving on or scattering over the countryside for the season. The birds roost at night in partly submerged reed-beds and the like.

FOOD, VOICE AND CALLS. As in 927.

BREEDING. Season, overall April to August chiefly May to July. Nest, eggs (c/3 or 4, rarely 5), and breeding biology as in Indian erythropygia (927). Two broods often raised in succession in same nest; sometimes three. Nest stuck against ceiling in a veranda or living-room of occupied or derelict hill-station bungalows, busy bazaar shops, under masonry culverts or rock overhangs and in tunnels and the like; nests usually individual; sometimes two or three in the same structure, but well apart — not colonially. The same site and nest, repaired if necessary, may be used year after year.

MUSEUM DIAGNOSIS. Streaks on underparts coarser than in erythropygia, especially in winter. Rump paler chestnut (seasonally variable but never so dark as in erythropygia) and distinctly dark shaft-streaked. Differs from rufula in having more heavily streaked underparts and darker chestnut rump.

Young (immature) has no, or only obsolete, striations on breast.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail central	outer
♂ ♀	111-123	9-11	13-15	37-43	81-102 mm (once 107) (SA, HW)
7 ♂♂	115-120	10-11	—	—	86-102 mm
7 ♀♀	109-120	10-11	—	—	82-95 mm (BB)

SWALLOWS

71

eastward from Punjab, Rajasthan and northern Gujarat (including Kutch and Saurashtra) to West Bengal. Plains and peninsular hills up to c. 1600 m. Not in Sind, Assam or East Pakistan. Rare straggler to Ceylon in winter. Affects open cultivated country and clearings in light deciduous forest, preferably the neighbourhood of archaeological ruins — old forts, mosques, temples, etc. — and rocky hills.

GENERAL HABITS. Much less gregarious than the migratory races, e.g. nipalensis. Keeps in pairs, family parties or small flocks hawking insects all day in company with swifts, crag martins and other swallows, alighting to rest from time to time on ledges, telegraph wires or tree-tops. Is less closely attached to the neighbourhood of water — reservoirs, streams, canals, etc. — than Wiretailed Swallow, and commonly met with hawking over drier country. Flight slower and more deliberate than that of Wiretailed, with fewer swoops. Numbers gather to hawk insects fleeing from fired grassfields and forest clearings, in mixed company with other birds. Threshing and winnowing floors and open-air grain markets, bazaars, railway goods yards and shipping docks where insects abound are also favourite hunting grounds.

FOOD. Gnats, midges and tiny flying beetles and bugs — Diptera, Coleoptera and Hemiptera. Winged ants and termites etc.

VOICE AND CALLS. Flight note, 'a loud low-pitched cheer, a sparrow-like chirp, and a more nasal queenk' (Nichols); more plaintive, and distinct from rustica's. Song, in breeding season, a cheerful subdued twittering, often uttered by the male while the pair is sitting side by side, and also near the nest (SA).

BREEDING. Season, overall April to August, the principal periods varying locally. Nest, typically retort-shaped, of conglomerated mud pellets — a bulbous hemisphere c. 15 cm in outside diameter, with a prolonged horizontal entrance-tunnel c. 15-18 cm, of c. 4 cm bore. The whole is stuck flat against the ceiling of a deserted or occupied dwelling, under the dome of ancient mosques or tombs, under masonry arches of bridges over canals, under natural rock overhangs and suchlike situations. In the developing India of today reinforced concrete road culverts are increasingly favoured. Egg-chamber copiously lined with grass, feathers and vegetable down. Eggs, 3 or 4, rarely 5, pure white. Average size of 60 eggs 21.0 × 14.4 mm (Baker). Often two or three successive broods raised in the same nest. Same site and nest, repaired or rebuilt as necessary, may be used year after year. Both birds share in nest construction, collecting mud blobs at nearby rain puddles, shuttling back and forth more or less together. Nest takes several days to complete as one mud layer must set before the next is put on; the whole dries to terracotta hardness. Both sexes incubate by turns, and both birds roost within at night even when incubation in progress. Family parties keep together by day and roost within nest at night until young become fully independent. While one bird is incubating the other will often continue to add fresh mud to the rim of the entrance-tunnel. Its diameter evidently constricts on drying, sometimes with fatal results to the inmates. Two cases recorded of birds getting stuck in the exit while trying to leave nest, and dying in that position (Davison, SF 10: 345; Himmatsinhji, JBNHS 56: 631) cf. also Cliff Swallow, p. 65. Incubation period undetermined. Nest built singly, not in colonies; frequently close to 'nest villages' of House Swifts. Often usurped by the latter and by House Sparrows.

70

HIRUNDINIDAE

Weight 2 ♀♀ 16, 18 g (GD).

COLOURS OF BARE PARTS. As in 927.

926. Japanese Striated or Redrumped Swallow. *Hirundo daurica japonica* Temminck & Schlegel

Hirundo alpestris japonica Temminck & Schlegel, 1847, in Siebold's Fauna Jap., Aves, Pl. 11: 33 (Japan)

Not in Baker, FBI cf. *H. d. daurica*, Vol. 3: 248

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 19 cm (7½ in.) including long tail.

FIELD CHARACTERS. As in 927, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. A winter migrant to Uttar Pradesh, Madhya Pradesh, Gujarat (Saurashtra), Mysore (Londa), Tamil Nadu, Andhra, W. Bengal, Assam and presumably East Pakistan. A doubtful specimen from Andaman Is. (Port Blair); another taken recently in central Nepal, January (Fleming, JBNHS 65: 330). Owing to overlapping of several races in the winter quarters, their movements and non-breeding ranges unclear.

Extralimital. Breeds in Manchuria, Korea, Japan, NE. and E. China; winters also in N. Thailand and Burma. (For details see Vaurie, 1959, 2: 13.)

GENERAL HABITS, FOOD, VOICE AND CALLS. Presumably as in 927.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Distinctly more heavily streaked below than nominate *daurica* and with faint streaks on rump which are usually absent or fainter in nominate *daurica*; somewhat smaller. Wing ♂♂ 114-125; tail 85-106 mm (Vaurie, 1959, 2: 13).

COLOURS OF BARE PARTS. As in 927 and other races.

927. Indian Striated or Redrumped Swallow.

Hirundo daurica erythropygia Sykes

Hirundo erythropygia Sykes, 1832, Proc. Zool. Soc. London: 83 (Dukhun, Poona) Baker, FBI No. 1162, Vol. 3: 251

Plate 108, fig. 1

LOCAL NAMES. *Māsūd ābābil* (Hindi); *Vāṛāṇkātrikā* (Malayalam); *Kēncī ābābil* (Gujarati).

SIZE. Sparrow ±; length c. 19 cm (7½ in.) including long tail.

FIELD CHARACTERS. A deeply fork-tailed swallow. Above, glistening steel blue-black; a narrow supercilium and sides of head chestnut connected by a chestnut half-collar on hindneck; rump chestnut, conspicuous and diagnostic in banking flight. Below, fulvous white, finely streaked with dark brown. Terminal half or one-third of under tail-coverts abruptly black. Sexes alike. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; largely sedentary with slight seasonal local movements. More or less throughout the subcontinent, from c. 1200 m in the outer Himalayan foothills and terai south to Kerala, and

72

HIRUNDINIDAE

MUSEUM DIAGNOSIS. Size small. Rump uniform dark chestnut without blackish shaft-streaks. Striations on underparts narrow. Tail-fork comparatively shallow. An indistinct white patch on inner web of outermost rectrices. Shape and proportions of adult tail similar to that of juvenile in other races.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail central	outer
♂ ♀	104-116	9-10	13-15	39-46	70-82 mm (SA, HW)

Weight 7 ♂♂ 15-19 (av. 16.7) g — SA.

In the flesh tarsi conspicuously stouter than in *H. rustica*.

COLOURS OF BARE PARTS. Iris brown. Bill brownish black; mouth pale yellowish grey. Legs, feet and claws brownish black.

928. Ceylon Striated or Redrumped Swallow.

Hirundo daurica hypertythra Blyth

Hirundo hypertythra Blyth, 1849, Jour. Asiat. Soc. Bengal 18: B14 (Ceylon, ex Layard MS.)

Baker, FBI No. 1164, Vol. 3: 253

Plate 65, fig. 15

LOCAL NAMES. *Wēhi līhīniyā* (Sinhala); *Tām pādi*, *Tādi illāda kūṛuvī* (Tamil).

SIZE. Sparrow ±; length c. 19 cm (7½ in.) including long tail.

FIELD CHARACTERS. As in 927, q.v., but underparts deep chestnut, faintly and narrowly striated. Nuchal collar absent or ill-defined; rump much darker chestnut. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Race peculiar to Ceylon. Plentiful throughout the low country (except perhaps the Jaffna Peninsula and neighbouring islands) and hills to c. 1200 m. Affects open grassy country, paddy-fields and grass-covered hillsides.

GENERAL HABITS AND FOOD. As in 927.

VOICE AND CALLS. Loud, musical, distinctive, 'easily recognized when once heard' (Henry).

BREEDING. Season, chiefly March to July, but occasionally in September and from November to January (Phillips). Nest and eggs (c/2 or 3) as in 927. Average size of 7 eggs 21.3 × 14.3 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters (above) and Key to the Subspecies

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	102-122	c. 7	c. 12-13	75-78 mm (Baker)

Weight 2 ♂♂ 14, 16 g (SDR).

COLOURS OF BARE PARTS. Iris sepia brown. Bill blackish brown. Legs and feet vinous brown (Wait).

SWALLOWS

73

929. Chinese Striated or Redrumped Swallow. *Hirundo striolata* mayri Hall*Hirundo striolata* mayri Hall, 1953, Ibis 95: 547

(Singhaling, Hkamti, Upper Chindwin, Burma)

Hirundo daurica khasica Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 20 (Boko, Assam)

Baker, FBI No. 1160, Vol. 3: 249

Cl. Mayr, E., 1941, Ibis: 367; Hall, B. P., 1953, ibid. 95: 547.

LOCAL NAME. *Inra gobi* (Kacha Naga).SIZE. Sparrow \pm ; length c. 19 cm (7½ in.) including long tail.

FIELD CHARACTERS. As in 927, q.v. See Key to the Species.

STATUS, DISTRIBUTION and HABITAT. Partly resident, partly winter visitor. Assam hills south of Brahmaputra R. (Khasi, N. Cachar, etc.) and in the Margherita area (Lakhimpur dist.), Nagaland, Manipur, and the hills of East Pakistan(?).

EXTRALIMITAL. Burma, Thailand, and Indochinese countries.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 927.

BREEDING. Season, in Assam (c. 1000-1400 m) April and May. Nest and eggs (c/3 to 5 generally 4) pure white as in races of *daurica*. 'Exceptionally an egg may be found with a few faint reddish specks on the larger end.' Average size of 30 Assam eggs 21.4 × 14.7 mm (Baker).MUSEUM DIAGNOSIS. Rufous collar on hindneck absent or broadly interrupted. Much more heavily and coarsely streaked on underparts than *H. d. nipalensis*; rump-band narrower, darker chestnut, with the shaft-streaks sometimes ill-defined.

MEASUREMENTS

9 ♂♀ Wing 120-124; tail 83-97 mm (Mayr, SDR)

Weight 1 ♀ 22 g (SDR).

COLOURS OF BARE PARTS. As in 927 and other races of *daurica*.

Genus DELICHON Horsfield & Moore

Delichon Horsfield & Moore, 1854, Cat. Bds. Mus. E.I. Co. 1: 384. Type, by monotypy, *Delichon nipalensis* Moore

Distinguished from all other swallows by wholly feathered or 'stockinged' tarsi and toes. Rump conspicuously white. Tail varying from deeply forked to almost square.

Key to the Species

	Page
Under tail-coverts white, tail deeply forked..... <i>D. urbica</i>	73
Under tail-coverts black, tail square..... <i>D. nipalensis</i>	76

DELICHON URBICA (Linnaeus)

Key to the Subspecies

Longer upper tail-coverts black
Lower plumage pure white..... <i>D. u. urbica</i>
Lower plumage smoky or greyish white..... <i>D. u. cashmeriensis</i>

SWALLOWS

75

together. If this is verified by further study they will have to be treated as separate species.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Tail more deeply forked than in *cashmeriensis*; depth of fork c. 16-22 mm v. c. 5-9 mm (CBT). For details of plumages and structure, also bionomics, see Witherby *et al.*, 1938, 2: 235-8.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail central	outer
Of an Indian series					
♂♀	106-113	9-10	10-11	—	42-47 mm (CBT, HW)
British birds					
♂♂	106-113	8-9	10-13	35-45	58-63 mm
♀♀	104-112	—	—	35-43	57-63 mm (Witherby)

Weight 1 ♂ 17 g (Paludan).

COLOURS OF BARE PARTS. Iris brown. Bill black (adult) or horn brown (immature). Legs and feet pinkish yellow, covered with white feathers.

931. Kashmir House Martin. *Delichon urbica cashmeriensis* (Gould)*Chelidon Cashmeriensis* Gould, 1858, Proc. Zool. Soc. London: 356 (Kashmir)

Baker, FBI No. 1142, Vol. 3: 228

Plate 65, fig. 10

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 930, q.v., but with the rump and underparts sullied with smoky grey, not glistening white. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, and partly local migrant. Breeds in the Himalayas between c. 1500 and 5000 m altitude. Chitral, Gilgit, Kashmir, Himachal Pradesh and eastward through Nepal, Sikkim, Bhutan and NEFA. Sight records often confused with *D. u. urbica*. Winter range imperfectly known but occurs in the foothills, terai and duars, and in the northern plains from Ambala east through Kumaon, U.P., Bihar to Assam and East Pakistan (?). Affects open valleys, grassy hillsides with cliffs, and the environs of mountain villages.

EXTRALIMITAL. SE. Afghanistan, SE. Tibet, eastward to Kansu (for particulars see Vaurie, 1959, 2: 16-17). Recorded in winter from N. Thailand and N. Burma.

GENERAL HABITS. Typical swallow, cf. 927. Highly gregarious while nesting as well as at other times. Loose parties commonly seen hawking midges and tiny winged insects in company with Striated and other swallows and house swifts high above gorges and stream valleys, terraced fields, or above the rising smoke of forest fires. In Kashmir canals and waterways are favourite hunting resorts. Flight swift and graceful — a few rapid wing-beats followed by effortless glides and swoops, and agile twisting, turning and banking movements.

FOOD. Insects, chiefly Diptera, taken on the wing.

HIRUNDINIDAE

74

930. European House Martin. *Delichon urbica urbica* (Linnaeus)*Hirundo urbica* Linnaeus, 1758, Syst. Nat., ed. 10, 1: 192 (in Europe = Sweden) Baker, FBI No. 1141, Vol. 3: 226

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. A small black and white swallow with short forked tail. Above, glossy blue-black with glistening white rump; below, pure white including feathered legs and feet. Sexes alike.



Tail, 'stockinged' foot, head and bill. × c. 1

In flight its diagnostic points are: white rump as in House Swift; white underparts as in Wiretailed Swallow; short slightly forked tail as in Cliff Swallow.

STATUS, DISTRIBUTION and HABITAT. Status unclear owing to difficulty of distinguishing in the field from Kashmir Martin (931). Apparently breeds at high altitudes in Ladakh and N. Kashmir (Shyok, Nubra and Indus valleys) also in the valleys of the Dras, Suru, Zaskar and other rivers of that region between c. 3000 and 4500 m. Sporadic in winter, and/or on migration, in the NW. frontier districts of W. Pakistan and N. Baluchistan, Nepal foothills (specimen, April, Fleming, JBNHS 65: 330), and in peninsular India mostly down the western side. Recorded from Gujarat, Saurashtra, Maharashtra, Madhya Pradesh, Mysore, Nilgiri Hills and Kerala — as late as end April and mid May. For particulars of occurrences in the Peninsula see Editors, JBNHS 65: 222. Has also occurred in the Laccadive and Maldives Is. (Mathew & Ambedkar, JBNHS 61: 189; Phillips & Sims, ibid. 56: 214). Affects open valleys and grassy hillsides with cliffs.

EXTRALIMITAL. Russian Turkestan, Afghanistan, Iran, Transcaucasia, Asia Minor; the Mediterranean countries and nearly all Europe (including Great Britain) north to Scandinavia. For particulars see Vaurie, 1959, 2: 15.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 931.

BREEDING. Season, in Ladakh, June and July. Nest and eggs, as in Kashmir House Martin (931).

There is considerable confusion in published (sight) records, and both *urbica* and *cashmeriensis* are reported breeding in the same localities, often

HIRUNDINIDAE

76

VOICE and CALLS. Not intelligibly described: only as 'squeaks and twittering'.

BREEDING. Season, chiefly end May to mid July. Nest, a deep earthen cup, or rounded 'pot', of agglomerated mud pellets attached under a rock-ledge or overhang on a high cliff-face, leaving a narrow slit between ceiling and nest-top for the bird to squeeze in. Sometimes nest-top actually connected to ceiling, in which case a small lateral entrance-hole left at top. Architecture of nest varies according to site and contours of substrate. Nests built solitarily or in small scattered groups — 10 to 12 (or more) — not in clusters like House Swifts; lined with grass and feathers. In high mountain villages sometimes builds under eaves or window corners of wooden houses, the nests looking singularly like enlarged nests of potter wasps (*Eumenes*). Eggs, 3 or 4, white, unmarked. Average size of 80 eggs 17.9 × 12.7 mm (Baker). Incubation period undetermined. Often two broods raised. Both sexes take part in nest-building, incubation and feeding the young. Food brought assiduously every few minutes, the birds fluttering at nest momentarily without alighting, hurriedly transferring the morsels to the widely gaping bills crowding the entrance, and flying off to fetch more. Young apparently fend for themselves on leaving nest though returning to roost in it with parents the first few nights. Not observed being fed in mid-air like other swallows.MUSEUM DIAGNOSIS. See Field Characters. Differs from *D. u. urbica* (930) further in having the ear-coverts mostly dark brown (v. white); axillaries and underwing dark brown; fork in tail shallower.

Young (immature). Above, rump white, sometimes with a pale vinous wash; rest of upperparts, including wings and tail, dark brown with slight gloss on mantle and scapulars. Below, as in adult, or washed with pale vinous.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	99-105	8-10	9-11	38-43 mm (CBT, HW)

Weight 1 ♂ 14.7 g (GD); 1 o? 15 g (SA).

COLOURS OF BARE PARTS. As in 930.

932. Nepal House Martin. *Delichon nipalensis nipalensis* Moore*Delichon nipalensis* 'Hodgson' = Moore in Horsfield & Moore, 1854, Cat. Bds. Mus. E.I. Co. 1: 384 (Nepal)*Delichon nipalensis bartlettii* Koelz, 1952 (Sept.), Jour. Zool. Soc. India 4: 43 (Himuntha, Lushai Hills)*Hirundo cuttingi ernstmayri* Walters, 1953 [Feb.], (1952), Bonner Zool. Beitr. 3: 280 (New name for *D. nipalensis* Moore if placed in genus *Hirundo*, preoccupied) Baker, FBI No. 1144, Vol. 3: 230

Plate 65, fig. 7

LOCAL NAMES. *Biri dzo* (Cachar); *Inra bi* (Naga).SIZE. Sparrow \pm ; length c. 13 cm (5 in.).

FIELD CHARACTERS. A small black and white swallow with a short square-cut tail. Above, steely blue-black including ear-coverts, wings and tail. Rump

SWALLOWS

77

glistening white. A broken white collar on hindneck. *Below*, chin and throat dull black; under tail-coverts glossy black. Rest of underparts pure white including 'stockinged' legs and feet. Sexes alike.

Could casually be confused with *D. urtica*, but on a good view, black throat and under tail-coverts, and square-ended tail (v. forked) diagnostic.

STATUS, DISTRIBUTION and HABITAT. Resident, with some local (mostly altitudinal) movements. The Himalayas from Garhwal and Kumaon through Nepal, Sikkim, Bhutan and NEFA; Assam hills south of Brahmaputra R., Nagaland, Manipur, Mizo; East Pakistan hills (?). Breeding between c. 2000 and 4000 m; down to c. 350 m in winter. Affects river valleys, mountain ridges with vertical cliffs, etc.

Extralimital. N. Burma and N. Vietnam.

GENERAL HABITS. Highly gregarious; very similar to those of the Kashmir House Martin (931), q.v. Subject to sudden sporadic appearances and disappearances in winter. The birds fly round continuously in a scattered rabble hawking insects high up in the air or skimming the tree-tops and bushes. From time to time one will suddenly climb almost vertically for 10 metres or so (to take a midge?) and then dive and flatten out when quite close to the bush or ground again. The fast smooth-flowing flight with its swoops, glides and 'tight' turns has been likened to skating.

FOOD. Tiny winged insects, mostly Diptera.

VOICE and CALLS. On the whole very silent. Occasionally utters a short high-pitched *chi-i* in flight (Lister).

BREEDING. *Season*, overall April to July, the peak periods varying locally and with altitude. *Nest*, as in Kashmir House Martin, a deep earthen bowl or 'pot', lined with fine grass and feathers, attached under a rock overhang on a vertical cliff-face, with a narrow slit or hole near top for entrance. Not recorded nesting in houses. Nests colonial, often 25 to 50 or so under the same overhang close together, sometimes almost touching one another, but not agglomerated in a mass or 'village' like House Swifts. *Eggs*, 3 or 4, rarely 5, white, unmarked, very like those of 931. Average size of 21 eggs 18.6 × 12.8 mm (Baker). Both sexes share in building the nest, incubation, and feeding the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. See Field Characters.

Young (immature). Like adult but black of upperparts less glossy, and white of underparts sullied with buff.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail (SA)
♂ ♀	90-98	7-9	11-12	37-41 mm

Weight 1 ♂ 14, 1 ♀ 16 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet (through white stockings) pale brownish flesh; claws horny brown.

A significant difference in the pattern of moult and plumage renewal between this species and *D. u. cashmeriensis*, closely correlated with their ecological peculiarities, has recently been described. See Stresemann, E., & V., 1969, 'Die Mauser von *Ptyonoprogne rupestris* and *Delichon nipalensis*'. *Jour. Orn.* 110 (1): 39-52.

SHRIKES

79

	Page
3 Back black..... <i>L. senator</i>	101
b Tail black or brown and rufous, the colours blending	
4 Crown of head grey or black..... <i>L. schach</i>	93
B No white patch on primaries	
c Head and back grey..... <i>L. tephronotus</i>	91
d Head grey, back chestnut..... <i>L. collurio</i>	87
II Upper tail-coverts and central tail-feathers same colour	
C Colour of crown and back nearly the same, rufous or brown..... <i>L. cristatus</i>	98

LANIUS EXCUBITOR Linnaeus

Key to the Subspecies

A Middle pair of rectrices all black	
a Lesser wing-coverts with or without grey tips..... <i>L. e. lahtora</i>	79
b Lesser wing-coverts entirely grey	
1 Inner webs of secondaries chiefly white..... <i>L. e. pallidirostris</i>	81
2 Inner webs of secondaries chiefly black..... <i>L. e. aucheri</i>	82
B Middle pair of tail-feathers with white bases..... <i>L. e. homeyeri</i>	82

933. Indian Grey Shrike. *Lanius excubitor lahtora* (Sykes)

Collurio Lahtora Sykes, 1832, Proc. Zool. Soc. London: 86 (Dukhun) Baker, FBI No. 706, Vol. 2: 285

Plate 66, fig. 12

LOCAL NAMES. *Dūdiya lātorā*, *Sāfēd lātorā*, *Bādā lātorā* (Hindi); *Dūdhiō* or *Mōto lātorā* (Gujarati); *Kachka*, *Anjānā* (Bengal); *Peddā kiriti gādu* (Telugu).

SIZE. Myna ±; overall length c. 25 cm (9½ in.) including long tail.

FIELD CHARACTERS. A 'bull-headed' silvery grey bird with longish graduated black-and-white tail. Wings black with a pure white patch or 'mirror' which flashes conspicuously in flight. A broad black band from forehead and bill backward across eye to ear-coverts. Heavy hooked bill like a bird of prey's. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident; local movements (winter dispersal) not worked out. Breeds in Baluchistan (Las Bela to Nal in south Kalat, Sibi plain), Sind, NW. frontier districts, Punjab, Rajasthan, Gujarat (including Kutch and Saurashtra) and through the Bombay Deccan south to Mysore (Belgaum); east through Madhya Pradesh, Maharashtra (to c. Nagpur), and Andhra (north of Kistna R.) to Bihar and southern W. Bengal; E. Pakistan (nr. Kushtia, c. 23°54'N., 89°07'E. — H. Rashid, 1967); from plains level to c. 1200 m. Two records from Tamil Nadu (Cuddapah dist.); one unconfirmed sight record from Ceylon (Phillips). Affects open semi-desert country, sparse scrub jungle, edges of desert cultivation, and thorn- and dry-deciduous forest.

78

LANIIDAE

Family LANIIDAE: Shrikes or 'Butcher Birds'

For morphological characters and description see Van Tyne, J. & Berger, A. J., 1959: 534; Baker, E. C. Stuart, 1924, FBI 2: 283-4; Olivier, G. G., 1964, Article 'Shrike' in Thomson, A. L. (ed.), *New Dict. Birds*. London and New York.



Grey Shrike (933)

Genus LANIUS Linnaeus

Lanius Linnaeus, 1758, Syst. Nat., ed. 10, 1: 93. Type, by subsequent designation.

Lanius excubitor Linnaeus

Cf. Olivier, G., 1944, Monogr. des Pies-Grièches du genre *Lanius*, Rouen: 1-324 Bill very stout and laterally compressed, the upper mandible downcurved and hooked, and with a large tooth and a deep notch near the tip; Nostils nearly round, almost hidden by numerous bristles. Plumage firm but not spinous. Wings pointed. Tail equal to or longer than wing, strongly graduated.

Key to the Species

	Page
I Upper tail-coverts and central tail-feathers of totally different colours	
A A white patch on primaries	
a Tail all black and white, the colours sharply defined	
1 Back grey	
i Forehead grey..... <i>L. excubitor</i>	79
ii Forehead black..... <i>L. minor</i>	83
2 Back chestnut	
iii Upper tail-coverts pale grey..... <i>L. tittatus</i>	84
iv Upper tail-coverts chestnut..... <i>L. collurioideus</i>	83

80

LANIIDAE

GENERAL HABITS. Bold and aggressive. Keeps singly or in widely separated pairs, perched upright on an exposed thorn bush or telegraph wire surveying the surroundings. Pounces from time to time on crawling prey which is either carried back in bill to the perch or disposed of on the ground, held underfoot and torn to pieces before being devoured by vicious jabs and upward tugs of the sharp hooked beak. Each individual has a staked-out feeding territory, frequented day after day and jealously guarded against interlopers. Has the well-known habit, shared by many of its congeners, of maintaining a 'larder' where surplus food (locusts, lizards, young mice, young birds, etc.) is impaled on thorns etc. to be eaten at leisure (hence the English name 'butcher bird'). Everywhere excessively wary and usually difficult to approach: this evidently an inherent trait and not the result of persecution. In common with other shrikes has the shikra-like trick of dropping from its perch when alarmed or suspicious and flying off at high speed flat along the ground on rapidly 'vibrating' wings, swooping steeply upwards to settle on another exposed bush-top a hundred metres or so away.

FOOD. Entirely carnivorous. Insects — locusts (adults and hoppers), *Chrotogonus* spp., black ants (e.g. *Myrmecocystus laevis*) and other Hymenoptera, *Agrotis* caterpillars, beetles, bugs, etc. (Hussain & Bhalla, JBNHS 39: 834). Also lizards, young rodents (mice, squirrels, etc.), and young or sickly birds (full-grown lark and young Brahminy Myna recorded); known to attack a wounded sandgrouse and drill a hole through back of its skull (O'Brien, JBNHS 26: 667).

VOICE and CALLS. Common call 'a harsh kwi-riick, kwi-riick' (Dharma-kumarsinhji). Notes of concern a grating *che-che* uttered by parent from near by when its nest being examined. In breeding season male has a short lively tinkling song, rather like Grey Tit's, but more musical. Like other shrikes, is an accomplished mimic of other birds' calls.

BREEDING. *Season*, overall January to October, mainly March to June. *Nest*, a deep compact cup of thorny twigs and grass intermixed with rag, hair, lumps of cotton, feathers, wool, etc. with the rags and rubbish hanging untidily from the structure. Size between c. 13 and 18 cm across externally, with the cup c. 8 to 10 cm in diameter and c. 6-7 cm deep. Placed in a babool or *Prosopis* tree or in a thorn bush, 2 to 4 metres up; commonly in the same locality and in more or less the same site year after year (sometimes the old nest renovated) unless disturbed. Old nests of crows and babblers often appropriated and adapted. *Eggs*, 3 to 6, considerably variable in colour and size. Commonest type pale greenish white thickly blotched and spotted with purplish brown, especially at the broad end. Some eggs very reminiscent of House Crow's. For range of variations see Baker, *Nidification* 2: 254-5. Average size of 100 eggs 25.9 × 19.7 mm (Baker). Both sexes take part in nest-building, incubation and feeding the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. See keys to the Species and Subspecies. Underparts pure white. Bill heavier and tail longer than in *pallidirostris* (934). Black frontal band 4-5 mm wide; narrower in first-winter plumage.

Young (immature). *Above*, grey clouded with brown, with obsolete dark bars; *underparts* and all wing-coverts tipped fulvous. *Below*, white tinged with fulvous. Post-juvénal moult includes body, all coverts except primary, and the tertials. First-winter plumage distinguished by pale tips to primary-coverts.

SHRIKES

81

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	108-115	20-26	30-33	106-122 mm
♀♀	105-113	19-25	29-32	107-118 mm (SA)

Weight 1 ♂ 52; 3 ♀♀ 55-66 g (BB).

COLOURS OF BARE PARTS. Iris dark brown. Bill horny black; mouth pale pink or greyish pink. Legs, feet and claws blackish brown.

MISCELLANEOUS. Young birds easily reared in captivity, becoming quite tame, flying freely and coming at call. In Mogul times was trained, along with falconets (*Microhierax*) to hunt sparrows and even larger birds.

934. Baluchistan Grey Shrike. *Lanius excubitor pallidirostris* Cassin

Lanius pallidirostris Cassin, 1852, Proc. Acad. Sci. Philadelphia 5: 244
(East Africa = Eritrea vide Meinertzhagen, 1954, Bds. Arabia: 164)
Baker, FBI No. 707, Vol. 2: 287

LOCAL NAMES. None recorded.

SIZE. Myna ±; overall length c. 25 cm (9½ in.) including long tail.

FIELD CHARACTERS. As in 933, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Summer (breeding) visitor — March to October/November — to northern Baluchistan from Kalat to Fort Sandeman between c. 1500 and 2100 metres. Resident and breeding (?) in coastal Makran. Straggles in winter to the Sibi plain, Sind, Punjab and Rajasthan: probably often overlooked among the commoner *lahtora*. Affects open semi-desert country.

Extralimital. The desert and semi-desert parts of the Astrakhan region east to Zaisan Nor, Dzungaria, S. Mongolia, southward to the Aral-Caspian region, Russian Turkestan, Transcaspia, NE. Iran, etc. In winter to Iraq and NE. Africa. For particulars see Vaurie, 1959, 2: 114.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 933.

BREEDING. Breeds in the valleys on the lower parts of the higher hills in N. Baluchistan. Season, nest, eggs and breeding biology as in *lahtora* (933).

MUSEUM DIAGNOSIS. Differs from *exuber* (935) and *lahtora* (933) in lacking, or almost lacking, the black frontal band; lores more dusky, not so pure black; no grey on under wing-coverts; underparts usually with a faint pinkish wash. Bill horn colour r. black.

MEASUREMENTS

	Wing	Tail
♂♀	105-112 (rarely up to 117)	104-116 mm (Hartert)

Outermost rectrices 25-30 mm shorter than central pair.

Females usually smaller than males.

COLOURS OF BARE PARTS. Iris brown. Bill horn colour (except in a very few adults). Legs, feet and claws blackish brown.

SHRIKES

83

Extralimital. From Bulgaria, Rumania and SE. Russia eastward across W. Siberia to the Yenisey Valley. For particulars see Vaurie, 1959, 2: 109.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 933 and other subspecies.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Differs from other subspecies in having the frontal band whitish. Grey of upperparts paler than in *lahtora* (about the same as in *pallidirostris*); rump and upper tail-coverts whitish; lesser wing-coverts grey; basal part (c. 25 mm) of tail-feathers white; black of flight-feathers confined to c. 25 mm on subterminal part of secondaries and to c. 40 mm of primaries.

MEASUREMENTS

10 ♂♂ Wing 113-119 (av. 115) mm — Vaurie
COLOURS OF BARE PARTS. As in 933.

937. Lesser Grey Shrike. *Lanius minor* Gmelin

Lanius minor Gmelin, 1788, Syst. Nat. 1: 308 (Italy)
Not in Baker, FBI
Plate 66, fig. 11

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 23 cm (9 in.) including tail.

FIELD CHARACTERS. A slightly smaller edition of the Grey Shrike in general effect, but with the forehead black contra grey with a narrow black frontal band.

STATUS, DISTRIBUTION AND HABITAT. Status? Has been obtained on passage (?) in N. Baluchistan (near Quetta in May, and at Chaman in April); there is a specimen from Kandahar in the British Museum (14.iv.1881). May occur in the NW. frontier districts of West Pakistan. Affects open semi-desert and cultivation with scattered thorn bushes.

Extralimital. Afghanistan, Iran, Asia Minor, S. Europe, etc. For particulars see Vaurie, 1959, 2: 106-7.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Upper breast and flanks tinged with rose-pink; rest of underparts white. Differs from *exuber* also in wing formula: 1st primary (as.) equal to or slightly longer (c. 3 mm) than primary coverts; 2nd primary shorter than 3rd by c. 2 mm. In *exuber* group 1st primary never less than 18 mm longer than primary coverts; 2nd primary at least 6 mm shorter than 3rd (Meinertzhagen).

MEASUREMENTS

	Wing	Tarsus	Tail
♂♀	c. 115-123	c. 25	85-95 mm (Hartert)

Females usually somewhat smaller

Weight 2 ♂♂ 42, 48; 2 ♀♀ 46, 46 g (Paludan, Afghanistan).

COLOURS OF BARE PARTS. Iris brown. Bill, legs, feet and claws black.

938. Chestnutrumped Shrike. *Lanius collurio* Lesson

Lanius collurio Lesson, 1832, in Bélanger, Voy. Ind.-Orient., Zool.: 250-1 (Pegu)
Baker, FBI No. 711, Vol. 2: 291
Plate 66, fig. 10

LOCAL NAMES. None recorded in India.

SIZE. Bulbul ±; length c. 23 cm (8½ in.).

82

LANIIDAE

935. Persian Grey Shrike. *Lanius excubitor aucheri* Bonaparte

Lanius aucheri Bonaparte, 1833, Rev. Mag. Zool. 5: 294 (Persia)
Baker, FBI No. 708, Vol. 2: 288

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 25 cm (9½ in.) including long tail.

FIELD CHARACTERS. As in 933, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. A scarce winter visitor to N. Baluchistan; more common in central and coastal Makran, from the valley of the Hingol westward. Arrives early September. Affects semi-desert scrub country.

Extralimital. West coast of the Red Sea in Eritrea, Ethiopia, and Somalia. N. Arabia, Sinai Peninsula, Palestine, Iraq, S. Iran, etc. For particulars see Vaurie, 1959, 2: 113.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 933.

BREEDING. Extralimital; as in 933.

MUSEUM DIAGNOSIS. Frontal black band narrower; grey of upperparts uniform, not paling on rump and upper tail-coverts as in *lahtora*. Lesser coverts grey; inner edge of inner web of secondaries usually white the rest brown, but this rather variable. Underparts with a greyish wash.

Young (immature). Above, pale grey washed with isabelline; ear-coverts dark brown. Below, white washed with cream on breast and with a few shadows of dark barring; wing-coverts and tertials dark brown tipped with buffish white.

MEASUREMENTS

	Wing	Tail
♂♀	107-116 (mostly 106-110)	c. 106-118 mm (Hartert)

COLOURS OF BARE PARTS. As in 933.

936. Turkestan Grey Shrike. *Lanius excubitor homeyeri* Cabanis

Lanius Homeyeri Cabanis, 1873, Jour. f. Orn. 21: 75 (Sarepta)
Lanius excubitor var. *leucoptera* Severtzov, 1875, Stray Feathers 3: 430
(Upper Naryn River, Turkestan)
Lanius Przeczalskii Bogdanov, 1881, Wur. der Russ. Faun.: 147 (Tashkent)
Baker, FBI No. 709, Vol. 2: 289

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 25 cm (9½ in.) including long tail.

FIELD CHARACTERS. As in 933, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Vagrants recorded between November and January only from Baluchistan (Quetta), Gilgit, and Kashmir (Avantipur near Srinagar — F. Ludlow); perhaps driven south in hard winters.

Originally identified, possibly quite correctly, as *homeyeri*, the specimens not now available for re-examination. However, assigned by Vaurie to *leucoptera* which he recognizes as distinct. He describes *leucoptera* as similar to *homeyeri* but distinctly paler, with the rump and upper tail-coverts white, not grey or tinged with greyish, and with the white area in the wing very much larger. It is also said to average very slightly larger: Wing 10 ♂♂ 116-123 (av. 118.5) c. 10 ♂♂ of *homeyeri* Wing 113-119 (av. 115) mm. Further specimens needed for study.

84

LANIIDAE

FIELD CHARACTERS. Male. Above, forehead, lores, ear-coverts and around eyes black, shading to dark ashy on crown and paling on nape and sides of neck; rest of upperparts chestnut. Wings blackish brown with a white 'mirror' or speculum conspicuous in flight. Below, chin, throat and under tail-coverts white; rest pale fulvous or whitish. Tail black-and-white, the two central pairs of rectrices tipped with rufous, the others with whitish.

Female like male but lores and nasal feathers whitish.

STATUS, DISTRIBUTION AND HABITAT. Passage migrant in the plains and foothills of eastern Assam (Cachar dist.), Nagaland (?), Manipur, and perhaps East Pakistan. Records of breeding in N. Cachar need confirmation. Affects gardens, secondary jungle and outskirts of cultivation.

Extralimital. Burma, Thailand, Yunnan, Indochinese countries.

GENERAL HABITS. Typical shrike, cf. 933. Usually met with singly, perched on a dead tree-stump, telegraph wire or other point of vantage, swaying its tail, darting to the ground every now and again to take an insect, and often returning to the same perch.

FOOD. Grasshoppers and other insects, lizards and small terrestrial animals.

VOICE AND CALLS. Harsh grating as well as musical notes. Song, described as 'sweet and full'.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters.

Young (immature). Above, whole head dark brown, the forehead feathers with tiny pale centres and all with small pale tips; rest of upperparts, median and lesser coverts rufous, barred with dark brown; rest of wings dark brown with fulvous instead of ferruginous edges; white bases of flight-feathers rather less than in adult. Tail pattern as in adult but brown replaces black and the white is sullied by rusty; rectrices narrower and more pointed. Postjuvenile and postnuptial moults complete; August to October. No spring moult (Ticehurst MSS.).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	85-94	17-19	c. 25	92-102 mm (CBT)

COLOURS OF BARE PARTS. Iris reddish brown. Bill horny brown, black at tip and on culmen, flesh at base. Legs and feet dark slate.

LANIUS VITTATUS Valenciennes

Key to the Subspecies

Paler above and averaging larger.....*L. v. nargianus*
Darker above and smaller.....*L. v. vittatus*

939. Baluchistan Baybacked Shrike. *Lanius vittatus nargianus* Vaurie

Lanius vittatus nargianus Vaurie, 1955, Amer. Mus. Novit., No. 1752: 10
(Champur, southern Persian Baluchistan)
Baker, FBI No. 710, Vol. 2: 289 (= *vittatus*)

LOCAL NAMES. *Nargiani* (Baluchi); *Gmeh* (Brahui).

SIZE. Bulbul; length c. 18 cm (7 in.).

SHRIKES

85

FIELD CHARACTERS. As in 940, q.v. See *Museum Diagnosis*.

STATUS, DISTRIBUTION and HABITAT. Resident throughout central and coastal Makran south of Las Bela and in the Sibi Plain. Summer (breeding) visitor to N. Baluchistan, arriving end March, departing August/September, ascending some of the higher hills to c. 1600 m. Intergrades with nominate *rittatus* in Sind and NW. Punjab. Affects open scrub country and outskirts of cultivation.

Extralimital. Adjoining Persian Baluchistan, E. Persia and S. Afghanistan. Reported from Transcaspi.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 940.

BREEDING. Season, April to June. Nest, eggs and breeding biology as in 940.

MUSEUM DIAGNOSIS. 'Paler above in both sexes than nominate *rittatus*; averaging larger, in 10 ad. ♂♂ (paratypes), wing 86-92 (88.8), bill 17-20 (18.5), as against 82-88 (85.5) and 15.5-18 (16.5) in 10 ♂♂ from southern Madras' (Vaurie). Weight 1 ♂ 26 g (Paludan, Afghanistan).

COLOURS OF BARE PARTS. As in 940.

940. Indian Baybacked Shrike. *Lanius vittatus vittatus* Valenciennes

Lanius vittatus Valenciennes, 1826, Dict. Sci. Nat., ed. Levrault 40: 227 (Pondicherry) Baker, FBI No. 710, Vol. 2: 289 Plate 66, fig. 6

LOCAL NAMES. *Pāchānāk* (Hindi); *Pāchnāk lātor* (Gujarati); *Boro* (Sindi); *Chhota kilator*, *Khayrī kārkatā* (Bengali); *Chinna bilinki*, *Venne dega* (Telugu); *Kichān kūrūci* (Tamil); *Anurakili* (Malayalam).

SIZE. Bulbul; length c. 18 cm (7 in.).

FIELD CHARACTERS. Smaller than Rufousbacked Shrike. Above, head white-and-grey with a broad black band across forehead encircling eye and reaching back to end of ear-coverts; back chestnut-maroon; rump whitish. Below, white; fulvous on breast, rusty on flanks. Sexes alike, but frontal band somewhat narrower in female.

Small size, chestnut back, white rump, contrasty black-and-white tail, and roundish white 'mirrors' on black wings diagnostic in flight.

Immature birds with rufous tail and minus white wing-mirror, confusingly like Pale Brown or Rufous shrikes (942, 943) but usually show some grey on lower rump.

STATUS, DISTRIBUTION and HABITAT. Resident, with marked seasonal movements, particularly in the northern parts. All India and W. Pakistan from along the outer Himalayan ranges (to c. 2000 m) — including Chitral, Kashmir south of Pir Panjal range, and Nepal terai — south throughout the Peninsula to Kanyakumari, and from Sind eastward to West Bengal; plains and hills. Not Assam, East Pakistan or Ceylon. Affects dry open scrub country and outskirts of cultivation. Preferential habitat intermediate between dry semi-desert of Grey Shrike (933) and wooded, well-watered facies of Rufousbacked (946).

GENERAL HABITS. Typical shrike. Very parochial, inhabiting the same beat day after day and jealously guarding it against interlopers. Usually

SHRIKES

87

First-year. A dull edition of adult except for the unmoulted parts of wing and tail. Frontal black band may be absent; band through eye may be brown; nape to mantle may be washed with ashy grey; sides of breast may be marked with dark crescents. Some may breed during next spring in this dress, others presumably moult to adult (Tiechurst MSS.).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	82-90	15-18	21-24	81-96 mm (usually under 90) (SA, HW)

Weight 17 ♂ ♀ 18-24 (av. 20.8) g — SA, BB.

COLOURS OF BARE PARTS. Iris brown. Bill dark horny brown or black (in immature paler at base of lower mandible); mouth pink (in imm. yellow). Legs, feet and claws plumbeous- or horny black, paler in immature.

LANTUS COLLURIO Linnaeus

Cf. Stegmann, B., 1930, *Orn. Monatsb.* 38: 106-18

Key to the Subspecies

	Page
A Tail black and white; back chestnut contrasting with ashy head and nape	87
B Tail rufous; head, nape and back concolorous, a light brownish grey	
1 A conspicuous wing-patch	88
2 Wing-patch concealed	89

941. Redbacked Shrike. *Lanius collurio collurio* Linnaeus

Lanius Collurio Linnaeus, 1758, Syst. Nat., ed. 10, 1: 94 (Sweden)
L. (lanius) collurio pallidifrons Johansen, 1932, Jour. f. Orn. 92: 199
(Tomsk, West Siberia)
Baker, FBI No. 717, Vol. 2: 298
Plate 66, fig. 13

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 17 cm (7 in.).

FIELD CHARACTERS. Male (adult), confusingly similar to Baybacked Shrike (940) in size and coloration. Distinguished from it by absence of white wing-speculum and by greater amount of white in tail.

Female (adult), like male but duller; usually without the black band through eye.

Young birds impossible to differentiate in the field from immature *phoenicuroides* (942); for distinguishing in the hand see *Museum Diagnosis*.

STATUS, DISTRIBUTION and HABITAT. Regular autumn passage migrant in small numbers through W. Pakistan and extreme western Rajasthan and N. Gujarat via Arabia and east Africa to its winter quarters in Africa. Recorded in Gilgit, Sind (Karachi), N. Gujarat (Banaskantha, Kutch, Saurashtra). Return passage in spring evidently largely misses out these parts: only sporadic solos sight-recorded in Kutch (end March) and at Quetta (May). Affects open scrub jungle and outskirts of cultivation.

86

LANIIDAE

seen solitary or in separated pairs keeping a look-out for prey from some exposed perch — bush-top, dead tree or telegraph wire — swinging its tail from side to side, dropping to the ground now and again to seize its quarry and returning to the same or a nearby perch. Quarry held underfoot and torn to pieces with the sharp hooked bill before being devoured. 'Larders' less common than in Grey or Rufousbacked shrikes.

FOOD. Caterpillars, beetles, ants and other Hymenoptera and Neuroptera. Also large insects, e.g. crickets and grasshoppers, as well as lizards, and occasionally young mice and nestling birds.

VOICE and CALLS. Normally a harsh, rather scolding *chur-r* or *chee-ur*, sometimes sounding very like the squealing of a frog caught by a snake. In breeding season a pleasant, rambling, warbling song (♂) interlarded with faithful mimicry of many other birds' calls.

BREEDING. Season, overall February to September; chiefly February to April in South India, May to July elsewhere. Nest, a neat compact cup of grass, rags, wool, tow and feathers with much cobweb on the exterior as binding material. Placed at moderate heights (c. 2 to 4 m up) in the fork of a thorn tree such as *Acacia*, *Prosopis* or *Zizyphus*. Eggs, 3 to 5, very variable in coloration and markings; commonest type pale greenish white, thickly blotched and spotted with purplish brown, especially at the broad end. Average size of 100 eggs 20.8 × 15.7 mm (Baker). Both sexes share in building the nest, incubation (?) and feeding the young. Incubation period undetermined. Often two broods raised in a season, usually with a fresh nest for each.

Courtship. Male alights close to female on a branch, the two sometimes almost touching each other. He cranes out his neck stiffly and with tail partially cocked utters harsh excited cries, his face turned away from the female the while but obviously talking 'at' her. She remains seemingly unconcerned, and while being serenaded may even fly down to the ground to pick an insect and back to a different perch. Here she is promptly followed by the male who repeats his amorous antics. He may vary the harsh cries by the pretty warbling mimicking song. His face still remains turned away from her during the performance but his body inclined towards her in a sidling posture. Every little while she utters a harsh *chee-ur* (of approval or encouragement?) whereupon the male hops stiffly a couple of centimetres closer to her, maintaining the same rigid stance of head and body. Copulation probably follows, but not observed. Sometimes two males may pay court in this manner to the same female, each making a sudden dash at his rival betweenwhiles in an attempt to beat him off.

MUSEUM DIAGNOSIS. See keys to the Species and Subspecies, and Field Characters.

Young (immature). Upperparts mealy grey, tinged rufous on mantle and upper tail-coverts, and all with dark bars and pale tips; ear-coverts brown; greater coverts and tertials rufous with pale tips and dark contour lines; primary coverts and flight-feathers dark brown with pale tips and narrow rufescent outer edges; a faint indication of white wing-patch of adult (in ♂ only?). Tail rufous with subterminal dark brown contour lines and pale tips; outer pair of rectrices rufous-white. Below, white with variable amount of dark wavy bars on flanks and breast. Postjuvinal moult includes body, all wing-coverts except primary-, tertials and a variable number of tail-feathers.

88

LANIIDAE

Extralimital. Most of Europe, east to W. Altai, south to Caucasus, Asia Minor, Iran. Winters in tropical and S. Africa.

GENERAL HABITS, FOOD, VOICE and CALLS. Typical of the family.

BREEDING. Extralimital; largely as in 940.

MUSEUM DIAGNOSIS. See keys to the Species and Subspecies; for details of plumages, and bionomics, Witherby, 1938, 1: 292-6; Baker, loc. cit.

Young (immature). Above, buff to rufous, barred with black crescents; ear-coverts dark brown; wing-coverts and tertials dark brown with rufous edges and tips and subterminal dark contour lines. Tail as in adult female (i.e. brown, all but the two central pairs of rectrices with narrow white tips and edges and dark subterminal contour lines) but more rufous. Below, creamy white with dark crescents on breast and sides.

In the hand young bird can be told apart from immature *phoenicuroides* by being more barred and more rufescent above. Tail darker rufous; outer web of outer rectrices white, not rufous.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	88-98	12-14	22-25	70-82 mm
♀ ♀	87-96	—	—	— mm (Witherby)

COLOURS OF BARE PARTS. Iris dark brown. Bill black (♂), brown (♀ and imm.). Legs, feet and claws blackish (♂), brownish grey (♀ and imm.).

942. Rufous Shrike. *Lanius collurio phoenicuroides* (Schalow)

Otomela phoenicuroides Schalow, 1875, Jour. f. Orn. 23: 148 (Tschimkent)
Baker, FBI No. 722, Vol. 2: 303
Plate 66, fig. 8

LOCAL NAMES. *Lāl lātor* (Quetta); *Ganj* (Brahui).

SIZE. Bulbul —; length c. 17 cm (7 in.).

FIELD CHARACTERS. Pale sandy brown above, buffy whitish below, with rusty red rump and tail. Closely resembles Pale Brown Shrike (943), but crown rufous-brown contrasting with sandy brown back. Supercilium usually more distinct and white; lores and band through eye black; white speculum usually more prominent. Underparts white with a rosy tinge.

Female. Like male but rather less bright above and with some fine brown squamations on underparts. Eye-streak and speculum less pronounced.

Young birds impossible to differentiate in the field from immature *collurio* (941); for distinguishing in the hand see *Museum Diagnosis*.

STATUS, DISTRIBUTION and HABITAT. Breeds in West Pakistan in the hills of NE. Baluchistan near Quetta (Murda, Takatu, Khaliphath, Ziarat) between c. 2000 and 3000 m. Regular autumn passage migrant in NW. Frontier districts, Gilgit, S. Punjab, Makran, Sind, Rajasthan (Mount Abu, Jodhpur); small numbers overwintering (September to March) in N. Gujarat and Kutch where intermediates between this form and *isabellinus* have been collected. Affects sparsely scrubbed semi-desert.

Extralimital. Mountains of Turkestan, Tien Shan, Pamirs, Transcaspi, Dzungaria, N. Afghanistan, Iran. In winter to Arabia and NE. Africa

SHRIKES

89

(Sudan, Ethiopia, etc.). For further particulars of range see Vaurie, 1959, 2: 98.

GENERAL HABITS, FOOD, VOICE and CALLS. Typical of the shrikes, cf. 933, 940.

REEDING. Season, in Baluchistan April to June. Nest, a massive cup of fine flexible twigs, grass, fibres, etc. and untidy bits of wool and rags where available, lined with soft grass or hair. Placed in the centre of a low thorny bush or in the fork of a branch with the main stem of a roadside tree, 3 to 5 metres up. Eggs, 5, occasionally 6, as typical of the shrikes (cf. 940), greenish white with the usual variations. A variety with salmon-pink ground reported as common in the Quetta neighbourhood. Average size of 20 eggs 22.8 × 16.2 mm (Williams).

MUSEUM DIAGNOSIS. Compared with *isabellinus* (943) wing-coverts darker; upper tail-coverts and tail more foxy red; outermost rectrices fall short of tail-tip by 10-16 mm.

Compared with *cristatus* (949) tail more foxy red; crown and back contrasting, not uniform rich russet brown; outermost rectrices longer.

Young (immature). Like female but less contrast between crown and upperparts; a good deal of dark and pale cross-barring on upperparts and lesser coverts; greater coverts, tertials and tail with dark submarginal contour lines and pale tips. Underparts with ochraceous tinge and dark squamate markings except on throat and under tail-coverts. Not so saturated above as in *cristatus* (Ticehurst MSS.).

In the hand young bird can be told apart from immature *collurio* (941) by being less barred, less rufescent above. Tail paler rufous; outer web and tip of outer rectrices rufous, not white.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	91-97	17-20	25-27	78-85 mm
♀♀	90-94	17-20	24-25	78-83 mm (SA)

Weight 7 ♂♂ 24-29; 5 ♀♀ 25-28 g (Paludan, Afghanistan); 4 co? (Nov./Dec.) 28-34 g — SA, Kutch.

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs, feet and claws black. In immature bill horn brown above, flesh-coloured below.

943. Pale Brown Shrike. *Lanius collurio isabellinus* Hemprich & Ehrenberg

Lanius isabellinus Hemprich & Ehrenberg, 1833, Symb. Phys. Avium fol. c. (Kunfuda, Arabia)

Baker, FBI No. 721, Vol. 2: 302

Plate 66, fig. 7

LOCAL NAME. *Mulkalo* (Sindi).

SIZE. Bulbul —; length c. 17 cm (7 in.).

FIELD CHARACTERS. A pale sandy brown shrike with rusty red rump and tail; very similar to the Rufous (942) but uniformly coloured above, without the contrast between crown and back.

Male. Feathers at base of upper mandible, lores and supercilium fulvous white; a spot in front of eye, and ear-coverts black. A hidden white speculum

SHRIKES

91

LANIUS TEPHRONOTUS (Vigors)

Cf. Dunajewski, A., 1939, *Jour. f. Orn.* 87: 38; Mayr, E., 1947, JBNHS 47: 125-7; Biswas, B., 1950, *ibid.* 49: 444-55

Key to the Subspecies

Back dark grey; rufous more extensive, generally up to the hind-most scapulars..... *L. t. lahulensis*
Back slaty; rufous less extensive..... *L. t. tephronotus*

944. Ladakh Greybacked Shrike. *Lanius tephronotus lahulensis* Koelz

Lanius tephronotus lahulensis Koelz, 1950, Amer. Mus. Novit., No. 1452: 7 (Kolung, Lahul, Punjab, India)

Baker, FBI No. 716 (part), Vol. 2: 297

LOCAL NAMES. None recorded.

SIZE. Bulbul+; length c. 25 cm (10 in.).

FIELD CHARACTERS. As in 945, q.v. See Key to the Subspecies and Museum Diagnosis. Confusingly like *L. s. caniceps* (947) of southern peninsular India but grey of upperparts darker, and usually only rump and upper tail-coverts cinnamon. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident and altitudinal migrant. Northern Kashmir, Baltistan, east to Ladakh (Kargil and Suru valleys), and Himachal Pradesh (Lahul, Spiti, Kulu, etc.). Breeds between c. 2700 and 3300 m; descends to lower elevations in the NW. Himalayas in winter. Affects open scrub and secondary growth in and around abandoned hill cultivation clearings.

Extralimital. Probably adjacent western Tibet.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 945.

REEDING. Season, chiefly June and July. Nest, an untidy bulky cup, largely composed of wool intermixed with thorny twigs, grass, rags and feathers bound together with fibres; usually lined with fine grass stems. Placed 1.5 to 3 metres or so up in a fair-sized thorn bush or small tree (*Berberis*, *Hippophae*, etc.). Position usually given away by the birds' harsh scolding chatter in the vicinity. Eggs, 4 to 6, somewhat variable in ground colour, most commonly pale grey-green blotched and spotted with grey-brown or brown, with numerous secondary markings of lavender and grey. Average size of 200 eggs [including those of the Tibetan form (943)] 24.9 × 18.7 mm (Baker).

MUSEUM DIAGNOSIS. Similar to nominate *tephronotus* but paler grey above, and usually with a white area at the base of the primaries (which is lacking or very poorly indicated in nominate *tephronotus*). Bill weaker, more slender and not so high. Averages somewhat smaller: Wing 10 ♂♂ 93-103 (97) mm, as against 98-105 (100.5) mm in 10 ♂♂ of nominate *tephronotus* (Vaurie).

MEASUREMENTS

	Wing	Bill (from skull)	Tail
17 ♂♂	92-103 (av. 95.9)	20-23 (21.3)	109-120 mm (115.8)
6 ♀♀	93-96 (94.9)	21-23 (22)	105-111 mm (108.8) (BB)

COLOURS OF BARE PARTS. As in 945.

90

LANIIDAE

at base of brown primaries, barely visible in flight. Tail dull rufous, the central rectrices browner. Below, pale fulvous, richer on flanks.

Female. Like male but with eye-spot and ear-coverts brown instead of black. Wing-speculum usually absent; underparts sometimes with faint dark squamations on breast.

Young (immature). Field identification unsatisfactory; see Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Winter visitor (September/October to March) and passage migrant. Plains of W. Pakistan and NW. India in Baluchistan, W. Punjab, Sind, Rajasthan, Gujarat (including Kutch and Saurashtra), south through Maharashtra to Nasik and Greater Bombay: chiefly west and north of a line from Khandesh through Sehore (M.P.) to Gorakhpur (U.P.). Stragglers recorded from Nepal, N. Bengal (Jalpaiguri), Bihar (Darbhanga), and eastern Madhya Pradesh (Raipur). Rare in Ladakh (Osmaston, JBNHS 31: 988); evidently not found in Kashmir or normally in the NW. Himalayas. Affects cultivation-outskirts in semi-desert, scanty babool and tamarisk jungle, etc.

Extralimital. From Issyk-kul and Dzungaria west through the plains of Turkestan to the Kirghiz Steppes. Winters largely in Arabia and NE. Africa.

GENERAL HABITS, FOOD, VOICE and CALLS. Typical of the family, cf. 933, 940.

REEDING. Extralimital. Recorded by Meinertzhagen as breeding near Quetta, in addition to *phoenicuroides* (1914, JBNHS 23: 363). However, confirmation has been lacking, and in his *Birds of Arabia* (1954: 173) *isabellinus* is referred to merely as wintering in NW. India (second thoughts!).

MUSEUM DIAGNOSIS. See keys to the Species and Subspecies, and Field Characters. 2nd primary (as.) equal to, or just longer or shorter than 5th (Ticehurst).

A good distinction between *isabellinus* and *phoenicuroides* on the one hand and *cristatus* on the other is the comparative shortness of the outermost rectrix in the former: from tip of this feather to tail-tip 10-16 mm in *isabellinus* (and *phoenicuroides*), 19-24 mm in *cristatus*.

Adults of this shrike and *cristatus* (949) have complete moults in both spring and autumn which take place in the winter quarters. Summer and Winter plumages alike.

Young (immature). Supercilium pale and inconspicuous. Upperparts as in adult but finely and sparingly barred with dark brown; dark submarginal contour lines on greater coverts and tertials, but those on tail hardly visible; pale tips to primary coverts. Below, dull white spangled with brown crescentic bars.

MEASUREMENTS

	Wing	Tail
9 ♂♂	89-94 (av. 91.0)	76-84 mm (av. 79.2)
4 ♀♀	86-95	70-81 mm (Paludan)

Weight 1 ♂ 26 g (BB). 3 ♂♂ 28-33; 3 ♀♀ 27-32 g (Paludan, Afghanistan). Bill (from skull) 18-20 mm (SA).

COLOURS OF BARE PARTS. Iris dark brown. Bill dark brown above and at tip, horn-flesh colour on rest. Legs, feet and claws slaty black.

LANIIDAE

92

945. Eastern Tibet Greybacked Shrike. *Lanius tephronotus tephronotus* (Vigors)

Collurio tephronotus Vigors, 1831, Proc. Zool. Soc. London: 43 (Himalayas, restricted to Gyantse, Tibet, by Baker, 1924, FBI 2: 297; re-restricted to 'Foothills of the Himalayas near Darjeeling, where breeding birds of the Gyantse district may be expected to winter' by Mayr, 1947, loc. cit.: 127)

Lanius nipalensis Hodgson, 1837, Ind. Rev. 1: 445 (Nepal)

Baker, FBI No. 716, Vol. 2: 297

Plate 66, fig. 15

LOCAL NAMES. *Bhadraya* (Nepal hills); *Bagaya tentha* (Nepal plains); *Sakrik pho* (Lepcha); *Tolera* (Bhutanese); *Tré tré* (Tibetan).

SIZE. Bulbul +; length c. 25 cm (10 in.).

FIELD CHARACTERS. Superficially very like Rufousbacked Shrike. Above, narrow forehead and a broad band through eyes to ear-coverts black. Crown, nape, hindneck, and back dark leaden grey or slaty. Rump and upper tail-coverts rufous, this colour not extending beyond rump; tail chestnut-brown. Wings black, only sometimes with an insignificant white patch or 'mirror'. Below, rufous, paler on abdomen. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Breeds in Garhwal, Kumaon and eastward through Nepal (?), Sikkim, Bhutan and NEFA, between c. 2700 and 4500 m. Winters at lower elevations and in the foothills and adjoining plains in Uttar Pradesh, Nepal Valley, Bihar, Madhya Pradesh (straggler), West Bengal, Assam, Manipur, and probably northern E. Pakistan. Affects open scrub, semi-cultivation, gardens and orchards.

Extralimital. Breeds also in eastern Tibet north to Sikang, south to N. Yunnan, east to W. Szechuan. Winters in Burma, S. Yunnan, N. Thailand and the Indochinese countries. For details see Vaurie, 1959, 2: 105.

GENERAL HABITS. A high-elevation shrike, descending to its winter quarters in September/October and leaving again by March/April. Habits and behaviour typical of the family; very similar to those of Rufousbacked and South Indian Greybacked shrikes (946, 947) q.v. Seen singly or in widely separated pairs keeping a look-out for creeping prey from bush-tops. Noisy and conspicuous. Has jealously guarded feeding territories where intrusion by others of its kind is actively resented. On disturbance or alarm drops from its perch and flies with rapid wing-beats flat along the ground sweeping upward to settle on another vantage point a hundred metres or so away.

FOOD. Crickets, grasshoppers, caterpillars and other insects; lizards, nestling birds, baby mice, etc. Also maintains 'larders' of surplus food impaled on thorns.

VOICE and CALLS. Harsh grating cries as if seized by hawk; most noisy towards sunset. Also mimics other birds' calls.

REEDING. Season, nest and eggs (c/3-6) as in 944.

MUSEUM DIAGNOSIS. Like *lahulensis* (944) but somewhat larger, darker, more slaty grey above. Bill stouter. White supercilium and white wing-spot often, but not always, absent. Rufous on lower plumage usually richer and more extensive than in *tephronotus*.

Postnuptial moult completed by December and some, apparently first year birds, perform a complete moult in April (CBT).

SHRIKES

93

Young (immature). Breast, belly and flanks more or less spangled with narrow dark brown bars; some indication of this also on upper tail-coverts. As in *erythronotus* there is variation in the white wing-spot, white supercilium, tail, and in the amount of postjuvénal moult.

MEASUREMENTS				
	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	95-108	20-23	28-30	102-119 mm (SA, BB, HW)

Weight 8 ♂♂ 39-51; 4 ♀♀ 43-54 g (GD, SA, BB).
COLOURS OF BARE PARTS. Iris brown. Bill horny brown or black, paler at base of lower mandible. Legs, feet and claws horny black.

LANIUS SCHACH Linnaeus

Cf. Biswas, B., 1950, JBNHS 49: 444-55; Vauric, C., 1955, *Amer. Mus. Novit.*, No. 1752: 13; Rand, A. L. & Fleming, R. L., 1957, *Fieldiana*, Zoology 41: 189-92

Key to the Subspecies

	Page
A Head black..... <i>L. s. tricolor</i>	96
B Head grey	
1 Upper back more or less suffused with rufous..... <i>L. s. erythronotus</i>	93
2 Upper back with no tinge of rufous..... <i>L. s. caniceps</i>	96

946. Rufousbacked Shrike. *Lanius schach erythronotus* (Vigors)

Collurio erythronotus Vigors, 1831, *Proc. Zool. Soc. London*: 42 (Himalayas, restricted to Lucknow by Baker, 1924, FBI 2: 295; re-restricted to Simla-Almora dist. by Ticehurst & Whistler, 1924, *Ibis*: 468-73)
Baker, FBI No. 714, Vol. 2: 295
Plate 66, fig. 17

LOCAL NAMES. *Mattiya latora*, *Kajala latora* (Hindi); *Majhla latora* (Saugor, M.P.); *Hara wataj* (*wataj* = executioner, Kashmiri); *Terra lilinchi* (Telugu).
SIZE. Bulbul +; length c. 25 cm (10 in.).

FIELD CHARACTERS. A typical shrike with large head, stout laterally compressed hook-tipped bill, and longish graduated tail.
Adult. Above, forehead and a broad band through eye black; crown, nape, sides and hindneck, and upper back clear grey diffusing to rufous or cinnamon on rest of upperparts. Tail black and rufous. Below, chin, throat and upper breast white; rest of underparts pale rufous. Wings blackish with a white wing-spot or mirror, conspicuous in flight. Sexes alike.
STATUS, DISTRIBUTION AND HABITAT. Breeds in W. Pakistan and India, in NE. Baluchistan, Sind, Punjab (NW. frontier districts, Murree hills, Salt Range, etc.), Chitral, Gilgit, Astor, Kashmir, along the outer ranges of the W. Himalayas eastward to Kumaon (Almora dist.) up to c. 3000 m. Arrives early April, leaves c. September. Also breeds in Uttar Pradesh southward to E. Maharashtra (Nagpur); in the west, in Rajasthan and southward through Gujarat and W. Maharashtra to N. Mysore (Belgaum).

SHRIKES

95

cuckoo shrike, purple sunbird (song), koel, pied crested-, hawk-, common and Indian cuckoos, magpie-robin. Other sounds such as call of striped squirrel and yelping of new-born puppies also realistically woven into the song and following one another in smooth succession. Is very quick to learn, and often reproduces the calls long after the originals have left the locality, signifying a remarkably retentive memory.

BREEDING. Season, overall March to July; chiefly April-May in the plains, May to July in Kashmir and elsewhere in the Himalayas. Nest, a bulky, deepish, loosely built cup of thorny twigs, rubbish, dirty rags, wool, hair, bits of papery bark, roots, etc. lined with fine grass stems. It measures c. 18-19 cm across on the outside; diameter of cup c. 7-8 cm, depth c. 5-6 cm. Placed 3 or 4 metres up amongst a cluster of twigs in a willow or thorny tree; occasionally at the base of leaf-stalks in a small date or palmyra palm. Eggs, 3 to 6, usually 4 or 5, somewhat variable in shape, colour and size: mostly greyish or greenish white in ground colour, fairly heavily marked with sepia or dark grey or yellowish brown in a zone at the big end. Average size of 95 eggs 23 x 17.9 mm (Osmaston). Both sexes take part in building the nest, incubation and tending the young. Incubation period undetermined. Often has two successive broods (sometimes three) using the same nest for both. Commonly brood-parasitized by the cuckoos *Cuculus canorus*, *C. varius* and *Clamator jacobinus*.

MUSEUM DIAGNOSIS. See Key to the Subspecies. White wing-speculum large. Rufous of rump extends to mantle; in *caniceps* more or less confined to rump. But there is some variation in the amount of rufous colour in the upperparts, and individual winter specimens are often impossible to place with certainty.

Young (immature). General colour scheme as in adult but feathers of upperparts with narrow dark brown bars, and with ochraceous or fulvous tips on head and neck; band through eye blackish brown (v. black); primary coverts dark brown, rest of coverts dark brown with rufescent tips and edges; flight-feathers dark brown with pale tips; tail brown tinged with rufous, and with paler tips. Below, chin and throat white; rest of underparts cream coloured with dark cross-bars on breast and flanks.

First-year birds recognized by browner wings without the white mirror, browner unmoulted parts of tail, and sometimes a brownish cast to the grey of the upperparts.

MEASUREMENTS				
	Wing	Bill (from skull)	Tarsus	Tail
♂♂	88-98	19-23	27-30	107-127 mm
♀♀	87-95	19-23	25-29	107-119 mm (BB, SA)

Weight 6 ♂♂ 37-41; 5 ♀♀ 33-41 g (Paludan — Afghanistan).
COLOURS OF BARE PARTS. Iris brown. Bill black, flesh coloured at base of lower mandible. Legs, feet and claws brownish black.

LANIIDAE

94

Intergrades with *caniceps* (947) and *tricolor* (948) on the southern and eastern edges of its breeding range.

In much of the above areas commoner in winter, in addition to spreading out then to W. Bengal, Andhra Pradesh (Hyderabad), E. Madhya Pradesh (Bastar dist.), and coastal Makran in Baluchistan. However, the wide overlap of the similar-looking races in winter has resulted in some confusion and ambiguity in the records for the Peninsula.

Affects openly wooded, well-watered country — cultivation, gardens, orchards, roadside hedges, etc. Partial to groves of young date and palmyra palms.

Extralimital. Southern Russian Turkestan, eastward to Ferghana, southward to Transcaspia, NE. Iran, Afghanistan. For particulars see Vauric, 1959, 2: 105-6.

GENERAL HABITS. As of the family. Pugnacious, bold and rapacious; keeps singly or in widely separated pairs, each to its own particular beat or feeding territory, haunting the same day after day all through the season and guarding it fiercely against intrusion by others of its kind. Perches upright on an exposed bush-top, stake, or telegraph wire keeping a sharp look-out for crawling prey. Glides down at an angle, swiftly and silently, to seize the quarry in bill and bear it away. Often pirates food from other birds, even bigger than itself, by bouncing into them bodily while on the ground, knocking them down and making off with the prize before they have recovered from their outraged surprise! Kills young sparrows, mice and other small animals by pouncing and smothering them on the ground and striking viciously and repeatedly on the head with the powerful bill. Often only the brain eaten, the rest impaled on a thorn along with other surplus food as a larder. Will sometimes hawk insects (moths, winged termites, etc.) in the air, launching short sorties from a perch, turning and twisting on the wing in pursuit and returning to base with the quarry.

FOOD. Any small living creature that can be overpowered: crickets, locusts and hoppers, grasshoppers, caterpillars, ants and other Hymenoptera, beetles and other insects; lizards, frogs, fledglings, sickly or disabled birds, young field mice, etc. Also earthworms, and once a two-inch *chilwa* fish (*Chela argentea*). Once reported eating ripe fruit of neem (*Melia* sp.) — Neelakantan, JBNHS 50: 666-7.

VOICE AND CALLS. Vociferous and noisy, particularly in breeding season. Normal notes harsh, grating, complaining cries as if in distress, reminiscent of squealing of frog caught by snake. Note *gritk gritk* or *jultk jultk* followed by a yapping *yaon yaon*. When angry, harsh scolding cries 'closely resembling those of a Corncrake (*Crex crex*) heard in the distance' (Magrath). In breeding season has a beautiful subdued musical song, uttered in the nature of a soliloquy, sustained unbrokenly sometimes for fifteen minutes or more at a stretch. Is an accomplished and versatile mimic of other birds' calls which are freely interlarded in its own song. Among species imitated to perfection the following recorded: pariah kite, common and pied mynas, house and yellowthroated sparrows, swallow, swift, parakeet, redvented bulbul, common, jungle, and yellow-eyed babblers, grey and black partridge, yellow- and redwattled lapwings, common sandpiper, large and small green bee-eaters, baya (chorus), Indian nightjar, rain quail, large

LANIIDAE

96

947. South Indian Greybacked Shrike. *Lanius schach caniceps* Blyth

Lanius caniceps Blyth, 1846, *Jour. Asiat. Soc. Bengal* 15: 302 (India, restricted to Madras by Whistler & Kinnear, 1930, *Jour. Bombay nat. Hist. Soc.* 34: 396)
Lanius schach kathiawarensis Koelz, *Amer. Mus. Novit.*, 1452: 7 (Jamwala, Junagadh, Kathiawar Peninsula, India)
Baker, FBI No. 715, Vol. 4: 296

LOCAL NAMES. Same as for 946; *Kattu karuci*, *Pey karuci* (Tamil).

SIZE. Bulbul +; length c. 25 cm (10 in.).

FIELD CHARACTERS. As of 946, q.v. See Museum Diagnosis.

Immature birds easily confused in the field with various subadult stages of *Lanius collurio phoenicuroides* (942) and *L. c. isabellinus* (943), but *schach* has the upperparts greyer v. browner in the others.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to local seasonal movements, thus only a winter visitor in parts of its range. NW. Ceylon (dry coastal belt in Jaffna Peninsula and offshore islands). Peninsular India from the extreme south to Kutch and Saurashtra in Gujarat, thence eastward through Madhya Pradesh and Andhra; plains level to c. 1200 m. Intergrades with *erythronotus* at the northern edge of its breeding range. Affects deciduous openly wooded country — cultivation, orchards, date groves, etc.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 946. In Ceylon, frogs reported to be a favourite prey. Also takes mantises (Mantidae) and dragonflies (Libellulidae).

BREEDING. Season, in India chiefly March to May-June (up to July-August in Kutch); in Ceylon December to June, chiefly April-May. Nest, and eggs (c/3 to 6; in Ceylon, 2 to 4) and breeding biology as in 946. Average size of 100 eggs 22.6 x 18.0 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *erythronotus* (946) in having the grey of head and mantle paler and extending down to rump, which alone (with the upper tail-coverts) is cinnamon-rufous. But there is a continuous cline in this character and individual examples are difficult to assign with certainty, especially in winter when there is an intermingling of the subspecies.

MEASUREMENTS				
	Wing	Bill (from skull)	Tarsus	Tail
♂♂	90-98	19-22	26-29	113-127 mm
♀♀	87-95	19-22	26-29	100-118 mm (SA, BB, HW)

Weight 7 ♂♂ 33-38 g (SA).
COLOURS OF BARE PARTS. As in 946.

948. Blackheaded Shrike. *Lanius schach tricolor* (Hodgson)

(*Collurio*) *Tricolor* Hodgson, 1837, *Ind. Rev.* 1 (10): 446 (Nepal, restricted to Kathmandu, Nepal Valley, by Biswas, 1950, loc. cit., below: 451)
Baker, FBI No. 712, Vol. 2: 292 (= *n. nigripes*)
Vol. 6, plate 66 fig. 18

LOCAL NAME. *Sakrik pho* (Lepcha).
SIZE. Bulbul +; length c. 25 cm (10 in.).

SHRIKES

97

FIELD CHARACTERS. A typical shrike with black head and a small white patch or 'mirror' on the blackish wings, particularly conspicuous in flight.

Above, crown, sides of head, nape and hindneck black. Upper back ashy grey changing to light chestnut on rest of upper plumage. Tail black, tipped and margined with rufous. *Below*, cheeks, chin and throat white shading to pale rufous on breast and to bright rufous on rest of lower plumage excepting abdomen which is whitish. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Breeds in the Himalayas between c. 3000 and 4300 m, in Garhwal, Kumaon, Nepal and eastward through Sikkim, Bhutan and NEFA (?). Winters at lower elevations in the above areas (below c. 1700 m) and in the plains of Uttar Pradesh (westernmost record Jagadhri, Ambala dist. — Jones, JBNHS 26: 675), Bihar, Orissa, W. Bengal, Assam, Nagaland, Manipur, and E. Pakistan. Affects open wooded country: light forest, scrub jungle, gardens and orchards, etc. Very partial to tall grassland with scattered bushes.

A large hybrid zone between this and the two preceding forms (946 and 947) occurs in the hills of eastern Uttar Pradesh and western Nepal. [Recorded breeding in W. Bengal (24-Parganas dist.) — S. C. Law, JBNHS 36: 261-2.] Wintering specimens showing intermediate characters have been taken in U.P., Nepal, Bihar, Madhya Pradesh, south to Orissa and northern Andhra in the Eastern Ghats.

Extralimital. Burma, Yunnan, Thailand, Vietnam.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 946, q.v. Keeps singly perched on bush-tops, telegraph wires, etc. whence it makes sallies to the ground for creeping prey. Has the usual harsh chattering and scolding notes of shrikes, but is also a very good songster and accomplished mimic. During the breeding season the male delivers a song of considerable sweetness, range and duration, interlarded with numerous other birds' calls and snatches of song.

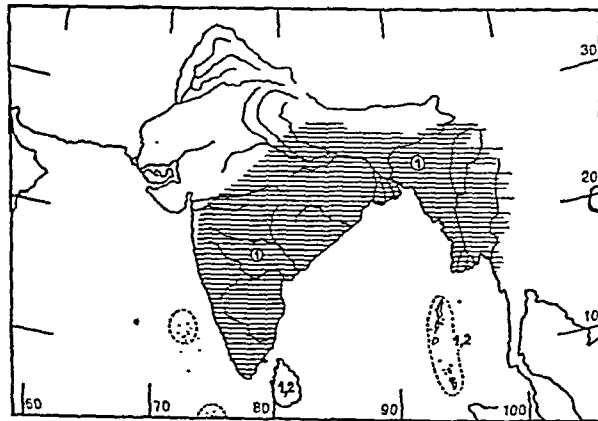
BREEDING. Season, April to July, chiefly May and June. *Nest*, as in 946 — a massive, compact cup of grass-stems, thorny twigs, etc., lined with softer grass, roots and fibres; built in shrubs, bamboo clumps or small trees mostly up to c. 6 m from the ground. *Eggs*, 4-6, variable, pink to buff or pale green, blotched and spotted with greyish-, reddish-, or purplish brown, more densely at the broad end. Average size of 200 eggs 23.6 × 17.9 mm (Baker). Both sexes share in building the nest, incubation, and feeding the young. Incubation period, *vide* Baker, 14-15 days.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies; for a full discussion on *Lanius schach* and its subspecies in SE. Asia — B. Biswas, 1950, JBNHS 49: 444-55.

Young (immature). *Above*, upperparts and sides of head pale ochraceous brown with small black bars on head and larger V-shaped bars on mantle — all with ochraceous tips; lower back and rump pale dull ochraceous with no bars; upper tail-coverts rufous; lores and ear-coverts blackish. *Below*, creamy white with no bars; under tail-coverts tinged fulvous. Wing-coverts dark brown with rusty spots and tips. Tail brown, not black; outer two pairs of rectrices dull fulvous (not black) with rufous-white outer webs sharply defined. Postjuvenile moult of body and apparently all coverts except primary. First-year birds distinguished by juvenal tail (Ticehurst, MSS.).

SHRIKES

99

Lanius cristatus

Winter ranges 1 *cristatus* (949). 2 *lucionensis* (950).

1959, 2: 100.) Winters also in Burma, Thailand, Malay Peninsula, Indo-chinese countries, etc. Some non-breeding birds apparently overwinter in the Andamans.

GENERAL HABITS. Typical of the shrikes, cf. 933, 946. Perhaps more crepuscular than others: commonly seen on the move and hunting till well after dusk, when also it is particularly noisy.

FOOD. Locusts, grasshoppers, crickets and other insects; sickly or fledgling birds, baby mice, lizards, etc. A white-eye (*Zosterops*) has been found impaled in its larder.

VOICE AND CALLS. A harsh loud swearing or scolding *chr-r-r-r* commonly uttered: distinguishable from that of Rufous-backed Shrike. Only sub-song occasionally heard in its winter quarters — a sweet but faint, almost inaudible warbling, like a very subdued and mellow version of the Rosy Pastor's chattering song, with mimicry of other bird-calls interlarded. Singing often detected only by the pulsations of the bird's throat and the accompanying up-and-down vibrations of the tail (SA).

BREEDING. Extralimital. Alleged nesting within Indian limits — N. Cachar and Khasi hills (Baker) — lacks substantiation.

MUSEUM DIAGNOSIS. Differs from *L. c. phoenicuroides* (942) in having the tail browner, and rump and upper tail-coverts concolorous with back v. contrasting rusty red. Most reliably diagnosed from it by comparative lengths of outermost rectrices: distance from tip of this feather to tip of central rectrices 19-24 mm, against 10-16 mm in *phoenicuroides* (and *isabellinus*).

Adults have two complete moults — in spring and autumn — in the winter quarters (cf. *isabellinus*, 943).

Young (immature). Juvenile like that of *Lanius c. phoenicuroides* (942), q.v., but darker, more saturated rufous above. Outer tail-feathers shorter but with the same

98

LANIIDAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	93-101	20-23	29-34	115-135 mm
♀♀	92-96	20-23	27-29	106-126 mm (SA, BB)

Weight 8 ♂♂ 39-50; 2 ♀♀ 43, 43 g (SA, GD, Paynter).

COLOURS OF BARE PARTS. Iris dark brown. Bill black, horny or flesh coloured at base in winter. Legs and feet slaty- or brownish black.

LANIUS CRISTATUS Linnaeus

Key to the Subspecies

Crown practically the same colour as back.....	<i>L. c. cristatus</i>
Crown grey	<i>L. c. lucionensis</i>

949. Brown Shrike. *Lanius cristatus cristatus* Linnaeus

Lanius cristatus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 93 (Benghala)

Baker, FBI No. 719, Vol. 2: 300

Plate 66, fig. 9

LOCAL NAMES. *Kārkātā* (all shrikes — Bengali); *Kerkheta* (Hindi); *Batte gādu*, *Batte kiriti gādu* (Telugu).

SIZE. Bulbul ±; length c. 19 cm (7½ in.).

FIELD CHARACTERS. Adult. Entire upperparts including crown, rump and upper tail-coverts reddish brown; forehead and supercilium white; a black line through eyes to ear-coverts. Tail rufous-brown. Wings brownish black, edged rufous; no white 'mirror' or speculum. *Below*, chin, cheeks and throat white; rest pale fulvous, tinged with variable amount of rufescent on breast and belly. Sexes alike.

Some adults have the breast and sides spangled with dark crescentic bars.

Easily confused in the field with the very similar *L. c. phoenicuroides* (942) and *L. c. isabellinus* (943) along its western limits, but is darker and with the tail less red. See Key to the Species and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor. All India including NEFA, Assam, Nagaland and Manipur together with Nepal, Sikkim, Bhutan and E. Pakistan, roughly south and east of a line from Ahmednagar through the Surat Dangs (Gujarat), Mhow (Madhya Pradesh), Lucknow (Uttar Pradesh) and Nepal. Also winters in Ceylon (common), and the Laccadive, Maldivé, Andaman and Nicobar islands (?). From plains level to c. 2100 m in the Himalayas and in the peninsular and Assam hills. Affects forest edges and clearings, secondary scrub jungle and grass-covered hillsides with scattered bushes and small trees etc. in dry-deciduous and semi-evergreen biotope. Arrives chiefly August-September: mostly gone by mid April, some individuals staying on till early June.

Extralimital. Breeds in Siberia from Tomsk to the Kolyma R. and Kamchatka south to N. Mongolia and N. Amurland. (For details see Vaurie,

100

LANIIDAE

dark subterminal contour lines by which first-year birds can always be recognized; these contour lines also present on the greater coverts and tertials.

First-year birds (♂♀) richer, darker and more rufous-brown above than first-year *phoenicuroides*, with the same dark contour lines to tertials and crescentic barring below (Ticehurst, MSS.).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	85-89	18-20	24-26	78-86 mm
♀♀	80-89	18-20	24-26	78-89 mm (SA, HW)

Weight 3 ♂♂ 30-39; 2 ♀♀ 33, 34 g (GD, Paynter). 14 ♂♀ (winter) 21-35 (av. 28.0) g — SA.

COLOURS OF BARE PARTS. Iris brown. Bill horny brown, paler at gape and base of lower mandible; mouth pale pinkish flesh. Legs and feet plumbeous or bluish grey; claws horny brown.

950. Philippine Shrike. *Lanius cristatus lucionensis* Linnaeus

Lanius lucionensis Linnaeus, 1766, Syst. Nat., ed. 12, 1: 135 (Luzon)

Baker, FBI No. 720, Vol. 2: 302

LOCAL NAMES. Same as for 949.

SIZE. Bulbul ±; length c. 19 cm (7½ in.).

FIELD CHARACTERS. As of *cristatus* (949), q.v., but with forehead and supercilium greyish white; crown greyish brown contrasting with rest of upperparts; rump and upper tail-coverts tinged with rufous. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor (September to April) chiefly to the Andaman and Nicobar islands (common), and Ceylon (occasional or regular?); believed to reach there via the Andamans. One old record for Kerala (Hume, 1876, SF 4: 393). Affects secondary jungle, gardens around habitations, and forest clearings for settlements, hill and plain.

Extralimital. Breeds in Szechuan, E. China, Korea. Winters also in Burma, Thailand, Malaya, Indonesian islands, Philippines, Taiwan, etc.

GENERAL HABITS AND FOOD. As in 949.

VOICE AND CALLS. Harsh chattering as in 949. Song reminiscent of a Sedge Warbler's; also that of Thickbilled Warbler (*Phragmatichela ardor*, 1549) — P. F. Wickham, Burma.

BREEDING. Extralimital. Non-breeding examples taken in the Andamans in June and July suggest possibility of some overwintering there.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies. Edges of tertials and of secondaries paler rufous than in *cristatus*.

First-year birds have the entire upperparts more greyish brown than in *cristatus*.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	87-92	c. 15	c. 24-25	77-89 mm (Baker)

Wing ♂♀ 90-94 mm (Hartert).

COLOURS OF BARE PARTS. As in 949.

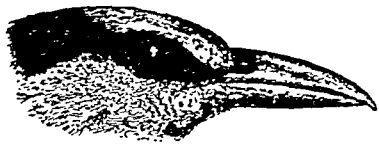
ORIOLES

105

954. Eastern Blacknaped Oriole. *Oriolus chinensis diffusus* Sharpe

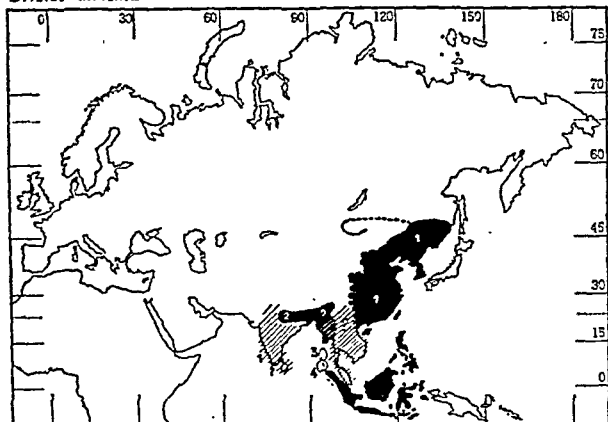
Oriolus diffusus Sharpe, 1877, Cat. Bds. Brit. Mus. 3: 197.
New name for *Oriolus indicus* Jerdon, 1845 (Malabar), preoccupied
Baker, FBI No. 954, Vol. 3: 7
Plate 63, fig. 5

LOCAL NAMES. As for other yellow orioles, cf. 953. *Sathiat* (Assam).
SIZE. Myna; length c. 25 cm (10 in.).
FIELD CHARACTERS. As of 953, q.v. See Key to the Subspecies.



x c. 1

STATUS, DISTRIBUTION and HABITAT. Occasional winter visitor: recorded in Mysore, Kerala, Tamil Nadu, Andhra Pradesh, Assam and E. Pakistan. Ceylon (once). Solos twice sight-recorded in the same residential garden in Bombay City, both in February — 1944 and 1946 (Rev. R. Dyke Acland,

Oriolus chinensis

■ Breeding ▨ Winter

Unnumbered, other races

- 1 *diffusus* (954).
2 *tenuirostris* (955).
3 *andamanensis* (956).
4 *macrourus* (957).

ORIOLES

107

rather surprised *whetow* or a liquid *chuck, tarry-you* (W. T. Loke); 'a curious *maow* like a peevish cat' (Smythies). Also a harsh grating cry, monotonously repeated.

BREEDING. Season, chiefly May and June. Nest and eggs (c/2 or 3), as in 953, the latter described as 'a beautiful pale pink, the markings nearly all surrounded by a reddish halo as if they had run'. Average size of 30 eggs 27.9 × 20.7 mm (Baker). Breeding biology as in 953.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	142-155	30-33	more or less as in <i>diffusus</i>	(Baker)

Weight 5 ♂ ♀ 2.5-3.25 oz. = c. 72-92 g (Scully, Davison).

COLOURS OF BARE PARTS. Iris blood-pink, eyelids paler. Bill livid pink, brighter in summer. Legs and feet plumbeous; claws black.

956. Andaman Blacknaped Oriole. *Oriolus chinensis andamanensis* Tytler

Oriolus andamanensis Tytler, in Beavan, 1867, Ibis: 326
(South Andamans)

Baker, FBI No. 957, Vol. 3: 10

LOCAL NAMES. None recorded.

SIZE. Myna —; length c. 23 cm (9 in.).

FIELD CHARACTERS. As of 953, q.v.: slightly smaller. See Key to the Subspecies.

STATUS, DISTRIBUTION and HABITAT. Resident; endemic. Andaman Islands. Common and conspicuous, particularly in the South and Middle groups. Affects wooded country — open forest as well as around settlements.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 953.

BREEDING. Season, April to June. Nest, as in 953: the typical deep cup of woven grass and fibres (here often coconut), suspended like a cradle or hammock in a horizontal fork of leafy twigs near the tip of a pliant out-hanging branch, between c. 3 and 6 or 7 m from the ground. 'Nest usually decorated outside with sprays of a small climbing Aselepiad with orbicular leaves' (Osmaston). Eggs, 2 or 3, white generally more or less tinged with claret and with dark purplish brown spots which appear to have run from the edges, and with a few underlying grey spots (Osmaston). Average size of 30 eggs 29.7 × 21.6 mm (Baker). Breeding biology presumably as in 953.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

♂ ♀	Wing	Bill (from feathers)	Tarsus	Tail
5 ♂ ♂	130-140 (av. 136.6)	29-31	90-104 mm (av. 98)	
1 ♀	133	28	92 mm (HA)	

COLOURS OF BARE PARTS. As in 953.

106

ORIOLIDAE

pers. comm. — subspecies?). Affects mixed deciduous and evergreen secondary jungle, rubber plantations, etc. and well-wooded gardens in urban areas.

Extralimital. Breeds in eastern Siberia (Khabarovsk Province), Ussuriland, Manchuria, NE. China, Korea, Yunnan, N. Vietnam. (For details see Vaurie, 1959, 2: 118.) Winters mostly in the Indochinese countries, Malay Peninsula, Thailand, Burma.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 955.

BREEDING. Extralimital. As in: 955.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	147-155	28-31	c. 24	89-95 mm (Baker)

COLOURS OF BARE PARTS. As in 955.

955. Slenderbilled Blacknaped Oriole. *Oriolus chinensis tenuirostris* Blyth

O. (riolus) tenuirostris Blyth, 1846, Jour. Asiat. Soc. Bengal 15: 48

(Central India; restricted to Assam by Deignan, 1945, Bull. U.S. Nat. Mus., No. 186: 296)

Baker, FBI No. 955, Vol. 3: 9

Plate 63, fig. 6

LOCAL NAMES. As in 953.

SIZE. Myna; length c. 25 cm (10 in.).

FIELD CHARACTERS. Very like the Golden Oriole (953) — brilliant golden yellow with black in wings and tail — but with the eye-band continued behind to meet over nape. See Key to the Subspecies.

Female duller and greener.

STATUS, DISTRIBUTION and HABITAT. Equivocal. According to Baker 'breeds in the lower Himalayas from Nepal to eastern Assam between the foothills and 6000 ft [c. 2000 m]'. However, there are no definite records of its breeding within Indian limits except Baker's own in the North Cachar and Khasi hills. The statement about the Himalayas needs confirmation since most observers in Nepal, Sikkim and Bhutan have recorded the bird only as a comparatively rare winter visitor (October-March). Apparently winter visitor also to the duars of W. Bengal and adjacent plains; Nagaland; Manipur; E. Pakistan (Chittagong Hill Tracts). Affects open well-wooded country.

Extralimital. Breeds in Burma, Yunnan and N. Laos. Recorded from Thailand in winter.

GENERAL HABITS. Similar to Golden Oriole (953). Arboreal, keeping singly or in pairs to large, well-foliaged and fruit-bearing trees.

FOOD. Fruits, berries and insects. Wild figs (*Ficus* spp.), and berries of *Trema orientalis* specifically mentioned; also nectar of *Salmalia* and *Erythrina* flowers.

VOICE and CALLS. Melodious liquid flute-like notes, similar to Golden Oriole's but with a distinct diagnostic quality. 'A pleasing long-drawn

ORIOLIDAE

108

957. Nicobar Blacknaped Oriole. *Oriolus chinensis macrourus* Blyth

O. (riolus) macrourus Blyth, 1846, Jour. Asiat. Soc. Bengal 15: 46, 370

(Nicobar Islands)

Baker, FBI No. 956, Vol. 3: 10

LOCAL NAME. *Macheen* (Nicobarese).

SIZE. Myna; length c. 25 cm (10 in.).

FIELD CHARACTERS. As of 953, q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION and HABITAT. Resident; endemic. Nicobar Islands. Recorded on Car Nicobar, Central Nicobars, Nancowry, Camorta, Trinkat, Great Nicobar, etc. Affects wooded country — open forest as well as around settlements.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 953 and other races. Call described as 'a long-drawn modulated whistle sounding like *pee-u*' (Butler, JBNHS 12: 396); as 'quite different from the Andaman bird... *chee-op*' (Abdulali, ibid. 61: 549).

BREEDING. Not recorded.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

♂ ♀	Wing	Bill (from feathers)	Bill (from skull)	Tail
8 ♂ ♂	151-160 (av. 154.8)	29-33 (av. 31.4)	108-119 mm (av. 114)	
4 ♀ ♀	142-156	31-33	110-117 mm (HA)	

COLOURS OF BARE PARTS. As in 953.

ORIOLES XANTHORUS (Linnaeus)

Key to the Subspecies

	Page
A Yellow edging on inner secondaries and tertiaries broad; wing c. 135-150 mm..... <i>O. x. xanthornus</i>	108
B Yellow on inner secondaries and tertiaries reduced to terminal spots	
a Larger; wing c. 130-140 mm..... <i>O. x. ruficapillus</i>	110
b Smaller; wing c. 120-130 mm..... <i>O. x. ceylonensis</i>	111

958. North Indian Blackheaded Oriole. *Oriolus xanthornus xanthornus* (Linnaeus)

(*Certhias*) *Xanthornus* Linnaeus, 1758, Syst. Nat., ed. 10, 1: 108
(in America = Chandernagor, Bengal)

Baker, FBI No. 958 (part), Vol. 3: 11

Plate 63, fig. 4

LOCAL NAMES. *Peelāk*, *Zērdāk* (Hindi); *Pēlārī tēpār peelāk* (Lucknow); *Pēlārī* (Gorakhpur, U.P.); *Bēnē bēnē*, *Hāli pākhi* (Bengali); *Hakhi*, *Heti* (Assamese).

SIZE. Myna; length c. 25 cm (10 in.).

ORIOLES

109

FIELD CHARACTERS. Adult. Brilliant golden yellow with jet black head, throat and upper breast, and some black in wings and tail. Sexes alike, but upperparts of female tinged with olive.

Young (immature) paler. *Above*, forehead yellow, crown and sides of head blackish streaked with yellow. *Below*, chin and throat white, breast yellow, streaked black.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to local movements. The Himalayan foothills (mostly under 1200 m), duns, bhabar, terai, duars and adjoining plains, from Himachal Pradesh (Kangra, c. 76°E.) eastward through Garhwal, Kumaon, Nepal, Sikkim, Bhutan, NEFA (Mishmi Hills); Assam, Manipur, E. Pakistan. The Gangetic Plain and along northern Madhya Pradesh to Bihar and W. Bengal, Andaman Islands (summer)¹. Affects well-wooded country — open forest, mango groves, etc. around habitations and cultivation, gardens and compounds with large trees within urban limits, etc.

Extralimital. Burma south to Tenasserim; Shan States; Thailand. Other races extend the species to the Indochinese countries, Malay Peninsula, Sumatra, Borneo, etc.

GENERAL HABITS. Very similar to those of the Golden Oriole (953). Chiefly arboreal and frugivorous, but also takes insects and will sometimes even descend to the ground for one. Keeps singly or in pairs; in family parties of 3 or 4 after the breeding season until the young can fend for themselves. Often in loose association with mixed hunting parties of insect-eating birds, bulbuls, etc., flying about from tree to tree.

FOOD. Predominantly banyan, peepul and other wild figs (*Ficus* spp.); berries, and flower-nectar (e.g. of *Salmalia*, *Bombax* and *Erythrina* spp.). Also moths, weevils, hemipterous bugs, ants and other insects — same as under 953, q.v.

VOICE and CALLS. A loud, harsh, rather nasal *kwaak*, and melodious fluty whistles like the Golden Oriole's, yet distinctive. Rendered as *uwe-you* (Y, U) or *uwe-you-you*. During the midday heat in the breeding season, male delivers a long-drawn broken song in the nature of a soliloquy from a shady branch (once timed 15 minutes!): a syncopated jumble of mellow fluty notes interspersed with harsh *cheeahs* and *kwaaks*, reminiscent of the Rufousbacked Shrike's compositions (SA). While calling the bird bends low with tail fully spread.

BREEDING. Season, March to August, principally March and April. *Nest*, like the Golden Oriole's — a deep cup of woven grass and bast-fibres, slung like a hammock within a fork of twigs near the end of an outganging branch in some large leafy mango, sheesham or similar tree, 4 to 10 m or so from the ground. *Eggs*, 2 to 4, usually 3, warm salmon-pink in ground colour, spotted with chestnut-brown to deep red-brown, with underlying spots

¹ [960a] Andaman birds, hitherto believed to be summer visitors of the nominate form, have recently been described as *O. x. andamanensis* ssp. nov. (Humayun Abdulali, 1966, JBNHS 63: 421-2).

MUSEUM DIAGNOSIS. Size small, as in *cydonensis*: 6 ♂♂ Wing 122-134; Tail 72-84 mm; 5 ♀♀ Wing 125-130, Tail 76-82 mm.

Deeper yellow than in *cydonensis*; edges to outer webs of inner secondaries yellow v. yellowish white; underparts of female and immature (with streaked throat) apparently as dark as in adult male v. paler in Indian birds (HA).

Separation from Ceylon population on above colour characters seems doubtfully tenable.

ORIOLES

111

MUSEUM DIAGNOSIS. Size intermediate. Yellow on inner secondaries and tertiaries reduced to terminal spots.

First-year birds have a fairly broad yellow frontal band, but yellow edging to feathers of crown and nape much reduced and often absent.

MEASUREMENTS		Wing	Bill (from skull)	Tarsus	Tail
17	♂♂	131-140	27-32	—	82-87 mm (HW)
	♂♂	129-144	28-32	25-27	82-91 mm
	♀♀	130-138	28-31	24-26	83-88 mm (SA)

COLOURS OF BARE PARTS. Adult. Iris blood red or crimson. Bill and mouth livid pink. Legs and feet bluish- or slaty brown; claws black. Young (immature). Iris greyish black. Bill horny black; mouth grey and pale pink. Legs and feet blackish grey; claws horny brown.

960. Ceylon Blackheaded Oriole. *Oriolus xanthornus ceylonensis* Bonaparte

O. (oriolus) ceylonensis Bonaparte, 1850, Comp. Gen. Av. 1: 347 (Ceylon)
Baker, FBI No. 959, Vol. 3: 12

LOCAL NAMES. *Kāhā kūrūllā*, *Woraka maddula* (Sinhala); *Māmbālā kūrūvi* (Tamil)
SIZE. Myna —; length c. 24 cm (9½ in.).

FIELD CHARACTERS. As of 958, q.v. Appreciably smaller. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Endemic in Ceylon. Widely distributed and plentiful locally throughout the well-wooded areas of the lowlands and lower hills to c. 1200 m, occasionally up to c. 2000 m.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 958, q.v. Notes described as 'loud melodious flutings' — *h' yaw haw wheeyou*, the *whee* much higher in the scale than the rest (Henry); a harsh *kwaak* besides.

BREEDING. Season, October to May, chiefly March and April, occasionally August. *Nest* and *eggs* (normally c/2) as in the Indian races, but eggs apparently whiter, only faintly tinged with pink. Average size of 40 eggs 27.0 × 19.4 mm (Baker). Breeding biology as in 958.

MUSEUM DIAGNOSIS. Size small. Yellow on inner secondaries and tertiaries as in 959; reduced to terminal spots. Adult female differs from adult male in being paler, less rich yellow on the upperparts.

First-year birds have the yellow on the head reduced to a narrow or almost obsolete frontal band. In first-year plumage, retained till the second autumn, both sexes have the black of the chin and throat replaced by black and white striping; breast more or less obsoletely streaked; wings duller and more washed with green (Whistler).

MEASUREMENTS		Wing	Bill (from skull)	Tarsus	Tail
17	♂♂	124-135	28-32	23-25	77-84 mm
7	♀♀	123-131	28-30	22-24	75-84 mm (HW)

COLOURS OF BARE PARTS. As in 958.

110

ORIOLIDAE

of dark inky purple. Average size of 60 eggs 28.0 × 19.4 mm (Baker). Both sexes share in building the nest, incubation, and tending the young. Incubation period unrecorded. Commonly builds in the same tree, often even on the same leafy branch, as holds a nest of the Black Drongo (*Dicrurus adsimilis*), doubtless for the protection afforded by these pugnacious birds against nest-robbing crows and other marauders.

MUSEUM DIAGNOSIS. Distinguished (a) by large size, and (b) by the very extensive yellow on inner secondaries and tertiaries forming a broad edging.

First-year birds have a broad yellow band on forehead, accompanied by yellow edging to all the black feathers of crown and nape. May breed in this plumage.

MEASUREMENTS		Wing	Bill (from skull)	Tail
20	♂♂	135-151	30-33	86-100 mm
Female not significantly smaller.				
2	♂♂	143, 143	31, 32	96, 99 mm (HW)
2	♀♀	137, 139	30, 31	92, 93 mm (BB)

Weight 1 ♂ 79 g (BB).

COLOURS OF BARE PARTS. Iris crimson. Bill fleshy pink. Legs and feet deep plumbeous; claws black; pads white (Biswas).

959. South Indian Blackheaded Oriole. *Oriolus xanthornus maderaspatanus* Franklin¹

Oriolus Maderaspatanus Franklin, 1831, Proc. Zool. Soc. London: 118
(Ganges between Calcutta and Benares, and in the Vindhyan Hills, etc., restricted to Jubbulpore by Whistler & Kinnear, 1934, Jour. Bombay nat. Hist. Soc. 36: 585)
Baker, FBI No. 958 (part), Vol. 3: 11

LOCAL NAMES. *Peelāk* (Hindi); *Konda vāṅḡ pāṇḍu* (Telugu); *Mānjūkruppān* (Malayalam).

SIZE. Myna; length c. 25 cm (10 in.).

FIELD CHARACTERS. As of 958, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to local movements. Peninsular India south of the Gangetic Plain, from Gujarat (not north or west of Mount Abu or Saurashtra, though one record from Kutch (Mandvi) — JBNHS 66: 376, and Madhya Pradesh east to southern Bihar, Orissa and Andhra; from plains level to c. 1700 m (sparingly in the Ghats, Nilgiri, Palni and other peninsular hills). Affects well-wooded country in moist-deciduous and semi-evergreen biotope — open forest, village groves, mango orchards, gardens and compounds in towns and cities.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 958.

BREEDING. Season, March to July; sometimes extending into September. *Nest* and *eggs* (c/2 or 3), as in the North Indian (nominate) form.

¹ Subspecies considered questionable by some authors. See Biswas, B., 1949, *Rec. Ind. Mus.* 47: 233-4; Rand & Fleming, 1957, *Firdians*, Zool., 41: 108.

112

ORIOLIDAE

961. Indian Maroon Oriole. *Oriolus traillii traillii* (Vigors)

Pastor Traillii Vigors, 1832, Proc. Zool. Soc. London, pt. 1: 175
(Himalayas-Darjeeling vide Baker, 1921, Jour. Bombay nat. Hist. Soc. 27: 698)
Baker, FBI No. 961, Vol. 3: 14
Plate 63, fig. 7

LOCAL NAMES. *Melambok* (Lepcha); *Tania pia* (Bhutaneese); *Singatee* (Nepali).

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. Male (adult), overall glossy crimson-maroon. Head, neck and wings black; tail chestnut-maroon.

Young (immature) male like adult female.

Female (adult), more or less like adult male above, but underparts greyish white streaked with blackish.

In overhead flight against the clear sky appears as a dark bird with square-cut claret-crimson tail.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to seasonal local movements. The lower Himalayas to c. 2400 m from Himachal Pradesh (Kotgarh, c. 77°30'E), eastward through Garhwal, Kumaon, Nepal, Sikkim, N. Bengal (Darjeeling dist. and duars), Bhutan, and NEFA. Assam hills south of Brahmaputra R., Nagaland, Manipur; E. Pakistan (Chittagong Hill Tracts). Affects moist-deciduous and evergreen forest, chiefly in the duars and foothills but extends into adjacent plains.

Extralimital. Burma to Shan States and N. Tenasserim; N. Yunnan; N. and W. Thailand and the Indochinese countries. Another race in Vietnam.

GENERAL HABITS. Very similar to those of the yellow orioles, 953, 958, qq.v. Keeps singly or in pairs much to the tree-tops in high dense forest, chiefly in the foothills; commonly in association with drongos, minivets, nuthatches, etc. Sometimes descends into low bushes or to the forest floor.

FOOD. Wild figs and berries; insects; flower-nectar.

VOICE and CALLS. A harsh *kee-ah*, usually followed by rich liquid fluty whistles like *pi-lo-lo*, indistinguishable from those of the Golden Oriole, but more varied. Some calls reminiscent of snatches of song of *Zoothera citrina*; some others of the rattling 'laugh' of a woodpecker!

BREEDING. Season, principally April and May. *Nest*, a deep massive cup of woven bast fibres bound with cobwebs and suspended hammockwise in the horizontal fork of a branch 4 to 10 m or so up, in thick jungle. *Eggs*, 2 or 3, pinkish white spotted with black or reddish brown. Average size of 24 eggs 29.4 × 20.6 mm (Baker). Both sexes share in building the nest, incubation, and tending the young. Incubation period unrecorded.

MUSEUM DIAGNOSIS. Subadult ♂ has the mantle sullied with black; bases of feathers of upper- and underparts greyish, not snow-white as in adult; traces of dark streaks on belly; outer webs of rectrices black or partly so.

Subadult ♀, like adult but with traces of whitish margins on throat feathers.

MEASUREMENTS		Wing	Bill (from skull)	Tarsus	Tail
♂♂		141-153	31-35	25-27	93-110 mm
♀♀		140-146	29-33	25-26	100-112 mm (SA. BP)

DRONGOS

113

Weight 7 ♂ 67-81; 3 ♀ 67-68 g (SA, GD, BB).

COLOURS OF BARE PARTS. Iris (adult) biscuit colour to creamy white; (imm.) brown. Bill pale bluish grey. Legs and feet plumbeous; claws horny brown.

Family DICRURIDAE: Drongos

For morphological characters and description see Van Tyne, J. & Berger, A. J., 1959: 505; Baker, E. C. Stuart, 1924, FBI 2: 352; Vaurie, C., 1964, Article Drongo¹ in Thomson, A. L. (ed.) *New Dict. Birds*. London & New York.

Genus DICRURUS Vieillot

Dicrurus Vieillot, 1816, Anal. nouv. orn.: 41. Type, by subsequent designation (G. R. Gray), *Ceruus Balicassius* Linnaeus

Chibia Hodgson, 1836, Ind. Rev. 1: 324. Type, by subsequent designation (G. R. Gray), *Edolius barbatus* J. E. Gray = *Ceruus hottentottus* Linnaeus

Bhringa Hodgson, 1836, Ind. Rev. 1: 325. Type, by monotypy, *Bhringa tectirostris* Hodgson

Chaptia Hodgson, 1836, Ind. Rev. 1: 326. Type, by monotypy, *Chaptia muscipetoides* Hodgson = *Dicrurus erurus* Vieillot

Dicrurus Gloger, 1841, Genéin. Hand. Hills. Naturg.: 347. Type, by monotypy, *Cuculus paradisus* Linnaeus

Dicrurorides Hume, 1873, Stray Feathers 1: 408. Type, by original designation, *Dicrurorides dicruriformis* Hume

Dicrurulus Oates, 1889, Fauna Brit. India, Bds. 1: 322. Type, by monotypy, *Dicrurus lephorhizus* Vieillot

Cf. Vaurie, C., 1949, *Bull. Amer. Mus. Nat. Hist.* 93: 205-342

Coloration chiefly glossy jet black; greyish or slaty in some species. Bill stout, sharply carinated; covered at base by dense short feathers partially concealing nostrils. Head uncrested, or with variably pronounced tuft on forehead. Tail variable in shape and structure: long and deeply forked, or with outer rectrices upcurved at end, or prolonged as bare shafts ending in rackets or spatulae. Wings long and pointed, of ten primaries. Legs short with strong toes and sharp curved claws.

Key to the Species

	Page
I Outer rectrices greatly lengthened and part of shafts bare	
A Terminal portion of outermost rectrices equally webbed on both sides	128
B Terminal portion of outermost rectrices much more broadly webbed on the inner than on the outer side (though seemingly vice versa)	135
II Outer rectrices not greatly lengthened; no portion of shaft bare	
C Forehead tufted	
a Tuft composed of a few hair-like feathers more than three centimetres long	131
b Tuft composed of a few hair-like feathers, less than two centimetres long	133
c Tuft composed of ordinary feathers less than two centimetres long	140

DRONGOS

115

(oak, rhododendron, etc.) and openly wooded country, often about cultivation and outskirts of habitations.

Extralimital. Adjacent SE. Iran and E. Afghanistan.

GENERAL HABITS. Arboreal and wholly carnivorous: of great economic usefulness to agriculture in destroying vast quantities of insect pests. Usually seen singly perched on leafless tree-tops, telegraph wires, fence posts, or earthen bunds separating fields. From such exposed look-out posts swoops to the ground for prey or launches sallies in aerial pursuit. Sometimes settles on the ground to pick up ants or winged termites emerging from their holes. Commonly in attendance on grazing cattle or wild herbivores, snatching the insects disturbed by the animals' movements through the grass, riding upon their backs, jogging along complacently with their progress. Often indulges in unabashed piracy, setting upon foraging birds with speed and determination, pursuing them relentlessly with agile twists and turns and forcing them to jettison their lawful prize. Whereupon the drongo retrieves the quarry in mid-air (sometimes in its feet) and calmly flies back with it to a perch, holding the insect down in its claws and tearing it to pieces with the hooked bill before devouring. Considerable numbers will collect at forest fires or fired grassland to hunt the insects fleeing through the rising smoke. Is one of the earliest risers amongst birds, often astir and calling well before dawn; similarly, is one of the last birds to retire, sometimes hunting till well into the dusk: then frequently seen flying up vertically at intervals to snatch a winged termite or other crepuscular insect, diving with closed wings back to the perch. Several birds thus engaged after winged termites is a common sight. Is bold and pugnacious, and very swift and agile on the wing. A pair will fearlessly attack and put to flight large birds like crows, and even raptors, blundering within the precincts of the nest-tree with angry 'war-cries' and much ferocity, the pair manoeuvring in concert, shooting straight into the intruder from below and the sides, diving at it from above and describing circles round it—like fighter planes tackling a heavy bomber—leaving the outraged visitor nonplussed and defenceless while making a hasty getaway. Numbers concentrate to roost in company, particularly during winter, in bamboo clumps etc., the birds dispersing in ones and twos at early dawn for their respective feeding territories. Bathes on the wing, plunging down and dipping at the surface of a pool or stream, then returning to a nearby perch to shake off the water and preen. At approach of breeding season two birds, frequently a trio (sex?), will sit close together or face to face and talk loudly 'at' one another ('argue') in harsh scolding notes, raising head and forepart of body and bobbing violently up and down—like hammering with the bill—and fluttering the wings from time to time as if to emphasize some important point in the argument. The significance of these postures in the courtship behaviour needs study.

FOOD. Predominantly insects; on occasion lizards, small birds (*Prinia*, *Zosterops*, *Agithina* recorded) and small bats (*Microchiroptera*). Very partial to flower-nectar, e.g. of *Salmaia malabarica*, *Bombax insignis*, *Butea monspesia*, *Erythrina* spp., and many others, and from the pollen invariably found on forehead and throat-feathers, doubtless helps in cross-pollination. Moths and butterflies (occasional); of the latter the following identified: *Danaus*

114

DICRURIDAE

D Forehead not tufted	Page
d Bill depressed; width greater than depth at nostrils	126
e Bill deep; width and depth at nostrils equal	
1 Upper plumage deep glossy black	
i Outermost rectrices exceeding central ones by about length of tarsus and distinctly curved	125
ii Outermost rectrices exceeding central pair by more than twice the length of tarsus and only faintly curved	
2 Upper plumage grey	
iii Lower plumage uniform grey	119
iv Lower plumage partly white	122

DICRURUS ADSIMILIS (Bechstein)

Key to the Subspecies

A Large size; wing c. 145-165; tail c. 150-180 mm	114
B Medium size; wing c. 130-145; tail c. 135-165 mm	117
C Small size; wing c. 125-140; tail c. 130-160 mm	118

Cf. Ticehurst, C. B., 1933, JBNHS 36: 927-9 (Résumé of races of *D. macrocerus*)

962. North Indian Black Drongo or King Crow. *Dicrurus adsimilis albirictus* (Hodgson)

(*Bhuchanga*) *Albirictus* Hodgson, 1836, Ind. Rev. 1 (8): 326 (Nepal)

Dicrurus macrocerus tripi Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 15 (Palasbari, Assam)¹

Baker, FBI No. 767, Vol. 2: 357

LOCAL NAMES. *Bijāngā*, *Būchāngā*, *Kōhāl*, *Kālkālāhi* (Hindi); *Jepāl kalhit* (Punjab); *Finga* (Bengali); *Thampal* (NW. Pakistan); *Kolaho*, *Gohalo* (Brahui); *Charoi*, *Chirai* (Manipur); *Phenchu* (Nowgong, Assam).

SIZE. Bulbul +; length, including long forked tail, c. 31 cm (12½ in.).

FIELD CHARACTERS. Slim, glossy jet black with long deeply forked tail. Sexes alike. When outer tail-feathers moulting (August-September), tail-fork disappears giving the bird a curiously puzzling look.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to some seasonal local and altitudinal migration. West Pakistan and northern India from Baluchistan east to Kashmir, eastward along the Himalayas to Nepal, Sikkim, Bhutan foothills, Assam, Nagaland, Manipur and East Pakistan. South to Rajasthan, Uttar Pradesh, Bihar and W. Bengal. Intergrades with *macrocerus* (963) in Sind, southern Rajasthan and southern Uttar Pradesh, and with *cathoecus* (of Burma) in SE. Assam and Manipur. From plains level to c. 2100 m in summer (breeding visitor, March/April to September/October), descending to lower altitudes in winter. Affects light hill forest

¹ This name refers to the easternmost population of *albirictus* which here begins to show a trend towards *cathoecus* of Burma.

116

DICRURIDAE

limniace and/or *septentrionis*, *D. aglaea*, *D. chrysippus*, *Euploea coreta*, *E. core*, *Hypolimnas bolina* and *Catopsilia crocale* (Leslie Andrews, JBNHS 20: 850). Among stomach contents of specimens from an intensively cultivated tract in Bihar the following insects (mainly agricultural pests) classified: locusts, grasshoppers and crickets (*Gryllotalpa africana*, *Gryllodes melanosephalus*, *Chrologonus* spp., *Brachytrypus achatinus*), beetles (*Myloecerus discolor*, *M. maculatus*, *Opatrum depressum*), bugs (*Nezara viridula*), ants (*Myrmecocystus setipes*, *Camponotus compressus*, *Oecophylla smaragdina*), termites, bees, etc. (Mason & Lefroy, 1912). Has been observed to capture the ferocious rock bee, *Apis dorsata*.

VOICE AND CALLS. Normal and most common, a defiant-sounding harsh shikra-like double-noted *ti-ti*; also a harsh *cheee-cheee-chick*, and chattering. Particularly noisy at dusk. At commencement of breeding season, indulges in noisy duets *cheee-ti* or *cheee-titi* (*cheee* harsh; rest musical) chiefly during the hour or two preceding daybreak.

BREEDING. Season, overall April to August, principally May and June. Nest, a flimsy-bottomed shallow cup of fine twigs, grasses, bents and fibres cemented together and bound to the substrate with cobwebs. Placed in a horizontal fork of twigs usually near the extremity of a branch between 4 and 12 metres from the ground. Mango (*Mangifera indica*), sheesham (*Dalbergia sissoo*), babool (*Acacia nilotica*) and kandi (*Prosopis spicigera*) in the plains, and oaks (*Quercus*) in the hills—preferably a tree standing by itself in the open with an unobstructed view of the surroundings—are widely favoured. Eggs, 3 or 4, somewhat variable: mostly whitish or pinkish cream, spotted and blotched with black or reddish brown. Average size of 60 eggs 27.1 × 19.8 mm (Baker). Both sexes take part in building the nest, incubation and tending the young. Nests sometimes brood-parasitized by various cuckoos: Drongo-Cuckoo (*Surniculus lugubris*, 588) and Koel (*Eudynamis scolopacea*, 590) thus recorded. Mild mannered birds such as orioles, doves, green pigeons and bulbuls commonly build in the same tree as holds a Black Drongo's nest, thereby profiting from the bird's vigilance and pugnacity in warding off potential marauders.

MUSEUM DIAGNOSIS. The largest-winged and longest-tailed form. White rictal spot usually present. For plumage changes from juvenile to adult, see under *Dicrurus e. macrocerus* (963).

MEASUREMENTS

	Wing	Bill (from skull)	Tail (outer)	Depth of fork
♂ ♀	143-167	24-28	152-180	— mm
				(CBT)
5 ♂ ♂	153-156	25-28	159-172	51-63 mm
3 ♀ ♀	149-153	26 (2)	159-166	48-56 mm
				(BB)

Weight 4 ♂ 39-59; 1 ♀ 41 g (Pahudan, GD).

There is considerable overlap in the measurements of both wing and tail in the sexes, and adult males and females cannot be separated on measurement alone.

COLOURS OF BARE PARTS. Iris blood red to deep crimson (reddish brown to brownish red in first-year birds). Bill, legs, feet and claws black; pads grey (Barnes).

DRONGOS

117

963. South Indian Black Drongo or King Crow. *Dicrurus adsimilis macrocerus* Vieillot

Dicrurus macrocerus Vieillot, 1817, Nouv. Dict. d'Hist. Nat., nouv. éd., 9: 588, based on 'Le Drongolon' of Levaillant, 1805, Ois. d'Afr. 4, pl. 174: 72 (India, restricted to Orissa by Baker, 1924, FBI 2: 356, re-restricted to Madras City by Vaurie, 1949, loc. cit.: 237)

Dicrurus macrocerus peninsularis Ticehurst, 1932, Bull. Brit. Orn. Cl. 53: 20 (Madras City)

Baker, FBI No. 766, Vol. 2: 356
Plate 67, fig. 1

LOCAL NAMES. *Kōlsā*, *Būchāngā* or *Bijāngā*, *Kōtwāl*, *Kālkāldāchi* (Hindi); *Karanjua* (Madhya Pradesh); *Finga* (Bengali); *Kānchh*, *Kālkānchh* (Kutch); *Kunik*, *Kālkāldāchi* (Sind); *Pāsālā pōli gādu* (Telugu); *Kari kārūmān*, *Karihān*, *Karuvattu vali* (Tamil); *Kakka tāmpūrātti*, *Anaranchi* (Malayalam); *Kosita*, *Kālo koshi* (Gujarati); *Chosia*, *Kōtwāl* (Marathi).

SIZE. Bulbul +; length, including long forked tail, c. 31 cm (12½ in.).

FIELD CHARACTERS. As of 962, q.v. See Museum Diagnosis.



× c. 1

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to some seasonal local migration. Throughout peninsular India south of a line roughly from Kutch and Saurashtra eastward through Madhya Pradesh and Orissa to southwest Bengal (intergrading with *albirictus* north of this area). From plains level to c. 2100 m; rarer in the hills. Affects

open deciduous forest and cultivated country, chiefly in the neighbourhood of habitations.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 962.

BREEDING. Season, chiefly March to June/July. Nest, eggs (c/3 or 4, rarely 5), and breeding biology as in the northern form (962).

MUSEUM DIAGNOSIS. Smaller than Himalayan-north Indian *albirictus*; larger than Ceylonese *minor* (964). White rictal spot usually present.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail central outer
♂ ♀	130-145	23-26	—	— 135-161 mm (CBT)
♂ ♂	130-147	23-26	19-23	90-102 134-168 mm
♀ ♀	130-144	23-26	19-23	93-98 143-157 mm (SA, HW)

Weight 15 ♂ ♀ 40-51 (av. 45.7) g — SA.

All three subspecies go through the same plumage stages as follows:

The juvenile differs from the adult in having,

1. body plumage softer and browner with very little metallic gloss and that confined to the upper plumage,
2. wings and tail shorter and duller with less gloss,

DRONGOS

119

MEASUREMENTS

	Wing	Bill (from feathers)	Tail
♂ ♀	125-143 (av. 133)	c. 20	135-165 mm (av. 153.5) (Baker)
♂ ♀	126-140	—	131-147 mm (CBT)

COLOURS OF BARE PARTS. As in 962.

DICRURUS LEUCOPHAUS Vieillot

Key to the Subspecies

	Page
A Tail c. 130-170 mm; general colour paler.....	D. l. <i>hopwoodi</i> 121
B Tail c. 140-185 mm; general colour darker.....	D. l. <i>longicaudatus</i> 119
C General colour palest; a whitish cheek-patch.....	D. l. <i>salangensis</i> 121

965. Indian Grey Drongo. *Dicrurus leucophaeus longicaudatus* Hay

(*Dicrurus*) *longicaudatus* Lord Arthur Hay, in Jerdon, 1845, Madras Jour. Lit. Sci. 13: 121 nom. nud.

Dicrurus longicaudatus A. Hay, in Horsfield & Moore, 1854, Cat. Bds. Mus. E.I. Co. 1: 152 (Segour Pass, Neilgherries); also A. Hay in Jerdon, 1862, Bds. India 1: 430

Dicrurus leucophaeus minimus Baker, 1918, Novit. Zool. 25: 296 (Ceylon)

Dicrurus leucophaeus beavani Vaurie, 1949, Bull. Amer. Mus. Nat. Hist. 93: 243 (Khudi Khel, eastern Afghanistan)

Baker, FBI No. 775, Vol. 2: 362
Plate 67, fig. 8

LOCAL NAMES. *Neel finga* (Bengali); *Erattāi vālan kūruvi* (Tamil); *Kakkattāmpūrān* (Malayalam); *Gunkots*, *Telakots* (Kashmiri).

SIZE. Same as of Black Drongo: bulbul +. Length c. 30 cm (12 in.).

FIELD CHARACTERS. A slim glossy slate-black drongo with long deeply forked tail and conspicuous crimson eyes. Underparts duller unglossed grey. Sexes alike.

'Slimmer build, relatively longer, deeper-forked tail and better-wooded habitat will help differentiation from Black Drongo of open plains, and ruby-red eye will clinch the diagnosis.

When deep tail-fork absent during moult, could be casually confused in the distance with Black Bulbul (*Hyphantornis madagascariensis*, 1148/9) but which has red bill and legs.

STATUS, DISTRIBUTION and HABITAT. Breeds in the Himalayas in West Pakistan and India (foothills, up to c. 3300 m) from the Afghan frontier (Safed Koh) east through Chitral, Gilgit, Kashmir, Himachal Pradesh, Garhwal, Kumaon, Nepal, Sikkim, northern W. Bengal (Darjeeling dist.), and Bhutan, where it intergrades with *hopwoodi* (966). In winter (September/October to March/April) descends to lower altitudes and spreads out throughout the better-wooded portions of the northern plains and the Peninsula (including non-arid portions of Rajasthan, Kutch and Saurashtra),

118

DICRURIDAE



Tail, × c. 1

3. under wing-coverts edged with white; outer edge of secondaries may also be narrowly edged white.

The postjuvinal moult does not include,

1. primaries, secondaries and tertiaries; primary-, greater-, and sometimes a few median coverts; under wing-coverts,
2. tail.

The first-winter and summer plumage is distinguished from adult plumage by,

1. long upper tail-coverts being usually edged with white,
2. lower plumage less glossy, the feathers from lower breast to under tail-coverts being fringed with white to a variable extent (these gradually wear down and in summer are less noticeable),
3. duller, more faded appearance of the unmoulted parts of the juvenile plumage, and the white edging on the under wing-coverts.

This plumage is retained until the autumn when the first complete moult gives fully adult plumage in the second winter. Adults occasionally have the under tail-coverts edged with white, but never so the upper tail-coverts or the under wing-coverts (Whistler).

COLOURS OF BARE PARTS. As of 962.

964. Ceylon Black Drongo or King Crow. *Dicrurus adsimilis minor* Blyth

Dicrurus minor Blyth, 1854, Cat. Bds. Mus. Asiatic Soc., Pref. app. 3, No. 1219: 22 (Ceylon)

Baker, FBI No. 768, Vol. 2: 358

LOCAL NAMES. *Kāudā* (Sinhala); *Erattāi vālan kūruvi* (Tamil).

SIZE. Bulbul +; length, including longish forked tail, c. 26 cm (11 in.).

FIELD CHARACTERS. As of 962, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Endemic to Ceylon. Common in the low-country Dry zone in the northwest coastal areas from Puttalam to Jaffna Peninsula, occasionally straying in winter to other districts in the Wet and Hill zones (Phillips). Affects openly wooded country.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 962. Notes described as 'loud, ringing and varied, some of them very musical' (Henry). Is a good mimic of other birds' calls.

BREEDING. Season, February to June, chiefly April and May. Nest, eggs (c/2 or 3, rarely 4), and breeding biology as in the Indian subspecies. Average size of 21 eggs 24.2 × 18.1 mm (Baker).

MUSEUM DIAGNOSIS. The smallest of the three Indian forms, with a smaller, weaker bill.

120

DICRURIDAE

east to W. Bengal, south through Tamil Nadu and Kerala. Winter visitor also to Ceylon.

Affects pine, oak and rhododendron forest in the Himalayas; broken, well-wooded country (deciduous as well as evergreen) in its winter range. Mixed bamboo jungle, edge of forest clearings, and shady village groves are favourite haunts. In SW. India coffee and cardamom plantations in shola forest (with tall shade trees), and gardens or 'kampongs' by the backwater homesteads are especially favoured.

Extralimital. Eastern Afghanistan south of the Hindu Kush (Vaurie).

GENERAL HABITS. Very similar to those of Black Drongo (962), q.v. but essentially a forest bird, not found in open cultivated country. Keeps singly, in pairs or small noisy parties, perching high up in tree-tops, launching agile swooping sallies after flying insects close to the ground or in and out amongst the tree-trunks and foliage canopy; sometimes gatherings of 30 or more birds, e.g. at a hatch of winged termites emerging from a nest-mound in forest. Crepuscular; often hunting till almost quite dark.

FOOD. As in Black Drongo, mainly insects — locusts, grasshoppers, crickets, moths, termites, etc.; occasionally butterflies, lizards and small birds (warbler, iora). Bees from a hive (Ingilis). Very fond of flower-nectar, and invariably amongst the most regular visitors to *Salmalia* and *Erythrina* blossoms and to those of the introduced *Grevillea robusta* and various *Eucalyptus* spp.

VOICE and CALLS. A varied assortment of harsh screeches and pleasant musical whistling notes. One common call: a harsh challenging *cheet-cheet-chick* (like the Black Drongo's) followed by a pleasant querulous whistling *kil-kil-kil-kil* (or *tililili*), very like the 'song' of the Striped Squirrel (*Funambulus pennanti*). Another common call rendered as *drāngh-gip, gip-gip-drāngh* (Magrath). Is a good mimic of other birds' calls as well.

BREEDING. Season, chiefly April to June. Nest, a neat shallow saucer of lichens and leaves bound together and secured in position with cobwebs; lined with fine grass. Fixed like a cradle in a horizontal or vertical fork at the end of a slender branch, often 15 to 20 m up, in a pine, oak, chinar, sal or similar tall tree. Eggs, 3 or 4, like those of Black Drongo (962/3) but more variable in ground colour (some rich salmon or deep terracotta) and somewhat more heavily marked. Average size of 200 eggs 23.6 × 18.2 mm (Baker). Both sexes take part in building the nest, incubation, and tending the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

Juvenile plumage differs from adult in two important particulars: (1) body plumage softer and a browner black, practically without any gloss, (2) wings and tail as in adult but considerably shorter. Postjuvinal moult excludes primaries and primary coverts, secondaries and greater coverts, tertiaries, and rectrices. These are retained to the following autumn so that first-winter and first-summer birds differ from adults in their more worn and faded, also shorter, wings and tail. When measuring specimens it is therefore essential that adult and first-year birds also be measured separately to ensure satisfactory comparison. First-year birds also appear to be paler and duller on the abdomen, slight white fringes being more noticeable, especially on under tail-coverts. Complete postnuptial moult evidently takes place between July and September. There is no definite spring moult, though odd body feathers are changed.

DRONGOS

121

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail	
				central	outer
♂♂	136-148	25-28	18-20	89-93	140-187 mm
♀♀	131-144	25-28	18-20	89-96	148-168 mm

Weight 40 ♂♀ (October, in winter quarters) 32-45 (av. 37.6) g (SA).

COLOURS OF BARE PARTS. Iris brownish red, orange-red, or crimson. Bill, legs, feet and claws black. Mouth brownish pink, pale pink, or slaty pink.

966. Assam Grey Drongo. *Dicrurus leucophaeus hopwoodi* Baker

Dicrurus leucophaeus hopwoodi Baker, 1918, Novit. Zool. 25: 294 (Dacca)

Dicrurus leucophaeus stevensi Baker, 1918, Novit. Zool. 25: 295 (Darjeeling)

Baker, FBI No. 773, Vol. 2: 361

LOCAL NAMES. *Nel fings* (Bengali); *Sahim*, *Sahim pha* (Lepcha); *Chu-chum* (Bhutancese).

SIZE. Same as of Black Drongo: bulbul +. Length c. 30 cm (12 in.).

FIELD CHARACTERS. As of 965, q.v. See Key to the Subspecies.

STATUS, DISTRIBUTION and HABITAT. Breeds in the eastern Himalayas in Bhutan (where it intergrades with *longicaudatus*) and NEFA; also Assam hills north and south of Brahmaputra R., Nagaland and Manipur (?) from the edge of the plains to c. 2100 m. In winter spreads south into the plains of West Bengal, Assam and E. Pakistan. Affects well-wooded country, as 965. *Extralimital*. Northern and central Burma and Indochinese countries. (For details see Vaurie, 1959, 2: 122.)

GENERAL HABITS, FOOD, VOICE and CALLS. As in 965.

BREEDING. Season, April to June. *Nest*, eggs (c/3 or 4) and breeding biology as in 965.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Paler above and below than *longicaudatus*; tail averages a little shorter and less deeply forked.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail	
				central	outer
♂♂	138-148	25-29	19-20	96-104	148-169 mm
♀♀	129-147	27-28	19-20	92-101	129-159 mm

Weight 5 ♂♂ 45-53; 2 ♀♀ 40, 53; 3 oo? 47-53 g (SA, BB).

COLOURS OF BARE PARTS. As in 965.

966a. Whitecheeked Grey Drongo. *Dicrurus leucophaeus salangensis* Reichenow

Dicrurus leucophaeus var. *salangensis* Reichenow, 1890, Nomencl. Mus. Hein. ornith. 69 ('Insula Salanga' = Junk Seylon or Phuket)

Dicrurus leucophaeus meridionalis Hachisuka, 1926, Bull. Brit. Orn. Cl. 47: 56

(Seven Finger Range, central Hainan)

Baker, FBI No. 779, Vol. 2: 367 (= *leucophaeus*)

Plate 67, fig. 9

SIZE. Same as of Black Drongo: bulbul +. Length c. 30 cm (12 in.).

FIELD CHARACTERS. As of 965, q.v., but much paler grey. See Museum Diagnosis.

DRONGOS

123

GENERAL HABITS. Typical of the family. Keeps in noisy twos and threes, often in association with roving hunting parties of other insectivorous birds and — wherever the two occur together — very commonly with the Bronzed Drongo. Hawks winged insects from tree-tops oftener like a flycatcher, making short looping sallies after them, turning and twisting in the air, snapping up the quarry in the bill or claws (if of large size), and returning with it to the same or a nearby perch. Is markedly crepuscular, often keeping up the hunt till well after dusk when almost quite dark.

FOOD. Crickets, grasshoppers, moths, winged termites and other insects. Occasionally small birds like warblers, chased and seized in the claws in mid-air. Food often pirated from other birds by dogged pursuit or surprise attack. Flower-nectar, e.g. of *Bombax* and *Erythrina* regularly eaten; doubtlessly promotes cross-pollination.

VOICE and CALLS. Pattern similar to King Crow's, but calls much less harsh. Normally 3 or 4 pleasant whistling notes — one of the commonest bird-calls wherever the drongo present. Has many pleasing whistles, some of rich oriole or thrush quality. 'Often whistles very quietly as if trying the notes over under its breath' (Hewitson). Is an excellent and convincing mimic: imitates, among others, Tailor Bird, Wood Shrike and Iora to perfection, not only the sweet sibilant whistles of the last but also the occasional *chr-r-r* with which they are punctuated.

BREEDING. Season, overall March to June, mostly March and April. *Nest*, not markedly different from that of Black Drongo (962) except as regards the site which is normally in mixed teak and bamboo and similar open forest. Eggs, usually 2 or 3, sometimes 4, more like those of Grey Drongo than of Black. A common type is warm salmon pink in ground colour, blotched and spotted with black or reddish brown. Average size of 40 eggs 23.6 × 17.8 mm (Baker). Both sexes take part in building the nest, incubation and tending the young. Incubation period unrecorded.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

Young (immature) very brown, with traces of white barring on breast, flanks, axillaries and under wing-coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail	
				central	outer
♂♂	122-137	22-25	18-20	85-91	112-130 mm
♀♀	118-129	22-25 (27)	18-21	85-95	113-130 mm

Weight 2 oo? 39, 41 g (SA).

COLOURS OF BARE PARTS. Iris brownish red. Bill black; mouth pale pink, slaty pink or pale pinkish yellow. Legs, feet and claws black.

968. Ceylon Whitebellied Drongo. *Dicrurus caeruleus insularis* (Sharpe)

Buchanga insularis Sharpe, 1877, Cat. Bds. Brit. Mus. 3: 253

(Lunugalla, Madodouna, Ceylon)

Baker, FBI No. 777 (part), Vol. 2: 365

LOCAL NAMES. *Kāndā*, *Kāndā* *amittiya* (Sinhala); *Erattai eḷḷān kūrāri* (Tamil).

SIZE. Bulbul +; length c. 24 cm (9½ in.).

DICRURIDAE

122

STATUS, DISTRIBUTION and HABITAT. Rare vagrant? A specimen collected in Nagaland, 20.i.1936 at Chizami (Khezabama) c. 40 km ESE. of Kohima the only definite record within Indian limits (P. K. Das, 1965, JBNHS 62: 557). Possibly occurs in or visits the Andaman Is. (a specimen of '*leucogenys*' — Hume, 1876, SF 4: 289).

Extralimital. SE. China inland . . . and on the coast south from the Fukien-Kwangtung boundary. Migrates to Hainan, and through the Indo-chinese countries, E. and S. Thailand to the Malay Peninsula as far south as Malacca (Vaurie).

MUSEUM DIAGNOSIS. Adult (♂♀), overall pale French grey; a frontal band and chin blackish; a whitish oval patch on each side of head extending from bill to over ear-coverts. Under wing-coverts whitish at edges and tips of the feathers. Young (immature), slightly darker grey; whitish check-patches less distinct.

MEASUREMENTS

	Wing	Bill (from skull)	Tail		Depth of fork
			central	outer	
♂♂	139-145	23-28	101-108	130-142	29-38 mm
♀♀	137-145	24-28	101-109	129-131	27-30 mm

COLOURS OF BARE PARTS. As in 965.

DICRURUS CAERULESCENS (Linnaeus)

Key to the Subspecies

		Page
A	Abdomen, posterior flanks, vent and under tail-coverts white. Larger. wing c. 120-135 mm. <i>D. c. caeruleus</i>	122
B	Abdomen dusker, the white area smaller and starting lower down on the central abdomen rather than on the lower breast. Smaller, wing, c. 110-125 mm. <i>D. c. insularis</i>	123
C	Abdomen dark, only vent and under tail-coverts white. Size similar to B <i>D. c. leucopygialis</i>	124

967. Indian Whitebellied Drongo. *Dicrurus caeruleus caeruleus* (Linnaeus)

Lenius caeruleus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 95 (Benghala)

Baker, FBI No. 777 (part), Vol. 2: 365

Plate 67, fig. 12

LOCAL NAMES. *Pādhāri būchāngā*, *Dhapri* (Hindi); *Dhouli* (Bengal); *Nella* or *Konda pāsāla poligādu* (Telugu).

SIZE. Bulbul +; length c. 24 cm (9½ in.).

FIELD CHARACTERS. A typical drongo with long, deeply forked tail. Glossy indigo colour above, brownish grey below with white belly and under tail-coverts. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to some seasonal local and altitudinal movement. All India south and east of a line roughly from Kutch (Bhuj, Mandvi) to Ambala and Simla, thence eastward through Uttar Pradesh, Nepal, Bihar and W. Bengal. From plains level to c. 2000 m, in dry- and moist-deciduous and bamboo forest. Partial to shady paths and edges of clearings in thin tree jungle, and wooded compounds in inhabited rural areas.

124

DICRURIDAE

FIELD CHARACTERS. As of 967, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Subspecies endemic to Ceylon. Resident. Common in the low-country Dry zone and Hill zone to at least c. 1500 m. Affects outskirts of forest and well-wooded areas.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 967.

BREEDING. Season, February to June, chiefly March and April. *Nest*, eggs (c/2 or 3) and breeding biology, as in 967. Average size of 75 eggs (together with those of 969) 22.0 × 17.1 mm (Baker).

MUSEUM DIAGNOSIS. Darker (purer black) above than peninsular birds but only slightly so than those from Kerala. White of abdomen reduced: not sharply defined or extending to flanks as in 967. Bill heavier.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail	
				central	outer
8 ♂♂	119-127	25-26	19-20	80-91	104-117 mm
4 ♀♀	111-125	24-25	18-20	89-97	106-113 mm

COLOURS OF BARE PARTS. As in 967.

969. Ceylon Whitevented Drongo. *Dicrurus caeruleus leucopygialis* Blyth

Dicrurus leucopygialis Blyth, 1846, Jour. Asiat. Soc. Bengal 15: 298

(Colombo, W.P., Ceylon)

Baker, FBI No. 778, Vol. 2: 366

LOCAL NAMES. Same as for 968 in Sinhala and Tamil.

SIZE. Bulbul +; length c. 23 cm (9½ in.).

FIELD CHARACTERS. As of 967 and 968, qq.v., but dark bellied, the white restricted to vent, under tail-coverts and posterior flanks. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Subspecies endemic to Ceylon. Resident. Common in the low-country Wet zone and neighbouring lower hills to c. 500 m. Confined to forest and well-wooded areas.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 967 and 968.

BREEDING. Season, February to April, chiefly March. *Nest*, eggs (c/2 or 3) and breeding biology, as in 967.

MUSEUM DIAGNOSIS. See Key to the Subspecies and Field Characters. An ecological form, grading into *insularis* in the drier northern, eastern and southeastern parts of the Island.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail	
				central	outer
8 ♂♂	122-128	25-27	c. 19	83-90	109-120 mm
12 ♀♀	115-128	24-27	17-18	80-92	105-118 mm

COLOURS OF BARE PARTS. As in 967.

DRONGOS

125

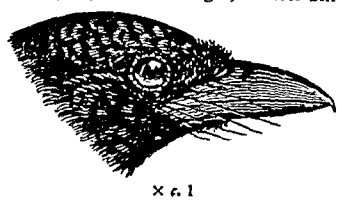
970. Crowbilled Drongo. *Dicrurus annectans* (Hodgson)(Bhuchanga) *Annectans* Hodgson, 1836, Ind. Rev. 1 (8): 326 (Nepal)
Baker, FBI No. 765, Vol. 2: 353

Plate 67, fig. 3

LOCAL NAME. *Kak raja sorai* (Assam).

SIZE. Myna +; length c. 27 cm (10½ in.) to tip of tail.

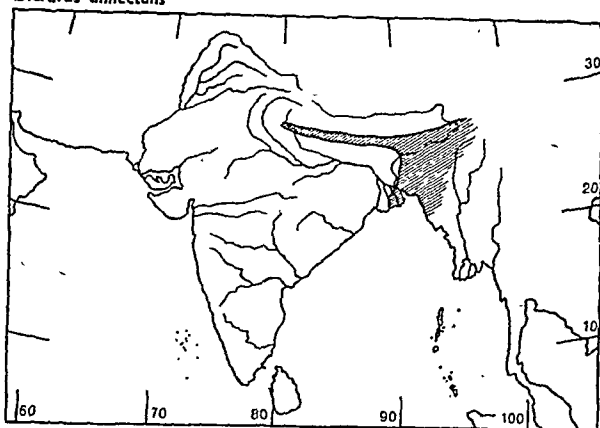
FIELD CHARACTERS. A glossy jet black drongo very like the familiar King Crow (963) but with larger, heavier bill and shorter, less deeply forked tail. Distinguished also by stockier build and forest habitat (v. open cultivation). Sexes alike.



x c. 1

STATUS, DISTRIBUTION and HABITAT. Resident (or breeding summer visitor?); seasonal movements and migrations unclear. Uttar Pradesh from Kumaon (c. Almora), Nepal (terai and duns), Sikkim (lowlands), N.

Bengal (duars), Bhutan (foothills), Assam north and south of Brahmaputra R., Nagaland, Manipur, East Pakistan (hill tracts); from plains level to c. 700 m. A doubtful record from Nicobar Is., possibly a straggler (1874, Hume,

Dicrurus annectans

Distributional range

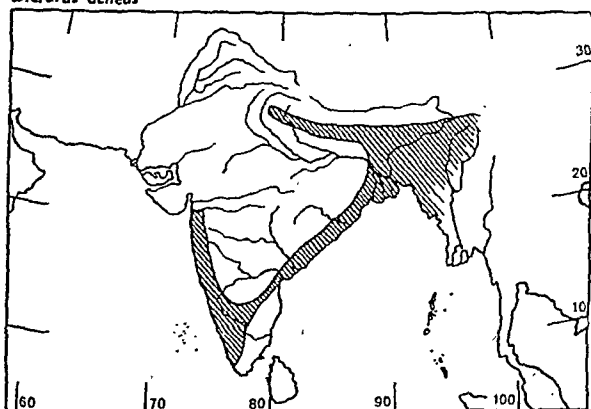
SF 2: 209). Affects dense moist-deciduous and evergreen forest; also well-wooded compounds with large trees in this biotope.

Extralimital. N. and C. Burma, N. Thailand. Migrates through Tenasserim, Malay Peninsula and islands, to Sumatra, Java, Borneo.

DRONGOS

127

STATUS, DISTRIBUTION and HABITAT. Resident, moving about locally in winter. Uttar Pradesh (from c. Mussooree) eastward through Nepal, Sikkim, Bhutan, NEFA, Assam (north and south of Brahmaputra R.), Nagaland, Manipur, Mizo (?), East Pakistan; West Bengal and eastern Bihar southward along the Eastern Ghats complex in Orissa, eastern Madhya Pradesh (Bastar dist.), Andhra and Tamil Nadu; east across the Shevaroy Hills

Dicrurus aeneus

Distributional range

D. a. aeneus (971).

to southern Kerala; thence northward along the Sahyadri or Western Ghats strip (including Nilgiri, Palni, and associated hills) to north of Bombay -- probably to the Tapi river, c. 21°N. (unconfirmed sight record, Surat Dangs, February, SA). Up to c. 2000 m in the Himalayas and peninsular hills. Affects broken foothills country for preference, in moist-deciduous and evergreen forest biotope. Keeps to wooded glades, the edge of forest paths, firelines and clearings, mixed bamboo jungle, tea, coffee and rubber plantations; in Kerala the fruit gardens or 'kampongs' around the back-water homesteads are favourite resorts.

Extralimital. Burma, Yunnan, Thailand, Indochinese countries, Malay Peninsula south to c. 4°N. whereabouts it intergrades with *malayensis*.

GENERAL HABITS. Forest-haunting and strictly arboreal. Keeps singly or in pairs to wooded shady glades with dense undergrowth, often near water; hardly ever ventures out in the open. Very parochial and territorial, frequenting the same spot day after day, and winter after winter. Commonly associates with the mixed foraging parties of insectivorous birds in forest. Hawks very much in the manner of a flycatcher, making short sprightly aerial sallies, often swooping close to the ground to snatch a winged insect and looping back to the same perch. Also makes vertical sorties of a metre or two from tree-tops, diving back to the perch with wings closed after each

126

DICRURIDAE

GENERAL HABITS. A comparatively low-elevation forest drongo, not uncommon seasonally in the appropriate habitats of its range. Keeps to tall undergrowth and lower parts of the foliage canopy rather than to exposed tree-tops. Little specifically recorded. Close superficial similarity to and possible confusion with Black and Bronzed drongos vitiates the reliability of casual field observations.

FOOD. Crickets, grasshoppers, hemipterous bugs, flying termites, and other insects; doubtless also other small living creatures.

VOICE and CALLS. Described as similar to those of Black Drongo but 'peculiarly clear and loud' (A. E. Osmaston), 'pleasanter and more musical' (BB).

BREEDING. Season, April to June. Nest, a small fragile-looking shallow cup of grasses, rootlets, fibres, etc. bound together with cobwebs, reminiscent of nest of cuckoo-shrike or minivet; cradled in a horizontal fork of a slender branch c. 5 to 12 metres up, in heavy forest; occasionally in scrub jungle. Eggs, 3 or 4, variable; usually pale cream to warm salmon or salmon-buff, longitudinally streaked (rather than spotted) with red-brown or purple-brown, with underlying streaks of pale grey or lavender, the markings more numerous at the broad end. Average size of 100 eggs 26.3 x 19.4 mm (Baker). Both sexes take part in building the nest, but *sic* Baker only the female incubates. Incubation period undetermined.

MUSEUM DIAGNOSIS. Whole plumage glossed with steel-blue. Under wing-coverts dull black with a round white spot at tip of each feather. Tail-fork shallow; outer rectrices curving outward.

First-year birds spotted with white from throat downwards, the spots becoming broad white tips on belly and under tail-coverts; flanks ashy grey.

MEASUREMENTS

	Wing	Bill (from skull)	Tail central	outer	Depth of fork
♂♂	140-150	28-32	99-107	119-134	18-26 mm
♀♀	137-147	28-30	100-112	120-130	15-28 mm (Vaurie)

Weight 1 ♀ 44 g (SDR).

COLOURS OF BARE PARTS. Iris hazel or deep brown to lake red. Bill, legs, feet and claws black.

971. Bronzed Drongo. *Dicrurus aeneus aeneus* Vieillot*Dicrurus aeneus* Vieillot, 1817, Nouv. Dict. d'Hist. Nat. 9: 586

(Bengal, restricted to Dacca by Baker, 1924, Fauna Br. India, Birds 2: 368)

Baker, FBI No. 780, 781, Vol. 2: 368, 369

Plate 67, fig. 6

LOCAL NAMES. *Chhota bhūjāngā* (Bengal); *Chhota kārāj* (Hindi, Gorakhpur); *Chaptia* (Nepal); *Chinna kārī kūrūni* (Tamil); *Lālitakaka* (Malayalam).

SIZE. Bulbul +; length c. 24 cm (9½ in.) including longish forked tail.

FIELD CHARACTERS. A small black forest drongo, highly glossed all over with bronze-green and blue. Superficially like the familiar Black Drongo or King Crow but appreciably smaller, more iridescent, and with less deeply forked tail. Bill broad and flattened like flycatcher's. Sexes alike.

DICRURIDAE

128

capture. Is characteristically bold and pugnacious and will attack and put to rout crows and even raptors intruding within the precincts of its nest-tree.

FOOD. Winged insects: midges, flies, ants, moths (Diptera, Hymenoptera, Lepidoptera), etc.; also flower-nectar.

VOICE and CALLS. Noisy and demonstrative during breeding season, comparatively silent otherwise. Has a wide repertoire of loud clear musical whistles interwoven with excellent and faithful mimicry of other birds' calls.

BREEDING. Season, overall March to June. Nest, a shallow cup of fragments of inner bark of trees, strips of banana leaf, grasses, etc. felted and cemented together and fixed into the site with vegetable fibres and cobwebs; copiously plastered on the outside with the latter until nearly white in colour, but usually very inconspicuous. Size of nest approximately 10 cm (outside diameter); cup c. 7 cm across x 4 cm deep inside; suspended like a hammock in a horizontal fork in terminal twigs of a leafless lateral branch of a teak sapling or similar small tree; sometimes near the tip of a curving bamboo stem. Eggs, 3 or 4, variable; most common type pale pinkish fawn to pale salmon-pink with an irregular zone of darker cloudy spots, in some cases reddish or purplish, round the broad end. Size of eggs c. 21 x 16 mm. Both sexes take part in building the nest, incubation, and rearing the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. Differs from extralimital *malayensis* (with which South Indian birds were placed by Baker) in being larger, with the rump generally lighter coloured (often grey) and without gloss; abdomen, vent and under tail-coverts also more grey.

MEASUREMENTS

	Wing	Bill (from skull)	Tail central	outer	Depth of fork
♂♂	112-131	20-25	78-93	105-131	19-39 mm
♀♀	112-127	21-25	80-92	105-124	19-36 mm (Vaurie)

Tarsus 15-17 mm (SA)

Weight 5 ♂♂ 26-28; 2 ♀♀ 22, 30 g (SDR, GD, BB).

COLOURS OF BARE PARTS. Iris brown to reddish brown or crimson. Bill black; mouth greyish pink or slaty pink. Legs, feet and claws black.

972. Lesser Racket-tailed Drongo. *Dicrurus semifer lectirostris* (Hodgson)(Bhringa) *Tectirostris* Hodgson, 1836, Ind. Rev. 1 (8): 325 (Nepal)

Baker, FBI No. 786, Vol. 2: 375

Plate 67, fig. 2

LOCAL NAMES. *Chhōis bhīmāj* (Bengal, Assam); *Namsong punnong* (Lepcha); *Poyadiyapo* (Bhutanese); *Das raja kashiba* (Chachari).

DRONGOS

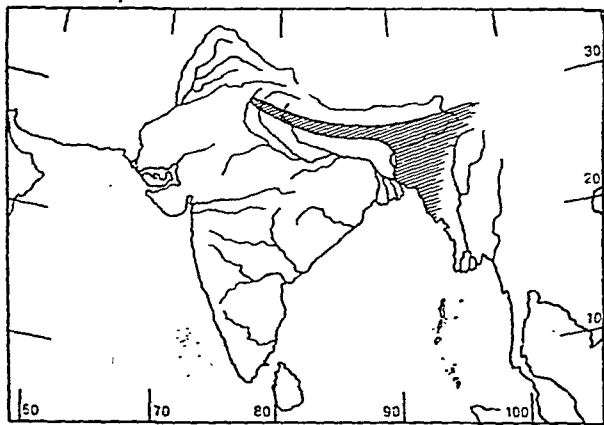
129

SIZE. Myna +; length c. 28 cm (11 in.), plus c. 9 cm to end of tail-rackets. FIELD CHARACTERS. A glossy metallic black forest drongo with a velvety pad-like tuft of feathers above base of bill; two curiously elongated wire-like outer tail-feathers ending in spatulae or 'rackets', fully webbed on both sides of shaft (contra 976, q.v.). Sexes alike.

In the flying bird these rackets, undulating behind, look singularly like a pair of angry bumble-bees in hot pursuit!

STATUS, DISTRIBUTION and HABITAT. Resident. The lower

Himalayas from Garhwal (Tons Valley, c. 78°E.) eastward through Kumaon, Nepal, Sikkim, N. Bengal (Darjeeling dist.), Bhutan and NEFA. Assam north and south of Brahmaputra R., Nagaland, Manipur, Mizo. East Pakistan

Dicrurus remifer

■ Distributional range

D. r. tectirostris (972).

(hill tracts); from the edge of the plains, through the foothills up to c. 2000 m. Affects heavy moist-deciduous and evergreen forest.

Extralimital. Burma south to c. 16°N. lat., Yunnan, N. Thailand and the Indochinese countries. Other races in Cambodia, Malay Peninsula, Sumatra, Java.

GENERAL HABITS. Entirely arboreal. Keeps singly or in twos and threes to tree-tops or high up within dense foliage canopy in heavy jungle. Frequents shady glades and edge of openings, firelines or forest streams. Hawks winged insects usually in the manner of a flycatcher, making

130

DICRURIDAE



Tail, x c. 1

short looping sallies, often swooping close to the ground, and returning to the same or a nearby perch. Is regularly met in association with the itinerant mixed hunting parties of flycatchers, laughing thrushes and assorted insectivorous forest birds, often side by side with its larger racket-tailed congener (976), which has very similar habits. Flight dipping and noisy.

FOOD. Chiefly insects; also flower-nectar.

VOICE and CALLS. A wide range of loud metallic musical whistles not readily distinguishable from those of Large Racket-tailed Drongo; like it, also an excellent mimic of other birds' calls.

BREEDING. Season, April to June. Nest, a shallow cup of roots, grass stems, wiry tendrils, etc. rather loosely bound together with cobwebs and secured with the same hammockwise in a horizontal fork of twigs near the extremity of a lateral branch; sometimes high up in a large tree but usually under c. 7 metres from the ground; occasionally low down in the fork of a bamboo almost within hand reach. Eggs, 3 or 4, variable in ground colour from pale pink to rich salmon-pink or terracotta, blotched and freckled with darker terracotta or purplish brown, more densely at the broad end. Average size of 100 eggs 25.5 x 18.4 mm (Baker). Both sexes take part in building the nest, incubation and rearing the young. Incubation period undetermined.

Brood-parasitism by Drongo-Cuckoo (*Surniculus lugubris*, 588) reported (Hopwood & McKenzie, JBNHS 25: 89).

MUSEUM DIAGNOSIS. Young (immature). Duller, less glossy above, greyer on abdomen, with the white tips to axillaries and under wing-coverts larger than in adult. Lacks frontal tuft and tail-rackets. Tail normal shaped (i.e. without bare shafts) and slightly forked.

For description of succession of 1st-year, 2nd-year and 3rd-year (adult) plumages see Vaurie, 1949: 271.

MEASUREMENTS

	Wing	Bill (from skull)	Tail central outer	Bare shaft
♂♂	137-149	25-30	117-129 402-532	182-306 mm
♀♀	133-146	24-28	116-126 354-466	137-241 mm

Tarsus 21-22 mm (SA)

Weight 4 ♂♂ 48-51 g (BB); 1 ♀ 46 g (SA).

COLOURS OF BARE PARTS. Iris brown to brownish crimson. Bill, legs, feet and claws black.

DRONGOS

131

973. Haircrested or Spangled Drongo. *Dicrurus hottentottus hottentottus* (Linnaeus)

Corvus hottentottus Linnaeus, 1766, Syst. Nat., ed. 12, 1: 155 (Cape of Good Hope, restricted to Sikkim by Baker, 1919, re-restricted to 'region between Ayuthia and head of the Gulf', Siam, by Kloss, 1921, Jour. Fed. Malay States Mus. 10: 223.

Re-restricted to Chandernagor by Stresemann, 1952, Ibis 94: 517, 521)

Edolius Chirina Gould, 1836, Proc. Zool. Soc. London: 5 (Nepalia)

Chibia hottentotta londae Koelz, 1939, Proc. Biol. Soc. Washington 52: 70

(Londa, Bombay Presidency)

Baker, FBI No. 782, Vol. 2: 370

Plate 67, fig. 7

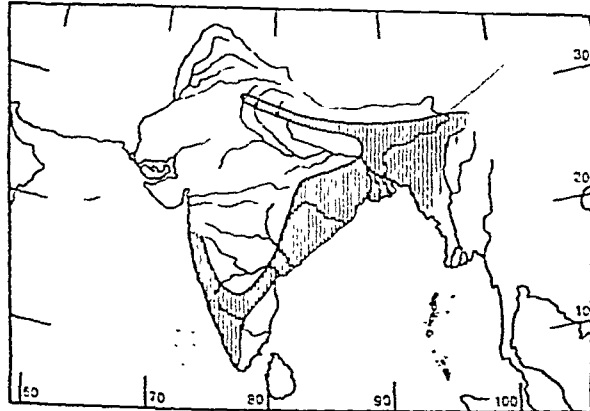
LOCAL NAMES. *Krishnarāj, Kūsharāj, Kārāj* (Hindi); *Keshrāj* (Bengali); *Kēyō, Jēbrāj, Keshrāj, Chibey* (Nepali); *Povongpho* (Lepcha); *Tentika pāsāla poliḡādu* (Telugu); *Kinnārikakka* (Malayalam).

SIZE. Myna ± with longer tail; overall length c. 31 cm (12½ in.).

FIELD CHARACTERS. An iridescent glossed and spangled blue-black drongo with a distinctive longish, almost square-cut tail, curled up at the outer ends. A few fine hair-like feathers springing from forehead and extending over hind-crown and upper back (visible only at close range in profile, or through binoculars). Bill long, pointed, and noticeably downcurved. Sexes alike.



x c. 1

Dicrurus hottentottus

■ Distributional range

D. h. hottentottus (973).

132

DICRURIDAE

STATUS, DISTRIBUTION and HABITAT. Resident, subject to seasonal movements and wanderings governed largely by availability of its staple diet of flower-nectar. The Himalayan foothills and submontane tract from Kalka hills (c. 77°E.) eastward through Uttar Pradesh, Nepal, Sikkim, N. Bengal, Bhutan and NEFA. Assam north and south of Brahmaputra R., Nagaland, Manipur, Mizo (?), East Pakistan (hill tracts), W. Bengal, eastern Bihar,

southward along the E. Ghats complex in Orissa, eastern Madhya Pradesh (Bastar and Balaghat dists.), Andhra and Tamil Nadu. Kerala, western Mysore (Malnaad), and northward, along the Sahyadri or W. Ghats strip at least to Bombay straggling irregularly to Kutch (c. 22°50'N.) — Him-matsinjhi, JBNHS 60: 734. From plains level to c. 1400 m; occasionally to 2000 m. Affects moist-deciduous and evergreen forest biotope.

Distribution and ecology more or less overlap those of *Dicrurus aeneus* (971), q.v.

Extralimital. Burma, Thailand, Indochinese countries. Numerous other races extend the species over China, Philippines, and across to New Guinea and Australia.

GENERAL HABITS. Forest-haunting and entirely arboreal. Predominantly a nectar-feeder, the long and pointed downcurved

bill, markedly different from other drongos, evidently an adaptation for this diet (structure of tongue needs proper study).¹ Keeps to dense jungle and wooded glades, singly or in small parties; occasionally gatherings of up to 20 or more, e.g. when mobbing a predator or to feed in a grove of flowering trees (once 'a flock of 40 to 50 bathing' — Hopwood). Is a regular member of the roving bands of assorted insectivorous birds in forest, and invariably in attendance on flowering Silk Cotton (simul) trees in clearings. Adopts 'dog-in-the-manger' tactics when feeding from the blossoms, swooping without provocation upon other visitors in the same quest and bullying them off even from distant branches or adjacent trees. Has a noisy flight with thudding wing-beats. Numbers have been observed bathing by repeatedly dashing into water from an overhanging tree (Hopwood, JBNHS 21: 1201).

FOOD. Principally flower-nectar; also insects. *Salralia risalabaria*, *Bombax insignis*, *Erythrina indica*, *E. stricta*, *E. lithosperma*, *Acrocarpus* sp. some of the most commonly patronized species; also various introduced *Eucalyptus* species. From the thick coating of pollen always present on the bird's forehead and throat feathers, is evidently instrumental in promoting cross-pollination.

VOICE and CALLS. A subdued metallic clanging note constantly uttered; also creaking calls reminiscent of the sharp *teei?* notes of Blossom-headed

¹ According to Beecher shows marked nectar-feeding adaptations (Beecher, W. J., 1953. Phylogeny of the Oecinae. *Auk* 70: 270-333).

DRONGOS

133

Parakeet (*Psittacula cyanocephala*, 558). Very noisy in breeding season: loud clear whistles and mimicry of other birds' calls.

BREEDING. Season, April to June in N. India; March–April in the south. Nest, of the usual drongo pattern, a deep saucer of pieces of bark, grass, rootlets, and tendrils of creepers, etc., often rather loose and untidy, and lacking the cobweb plastering on the exterior: measuring 9–10 cm across (inside) and 4–5 cm deep; sides about 10 mm thick but bottom so flimsy that the contents usually visible from below. Built in a horizontal fork of twigs near the extremity of a lateral branch, usually between 5 and 10 metres up, but sometimes almost within hand reach from the ground; occasionally in the head of a *Borassus* or other palm at the base of the leaf stalks. Eggs, 3 or 4, variable in coloration and markings: commonly creamy to salmon pink, minutely freckled with light red or purplish red. Average size of 200 eggs 29.2 × 21.2 mm (Baker). Both sexes take part in building the nest, incubation, and tending the young. Incubation period unrecorded.

MUSEUM DIAGNOSIS. Neck and breast feathers hackle-shaped, brightly glossed and spangled. Tail with the four inner pairs of rectrices of equal length; outer pair a little longer, twisted round and curling upward near tip.

Young (immature) browner and with less metallic gloss; hackle feathers of neck and breast, and forehead filaments, shorter. Axillaries and under wing-coverts tipped with white.

Nestling. 'Brown with obsolete white bars to the abdomen, flanks and breast; bold white tips to the axillaries and under wing-coverts and pale edges to the wing-coverts' (Baker).

MEASUREMENTS

Peninsular birds

	Wing	Bill (from skull)	Tail central	Tail outer
♂♂	160–172	26–30	117–135	132–155 mm
♀♀	154–166	25–29	120–133	131–149 mm

(Vaurie)

Tarsus 26–29 mm (SA)

There is a cline of increasing size from south to north. Birds from the Punjab Himalayas to eastern Assam are larger than from south India. Vaurie and some other authors therefore prefer to retain these under the subspecies *chirishna* Gould. Vaurie measures northern birds as follows:

	Wing	Bill (from skull)	Tail central	Tail outer
♂♂	168–180	28–31	126–134	149–164 mm
♀♀	165–183	28–30	131–143	144–163 mm

Weight 4 ♂♂ 86–102; 2 ♀♀ 76, 90 g (GD, SA, BB).

COLOURS OF BARE PARTS. Iris reddish brown or dark brown. Bill, legs, feet and claws black.

DICRURUS ANDAMANENSIS Tytler

Key to the Subspecies

- Larger *D. a. dicuriformis*
Smaller *D. a. andamanensis*

DRONGOS

135

company with *Irena puella*; *Sturnus erythropygius*, *Coracina striata*, *Pericocelus cinnamomeus*, etc.' (Butler, JBNHS 12: 291). Frequently observed clinging to tree-trunks like a woodpecker, pressing the tail against the bark and ascending in flitting hops.

FOOD. Mainly winged insects hawked in the air.

VOICE AND CALLS. A variety of sharp metallic notes, typical of the drongos. Slightly jerks up tail after each note. 'A long tseep' (HA).

BREEDING. Season, April and May. Nest, a shallow cup of fine dry twigs firmly woven together, bound and suspended with cobwebs cradle-wise in a fork of twigs generally at a considerable height in some dry or leafless tree: scantily lined with black hair-like rhizomorphs. Eggs, 2 or 3, variable; commonest type pale salmon-pink spotted all over with pale brownish markings, with some underlying spots of pale grey (Osmaston). Average size of 50 eggs 24.8 × 18.3 mm (Baker).

MUSEUM DIAGNOSIS. Feathers of crown, hindneck and whole back glossy only at tips and edges, producing a somewhat scaly appearance. Tail long, deeply forked, the outer feathers curving markedly upward. Four inner pairs of rectrices each increasingly longer than its neighbour, *contra hottenottus* where they are all of about equal length.

Differs from *dicuriformis* (974) only in being smaller.

MEASUREMENTS

	Wing	Bill (anterior point of nostril to tip)	Tarsus	Tail (outer)
♂♀	126–138	19–20	c. 20	118–161 mm

(Baker)

South and Little Andamans birds give:

	Wing	Tail (outer)
9 ♂♂	135–144	153–167 mm
3 ♀♀	132–138	157–162 mm

(Vaurie)

COLOURS OF BARE PARTS. Iris deep brown or blackish. Bill, legs and feet black.

DICRURUS PARADISEUS (Linnaeus)

Key to the Subspecies

- A Tail without terminal rackets; otherwise like (c) *D. p. lophorhinus* 140
B Tail with terminal rackets
a Size medium; wing c. 140 to 170 mm; tail up to 480 mm; frontal crest, reaching only over anterior crown *D. p. paradiseus* 137
b The largest form; wing c. 160 to 185 mm; tail up to 580 mm; frontal crest covering whole crown *D. p. grandis* 136
c Size large; wing c. 150 to 170 mm; tail up to 475 mm; frontal crest absent or obsolete; bill c. 34 mm *D. p. otionus* 142
d Size medium; wing c. 145 to 155 mm; frontal crest short; bill c. 35 mm *D. p. nicobaricus* 142
e Size small; wing c. 140 to 160 mm; tail up to 350 mm; frontal crest very small *D. p. egyptiacus* 140

1 Current scientific names have been substituted for those used by Butler.

134

DICRURIDAE

974. Large Andaman Drongo. *Dicrurus andamanensis dicuriformis* (Hume)

Dissemuroides dicuriformis Hume, 1873, Stray Feathers 1: 408
(Great Cocos and Table Island)
Baker, FBI No. 784, Vol. 2: 372

LOCAL NAMES. None recorded.

SIZE. Myna ±, with longer tail; overall length c. 35 cm (c. 14 in.).

FIELD CHARACTERS. As of 975, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Endemic in the North Andaman group of islands. Recorded from Great Coco and Table Island. Affects forested areas, 'principally the jungle immediately within the belt of coconut palms that surround the coast' (Hume, SF 2: 211).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 975, q.v.

BREEDING. Not specifically recorded; doubtless as in 975.

MUSEUM DIAGNOSIS. Differs from *andamanensis* only in being larger.

There is apparently a cline of increasing size from south to north, birds from the Middle Andamans probably intermediate between this form and *andamanensis* (975) as suggested by Abdulali (JBNHS 61: 550). More material needed.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail (outer)
♂♀	142–156	22–23	c. 24	150–182 mm

(Baker)

COLOURS OF BARE PARTS. As in 975.

975. Small Andaman Drongo. *Dicrurus andamanensis andamanensis* Tytler

Dicrurus andamanensis Tytler, in Beavan, 1867, Ibis: 323
(Andaman Is., restricted to Port Blair by Baker, 1923, Hand-List: 48)
Baker, FBI No. 783, Vol. 2: 371
Plate 67, fig. 10

LOCAL NAMES. None recorded.

SIZE. Myna ±, with longer tail; overall length c. 35 cm (c. 14 in.).

FIELD CHARACTERS. A deeply fork-tailed drongo, similar to the Black (962, 963), glossed with metallic blue-green above, dull velvety black below. Distinguished chiefly by a peculiar tuft of hair-like filaments c. 2 cm long springing from forehead, erect or curved back. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Endemic in the Little and South Andaman groups of islands. Habitat as in 974.

GENERAL HABITS. Arboreal and forest-haunting. 'Highly gregarious, flocks of a dozen to 20, travelling through forest together, searching food by themselves or in



× c. 1

DICRURIDAE

136

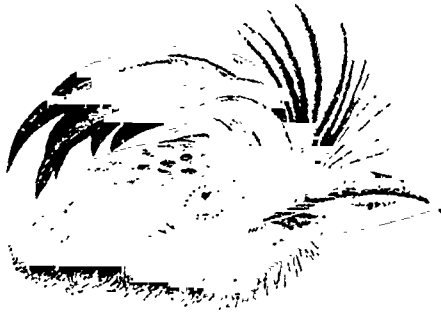
976. Northern Large Racket-tailed Drongo. *Dicrurus paradiseus grandis* (Gould)

Edolius grandis Gould, 1836, Proc. Zool. Soc. London: 5 (Nepalia)
Baker, FBI No. 789, Vol. 2: 378
Plate 67, fig. 4

LOCAL NAMES. *Bhimrāj*, *Bhringrāj* (Hindi, Bengali); *Kājia* (Nepal); *Parak* or *Parak pho* (Lepcha); *Dao raja gashim* (Cachari).

SIZE. Myna; with a tail c. 35 cm (14 in.) long.

FIELD CHARACTERS. A large metallic black drongo with a conspicuous backward-curving tuft or crest on forehead, and two long wire-like spatula-tipped streamers in tail. Sexes alike.



× c. 1

STATUS, DISTRIBUTION AND HABITAT. Resident. The lower Himalayas and submontane country from Kumaon eastward through Nepal, Sikkim, Bhutan and NEFA; Assam, Nagaland, Manipur, Mizo; East Pakistan (hill tracts). Northern India roughly east of a line from Pilibhit in Kumaon (c. 80°E.) to Surat in Gujarat (c. 21°N.) thence southeast to Rajahmundry (c. 80°E.) around its southern boundary. From plains level to c. 1500 m. Affects deciduous and evergreen forest biotope: especially well-wooded, broken foothills country. Cultivation edges, tea-gardens, sal, teak and bamboo jungle particularly favoured. Occasionally wanders to jungle patches isolated by several kilometres of cultivation and open treeless country.

EXTRALIMITAL. N. Burma south to Chin Hills and N. Shan States, Yunnan and northern and central Vietnam. Other subspecies in S. Burma, Malay Peninsula, etc.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 977, q.v.

BREEDING. Season, April to June. Nest, eggs (c/3 or 4) and breeding biology as in the peninsular bird (977).

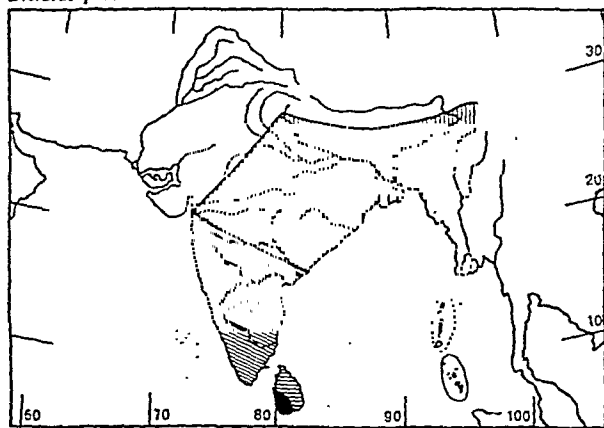
MUSEUM DIAGNOSIS. Feathers at sides and hind part of neck long, pointed and hackle-shaped, forming a prominent cape. Crest very large and full, with the front feathers longer and more attenuated and erect than in South Indian and Ceylonese birds: main feathers of crest also broader, longer, and curving back over the entire crown.

DRONGOS

137

138

DICRURIDAE

Dicrurus paradiseus

Distributional ranges

grandis (976).
 paradiseus (977).
 ceylonicus (978).
 lophorhinus (979).
 otiosus (980).
 nicobariensis (981).

Rackets at end of tail-wires formed by inner web not outer as superficially apparent. The delusion is due to a twist in the slender rachis just above the spatula.

MEASUREMENTS

	Wing	Bill (from skull)	Tail central	outer (to tip of racket)
♂♂	175-185	39-44	145-162	447-578 mm
♀♀	165-181	38-42	142-155	362-458 mm (Vaurie)

Weight 3 ♂♂ 100-124 g (BB, SA).

COLOURS OF BARE PARTS. Iris brown to reddish brown. Bill black; mouth pale greyish pink, sometimes mottled with brown, yellow and slate. Legs, feet and claws black.

977. Southern Large Racket-tailed Drongo. *Dicrurus paradiseus paradiseus* (Linnaeus)

Cuculus paradiseus Linnaeus, 1766, Syst. Nat., ed. 12, 1: 172 (Siam, restricted to 'the region between Ayuthia and the head of the Gulf' by Kloss, 1919, Jour. nat. Hist. Soc. Siam 3: 453)

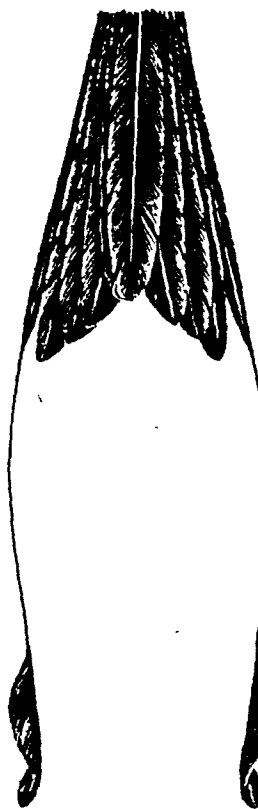
Lenius malabaricus Latham, 1790, Index Orn. 1: 66 (Malabar)

Baker, FBI No. 792, Vol. 2: 381

LOCAL NAMES. *Bhimraj*, *Bhānraj* (Hindi); *Tinka pāṣṭālā poligādu* (Telugu); *Hati* (Gond); *Pellāpūṇṇā kōṇcāl* (Marathi); *Erattai rālān*, *Kondai kārīchān* (Tamil).

SIZE. Myna; with a tail c. 35 cm (14 in.) long.

FIELD CHARACTERS. As of 976, q.v. See Key to the Subspecies and Museum Diagnosis.



Tail, x c. 1/2

off, the end rackets looking singularly like a pair of irate bumble-bees in hot pursuit. Distinctly crepuscular, commonly hunting till far into the dusk, springing up vertically from a tree-top to snatch an insect and diving back to the perch with wings closed.

FOOD. Termites, moths, beetles, dragonflies, locusts, mantises and other insects up to the largest size, hawked in the air; larvae picked off tree-trunks and branches in agile swoops and carried away in claws. Very probably also takes lizards and small birds as other drongos. Flower-nectar

DRONGOS

139

of *Salmaia malabarica*, *Bombax insignis*, *Erythrina* (*indica*, *stricta*, *lithosperma* and other species) an important supplementary diet.

VOICE AND CALLS. Very noisy, especially in the early mornings and at sunset, more so towards the breeding season. Has a large repertoire of loud metallic calls and rich melodious notes and whistling. Is, in addition, an exceptionally versatile and convincing mimic. In the wild state has been recorded mimicking both calls and complete songs (with all their nuances) of the following birds: shikra, serpent eagle, crested hawk-eagle, grey junglecock, barred owl, Indian cuckoo, koel, black woodpecker (*Dryocopus*), goldenbacked woodpecker (*Dinopium*), rufous woodpecker (*Micropternus*), grey hornbill, pitta, jungle babbler, scimitar babbler, oriole, magpie robin, shama. The imitations are sometimes echoed back promptly after the original call and repeated after each, the mimic seeming to mock the producer while obviously enjoying the joke and his own cleverness! Once observed reproducing agitated calls of jungle babbler (*Turdoides striatus*) with the body feathers fluffed out, wings drooping, tail depressed, and pivoting from side to side, 'in exact mimicry of the behaviour of the babbler while thus calling' (Daniel, JBNHS 63: 443). Many intriguing and unexpected bird-calls in forest — also of squirrels (*Ratufa*, *Funambulus*) — may, often be traced down to a single sportive Racket-tail, a fact which stresses the importance of visual evidence in support of 'diagnostic' calls in drongo-ridden areas. In captivity has been recorded imitating song of canary to perfection; also mewing of cat, and 'two or three lines of whistled song with remarkable accuracy' (Finn, JBNHS 14: 568).

BREEDING. Season, chiefly February-May in Kerala; June-July in the northern parts of its range. Nest, a deepish loosely built cup of fine twigs, grasses, tendrils, strips of inner bark, etc. Size: external diameter c. 15 cm, inner cup c. 10 cm across and 5 cm deep. Unlined, and usually with little or no cementing or plastering cobwebs; thus contents of nest often visible through the flimsy bottom from below. Fixed in a horizontal fork of branches (leafy or bare) near the end of a lateral bough in open forest, between c. 5 and 15 m from ground. In some areas the channel-shaped bases of leaf-stalks of *Borassus* palms provide favourite nest-sites. Nests often found in identical patch of forest, even the same tree, year after year; occasionally built of thicker sticks and flatter, like a miniature crow's nest. Eggs, normally 3, rarely 4, somewhat variable. A common type is creamy white or pale pink, blotched and speckled with dark reddish brown, with secondary markings of pale- or pinkish grey. Average size of 40 eggs 27.8 × 20.2 mm (Baker). Both sexes take part in building the nest, incubation, and tending the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. Smaller than northern *grandis* (976) and with shorter crest, the longest feathers reaching to hindcrown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail central	outer (to tip of racket)
♂♂	151-170	33-37	26-28	133-142	295-484 mm
♀♀	148-154	33-36	26-27	128-136	310-358 mm (SA, HW)

140

DICRURIDAE

Weight 3 ♂♂ 74-85 g (SA).

COLOURS OF BARE PARTS. As in 976.

978. Ceylon Large Racket-tailed Drongo. *Dicrurus paradiseus ceylonicus* Vaurie

Dicrurus paradiseus ceylonicus Vaurie, 1949, Bull. Amer. Mus. Nat. Hist. 93: 329, new name for *Dissemurus ceylonensis* Sharpe, 1877, Cat. Bds. Brit. Mus. 3: 264 (NE. Province, Ceylon), preoccupied by *Dicrurus ceylonensis* Stephens, 1826 Baker, FBI No. 793, Vol. 2: 381

LOCAL NAMES. *Māhā kāudā*, *Kaputā bālaya* (Sinhala); *Erattai rāl kūrūci* (Tamil).

SIZE. Myna; with a tail c. 31 cm (12 in.) long.

FIELD CHARACTERS. As of 976, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Subspecies endemic in Ceylon. Confined to, and moderately plentiful in the Dry zone in the northern, eastern and southeastern portions of the Island, to c. 600 m alt. Affects tall jungle especially around irrigation tanks and along river banks (Phillips, Henry). Intergrades with *D. p. lophorhinus* (979) along the edge of the Dry and Wet zones.

BREEDING. Season, March to May. Nest, eggs (c/2-4) and breeding biology as in 977.

MUSEUM DIAGNOSIS. Differs from nominate *paradiseus* of peninsular India in being smaller with a less developed crest, the feathers reaching only to top of crown; racket feathers of tail much shorter.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail central	outer (to tip of racket)
7 ♂♂	145-159	31-35	24	121	260-350 mm
2 ♀♀	150, 150	32, 35	25	130, 133	284, 288 mm (HW)

Weight 1 ♂ 71; 1 ♀ 73 g (SDR).

COLOURS OF BARE PARTS. As in 976 and other races.

979. Ceylon Crested Black Drongo. *Dicrurus paradiseus lophorhinus* Vieillot¹

Dicrurus lophorhinus Vieillot, 1817, Nouv. Dict. d'Hist. Nat. 9: 587 (Africa, restricted to Ceylon)

Baker, FBI No. 785, Vol. 2: 373

Plate 67, fig. 5

LOCAL NAMES. *Māhā kāudā*, *Kaputā bālaya* (Sinhala); *Erattai rāl kūrūci* (Tamil).

SIZE. Myna; with longer tail. Overall length c. 35 cm (14 in.).

¹For a discussion of the two ecological forms in Ceylon see Ripley, S. D., 1946, *Sp. Zool.* 24: 218-20, and Vaurie, C., 1949, *Bull. Amer. Mus. Nat. Hist.* 93: 330-1.

DRONGOS

141

FIELD CHARACTERS. As of 977 and 978, qq.v.; also glossy black with



a tuft of feathers at forehead but lacking the racket-feathers in the tail which is merely long and deeply forked. Sexes alike. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Subspecies endemic in Ceylon. Confined to, and moderately plentiful in the Wet zone and lower hills, but ascending Adam's Peak to at least c. 1700 m (Henry). Affects tall humid forest in the southwest portion of the Island. Its range is becoming constricted owing to increasing encroachment upon its forest habitat for rubber plantation etc.

Intergrades with *D. p. ceylonicus* (978) along the edge of the Wet and Dry zones.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 977 and the Ceylon Racket-tailed Drongo of the Dry zone (978).

BREEDING. Season, April and May, but very little known. The only authentic nest so far is described as a flimsy cup rather small for the size of the bird, about 10 m up in a tall straight tree on the edge of jungle bordering a paddy field. It contained nestlings on 24th May (Henry). Eggs not authentically described; evidently more or less as in the other racket-tailed drongos, cf. 977.

MUSEUM DIAGNOSIS. Outer feathers of long, deeply forked tail much prolonged beyond the others: webbed on both vanes throughout their length, and strongly upcurved at the tips. Crest shorter, denser and stiffer, the longest feathers curving backward only over the forehead.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail central	outer (to tip of racket)
3 ♂♂	151-155	33-36	—	129-131	185-199 mm
1 ♀	145	34	24	124	170 mm
					(HW)
4 ♂♂	139-146	27-31	—	126-129	moult ¹ mm
4 ♀♀	141-147	28-30	—	119-125	moult mm
					(SDR)

¹ Only one feather in one of the specimens measuring 196 mm.

SWALLOW-SHRIKES

143

GENERAL HABITS, FOOD, VOICE and CALLS. As in the Indian forms 976, 977.

BREEDING. Almost unknown. A nest with sitting bird observed by Humayun Abdulali at end February c. 25 m up in a bare tree in forest.

MUSEUM DIAGNOSIS. 'Differs from *otiosus* of the Andamans by being smaller and by having a crest. Similar to *paradisus* [of peninsular India] and may be separable from it only by the size of the racket which appears to be smaller' (Vaurie).

MEASUREMENTS (of Great Nicobar birds)

	Wing	Bill (from skull)	Tail central	outer (to tip of racket)
2 ♂♂	155, 155	35, 36	127, 131	308, 310 mm
4 ♂♂	150-156	—	—	294-357 mm
				(Vaurie)
				(3 msd.)
3 ♀♀	147-155	—	—	308-322 mm
				(Abdulali)

Birds from Little Nicobar and Katchall (to the north) are larger than from Great Nicobar, tending to agree in size with *otiosus* of the Andamans.

COLOURS OF BARE PARTS. As in *otiosus* and other subspecies.

Family ARTAMIDAE: Swallow-Shrikes or Wood Swallows

For description see Van Tyne, J. & Berger, A. J., 1959: 532; Baker, E. C. Stuart, 1924, FBI 2: 348; Smythies, B. E., 1964. Article 'Wood-Swallow' in Thomson, A. L. (ed.), *New Dict. Birds*. London & New York.

Genus ARTAMUS Vieillot

Artamus Vieillot, 1816, Anal. nouv. Orn.: 41. Type, by monotypy,
Leucorhynchus Linnaeus

Bill strong and gently curved, but not notched or hooked as in the true shrikes (*Leucorhynchus*). Wings long and pointed: first primary (as.) very short; 2nd and 3rd subequal and longest. Tarsi very short. Tail short and square.

Key to the Species

Rump of same colour as back.....*A. fuscus*
Rump white, different from back.....*A. leucorhynchus*

982. Ashy Swallow-Shrike. *Artamus fuscus* Vieillot

Artamus fuscus Vieillot, 1817, Nouv. Dict. d'Hist. Nat. 17: 297
(Bengal)

Baker, FBI No. 763, Vol. 2: 348
Plate 65, fig. 18

LOCAL NAMES. — *Tādi ābābel* (Hindi); *Tāl charai*, *Chātdāk-ānjānd* (Bengal); *Tād pītā* (Telugu); *Mūra sing* (E. Pakistan); *Silliangrechi pho* (Lepcha); *Tāl gas kurullā* (Sinhala); *Mādām parā* (Tamil); *Endakāttārān* (Malayalam).

SIZE. Bulbul ±; dumper with short tail. Length c. 19 cm (7½ in.).

DICRURIDAE

142

Weight 1 ♂ 70; 1 ♀ 70 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill, legs, feet and claws black.

980. Andaman Racket-tailed Drongo. *Dicrurus paradisus otiosus* (Richmond)

Dissemurus malabaricus otiosus Richmond, 1903, Proc. U.S. Nat. Mus. 25: 290
(Andamans)

Baker, FBI No. 790, Vol. 2: 380

LOCAL NAMES. None recorded.

SIZE. Myna; with a tail c. 35 cm (14 in.) long.

FIELD CHARACTERS. As of 977 q.v., also with rackets in tail but lacking the frontal crest! See Key to the Subspecies.

STATUS, DISTRIBUTION and HABITAT. Endemic in the Andaman Archipelago: recorded from the North, Middle, South, and Little Andaman groups. Fairly abundant in forested areas.

GENERAL HABITS, FOOD, VOICE and CALLS. As in the Indian forms 976, 977.

BREEDING. Season, May; 'building its nest generally high up on the more or less inaccessible branches of big trees. Eggs, similar to those found in India' (Osmaston, JBNHS 17: 157).

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tail central	outer (to tip of racket)
♂♂	162-169	34-37	139-152	359-474 mm
1 ♀	157	34	139	330 mm
				(Vaurie)

COLOURS OF BARE PARTS. As in 977 and other subspecies.

981. Nicobar Racket-tailed Drongo. *Dicrurus paradisus nicobariensis* (Baker)

Dissemurus paradisus nicobariensis Baker, 1918, Novit. Zool. 25: 302
(Kondel, Nicobars)

Baker, FBI No. 791, Vol. 2: 380

LOCAL NAMES. None recorded.

SIZE. Myna; with a tail c. 33 cm (13 in.) long.

FIELD CHARACTERS. As of 977, q.v. Very similar to the Andaman bird but somewhat smaller and with a short frontal crest.

STATUS, DISTRIBUTION and HABITAT. Endemic in the Nicobar Archipelago (south of Ten Degree Channel): specifically recorded from Car Nicobar (sight, HA), Katchall, Little Nicobar and Great Nicobar islands. Affects forested areas.

ARTAMIDAE

144

FIELD CHARACTERS. A dark slaty grey short-tailed bird with paler rump and underparts. Tail slaty black tipped with white. Bill bluish, heavy, somewhat finch-like. Sexes alike.

At rest tips of closed wings reach end of tail.

STATUS, DISTRIBUTION and HABITAT. Resident and marked seasonal local migrant, especially in the hills and in heavy-rainfall areas. East and south of

line from about Godhra in Gujarat (c. 23°N., 74°E.) to Simla in Himachal Pradesh (c. 31°N., 77°E.) thence eastward along the Himalayan terai and foothills through Nepal, Sikkim, Bhutan, and NEFA, locally up to c. 1700 m. Throughout peninsular India south to Kerala (common but patchy and local; rare in Madhya Pradesh), from plains level to 1700 m; once over 2100 m (Kodaikanal — Bates); Assam, Nagaland, Manipur and East Pakistan. Widely distributed also in Ceylon: lowlands, lower hills and up to c. 1200 m. Affects openly wooded dry- and moist-deciduous country, especially with a predominance of palms — palmyra, coconut, date, Fish-tail (*Caryota urens*) and other species. Its close association with palms needs study.

Extralimital. Burma, Thailand, the Indochinese countries, and W. China.

GENERAL HABITS. Gregarious and sociable. Keeps in parties or loose flocks, sometimes of 30 or more birds. Usually seen huddled closely together along a horizontal bare branch near a tree-top, leaf-stalks of palms, or telegraph and power wires in open foothills country, old forest clearings, etc. While perched, the stumpy tail is bobbed slowly and deliberately up and down or opened and screwed from side to side. Makes constant sallies after winged insects from such vantage points, one or two birds at a time or several together, sometimes swooping close to the ground to seize the quarry. Not recorded actually settling on ground, but may do so (cf. 983). Flight swift — several rapid wing-beats followed by a graceful effortless glide, reminiscent of a swallow or bee-eater — the bird sailing back to its perch in a wide circle after each capture. Brakes by sudden uptilt of body at last moment accompanied by a spreading of tail and vigorous flutter of wings assuming statue-like immobility immediately on alighting. Quarry frequently transferred to feet in mid-air, torn to pieces with bill, and swallowed in flight. When 'business is brisk', e.g. as at a swarming of butterflies or winged termites, the first victim is promptly transferred to the feet to free the bill for the second, the bird then sailing round to its perch to dispose of both at leisure. Is very bold and aggressive when nesting, attacking crows and raptors encroaching on the vicinity of the nest-tree, while tolerating harmless species like bulbuls.

FOOD. Insects: largely (and regularly) butterflies even of the genera *Danaus* and *Euploea* repugnant to most other birds and to lizards; dragonflies, winged termites, etc. Occasionally nectar of flowers, e.g. *Erythrina indica*.

VOICE and CALLS. Distinctive, harsh cries *chek-chek-chek* (or *chake-chake-chake*) etc. uttered at rest and in flight, audible from a considerable height. Song (♂?) from bare tree-top in breeding season described by SA as

SWALLOW-SHRIKES

145

rather subdued, commencing and ending with the harsh *chaks*. A medley of pleasant twittering snatches of 10-15 seconds duration, repeated again and again for over 10 minutes with short pauses during which the bird switched its tail slowly up and down. Was reminiscent of Swallow's twittering song, soliloquy of Rufous-backed Shrike and chattering ditty of Rosy Pastor, as well as the soft warbling of Blyth's Reed Warbler (*Acrocephalus dumetorum*). Imitations of many bird-calls were interlarded in the song, those of Jungle Myna (softer) and Red-whiskered Bulbul being clearly recognizable.

BREEDING. Season, in India principally March to June; in Ceylon January to June, chiefly March. *Nest*, a loosely put-together shallow cup of fine grass, roots and fibres with sometimes a few feathers but no definite lining. Placed in a crotch or elbow of some horizontal bough — very commonly in the angle at the base of leaf-stalks in a palmyra, coconut or other palm — often at considerable heights from the ground. *Eggs*, 2 or 3, greenish white spotted with light brown chiefly at the broad end, sometimes forming a cap. Average size of 50 eggs 23.4 × 17.1 mm (Baker). Both sexes take part in building the nest, incubation, and tending the young. Incubation period unrecorded.

MUSEUM DIAGNOSIS. Rump somewhat paler than back, slaty grey-brown with a vinous tinge; longer upper tail-coverts white.

Young (immature) resembles adult but upperparts, except the whitish tail-coverts, brown with tiny fulvous margins, mostly on mantle; tiny pale tips to median, greater and primary coverts. Throat browner; rest of underparts dirty fulvous white with narrow indistinct brownish bars. Postjuvinal moult includes body, and apparently all coverts except primary.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	129-138 (145)	21-24	16-19	54-60 mm
♀♀	130-139	21-23	16-19	48-53 mm (SA, HW)

Weight 2 ♂ 37, 42; 3 ♀ 38-42 g (Paynter).

COLOURS OF BARE PARTS. Iris dark brown. Bill sky blue or greyish blue, black at tip; mouth dark slate. Legs and feet bluish slate or slaty brown; claws black.

983. Whitebreasted Swallow-Shrike. *Artamus leucorhynchus humei* Stresemann

Artamus leucorhynchus humei Stresemann, 1913, Novit. Zool. 20: 291 (Andamans)

Baker, FBI No. 764, Vol. 2:350
Plate 65, fig. 16

LOCAL NAMES. None recorded.

SIZE. Bulbul ±; dumpy with short tail. Length c. 18 cm (7 in.).

FIELD CHARACTERS. Above, head, and neck all round slaty grey; back purplish grey-brown; lower rump and upper tail-coverts white; tail and wings ashy black. Below, throat and upper breast slaty grey; lower breast and rest of underparts white. Sexes alike.

STARLINGS, MYNAS

147

Genus SAROGLOSSA Hodgson

Saroglossa Hodgson, 1844, in Blyth, Jour. Asiat. Soc. Bengal 13: 367.

Type, by monotypy, *Lamprolornis spilopterus* Vigors

Bill slender and gently curved; tongue less fleshy than in *Gracula*. Nostrils small and slender; rictal bristles short though strong. Feathers of crown somewhat lanceolate but short. Wing long and pointed: first primary (as.) very small. Tail short and square-cut.

984. Spottedwinged Stare. *Saroglossa spiloptera* (Vigors)

Lamprolornis spilopterus Vigors, 1831, Proc. Zool. Soc. London: 35

(Himalayan Mountains, restricted to Simla-Almora)

Psaroglossa spiloptera assamensis Baker, 1924, Bull. Brit. Orn. Cl. 45: 14

(Khasia Hills)

Baker, FBI Nos. 970, 971, Vol. 3: 25, 26

Plate 68, fig. 2

LOCAL NAME. Pali (Mussorie, U.P.).

SIZE. Bulbul ±; length c. 19 cm (7½ in.).

FIELD CHARACTERS. A spruce little gregarious myna reminiscent of the Greyheaded (*Sturnus malabaricus*, 987).

Male. Above, including crown, brownish grey scalloped with black. Below, chin and throat deep chestnut-rufous; rest of underparts rusty white. A prominent white patch in the blackish wings.

Female. Above, sooty brown; sides of head dark brown. Below, pale fulvous ashy brown scalloped with white, especially on chin and throat. White wing-patch as in male.

The typical starling-like flight, together with dark head, rufous-chestnut rump, and pointed blackish wings with a conspicuous white patch (as in Blueheaded Rock Thrush) diagnostic.

STATUS, DISTRIBUTION and HABITAT. Status equivocal and imperfectly known. From available data, is by and large an east-west migrant. Breeds in the western Himalayas from about Kangra in Himachal Pradesh (c. 32°N., 76°E.) to Garhwal and Kumaon (Dehra Dun, Simla, Almora). Flocks sight-recorded at c. 2000 m in Garhwal (Mandakini Valley, May-June — Lavkumar, JBNHS 53: 324). Passes westward along the lower hills, between c. 700 and 1200 m, in March-April through Nepal and Sikkim, and eastward again in June-July. Winters abundantly in Assam, from the foothills up to c. 1000 m, rather erratically in Nagaland (?), Manipur, and E. Pakistan (Dacca, Chittagong). May also breed occasionally (or regularly?) in between and in Assam, but this not proven. Affects open forest.

Extralimital. Burma south to N. Tenasserim (winter).

GENERAL HABITS. Arboreal and highly gregarious. Keeps in small or large flocks, sometimes of several scores or even hundreds as when feeding



× c. 1

146

STURNIDAE

STATUS, DISTRIBUTION and HABITAT. Endemic to Great and Little Coco, and Andaman islands. Affects openly wooded country, forest clearings, rubber plantations, etc.

Extralimital. Other subspecies in Malaysia, Philippines, Borneo, Sumatra, Java and associated islands, east to Australia.

GENERAL HABITS, FOOD, VOICE and CALLS. As in Ashy Swallow-Shrike (982) q.v. Has been recorded as settling freely on the ground, moving with very short hops to pick up insects and nesting material, several frequently together on roads (Hume).

BREEDING. Season, mainly April and May. *Nest*, as in Ashy Swallow-Shrike (982) — usually quite exposed; almost invariably placed on the broken-off stump of some stout branch, between c. 3.5 and 7 m from the ground. *Eggs*, 3, white, spotted with light brown or fawn chiefly in a zone at the broad end, with numerous underlying grey markings (BBO). Average size of 40 eggs 23.8 × 17.2 mm (Baker). Breeding biology as in 982.

MUSEUM DIAGNOSIS. Underparts white from breast downwards; upper tail-coverts as well as lower rump white.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	127-134	16-17	15-16	55-60 mm (Baker)

COLOURS OF BARE PARTS. Iris pale blue, dark blue to deep brown. Bill pale blue tipped with black. Legs and feet dark slaty to practically black (Baker).

Family STURNIDAE¹: Starlings, Mynas

Cf. Amadon, D., 1943, *Amer. Mus. Novit.*, No. 1247: 1-16

Marien, D., 1950, JBNHS 49: 471-87

Amadon, D., 1956, *Amer. Mus. Novit.*, No. 1803: 1-41

For description and morphology see Van Tyne, J. & Berger, A. J., 1959: 537; Baker, E. C. Stuart, 1926, FBI 3: 16, 27; Dean Amadon, 1964. Article 'Starling' in Thomson, A. L. (ed.), *New Dict. Birds*. London and New York.

Key to the Genera

	Page
I A yellow wing-patch.....	Mino 189
II A white wing-patch showing on the upperparts of the remiges	
A Patch near base of remiges	
1 Underparts and throat mostly dark grey.....	<i>Acridotheres</i> 176
2 Underparts rufous, throat chestnut.....	<i>Saroglossa</i> 147
B Patch at about middle of length of wing.....	<i>Gracula</i> 190
III No wing-patch, or patch suffused	
C Underparts mostly greyish white, rufous or pink, or nearly black with metallic purple and green reflections.....	<i>Sturnus</i> 151
D Underparts black with green reflection, no purple; underparts of female striped.....	<i>Aplonis</i> 148

¹ Includes Graculidae (Eulabidae) of FBI, 1926, 3: 16; 1930, 7: 207; 8: 648.

148

STURNIDAE

on large leafless *Salmalia* trees in flower, and in company with Greyheaded and Jungle Mynas (*Sturnus malabaricus* and *Acridotheres fuscus*). Very fond of nectar, the slender curving bill suggesting special adaptation for this diet. At the flowers often adopts blustering and bullying dog-in-the-manger tactics, like Rosy Pastor, assaulting and keeping other visitors off from the flowers although itself satiated. From time to time, for no apparent reason, a whole flock will suddenly dive into space from the leafless branches and wheel round and round the tree at top speed with lightning twists and turns and side-slips as if to dodge some invisible devil in pursuit! After a couple of rounds the birds re-settle and resume feeding complacently as before. Flight swift, very much like that of the starlings *Sturnus vulgaris* and *S. roseus*.

FOOD. Insects (red tree ants, winged termites, etc.); *Ficus* figs and various berries; in season, predominantly flower-nectar of *Salmalia*, *Bombax* and *Erythrina* species; also of *Gracillea* shade-trees in tea gardens.

VOICE and CALLS. Noisy chattering notes when in a flock, very similar to those of Greyheaded and Jungle mynas. A resentful or bellicose *chek-chek-chek*, with wings partially dropped and tail slightly cocked and expanded, while hopping from flower to flower with other bird visitors feeding in the vicinity. A soft *chik-chik* like chirruping of Yellowthroated Sparrow (*Petronia xanthocollis*, 1949) when sitting idly.

BREEDING. Season, chiefly April to June. *Nest*, a pad of green leaves and rubbish, in a natural tree-hollow or barbet hole, 6 to 10 m from the ground. *Eggs*, 3 or 4, pale stone colour or pale bluish green with small reddish brown specks and blotches. Average size of 30 eggs 25.4 × 18.0 mm (Baker). Breeding biology unrecorded.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young (immature) female. Above, whole head and upperparts uniform grey-brown, a little paler than adult, with fulvous tips to lesser and median coverts and tertials; rump and upper tail-coverts fulvous brown; rest of wings and tail as in adult ♀ but rectrices narrower. Below, as in adult but more streaked than mottled, and washed with fulvous on flanks.

Young male said to differ from female, but not examined.

MEASUREMENTS

	Wing	Bill (from anterior edge of nostril)	Tail
♂♂	110-115	14-15	56-61 mm
♀♀	105-106	13-14	54-58 mm (Marien)

Tarsus 21-22 mm (Baker)

Weight 1 ♂ 47.5 g (BB).

COLOURS OF BARE PARTS. Iris dull white to lemon-yellow. Bill dusky black, reddish at base of lower mandible and pale yellow on margins of both mandibles. Legs, feet and claws black.

Genus APLONIS Gould

Aplonis Gould, 1836, Proc. Zool. Soc. London: 73. Type,

by original designation, *Aplonis marginata* Gould = *Lanius talaris* Gmelin

Lanius Bonaparte, 1853, Comp. Rend. Acad. Sci. Paris 38: 830. Type,

by original designation, *Lamprolornis fuliginis* Pucheran = *L. griseus* Salvadori

STARLINGS, MYNAS 149

Plumage intensely glossy. Bill fairly stout and gently curved; nostrils small and round. Wing long and pointed; tail of moderate length, well graduated. Tarsus and feet strong. Only the single species *panayensis* (Scopoli) occurs within our limits with two subspecies.

APLONIS PANAYENSIS (Scopoli)

Key to the Subspecies

- Plumage very dark and less glossy.....*A. p. tyleri*
- Plumage less dark and very glossy.....*A. p. affinis*

985. Tipperah Glossy Stare. *Aplonis panayensis affinis* (Blyth)

Calornis affinis 'A. Hay' = Blyth, 1846, Jour. Asiat. Soc. Bengal 15: 36 (Tipperah)

Baker, FBI No. 969, Vol. 3: 24

LOCAL NAMES. *Dao gogoui*, *Dao maina gajeba* (Cachari).

SIZE. Myna \pm ; length c. 22 cm (8 $\frac{1}{2}$ in.).

FIELD CHARACTERS. A smallish, comparatively slender black myna, brilliantly green-glossed all over and with conspicuous scarlet-crimson eyes (yellowish white in young, q.v.). Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Status equivocal. Thought to be summer (breeding) visitor to Assam in the Garo, Khasi and N. Cachar hills; arrives there c. February and departs

c. April with flying young. Occurs also in East Pakistan (Tipperah, Chittagong, Dacca). Locally common. A straggler (subspecies?) taken in Madras, 9 Oct. 1880 (W. F. Dique, SF 9: 298). Affects coconut groves, forest edges, and cultivation clearings with a scattering of large *Ficus* and suchlike trees.

Extralimital. Arakan. Other races in Burma, peninsular Thailand, Indo-chinese countries, Malay peninsula and archipelago, and Indonesian islands east to the Philippines.

GENERAL HABITS. Gregarious and sociable. Keeps in noisy flocks feeding in association with other mynas on *Ficus* and flowering trees. Congregates to roost in hundreds in coconut palms and other trees to the accompaniment of much squabbling and chattering. Chiefly arboreal but will sometimes descend to the ground to pick up fallen berries. Posture at rest, and flight, very starling-like.

FOOD. Insects, berries and small *Ficus* figs (e.g. *F. benjamina*), and flower-nectar (*Salmalia*, *Erythrina*, etc.).

VOICE AND CALLS. Very noisy when in flock; has a sharp metallic single note.

BREEDING. Very little known. In Cachar 'It breeds about April in the holes of dead trees; when the young are able to fly it departs. It again returns



x c. 1

STARLINGS, MYNAS 151

Genus STURNUS Linnaeus

Sturnus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 167. Type, by subsequent designation, *Sturnus vulgaris* Linnaeus

Pastor Temminck, 1815, Man. d'Orn.: 82. Type, by monotypy, *Turdus roseus* Linnaeus

Gracupica Lesson, 1831, Trait   d'Orn.: 401. Type, by monotypy, *Gracupica melanoleuca* Lesson = *Gracula nigricollis* Paykull

Sturnia Lesson, 1837, Compl. de Buffon 9: 53. Type, by original designation, *Sturnus sericeus* Gmelin

Sturnopastor Hodgson in Blyth, 1843, Ann. Mag. Nat. Hist. 12: 97. Type, by monotypy, *Sturnus contra* Linnaeus

Temenuchus Cabanis, 1851, Mus. Hein. 1: 204. Type, by subsequent designation, *Turdus pagodarum* Gmelin

Sturnornis Legge, 1879, Bds. Ceylon: 679, pl. 28. Type, by monotypy, *Heterornis mex* Bonaparte

Key to the Species

- I No crest, or crest very moderate
 - A Plumage entirely dark, glossy and speckled.....*S. vulgaris* 166
 - B Abdomen white or rufous, back grey
 - 1 Middle rectrices longer than outermost
 - a Upper wing-coverts and scapulars buff contrasting with back.....*S. sinensis* 176
 - b Upper wing-coverts and scapulars same colour as back
 - i Tertiaries glossy black.....*S. malabaricus* 151
 - ii Tertiaries grey.....*S. erythropygius* 156
 - 2 Middle rectrices shorter than outermost, back glossy black.....*S. sturninus* 162
- II Crest present
 - C Crest longer than tarsus.....*S. pagodarum* 160
 - 3 Throat and breast rich buff.....*S. roseus* 163
 - 4 Throat black, abdomen pink.....*S. senex* 159
 - D Crest shorter than tarsus.....*S. contra* 172
 - 5 Throat black.....*S. senex* 159
 - 6 Throat whitish grey.....*S. contra* 172

STURNUS MALABARICUS (Gmelin)

Key to the Subspecies

- 1 Head grey or grey tinged with rufous
 - a Abdomen fawn.....*S. m. malabaricus* 152
 - b Abdomen whitish washed with ochraceous buff on the sides.....*S. m. nemoricola* 155
- 2 Head white.....*S. m. blythii* 154

150 STURNIDAE

about the middle of February' (J. Inglis in Hume, 1889, 1: 367). More information desirable.

MUSEUM DIAGNOSIS. Lores and feathers at base of upper mandible dull black; wings and tail black with faint blue gloss.

Young (immature). Upperparts dark brown with slight green gloss. *Below*, buffy white heavily streaked with brown and slightly glossed with green, the streak fine on chin and throat, heavier elsewhere except on belly which is nearly immaculate. Coverts, secondaries and tertiaries browner, slightly glossed and edged paler. Post-juvinal moult complete (Ticehurst).

MEASUREMENTS

♂♀ Wing 106-113 mm (Ticehurst).

COLOURS OF BARE PARTS. Adult. Iris crimson. Bill, legs, feet and claws black. Immature. Iris yellowish white turning to pale yellow with red-brown tinge, orange-vermillion, and finally crimson. Legs and feet brownish black (CBT).

986. Andaman Glossy Stare. *Aplonis panayensis tyleri* (Hume)

Calornis Tyleri Hume, 1873, Stray Feathers 1: 480 (Andamans)

Baker, FBI No. 968, Vol. 3: 23

Plate 68, fig. 1

LOCAL NAME. *Tukkulis* (Car Nicobar).

SIZE. Myna \pm ; length c. 22 cm (8 $\frac{1}{2}$ in.).

FIELD CHARACTERS. As of 985, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident and locally migratory: Andamans and Nicobars; found on nearly all the islands. Appears in Port Blair about February and remains till June: exceedingly numerous between these months. Absent for rest of the year; where the birds go unknown (Osmaston, JBNHS 17: 158). Affects coconut groves; also forest and open country with large trees.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 985.

BREEDING. Season, March to May, chiefly April. Nest, a natural hollow or woodpecker hole in a coconut trunk for preference, but also in padouk and other trees, generally at considerable heights. Eggs, 2(?) to 4, white to skim-milk blue with specks and small blotches of reddish brown. Average size of 30 eggs 26.6 x 19.7 mm (Baker). Breeding biology unrecorded.

MUSEUM DIAGNOSIS. Differs from *affinis* (985) in being darker, not so glossy bronze-green, the gloss more bluish green. Also has a longer wing, and larger and broader bill.

Young (immature) as in *affinis*.

MEASUREMENTS

♂♀ Wing 112-120 mm (Baker)

COLOURS OF BARE PARTS. Iris very variable: white, pink, brown, red-brown or deep orange. Bill, tarsus and toes black (CBT).

A new subspecies, *A. p. albis*, has since been described by Abdulali from Great Nicobar on the basis of eye colour, white s. brown in birds from Car Nicobar and the Andamans (type locality, Campbell Bay, Great Nicobar). Known distribution: Camorta, Trinkat, Nankowry, and Great Nicobar islands (Bull. BOC. 87 (2): 33-4. 1967).

152 STURNIDAE

987. Greyheaded Myna. *Sturnus malabaricus malabaricus* (Gmelin)

Turdus malabaricus Gmelin, 1789, Syst. Nat. 1: 816 (Malabar Coast)

Sturnia malabarica asiamica Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 19

(Nichuguard, Naga Hills)

Baker, FBI No. 982, Vol. 3: 39

Plate 68, fig. 3

LOCAL NAMES. *P  wei* (Hindi); *D  ri p  wei* (Bengal); *Kat halik* (Assam); *Meina gophu* (Cachar); *P  li palisa* (Telugu); *Ch  r  kkili* (Malayalam).

SIZE. Myna --; length c. 21 cm (8 in.).

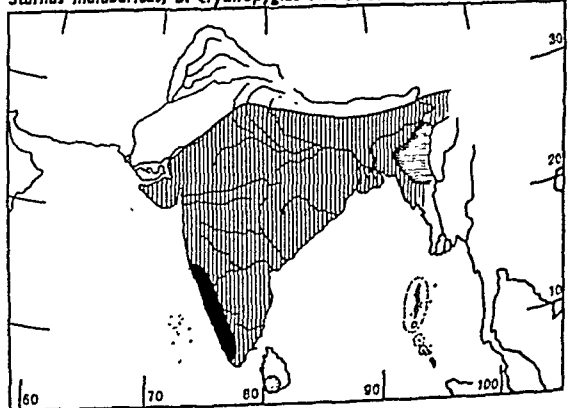
FIELD CHARACTERS. A small, trim, silvery grey-and-rufous sociable myna. Above, head and upperparts silvery- or brownish grey; tail largely ferruginous. Wing-quills black and grey. Below, chin, throat and breast lilac-grey or pale rufous; rest of underparts bright rufous. Sexes more or less similar. See Museum Diagnosis.



x c. 1

STATUS, DISTRIBUTION AND HABITAT. Resident, with marked seasonal local migrations and erratic wandering movements, especially during the SW. monsoon and in winter. Practically throughout the Indian Union

Sturnus malabaricus, *S. erythropygius* and *S. senex*



Distributional ranges

- S. m. malabaricus* (987) *S. m. blythii* (988) *S. m. nemoricola* (989)
- S. a. andamanensis* (990) *S. e. erythropygius* (991) *S. e. katchaleusii* (992)
- S. s. senex* (993)

STARLINGS, MYNAS

153

(south to Kanyakumari) and E. Pakistan, roughly east and south of a line from Mt Abu in Rajasthan to Dehra Dun in U.P. (straggling to Simla and Ambala); thence eastward along the lower Himalayas and submontane tracts through Nepal, Sikkim, Bhutan and NEFA; normally up to c. 1500 m in the Himalayas and peninsular hills, locally to c. 2000 m. Evidently breeds at least south to about 17°N.; replaced in southwestern India by 988. In winter both grey-headed and white-headed birds often in the same locality and even in a mixed flock. Represented in N. Cachar, Nagaland and Manipur by 989. Absent in Ceylon.

Affects thinly wooded country both near human habitations and in outlying parts, and open secondary jungle. Partial to young forest plantations.

GENERAL HABITS. Gregarious and predominantly arboreal, but will frequently descend to feed in low bushes and occasionally on the ground. Keeps in small flocks of 5 to 20 or larger ones of several scores, by itself or in association with Rosy Pastors and other mynas as when feeding on flowering trees. The birds hop actively from one flower bunch to another keeping up a lively chatter and squabbling the while. Hunts insects among the foliage canopy walking purposefully along the branches, clinging to the bark in all manner of acrobatic positions, and peering into nooks and crannies. Flight swift and typically starling-like: a few rapid beats of the pointed wings followed by a short glide. Large congregations collect to feast on winged termites emerging from rain-sodden soil in company with drongos and other insectivorous species. The birds, in ones and twos or several together, spring up vertically from the ground or a bush-top closing the wings and halting in mid-air for a split second while they neatly snap up the quarry, before diving back to the perch. While feeding on a lofty leafless flowering Silk Cotton a flock will suddenly—as at a word of command—and for no apparent reason, dive helter-skelter into space as if to dodge the stoop of some imaginary raptor and will circle round the tree at high speed once or twice before re-settling and resuming activity as before, with no sign of nervousness (cf. 984).

FOOD. Fruits and berries; flower-nectar; insects. Among the first, most commonly recorded are: *Zizyphus* (esp. *oenophia*), *Lantana aculeata*, *Inga dulcis*, and wild figs of many species (*Ficus bengalensis*, *F. religiosa* and others). Nectar of *Salmalia malabarica*, *Bombax insignis* and species, *Erythrina indica*, *E. suberosa* and *E. lithosperma*, *Butea monosperma* and occasionally *Loranthus* spp. the birds helping to promote cross-pollination in many of these. In an intensively cultivated area in Bihar the following insects identified among stomach contents: weevils [*Tanymericus* sp. (*hispidus*?), *Astycus lateralis*]; beetles (*Myliocerus maculosus* and spp.), in addition to gryllids, hemipterous bugs and geometrid caterpillars. Nest-young observed to be fed on melolonthid, geometrid and noctuid larvae (Mason & Lefroy, 1912).

VOICE AND CALLS. A sharp disyllabic metallic note; uttered also when just taking off and during flight. A mild, rather tremulous single whistle (Nichols). Song: a pleasant warble (Hume, Jones).

BREEDING. Season, overall April to July, the principal periods varying with locality. Nest, a collection of twigs, rootlets and grass placed in a barbet- or woodpecker hole in a tree-stem, normally between 3 and 12 metres from the ground. Eggs, 3-5, pale blue-green, unmarked. Average size of

STARLINGS, MYNAS

155

(July) and Ahmedabad (August). Frequently found in mixed flocks together with Greyheaded Myna in non-breeding season. Due to this and consequent ambiguity in sight records, exact status and distribution as yet imperfectly known. Habitat as under 987.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 987.

BREEDING. Season, February to May. Nest, eggs (c/3) and breeding biology as in Greyheaded Myna (987). Average size of 15 eggs 23.8 × 17.9 mm (Baker).

MUSEUM DIAGNOSIS. Male differs from male *malabaricus* in having the whole head, chin, throat and breast white; upper tail-coverts with less rufous or none; under tail-coverts constantly more rufous, never quite white as sometimes in *malabaricus*.

Adult female differs from adult male (*above*) as follows: 1. White of head confined to forehead and forecrown; rest of crown and nape concolorous with back but much streaked with pale grey, 2. Silvery grey on wings and tail less pronounced, 3. Sides of head and neck largely grey instead of white, 4. Pure white on underparts confined to chin and throat; breast sullied grey merging into the creamy rufous of abdomen and flanks (which are rich rufous in male); under tail-coverts paler and more fulvous.

Adult female *blythii* differs from adult female *malabaricus* as follows: 1. Upperparts purer more silvery grey v. more brownish grey, 2. Underparts much paler: chin and throat pure white; breast white, sullied with grey and rufous; rest of underparts and flanks creamy rufous; under tail-coverts pale rufous.

Young (immature) not distinguishable from juvenile *malabaricus*.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	96-107	23-24	23-26	62-67 mm
♀♀	97-104	22-25	23-26	59-65 mm

(SA, Marien)

Bill from anterior edge of nostril: ♂♂ 14-16 mm (Marien).

COLOURS OF BARE PARTS. As in 987.

989. Whitewinged Myna. *Sturnus malabaricus nemoricola* (Jerdon)

Sturnia nemoricola Jerdon, 1862, Ibis: 22 (Thayetmyo, Upper Burma)
Baker, FBI No. 987, Vol. 3: 42

LOCAL NAMES. None recorded.

SIZE. Myna —; length c. 21 cm (8 in.).

FIELD CHARACTERS. As of 987, q.v., but with forehead, crown, chin, throat and breast clear pearly grey (without white shafts), and underparts pale rufous buff to almost white. Sexes alike. See also Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident and common. North Cachar, Nagaland, Manipur: foothills and up to c. 1200 m. Affects secondary forest with scattered large *Salmalia* trees, and semi-cultivation.

Extinct. Burma, Thailand, Yunnan, Indochinese countries.

GENERAL HABITS. Very similar to Greyheaded Myna (987). Keeps in small parties or flocks, often of considerable size. Feeds up in flowering and

154

STURNIDAE

50 eggs 23.8 × 18.2 mm (Baker). Both sexes take part in building the nest, incubation, and tending the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. Male. *Above*, forehead feathers over eyes whitish; cheeks and ear-coverts pale rufous-grey; shafts of feathers of head and neck whitish. Rest of upperparts dark grey tinged with ferruginous on rump and upper tail-coverts. Central tail-feathers frosted grey; rest blackish at base, dark ferruginous at tips, this increasing towards outer pair. *Below*, chin, throat and breast rufous-grey, the feathers with white shafts; rest of underparts deep ferruginous, but under tail-coverts sometimes white. Feathers of crown, nape, throat and upper breast hackled.

Female. Normally indistinguishable from male. Some have the hackles shorter and less defined; head similar to back without the white; underparts paler or even whitish.

Young (immature). 'Upperparts grey-brown, palest on head; indistinct pale supercilium; upper tail-coverts with a rusty tinge; sides of head and underparts dirty buffy white; wings and tail dark brown without grey frosting and with paler brown outer edges to wings and coverts; the deep ferruginous of tail replaced by paler rufous tips, less in extent; tail-feathers narrower. Postjuvinal moult complete' (Ticehurst).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	93-106	21-24	23-25	59-65 mm
♀♀	94-104	20-22	22-24	55-65 mm

(HW, BB, Marien)

Bill from anterior edge of nostril: ♂♂ 12-15; ♀♀ 12-14 mm (Marien).

Weight 16 ♂♂ 32-44 (av. 39.9) g—SA. 3 ♂♂ 34.5-42.5; 2 ♀♀ 36.5, 39.5 g (GD, BB).

COLOURS OF BARE PARTS. Iris greyish- or creamy white. Bill cobalt or leaden blue at base, yellow at tip, with a greenish intermediate area; palate dusky yellow, gullet pinkish grey or slaty. Legs, feet and claws yellowish brown, brownish flesh, or pale lemon-yellow.

988. Whiteheaded Myna. *Sturnus malabaricus blythii* (Jerdon)

Pastor Blythii Jerdon, 1844, Madras Jour. Lit. Sci. 13: 133 (Malabar)
Baker, FBI No. 983, Vol. 3: 40
Plate 68, fig. 4

LOCAL NAMES. *Pāli palisa* (Telugu); *Chārākkili* (Malayalam).

SIZE. Myna —; length c. 21 cm (8 in.).

FIELD CHARACTERS. As of 987, q.v., but whole head, chin, throat and breast white in male. For details of plumage and distinction between male and female, and between female *blythii* and very similar female *malabaricus* see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to seasonal local migration like *malabaricus*. Breeds in southwestern peninsular India, in Kerala (including Wynaad) and western Mysore (Coorg dist.) up to c. 1200 m; perhaps north to Belgaum (c. 16°N.). Migrates and/or straggles sporadically northward in the rains and winter. Specimens from Bombay

156

STURNIDAE

fruiting trees—sometimes on the ground—chiefly in the morning and late afternoon, sheltering in shady trees during the heat of the day. Roosts in bushes in company with Pied and other mynas.

FOOD, VOICE AND CALLS. As in 987. 'A sharp metallic note continued during flight' (Davison). Diet largely nectar and wild figs (*Ficus* spp.).

BREEDING. Season, apparently April and May. Nest, eggs (c/3-6) and breeding biology as in 987. Average size of 14 eggs 25.6 × 19.0 mm (Baker).

MUSEUM DIAGNOSIS. Under tail-coverts, winglet and primary-coverts often white, sometimes black as in *malabaricus*, sometimes particoloured black and white; this apparently neither sexual nor due to age. Hackles as in *malabaricus*.

There is much variation. Usually the only ferruginous on the underparts is a small patch on flanks covering the thighs. But occasionally underparts distinctly suffused with ferruginous. Head colour varies individually and with wear, but is never so dark grey as in *malabaricus*. Even in fresh plumage head and throat may be very pale grey or almost pure white thus closely resembling *blythii* except for the belly which is not ferruginous.

Young (immature) indistinguishable from *malabaricus*.

MEASUREMENTS

Wing ♂♂ ♀♀ 94-103 mm (Baker)

COLOURS OF BARE PARTS. As in 987.

STURNUS ERYTHROPS (Blyth)

Key to the Subspecies

	Page
1 Rump rufous..... <i>S. e. erythropus</i>	157
2 Rump pale grey	
a Under tail-coverts pale rufous..... <i>S. e. andamanensis</i>	156
b Under tail-coverts chestnut-rufous..... <i>S. e. katchaleensis</i>	158

990. Andaman Whiteheaded Myna. *Sturnus erythropus andamanensis* (Tyder)

Temeruchus andamanensis Tyder, in Beavan, 1867, Ibis: 329 (Andamans)
Baker, FBI No. 984, Vol. 3: 41

LOCAL NAMES. None recorded.

SIZE. Myna —; length c. 21 cm (8 in.).

FIELD CHARACTERS. Similar to Whitewinged Myna (989), q.v., but with whole head, neck, and underparts creamy white; back and scapulars pale grey; rump and upper tail-coverts paler grey, faintly tinged with fulvous. Sexes alike. See keys to the Species and Subspecies, and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; very common. Andaman Islands. Affects forest and secondary jungle. Introduced on Camorta, Nicobars.

GENERAL HABITS. As of Greyheaded Myna (987). Keeps in small parties and large flocks in and around paddyfields, open grassland and forest edges, and on hillsides. Associates with drongos, cuckoo-shrikes, minivets, etc. in the itinerant foraging bands.

STARLINGS, MYNAS

157

FOOD. Nectar, fruits and berries, and insects. Very partial to a small caterpillar which rolls itself up in narrow bamboo leaves¹, the birds adopting all sorts of tit-like attitudes to investigate the infested leaves (Butler, JBNHS 12: 397-8).

VOICE and CALLS. Not specifically recorded. Presumably as in 987 and 989.

BREEDING. Season, March to May. Nest, of small pliant twigs lined with small green leaves; placed in a tree-hole 2 to 10 metres from the ground. Eggs, 4, uniform blue similar to those of *Sturnus malabaricus* and also *Acridotheres tristis*. Average size of 40 eggs 25.8 × 18.9 mm (Baker). Both sexes take part in all domestic chores.

MUSEUM DIAGNOSIS. Only feathers of crown hackled. Wings and tail black glossed with green. Central rectrices with hardly any white tips; small tips to next pair and increasingly larger ones to outer pair which are half white. Under wing-coverts and axillaries white. Bill more massive and longer than in *S. m. nemoralis* (1989).

Young (immature). 'Very similar to adult' (Butler).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	103-113	20-21	27-28	75-76 mm (Baker)
2 ♂♂	107+, 117	20, 21	—	76, 78 mm
2 ♀♀	107, 108	20, 21	—	72, 74 mm (Abdulali)

COLOURS OF BARE PARTS. Iris opalescent white to very pale blue. Bill greenish yellow, small blue at base. Legs and feet lemon- or fleshy yellow.

991. Nicobar Whiteheaded Myna. *Sturnus erythrogygius erythrogygius* (Blyth)
Sturnia erythrogygia Blyth, 1846, Jour. Asiat. Soc. Bengal 15: 34
(Nicobar islands, restricted by Ripley, 1961, to Car Nicobar)
Baker, FBI No. 985, Vol. 3: 41
Plate 68, fig. 8

LOCAL NAMES. *Halat*, *Harotich* (Car Nicobarese).
SIZE. Myna —; length c. 21 cm (8 in.).
FIELD CHARACTERS. As of 990, q.v. Sexes alike. See Key to the Subspecies and Museum Diagnosis.
STATUS, DISTRIBUTION and HABITAT. Nicobar islands; so far known only on Car Nicobar where quite common. Habitat as in 990; partial to casuarinas and coconut palms in the coastal belt.
GENERAL HABITS, FOOD, VOICE and CALLS. As in 987 and 989. Large numbers congregate in the evening to roost in old casuarina and other trees.
BREEDING. Season, April; perhaps more correctly March to May as in the Andaman form. Nest, the only three known were as described under

¹ Probably larva of the common Pyralid, *Pyrausta nectalis*.

STARLINGS, MYNAS

159

993. Ceylon Whiteheaded Myna. *Sturnus senex* (Bonaparte)
Heterornis (Pastor) senex Bonaparte, 1850, Cons. Gen. Av. 1: 419
(¹ ex Beng. ² errors = Ceylon)
Cf. Ticehurst, C. B., 1940, *Ibis*: 148-9
Baker, FBI No. 990, Vol. 3: 46
Plate 68, fig. 7

LOCAL NAMES. Not specifically recorded.
SIZE. Myna —; length c. 22 cm (8½ in.).
FIELD CHARACTERS. A trim smallish myna, reminiscent of the Greyheaded (987).
Above, forehead and sides of head white; crown and rest of upperparts blackish slate; feathers of nape and neck white-shafted. Below, chin and throat white, rest of underparts dusky lavender-grey (streaked with white on neck and breast) paling to whitish on belly and under tail-coverts. Wings and tail green-glossed black. Sexes alike.
STATUS, DISTRIBUTION and HABITAT. Species endemic to Ceylon: Not abundant. Confined to well-wooded hills in the southwestern Wet zone, including Adam's Peak, up to c. 1300 m. Affects tall forest and the adjacent clearings.

Could be regarded as the Ceylon form of *Sturnus malabaricus*.
GENERAL HABITS. Not different from Indian Greyheaded and White-headed mynas. Like them, sociable and almost entirely arboreal.
FOOD. Fruits and berries, and insects; also flower-nectar (*Salmalia*, *Grevillea*, etc.).
VOICE and CALLS. 'A starling-like chirp' (Legge). 'A single note *cheer* with the tone of a grackle's, and the bird bows and scrapes like a myna' (W. W. A. Phillips's correspondent from Rakwana in *epist.*).
BREEDING. Apparently known only from a single nest in a tree-hole (April). It contained 2 pale blue eggs measuring c. 25 × 20 mm.
MUSEUM DIAGNOSIS. Feathers of crown and nape hackled. White shafts of nape and neck feathers, coloration of underparts, and amount of white on head very variable. Under wing-coverts dusky. A small bare bluish patch behind eyes.
Young (immature). Upperparts dull brown; supercilium whitish; ear-coverts sullied white. Underparts much as adult, but conspicuous white shaft-lines absent. Wings and tail brown. Postjuvénal moult complete (Ticehurst).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	105-110	c. 20-21	c. 26	69-73 mm (Baker)
1 ♂	112	(from skull) 23	—	73 mm (SDR)

COLOURS OF BARE PARTS. Iris dull white with narrow brown inner circle; orbital skin and eyelids bluish. Bill bluish brown, base of lower mandible plumbeous blue. Legs and feet bluish plumbeous.

STURNIDAE

158

990, and built in holes c. 3 or 4 metres up in Screw Pines (*Pandanus*) on the fringe of forest along the beach (D. B. Osmaston). Eggs, 4, unmarked uniform blue. Average size of 8 eggs 26.2 × 18.7 mm (Baker). Breeding biology not described; presumably as in *andamanensis* (990).

MUSEUM DIAGNOSIS. Only feathers of crown hackled. Rump, upper tail-coverts, vent, under tail-coverts, and tips of rectrices deep chestnut; sometimes a chestnut tinge on scapulars and under wing.

Young (immature). Like adult, but crown with narrow brownish grey shaft-streaks; belly tinged with creamy fawn; upper wing-coverts, secondaries and tertials narrowly edged with fulvous (A. L. Butler).

MEASUREMENTS

	Wing	Bill	Tail
3 ♂♂	110-112	23-24	76-78 mm
2 ♀♀	106, 108	22, 23	65, 71 mm (Abdulali)

Wing ♂ ♀ 112-120 mm (Baker)

COLOURS OF BARE PARTS. Adult as in 990. Juvenile. Iris pale grey. Bill yellow or greenish yellow above; base of lower mandible flesh-pink. Legs and feet dirty yellow (Butler).

992. Katchal Whiteheaded Myna. *Sturnus erythrogygius katchalensis* (Richmond)
Sturnia erythrogygia katchalensis Richmond, 1902, Proc. U.S. Nat. Mus. 25: 293
(Katchal, Nicobars)
Baker, FBI No. 986, Vol. 3: 42

LOCAL NAMES. None recorded.
SIZE. Myna —; length c. 21 cm (8 in.).
FIELD CHARACTERS. As of 990 and 991, q.v. See Key to the Subspecies and Museum Diagnosis.
STATUS, DISTRIBUTION and HABITAT. Katchal Island, Nicobars.
GENERAL HABITS, FOOD, VOICE and CALLS. Nothing recorded; presumably as in 990 and 991.
BREEDING. Not recorded.
MUSEUM DIAGNOSIS. Stands midway between *andamanensis* and *erythrogygius*, possibly a hybrid form. Has the pale grey rump and upper tail-coverts of *andamanensis* and the rufous belly, thighs and under tail-coverts of *erythrogygius*.

MEASUREMENTS

	Wing	Bill	Tail
1 ♂	107	—	64 mm
1 ♀	106	22	64 mm (Abdulali)

Wing 106, bill 21.5, tarsus 25.5, tail 71 (Richmond)

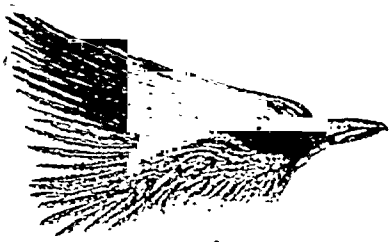
COLOURS OF BARE PARTS. Not recorded; doubtless as in 990.

STURNIDAE

160

994. Blackheaded or Brahminy Myna. *Sturnus pagodarum* (Gmelin)
Turdus pagodarum Gmelin, 1789, Syst. Nat. 1: 816 (Malabar)
Tentamachus pagodarum sylvestris Koeltz, 1939, Proc. Biol. Soc. Washington 52: 73
(Lucknow), *lepus* for (Maine) *Sylvestris* Hodgson, 1837, *see Sturnus sylvestris* Brehm, 1831
• *Tentamachus pagodarum afghanorum* Koeltz, 1939, Proc. Biol. Soc. Washington 52: 73
(Tagan, Afghanistan)
Baker, FBI No. 991, Vol. 3: 47
Plate 68, fig. 5

LOCAL NAMES. *Pepoya myna*, *Brāhmīni myna*, *Pūhāia*, *Kālasit myna* (Hindi); *Menghyr pāri* (Calcutta dealers), *Bāmīni myna*, *Harbolā* (Bengal); *Pahiya pāri* (U.P., Mathura); *Pāpāta gurinki* (Telugu); *Pāpāta pāriki*, *Pāpāthi nākanarāi*, *Raveneti* (Tamil); *Kārimālaichikkili* (Malayalam); *Martintu* (Portuguese in Ceylon); *Nākanam pāshi* (Tamil in Ceylon).
SIZE. Myna —; length c. 22 cm (8½ in.).
FIELD CHARACTERS. A crested myna, grey above reddish fawn below, with glossy black forehead, crown and nape and long pointed crest. Wings



black; tail brown with white edging and tip, particularly conspicuous when the bird spreads it before alighting. Sexes alike, but crest of female shorter.
Young (immature). General coloration dull: back browner grey, head sooty brown and crestless.
STATUS, DISTRIBUTION and HABITAT. Mainly resident, locally common but capricious, and subject to marked seasonal movements especially in the monsoons. Summer visitor (c. April) to the northern cold-winter parts. Absent in arid semi-desert and desert tracts as well as in humid evergreen biotope. West Pakistan roughly east of the Indus Valley; common summer visitor to Gilgit and Chitral, arriving there in April/May and breeding at between 1500 and 1600 m (Fulton, JBNHS 16: 49). All India from southern Kashmir, Himachal Pradesh and the Himalayan foothills (normally up to c. 1400 m, locally to 2400 m) southward to Kanyakumari; from eastern Rajasthan, northern Gujarat and Kutch eastward to about the longitude of Calcutta, c. 88°E. in W. Bengal. Rare or straggler in Assam and E. Pakistan. Not recorded in Nepal, Sikkim or Bhutan. Resident and widely distributed in Ceylon in the low-country Dry zone and coastal belt. Affects open deciduous forest and scrub jungle, and the neighbourhood

STARLINGS, MYNAS

161

of cultivation and human habitations, freely entering wooded urban gardens and compounds.

GENERAL HABITS. Sociable; less arboreal than Greyheaded Myna. Keeps in family parties of 4 to 7 banding into larger flocks where food is plentiful, and at the communal roosts. Associates freely with Greyheaded myna and other frugivorous and nectar-eating birds to feed on flowering and fruiting trees, and with Pied, Jungle and Indian mynas to hunt grasshoppers etc. disturbed by grazing cattle on marshy grassland and moist tank margins. Stalks about amongst the animals' legs with the typical jaunty upright carriage of mynas, darting at and seizing the fleeing insects. Flight less swift and starling-like than Greyheaded myna. Roosts in large congregations in leafy trees and shrubs such as mango and palas (*Butea*), or in reedbeds, in the noisy company of parakeets, rosy pastors and common mynas.

FOOD. Fruits and berries: lantana, *Zizyphus*, wild figs (*Ficus* spp.), *Salvadora persica* and *S. oleoides*, *Bridelia*, *Mimusops hexandra*, and others. Has been recorded eating the poisonous fruits of Yellow Oleander (*Thevetia nerifolia*), and the fleshy flowers of mhowa (*Madhuca indica*) commonly. Nectar of flowers: *Erythrina*, *Salmalia*, *Butea* and *Capparis* among the most usual, the birds doubtless promoting their cross-pollination. Insects: grasshoppers, moths, caterpillars, etc.

VOICE AND CALLS. Amusing merry creaking and chattering notes. In breeding season, a pleasing little rambling warbling song delivered by male from a shady perch in the nature of a soliloquy with his crest partially raised and whole plumage frowzled. It is interlarded with passable mimicry of bulbul, drongo and other birds' calls.

BREEDING. Season, overall February/March to August/September, the principal periods varying with locality; earlier in south India later in the north. Equivocal in Ceylon: believed to be July–August. Nest, a collection of grass, dead leaves, feathers and rubbish stuffed in a hole in a tree-trunk or bough — usually with a very small entrance — often usurped from a tit, barbet or woodpecker; or in a wall or roof even of inhabited houses. Is not averse to nesting colonially if suitable holes available close together. Eggs, 3 or 4, pale blue, unmarked. Average size of 100 eggs 24.6 × 19.0 mm (Baker). Both sexes take part in building the nest, incubation and tending the young. Incubation period undetermined. Two, sometimes three, broods raised in succession.

MUSEUM DIAGNOSIS. Wings blunter than in Grey- and Whiteheaded mynas (987–993), and tarsi stouter. Tail slightly graduated. For details of plumage see Baker, loc. cit.

Young (immature). Forehead to nape dark brown and crestless; grey upperparts, edges of coverts and of secondaries suffused with rufous-brown. Underparts paler and pale streaks to long hackles absent, otherwise as adult. Rectrices narrower. Postjuvénal moult complete and first-winter bird cannot be distinguished from adult. No spring moult. Complete autumn moult in October/November.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	99–112	20–24	26–30	60–75 mm
♀♀	99–109	20–21	28–29	58–68 mm (SA, HW)

STARLINGS, MYNAS

163

996. Rosy Starling or Rosy Pastor. *Sturnus roseus* (Linnaeus)

Turdus roseus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 171

(Lapland, Switzerland)

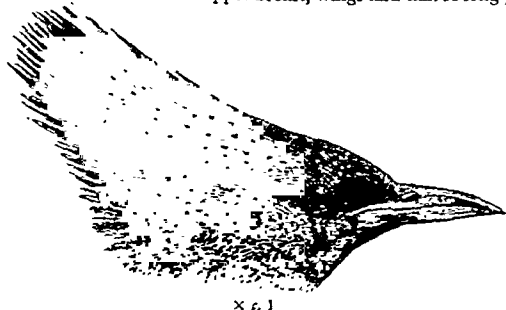
Baker, FBI No. 972, Vol. 3: 29

Plate 68, fig. 10

LOCAL NAMES. *Gulabi myna*, *Tifery* (Hindi); *Lal myna* (Bengal); *Ganggaya* (Bihar *mirshikars*); *Wyha*, *Wahero*, *Wyho* (Kutch, Sind); *Pariki pitta*, *Palisa* (Telugu); *Surai kūrūri*, *Chōlām kūrūri* (Tamil).

SIZE. Myna ±; length c. 23 cm (9 in.).

FIELD CHARACTERS. A distinctive rose-pink starling, or myna, with glistening black head, neck and upper breast, wings and tail. A long pointed



crest on crown and nape, recumbent at rest, partially raised under excitement and when singing. Pointed wings; swift and direct typically starling flight. Sexes alike.

Young (immature). Crestless, pale sandy brown with darker wings and tail; confusingly different from adult.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor to West Pakistan and India eastward to Bihar, straggling (rarely) into W. Bengal, Assam and E. Pakistan. Southward throughout the Peninsula: abundant in Gujarat and the Deccan, decreasingly through Mysore, Kerala and southern Tamil Nadu. Irregular and sparingly in Ceylon chiefly in the northern districts and coastal areas of the Dry zone. Vagrant or irregular visitor to the Andaman Islands.

In many areas of W. Pakistan (N. Baluchistan, NW. frontier districts, Gilgit, Chitral) and NW. India (Punjab) mainly an abundant two-way passage migrant, recorded as such at up to 3000 m alt.; practically absent during the winter months.

Affects open cultivation, grassland, and low thorn jungle in semi-desert. Avoids forest.

Extralimital. Breeds in SE. Europe (west to Hungary) and SW. Asia (Asia Minor, Middle East countries, Russian Turkestan, etc.). For details see Vaurie, 1959, 2: 125–6.

162

STURNIDAE

Weight 9 ♂ ♀ 40–54 (av. 49) g — SA.

COLOURS OF BARE PARTS. Iris bluish white or yellowish cream colour. Bill, basal half including gape and nostrils greenish lead, terminal half lemon-yellow; mouth greenish plumbeous or bluish slate. Legs, feet and claws lemon-yellow.

995. Daurian Myna. *Sturnus sturninus* (Pallas)

Gracula sturnina Pallas, 1776, Reise Russ. Reich 3: 695 (Dauria)

Baker, FBI No. 988, Vol. 3: 43

Plate 68, fig. 6

LOCAL NAMES. None recorded.

SIZE. Myna —; length c. 19 cm (7½ in.).

FIELD CHARACTERS. A small greyish myna reminiscent of the Grey-headed, with very short blackish slightly forked tail, and two whitish wing-bars. Above, Crown and sides of head and neck hoary grey; lores and a ring round eye white; back, rump, wing-coverts and a patch on nape metallic blackish purple. A buff band across rump. Below, pale grey, the chin tinged with rufous. Tail metallic green, edged on the outside with buff. Sexes more or less alike; see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Aberrant straggler. There are only two definite records from within our limits: a specimen collected in Chitral (head of Turikho Valley, c. 3300 m) from a flock of 17 birds on 16 July 1902 (Fulton, JBNHS 16: 49), and another which flew on board ship in a squall in the open sea between Car Nicobar and Little Andaman I. on 20 March (Hume, SF 2: 250, footnote). Said to be an occasional winter visitor to the Nicobars; possibly also to the Andaman islands.

Extralimital. Transbaikalia and N. Mongolia, Ussuriland, Manchuria, N. Korea, etc. Migrating through China to winter in S. China, Hainan, the Indochinese countries, Burma, Malay Peninsula and Indonesia. (For details see Vaurie, 1959, 2: 124.)

GENERAL HABITS, FOOD, VOICE AND CALLS. As in Greyheaded Myna (987), q.v. Keeps in flocks to open cultivated country.

BREEDING. Extralimital. In tree-holes.

MUSEUM DIAGNOSIS. Female resembles ♂ but dull brown replaces glossy black on upperparts, wings and tail. Hoary grey of head and upper back less marked; nape-patch dark brown instead of purple-glossed black. Underparts creamy white.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	105–110	14–15	c. 25	52–54 mm (Hartert)

COLOURS OF BARE PARTS. Iris brown. Bill dusky; lower mandible whitish, to greenish blue from base to arch of gonys. Legs and feet greenish horn.

164

STURNIDAE

MIGRATION. One of our earliest migrants; fair numbers of adults (♂?) accompanied by a few young of the year entering the northwestern parts of the subcontinent already by middle, or even first week July; bulk passage of adults and young between August and October. Return transit in March and April continuing into mid May. Thus the birds totally absent from the subcontinent only for less than three months in the year. Enlargement of male gonads to breeding size in April–May, combined with presence of brood-patch in both sexes in unmoulted nuptial plumage of the earliest arrivals in July have led to postulation of the birds breeding within our limits or immediately adjoining areas (i.e. in Sind, Baluchistan, Afghanistan). However, this not yet proven except for a single circumstantial record in Afghanistan (see Marien, JBNHS 49: 480).

Is one of the exceptional species with a remarkable East-West migrational movement (*contra* North-South), comparable with that of the Blackheaded Bunting (*Emberiza melanocephala*, 2043). Adequate observational evidence in this regard is supported by ringing data (though only a single record as yet): a nestling ringed in NE. Hungary (47°55'N., 20°30'E.) on 30.vi. 1925, recovered near Lahore, W. Pakistan (c. 31°30'N., 74°30'E.) on 24.iv. 1926 — a map distance of some 4800 km. For a good summary of the movements of the Rosy Pastor within the country see Abdulali, JBNHS 46: 704–8. Large-scale emigration in progress observed earlier in N. Afghanistan in April–May and again in late March across the Great Rann of Kutch, probably represents the normal pattern of Rosy Pastor's migratory flight. Small parties and large flocks of 50–300 birds followed one another in an intermittent stream, flying swiftly and purposefully in a NW. direction, chiefly between 0830 and 1100 hrs, some sweeping low over the bush-tops, others perhaps 100 to 150 metres up. Parties occasionally alighted on the bushes but with no apparent inclination to feed; the birds seemed restless and presently took off again to join the hurrying bands.

GENERAL HABITS. Keeps in small parties or large flocks, sometimes of swarm proportions, in the neighbourhood of cultivation, especially jowar and bajra. The birds descend on the fields in 'clouds' often causing enormous damage to the ripening grain. Feeds actively in the morning and forenoon and then again in the late afternoon. Retires to rest in shady trees fringing the fields during the heat of the day, spending the time between intermittent raids in noisy chatter and creaky warbling. Often attends grazing cattle, especially on waterlogged ground, in association with other myna species and cattle egrets to hunt insects disturbed in the grass. Is unfailingly present on flowering trees such as Silk Cotton (*Salmalia*), Coral (*Erythrina*) and Flame-of-the-Forest (*Butea*) to feed on the nectar, and largely instrumental in their cross-pollination and fertilization. Acts the blustering bully to keep other birds away from the flowers, attacking the visitors from a distant part of the tree even when itself satiated and not feeding. The aggressive Pastor droops, twitches and shivers its wings, spreads its tail flicking it sideways provocatively, utters a bellicose *chit chit chit* by way of war-cry as it charges down to supplant the newcomer. The bird promptly inserts its own bill into the chalice as if to celebrate the victory. Roosts communally in enormous thickly-clustered swarms, numbering maybe several thousand birds — often in company with

parakeets, mynas, crows, weaver birds and migratory sparrows — in thorn bushes, groves of babool trees, *Butea* jungle, coconut plantations and reed-beds. Also in leafy roadside avenues in urban areas, frequently right in the midst of a congested city bazaar, undeterred by the din and bustle of traffic or the glare of electric lights. The deafening clamour produced by a large concourse settling in for the night may, at a distance, be likened to a heavy monsoon downpour pattering off a roof on to a cement floor! Flight swift and direct, typical of the starlings. While hunting swarming grasshoppers the birds run along the ground jostling one another in their eagerness, springing into the air every now and again to snatch the escaping quarry. The grassfield ripples with the activity of chaser and chased as the seething mass of birds constantly leap-frog over one another or fly ahead to cut off the fleeing horde. Is highly beneficial as a wholesale destroyer of locusts in times of invasion, as well as an important agent of seed dispersal. The abundance of mulberry trees in the Chhanga Manga Forest Reserve in W. Pakistan, and other plantations in the canal areas of the Punjab — the base of the flourishing sports goods industry — is largely due to the Rosy Pastor aided by bulbuls and other frugivorous birds.

Dense masses collect regularly to drink and bathe at puddles left behind in drying-up jheels and tanks.

Food. Chiefly fruits, berries, flower-nectar, cereal grains and insects. The following items specifically recorded:

Fruits and berries: *Ficus* (many species), *Lantana aculeata*, *Zizyphus oenoplia*, *Bridelia hamiltoniana*, *Streblus asper*, grapes, mulberries (*Morus*), dates (in W. Pakistan), *Salvadora persica*, *Capparis aphylla*, 'chillies' (Ingilis).

Flower-nectar: *Salmalia malabarica*, *Bombax insigne*, *Erythrina indica* and *E. suberosa*, *Butea monosperma*, *Careya arborea*.

Insects: Largely locusts and grasshoppers (Orthoptera—Acrididae). From stomachs of specimens have also been taken beetles (Coleoptera) of the families Lucanidae, Elateridae, Tenebrionidae, Buprestidae, Scarabacidae, Curculionidae.

Likewise centipedes (Chilopoda—Scolopendridae), molluscs (Gastropoda—Helicidae), and spiders (Araneae).

Cereal grains: chiefly jowar (*Sorghum vulgare*) and bajra (*Pennisetum typhoides*).

VOICE and CALLS. Song lively and much prolonged: a jumble of harsh chattering noises intermingled with melodious warbling notes. The hackle-like feathers of throat and long black crest stand out prominently while the bird is singing.

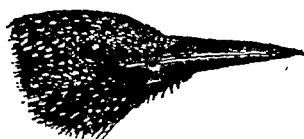
BREEDING. Extralimital. Season, May–June. Nesting colonial; in holes and crannies on stony hillsides and amongst ruins, the breeding grounds shifting year to year largely with those of migratory locust swarms. Eggs, 3 to 5, pale blue.

For an excellent account of the food, feeding habits and breeding biology, see Serebrennikov, M. K., 1931, 'Der Rosenstar (*Pastor roseus* (L.)), seine Lebensweise und ökonomische Bedeutung in Uzbekistan (Turkestan)', *Jour. f. Orn.* 79: 29–56.

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters.

STARLINGS, MYNAS

167

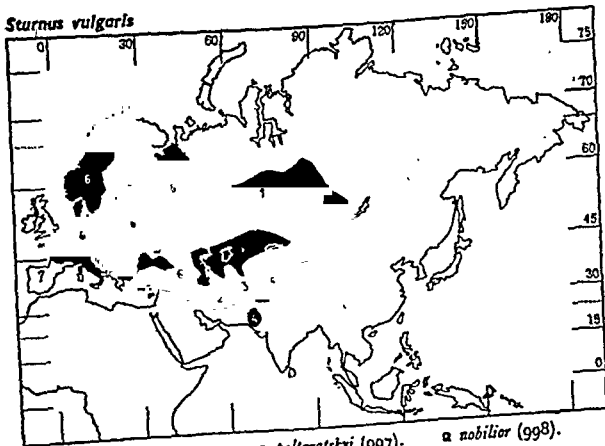


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For distinguishing adult ♂♂ from *nobilior* (998), also green-backed, see under that subspecies.

STATUS, DISTRIBUTION and HABITAT. The commonest Starling on the Indian list. Passage migrant through Chitral and Gilgit in October–November and then again mid March to mid April, a few overwintering in the Valley (Scully, SF 10: 128).

Probably passes also through Kashmir and Himachal Pradesh, but winter ranges of the various races overlap, two or more forms sometimes even occurring in the same flock; therefore subspecific determination impossible unless specimens in the hand; sight records equivocal. Abundant winter visitor to rest of W. Pakistan (Baluchistan, Sind, Punjab), and northern India — Punjab, Delhi, Nepal terai, and the Gangetic Plain, east (rare) to Bihar, W. Bengal, Assam (?), and E. Pakistan. Southward to Rajasthan, N. Gujarat (including Kutch and Saurashtra), northern and western Madhya



■ Breeding
For winter ranges see text

1. *poltaratskyi* (997).
2. *nobilior* (998).
3. *porphyronotus* (999).
4. *minor* (1000).
5. *indicus* (1001).
6. *vulgaris* (RE) and other extralimital races.

Pradesh. Vagrants and stragglers liable to be met in far-flung localities, thus two recorded from Madras (Whistler, JBNHS 36: 587) and three collected from a flock of c. 12 near Bombay, November (Abdulali, *ibid.* 62: 161).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	125–136	24–26	30–32	67–73 mm
♀♀	122–136	22–24	28–33	65–72 mm

Weight 5 ♂♂ 55–76; 3 ♀♀ 53–73 g (Paludan). 7 ♂♂ 70–80 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill horny brown, yellow at gape and on basal half of lower mandible; mouth bright lemon-yellow, gullet livid pink or greyish pink. Legs, feet and claws horny brown.

MISCELLANEOUS. Extensively netted and/or shot in West Pakistan and N. India as an epicurean delicacy, particularly on outward migration when the birds are very fat. In Afghanistan (where locally known as *Sach*) not molested by the populace because of the wide appreciation of its beneficial service to agriculture as a destroyer of locusts. In Iran there is a popular legend that anyone afflicted with a locust plague has only to travel to a certain well in Qazvin and get from it a bottle of water. He must take this bottle to the place where the locusts are, and break it on the ground; the Pastors will soon come and eat up the locusts! (A. C. Trott, JBNHS 56: 692.)

STURNUS VULGARIS Linnacus

Key to the Subspecies

	Page
A Wing c. 110–120 mm.....	<i>S. v. minor</i> 170
B Wing 115–125 mm.....	<i>S. v. indicus</i> 170
C Wing c. 122–137 mm.....	<i>S. v. porphyronotus</i> 169
1 Head bronze-green.....	<i>S. v. poltaratskyi</i> 166
2 Head purple.....	<i>S. v. nobilior</i> 168
a Upper plumage green.....	
b Upper plumage very deep green.....	

Cf. Ticehurst, C. B., 1919, On Asiatic Starlings. JBNHS 26: 380–4.
Sushkin, P., 1933, Notes on some eastern forms of *Sturnus vulgaris*. *Ibis*: 55–8.

997. Finsch's or Common Indian Starling. *Sturnus vulgaris poltaratskyi* Finsch

St.(urnus) poltaratskyi Finsch, 1878, Proc. Zool. Soc. London: 713
(Marka-kul, Eastern Kazakhstan)
Baker, FBI No. 976, Vol. 3: 34
Plate 68, fig. 9

LOCAL NAMES. *Tilyer myna*, Kumai, *Tilora*, *Nakshi tilyer* (Hindi); *Tiley myna* (Bengali); *Tsinhangoor* (Kashmir); *Kero whidho* (Sind).

SIZE. Between bulbul and myna; length c. 20 cm (8 in.).
FIELD CHARACTERS. As of Kashmir Starling (1001), q.v. See Key to the Subspecies and Museum Diagnosis.

STURNIDAE

168

Sight-recorded at sea (subsp. ?) c. 40 miles west of Minicoy island, in December and January (Phillips, JBNHS 60: 582).

Affects damp grassland around marshes and jheels, and outskirts of cultivation and habitations — irrigated lawns etc.

Extralimital. Breeds in Siberia north to c. 60°N. from the Ural Mts to Lake Baikal; south to Kazakhstan and W. Mongolia. Winters also in eastern Iran and Afghanistan (apparently breeding locally in the northern part). For details see Vaurie, 1959, 2: 129.

MIGRATION. The only ringing data so far available is of a juvenile ringed in the Kumerovo Region of western Siberia (Leninsk-Kuznetsky, c. 54°N., 86°E.) on 25.v.59, recovered in West Pakistan (Lahore, c. 31°N., 74°E.) on 3.i.1960 — a straight-line map distance of c. 2900 km.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 1001.

BREEDING. Extralimital. Breeding biology as in 1001, and other races.

MUSEUM DIAGNOSIS. 'Head, throat and ear-coverts purple; mantle and rump green; upper tail-coverts and scapulars green, the longest feathers often violet-blue at the tips; wing-coverts green, mixed with violet-blue on the larger feathers; a green pectoral band separates the purple throat from the rest of the underparts which are "bluebottle" blue and more violet-blue on the flanks. Under wing-coverts brown with broad buff edges' (Ticehurst).

For description of plumages and bionomics of the nominate subspecies (*vulgaris*) see Witherby *et al.*, 1938, 1: 40–44.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	125–135	28–32	29–32	62–69 mm
♀♀	124–131	28–32	29–32	59–65 mm

COLOURS OF BARE PARTS. As in 1001.

998. Hume's or Afghan Starling. *Sturnus vulgaris nobilior* Hume

St.(urnus) nobilior Hume, 1879, Stray Feathers 8: 175 (Kandahar)
Baker, FBI No. 977, Vol. 3: 34

LOCAL NAMES. As for 997.

SIZE. Between bulbul and myna; length c. 20 cm (8 in.).
FIELD CHARACTERS. As of Kashmir Starling (1001), q.v. See Key to the Subspecies and Museum Diagnosis.

Very similar to Indian Starling (997), also with green-glossed upperparts, but in good sunlight, with binoculars it is often possible to pick out adult males in mixed flocks with tolerable certainty by their blacker appearance due to the finer and less amount of spotting on the underparts in winter.

STATUS, DISTRIBUTION and HABITAT. Winter visitor to W. Pakistan (Baluchistan, Sind, NW. frontier districts, Punjab); doubtless also adjoining northwestern India. Affects open country — cultivation and grassland, and lush margins of jheels.

STARLINGS, MYNAS

169

Extralimital. Breeds in Khorasan, Transcaspia and Afghanistan (Vaurie). GENERAL HABITS, FOOD, VOICE AND CALLS. As in 1001.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. 'Resembles *pollaratskyi* (997) but belly and flanks bright reddish purple, as also are the wing-coverts. Under tail-coverts glossed with purple. Scapulars, rump, and upper tail-coverts mostly green, sometimes mixed with purple-blue, especially on the longer feathers. Underwing darker with narrow whitish edges. In winter, spots smaller and whiter. Bill usually a little longer and slenderer, up to 30 mm' [from feathers] — Ticehurst.

MEASUREMENTS

	Wing	Bill (from skull)
♂♂	130-134	31-34 mm
♀♀	127-132	31-33 mm
		(CBT)

COLOURS OF BARE PARTS. As in 1001.

999. **Central Asian Starling.** *Sturnus vulgaris porphyronotus* Sharpe

Sturnus porphyronotus Sharpe, 1888, Ibis: 438 (Yarkand)

Sturnus purpurascens dresseri Buturlin, 1904, Orn. Jahrb.: 208 (Askabad)

Baker, FBI No. 974, Vol. 3: 32

LOCAL NAMES. As for 997.

SIZE. Between bulbul and myna; length c. 20 cm (8 in.).

FIELD CHARACTERS. As of Kashmir Starling (1001), q.v. See Key to the Subspecies and Museum Diagnosis.

In good sunlight, with binoculars, bronze-green head (v. purple in 997 and 998) suggests identity.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor to W. Pakistan (Baluchistan, Sind, NW. frontier districts, Punjab) and adjoining north-western India [Kashmir, Himachal Pradesh (Kangra), etc.]. Has been obtained in Nepal terai (Fleming).

Extralimital. Breeds in Chinese and Russian Turkestan south to Tadzhikistan and Pamirs. For details see Vaurie, 1959, 2: 129. Winters also in Afghanistan.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in Kashmir Starling (1001).

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Head greenish but ear-coverts always more or less purple; mantle red-purple, in some specimens tinged with purple-blue; wing-coverts purple on the median and lesser series, bronze-green on secondaries and their coverts. Purple of belly shades off to bronze-green on flanks. Underwing blackish brown with narrow whitish edges. Bill usually longer than in *pollaratskyi* (997).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	129-137	32-34	30-32	62-69 mm
♀♀	122-129	31-34	30-32	62-66 mm
				(HW, CBT)

COLOURS OF BARE PARTS. As in 1001.

STARLINGS, MYNAS

171

FIELD CHARACTERS. A gregarious, slim glossy black myna with metallic green and purple reflections, and finely stippled with whitish. Feathers of head, neck and breast pointed and hackle-shaped. Sexes more or less alike; female duller. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Very common and abundant summer (breeding) visitor to Kashmir (Vale and side valleys up to c. 2100 m) arriving in small numbers at end February, progressing to peak density by 3rd week March or early April. Leaves Kashmir c. October to winter in the north Indian plains alongside the extralimital migratory starlings. May breed also in Himachal Pradesh but no definite evidence as yet. Affects grassy meadows and pastures, mulberry groves, orchards and cultivation in the vicinity of villages.

GENERAL HABITS. Highly gregarious. Keeps in small parties or large flocks of several hundred birds, sauntering or running about purposefully to grub in damp fields, lawns and pastureland. Often in attendance on grazing cattle and sheep, or following the plough in association with Indian Mynas, yellow wagtails and other birds. A feeding flock will, for no apparent reason, suddenly take to the air as if to a given signal and fly up into a nearby tree-top, there to preen and sit around for a while, before gliding down again in twos and threes to resume the foraging. Or the flock will circle around a couple of times in a massed rabble with quick beats of the pointed wings, wheeling and banking in regimented unison, and resettling to feed, seemingly quite unperturbed. Roosts communally in enormous congregations in favourite willow groves, sheesham plantations, reed-beds and the like, flock after flock flying in at sunset from all quarters, sitting clustered thickly on the bare topmost branches, blackening them with their dense multitudes. Roosting preliminaries much less noisy than common mynas'.

FOOD. Chiefly fruits and berries, and insects. Destructive to orchard fruit. In an agricultural area in Punjab (Lyallpur) the following identified among stomach contents: grain and fruit, lizards, spiders, and large quantities of insect pests — grasshoppers (*Chrotogonus* spp.) and locusts (all stages), gram caterpillars, cutworms, beetles, weevils, grubs, pupae of *Chrysopa* sp. (Husain & Bhalla, JBNHS 39: 836).

VOICE AND CALLS. Song typical of Starling: prolonged and varied — a jumble of chattering, clicking and creaky noises mixed with pleasant musical whistles and often some mimicry of other birds' calls. Uttered with verve and persistence, with bill raised to the sky and wings shivering loosely at sides. When approaching a nest under observation, a concerned sharp click, click, reminiscent of a small woodpecker, e.g. *Picoides maharattensis*, 847.

BREEDING. Season, May and June. Nest, an untidy loosely-knit pad of grass and feathers in woodpecker holes in trees (willow, mulberry, chenar, etc.) as well as in holes in earth banks, walls and under rafters of village houses; sometimes amongst heaps of willow twigs stacked up in the branches of trees near villages. Frequently several nests placed fairly close to one another. Eggs, 5 or 6, pale skim-milk blue. Average size of 92 eggs 28.8 × 20.7 mm (BBO). Incubation apparently by both sexes: period unrecorded. Both parents tend the young.

170

STURNIDAE

1000. **Sind Starling.** *Sturnus vulgaris minor* Hume

St. (turnus) minor Hume, 1873, Stray Feathers 1: 207 (Larkhana, Sind)

Baker, FBI No. 975, Vol. 3: 33

LOCAL NAME. *Chhoto karo uhdhio* (Sind).

SIZE. Bulbul ±; length c. 19 cm (7½ in.).

FIELD CHARACTERS. As of Kashmir Starling (1001), q.v.; somewhat smaller. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident and breeds in Sind (West Pakistan); not uncommon but extremely local. Seasonal movements, if any, not recorded. There is only a single unexplained occurrence reported outside Sind (January 1872 — Brooks), near Etawah in Uttar Pradesh, c. 1100 km east of its nearest known habitat. Affects damp cultivation in canal-irrigated desert colonization areas, and tamarisk jungle in the Indus riverain.

GENERAL HABITS, FOOD, VOICE AND CALLS. Keeps in small parties of half a dozen birds or so; apparently never large flocks like the wintering migrant starlings; otherwise like 1001 and other races.

BREEDING. Season, March to May. Nest, a pad of grass and feathers in a hole in a tamarisk or *Prosopis* tree growing along a canal bank or in the middle of a dhand (jheel). Eggs, 5 or 6 (?), pale skim-milk blue as in 1001. Average size of 12 eggs 26.1 × 19.6 mm (Baker). Breeding biology unrecorded.

MUSEUM DIAGNOSIS. Most distinct of all Asiatic races of *S. vulgaris*, with the glossy reflections characteristic and constant. Not only smaller-looking than the other Starlings, but acquires the yellow bill of the breeding season long before the winter-visiting birds do. Entire head, throat and ear-coverts green; upperparts including wing-coverts red-purple; no distinct pectoral band as in *pollaratskyi* (997), the green of the throat joining the purple breast which shades off to green on belly and flanks; under tail-coverts purple.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus
♂♀	110-120	26-27	28-30 mm
			(CBT)

COLOURS OF BARE PARTS. As in 1001. 'Iris in ♂ brown, in ♀ bright gold' (Ticehurst).

1001. **Kashmir Starling.** *Sturnus vulgaris indicus* Blyth

Sturnus indicus Blyth, 1844, Ann. Mag. Nat. Hist. 12: 97 ex Hodgson in Gray, 1843, Zool. Misc.: 84 nom. nud. (Nepal, restricted by Ripley, 1961; based on only specimens available to Blyth in 1843)

Sturnus humii Brooks, 1876, Ibis: 500, new name for *Sturnus nitens* Hume, 1873 (Cashmere)

Baker, FBI No. 973, Vol. 3: 31

LOCAL NAMES. *Tilgiri*, *Tsinhangoor* (Kashmir).

SIZE. Myna —; length c. 19 cm (7½ in.).

172

STURNIDAE

MUSEUM DIAGNOSIS. 'Head deep purple-blue, redder purple on chin, throat and hindneck; ear-coverts deep metallic green; mantle coppery red to bronze; scapulars deep green; rump and upper tail-coverts, belly and flanks bronze-green to bluish green; pectoral band of copper-red continuous with throat and passing to the green underparts. Under wing-coverts blackish brown with narrow whitish edges. Wing shorter than in the other races except *minor* [1000]' — Ticehurst.

In first-winter plumage whitish spots on abdomen so large that abdomen appears almost white.

Juvenile. Pale brown, the feathers of the underparts streaked with darker brown; throat and chin very pale.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	116-121	29-32	30-32	56-59 mm
♀♀	113-119	28-30	29-31	54-58 mm
				(HW)

Wing ♂♀ 119-125 mm (CBT)

Weight 15 ♂♀ 55-72 (av. 62.1) g — SA.

COLOURS OF BARE PARTS. Adult. ♂ Iris dark brown. Bill bright yellow, horny steel colour about nostrils and on base of lower mandible. Legs and feet salmon-brown, darker on tarsus; claws dusky horny, darker towards tips. ♀ Iris: outer ring pale yellow, inner dark brown. Bill horny yellow. Legs and feet as in ♂. Immature. ♂ roughly as in adult. ♀ Bill horny, mottled with brown and yellow; or bright yellow, horny at base of lower mandible.

STURNUS CONTRA Linnaeus

Key to the Subspecies

	Page
A Forehead not streaked with white	
a Underparts lighter, shoulders and nape streaked.....	<i>S. c. contra</i> 172
b Underparts darker, streaklets on shoulders reduced, lacking on nape.....	<i>S. c. sordidus</i> 175
B Forehead streaked with white.....	<i>S. c. superciliosus</i> 175

1002. **Indian Pied Myna.** *Sturnus contra contra* Linnaeus

Sturnus Contra Linnaeus, 1758, Syst. Nat., ed. 10, 1: 167

(India, restricted to Chandernagor [Hooghly dist., W. Bengal] by Stresemann, 1952, Ibis 94: 517)

Sturnopastor cepensis dehrac Baker, 1925, Bull. Brit. Orn. Cl. 45: 103 (Dehra Dun)

Baker, FBI No. 1005, Vol. 3: 63

Plate 68, fig. 11

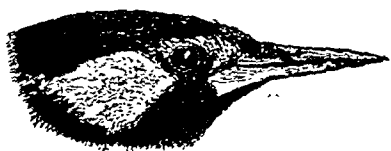
LOCAL NAMES. *Abhlak* or *Abhlaki myna* (Hindi); *Gyē sālik* (Bengali); *Sirēli myna* (Bihar); *Kān kurikā* (Nowgong, Assam); *Vēnda gerikā* (Telugu).

SIZE. Myna ±; length c. 23 cm (9 in.).

FIELD CHARACTERS. A trim black and white myna with conspicuous deep orange-red orbital skin and bright orange-and-yellow bill. Sexes alike. Young much paler and browner, the breast streaked or smeared with vinaceous brown. For details see Museum Diagnosis.

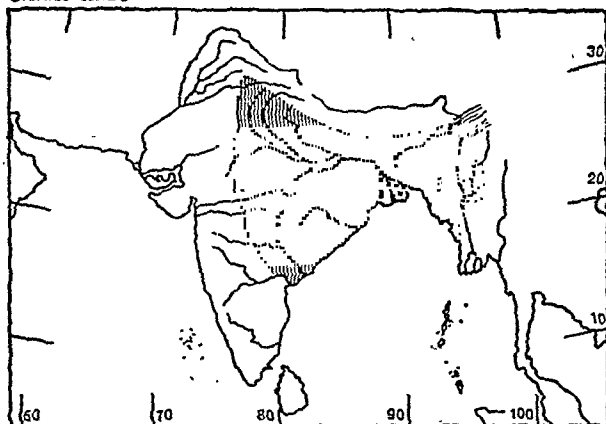
STARLINGS, MYNAS

173



x c. 1

STATUS, DISTRIBUTION and HABITAT. Resident, evidently with some seasonal (?) local movements, as yet little investigated. Local and patchy in some parts. Northern and eastern continental India east of a line from c. 76°E. (Ludhiana and Hisar in Punjab) south through eastern Rajasthan roughly to Hoshangabad (Madhya Pradesh), Hyderabad (Andhra) and the Krishna river delta (c. 16°N. lat.)¹. In the north along the U.P. and Nepal

Sturnus contra

Distributional ranges

▨ *contra* (1002).

▨ *sordidus* (1003).

▨ *superciliosus* (1004).

terai, duars, foothills and through the Gangetic Plain to Lakhimpur and N. Cachar districts, Assam [where some intergrading with *sordidus* (1003) occurs]; also East Pakistan. Plains and foothills up to c. 700 m. Affects open cultivated well-watered country in the vicinity of human habitations—damp grazing grounds, margins of tanks, sewage farms, municipal refuse dumps, etc.

¹ An odd pair or two (presumably escapes) observed in Greater Bombay in 1939, and as breeding more or less regularly since; but the species has failed to colonize in strength; the largest number seen in March 1963 five birds (HA & SA, JBNHS 51: 736).

STARLINGS, MYNAS

175

1003. Eastern Pied Myna. *Sturnus contra sordidus* Ripley

Sturnus contra sordidus Ripley, 1950, *Postilla*, Yale Peabody Mus., No. 1: 3 (Sadiya, Northeastern Assam [= Lohit division, NEFA])
Not in Baker

LOCAL NAME. *Kān kurikā* (Assam).

SIZE. Myna ±; length c. 23 cm (9 in.).

FIELD CHARACTERS. As of 1002, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Northeastern Assam from Dibrugarh and Margherita (95–96°E.) north to the Brahmaputra gorges and Mishmi foothills, east through the Lohit Valley (very common and abundant in the neighbourhood of Sadiya). Presumably extends south to the Patkai and Naga hills (?), but exact limits undetermined.

GENERAL HABITS, FOOD, VOICE and CALLS. As in the Indian form (1002). BREEDING. Not specifically recorded; doubtless as in 1002.

MUSEUM DIAGNOSIS. Differs from nominate *contra* (1002) in having the streaklets much reduced on the shoulders, and absent on the nape; the streaklets sepia rather than vinaceous or drab. Underparts darker.

MEASUREMENTS. 2 ♂♂ Wing 118, 124; bill (from skull) 33, 35 mm (SDR).

COLOURS OF BARE PARTS. As in 1002.

1004. Burmese Pied Myna. *Sturnus contra superciliosus* (Blyth)

Sturnopaster superciliosus Blyth, 1863, *Jour. Asiat. Soc. Bengal* 32: 77 (Burma)

Baker, FBI No. 1006, Vol. 3: 64

LOCAL NAMES. *Kān kurikā* (Assam); *Chong nga* (mynas generally — Manipur); *Zeyet* (Burma).

SIZE. Myna ±; length c. 23 cm (9 in.).

FIELD CHARACTERS. As of 1002, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. Manipur Valley up to c. 800 m. Inhabits open well-watered country and cultivation near habitations; abundant about Logtak Lake.

Extralimital. Plains of Burma, south to Tenasserim.

GENERAL HABITS, FOOD, VOICE and CALLS. As in the Indian form (1002). BREEDING. As in 1002. Average size of 40 Burmese eggs 26.8 × 19.8 mm (Baker).

MUSEUM DIAGNOSIS. Differs from nominate *contra* (1002) in having the forehead and anterior crown streaked with white, and a broad white supercilium to ear-coverts. Streaks on neck and shoulders absent or obsolete.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
11 ♂♀	114–118	32–35	62–70 mm (CBT)

COLOURS OF BARE PARTS. As in 1002.

174

STURNIDAE

Extralimital. Other races extend the species to Thailand, N. Laos, and to Sumatra and Java.

GENERAL HABITS. Sociable, predominantly insectivorous and ground-feeding. Keeps in small parties and noisy squabbling flocks of up to 30 or more birds when not paired off for breeding, commonly in association with other mynas. Rarely met away from villages and human habitations though never actually entering or utilizing houses like Indian Myna. Refuse dumps, cattle pens and marshy grazing land are some of its favourite feeding-grounds.

FOOD. Insects, fruit and cereal grain; apparently less fond of flower-nectar than many other mynas. Among stomach contents in an intensively cultivated area in Bihar, have been identified grasshoppers (*Chrotogmus* sp.) and crickets, beetles (of the families Tenebrionidae, Melolonthidae, Copridae and Carabidae), ants (*Camponotus compressus*), cutworms, caterpillars and grubs (Mason & Lefroy, 1912).

VOICE and CALLS. An assortment of high-pitched but pleasant musical liquid notes, some reminiscent of snatches of the flight-song of the finchlike *Ammodramus* and *Eremopterix*. Is a good mimic and if taken young will learn to imitate whistled tunes and song of Shama and other birds to perfection.

BREEDING. Season, March to September; often two successive broods. Nest, a massive dome affair, roughly globular but often merely a shapeless mass of straw, roots and rags on a foundation of twigs, with wispy 'beards' of straw and rubbish dangling untidily below. Placed among the outer branches of trees like shesham, babool, mango or peepul growing near a village, 5 to 10 metres from the ground; occasionally up in the head of a *Borassus* palm. Nests tend to be loosely colonial, sometimes maybe a dozen or more built in the same tree. Eggs, 4–6, most commonly 5, glossy unmarked blue. Average size of 100 eggs 27.6 × 20.2 mm (Baker). Both sexes share all the domestic chores. Period of incubation undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young (immature). Loes and feathers to base of bill rusty white, ear-coverts whitish suffused with brown; underparts buffish white with a few brown smudges; white edges of scapulars less defined and less pure. Rest of plumage as adult, but black replaced by brown; brown of throat with pale tips and bases and a few brownish tips to lesser coverts. Tail feathers narrower. Postjuvinal moult complete (Tieckumt).

Birds from the western parts of the range (Punjab, Gwalior) have a tendency to be browner above whiter below; those from the eastern (duars, Bengal, Assam) are black above pearly grey below. But there is a continuous colour cline, and some examples are indistinguishable.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	116–126	30–35	32–35	63–75 mm
♀♀	114–120	31–33	32–34	64–72 mm

(SA, HW, Maricou)

Weight 7 ♂♀ 72–82 g (SA).

COLOURS OF BARE PARTS. Iris brownish orange or orange-buff; orbital skin deep orange. Bill, basal portion orange-red, terminal pale yellow or flesh colour; mouth leaden-black. Legs and feet yellowish brown.

176

STURNIDAE

1005. Chinese or Greybacked Myna. *Sturnus sinensis* (Gmelin)

Oriolus sinensis Gmelin, 1788, *Syst. Nat.* 1: 394 (China)

Oriolus buffinianus Shaw, 1809, *Gen. Zool.* 7: 437, new name for *O. sinensis* Gmelin

Pastor turdiformis Wagler, 1827, *Syst. Av. Pastor* sp. 15, new name for *O. sinensis* Gmelin

Baker, FBI No. 991, Vol. 3: 37

Plate 68, fig. 13

LOCAL NAMES. None recorded.

SIZE. Greyheaded Myna (987); length c. 20 cm (8 in.).

FIELD CHARACTERS. A small greyish and black myna with a large and prominent white shoulder-patch (scapulars and upper wing-coverts), smaller and greyish buff in female. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Apparently an irregular vagrant as in Burma, Thailand and Malaya, or overlooked as a winter visitor. Only a single authentic sight record within our limits in Manipur, 30 April (Hume, 1888, SF 11: 267).

Extralimital. China (SE. Yunnan, Foochow, Kwangtung) and the Indo-chinese countries (La Touche).

GENERAL HABITS, etc. Described as gregarious, cheerful and noisy, feeding in trees as well as on ground, nesting in holes of roofs and houses, 'making free with verandahs and quite domesticated during the breeding season' (La Touche).

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Adult. Above, whole head and rump pale rosy ferruginous; nape and back deep grey. Wings black; scapulars and upper wing-coverts white, washed with rosy ferruginous. Tail black, slightly graduated, broadly tipped with white. Below, throat, sides of neck and breast pale grey; centre of abdomen white; flanks, thighs and under tail-coverts rosy ferruginous.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	103–108	18–21	24–26	57–62 mm
♀♀	99–104			53–58 mm

(La Touche)

COLOURS OF BARE PARTS. Iris white to bluish white. Bill slaty grey or pale bluish plumbeous; mouth and base rich slaty blue. Legs and feet slaty blue to plumbeous grey (Baker).

Genus *ACRIDOTHERES* Vieillot

Acridotheres Vieillot, 1816, *Anal. nouv. Orn.*: 42.

Type, by subsequent designation, *Perdix tritris* Linnaeus

Arthropus Sharpe, 1889, in Oates, *Fauna Brit. Ind.*, Bds. 1: 518, 533.

Type, by original designation, *Pastor fuscus* Wagler

Nasal and frontal plumes lengthened and erect or slightly curving backwards. Feathers of crown elongated and pointed. Sides of head well feathered or with a patch of naked skin below and behind eye. Bill shorter than head with the culmen curved. Wing blunt; tail rounded. Sexes alike.

STARLINGS, MYNAS
Key to the Species

177

Page

- A Sides of head partly bare
- 1 Under wing-coverts and axillaries white.....*A. tristis* 177
 - 2 Under wing-coverts and axillaries buff.....*A. ginginianus* 181
- B No bare skin on sides of head
- 3 No collar on sides of neck
 - a Base of mandible blackish.....*A. fuscus* 183
 - b Base of mandible yellow.....*A. javanicus* 187
 - 4 A white collar on sides of neck.....*A. albocinctus* 188

ACRIDOTHERES TRISTIS (Linnaeus)

Key to the Subspecies

- Not so dark above; primary-coverts entirely white....*A. t. tristis*
 Much darker above; primary-coverts half black and half white
 *A. t. melanosternus*

1006. Indian Myna. *Acridotheres tristis tristis* (Linnaeus)*Paradisa tristis* Linnaeus, 1766, Syst. Nat., ed. 12, 1: 167

(Philippines, *errone* = *Calcutta ride* Baker 'Fauna' 3: 53 = Pondichéry ride
 Stresemann, 1952, Ibis: 515)
 Baker, FBI No. 996, Vol. 3: 53
 Plate 68, fig. 12

LOCAL NAMES. *Dēri myna* (Hindi); *Hōr* (Kashmiri); *Sālik, Bhat sālik* (Bengali); *Sālik sorāi, Sālika, Ghor sālikā* (Assamese); *Deo myna* (Cachari); *Bemni, Sāloo* (Chota Nagpur); *Gūlgūl* (Madhya Pradesh); *Shālī, Sālonki* (Marathi); *Kābār* (Gujarati); *Gorwāntera* (Kannada); *Nākanarāi* (Tamil); *Geranka* (Telugu); *Karalamkili, Mātātta* (Malayalam).

SIZE. Dove —; length c. 23 cm (9 in.).

FIELD CHARACTERS. A familiar, perky, well-groomed dark brown bird with glossy black head, and bright yellow legs, bill and a naked patch below and behind eye. A large white patch on the wing conspicuous in flight. Sexes alike.

Young (immature). A pale edition of adult: duller, less dark brown, with the head ashy brown rather than black.

STATUS, DISTRIBUTION AND HABITAT. Resident; ubiquitous. One of the commonest and most familiar birds in the entire subcontinent including both Pakistan, Nepal, Sikkim and Bhutan; also Ceylon [another subspecies (1007)]. Plains and hills. Breeds up to c. 3000 m in the Himalayas, descending lower from the highest altitudes in winter. Very abundant all-year resident in Kashmir Valley, quite at home in Srinagar even in snow. Introduced in the Andaman islands (c. 1867) as probably also in the Nicobars, Laccadives and Maldives where now well established and common. Addicted to the neighbourhood of human habitations and cultivation — villages, towns and cities as well as outlying homesteads in desert or forest.

EXTRALIMITAL. Russian Turkestan, Afghanistan, SE. Persian Baluchistan, Burma, peninsular Thailand and the Indochinese countries. Introduced

STARLINGS, MYNAS

179

also provide popular roosts. Usually there is considerable competition for nesting sites, and during the breeding season violent battles ensue between prospecting pairs or to oust occupants of coveted holes. Each partner grapples with his opposite number in a vicious rough-and-tumble, the adversaries dropping to the ground locked in each other's claws, rolling over and over and jabbing mercilessly with their bills to the accompaniment of loud screaming complaints. Partisans of either side, drawn to the scene by the outcry, join in the mêlée which continues as a noisy free-for-all until one of the combatant pairs withdraws.

FOOD. Chiefly fruit, grain, insects and grubs but also everything else that can be eaten: kitchen scraps, titbits from refuse dumps, small animals such as baby mice, frogs, lizards and crabs, and flower-nectar. It is an important agent in the cross-pollination of flowers such as *Salma* and *Erythrina*, and in the dispersal of seeds of many plant species, some of great economic significance: *Ficus*, *Zizyphus*, *lantana*, mulberry (*Morus*), *Salvadora*, sandal (*Santalum*) and others. Often causes damage to orchard fruit and standing cereal crops, but on the other hand is highly beneficial as a destroyer of serious agricultural pests. In an intensively cultivated area in Bihar the following insects have been identified among stomach contents of specimens: grasshoppers (Acrididae: *Chrotogonus*, *Tryxalis*, *Oxya* sp.), crickets (Gryllidae: *Liogryllus bimaculatus*), beetles (Scarabaeidae: *Anomala varians*, *Trox indicus*, *Gymnopleurus miliaris*, *Tenebrionidae*: *Opatrum depressum*), weevils (Curculionidae: *Astycus lateralis*, *Mylocerus discolor*), bugs (Pentatomidae: *Bagrada picta*), wasps (Scoliidae: *Scolia quadri-pustulata*), flies (Bibionidae: *Bibio* sp.), ants (Formicidae: *Oecophylla smaragdina*, *Camponotus compressus*, *Phidole malini*, *Dorylus* sp.) (Mason & Lefroy, 1912); in addition termites, spiders, geometrid larvae and butterflies also recorded.

VOICE AND CALLS. A varied assortment of high-pitched falsetto notes and chatter, some eloquently expressive of passing moods and emotions such as pleasure, contentment, alarm, anger and agitation. The harsh angry swearing cries *chake, chake*, etc. uttered with partially drooped shivering wings on sighting a cat or snake are readily understood even by birds other than its own species who soon gather on the spot to chivvy the unwelcome presence. One of the more familiar calls is a loud, scolding *rādio, rādio, rādio*. While a pair is resting in a shady spot during the midday heat, the male (not only in breeding season) will frequently go through an amazing gamut of *kek-kek-kek, kok-kok-kok, churr-churr*, etc. with plumage frowled and a ludicrous bowing and bobbing of the head before his mate. A *sotto voce* solo (subsong) is sometimes given while resting on a shady branch during daytime, interlarded with mimicry of other birds' calls (Neelakantan, JBNS 52: 619). In captivity will learn to repeat a few words of human speech, but is far inferior to the Hill Myna as a talker.

BREEDING. Season, overall March to September; principally April to July, but peak periods varying locally. In Kerala chiefly March–April, commencing as early as mid January. Two successive broods commonly raised; sometimes three. Nest, an untidy collection of twigs, roots, tow and rubbish (often including bits of tissue paper, tin foil and snake sloughs) stuffed in holes in trees, rock scarps, vertical earth banks, walls of houses or between the ceiling and roof, even in the midst of noisy bazaars.

178

STURNIDAE



and well established in many countries, to pest proportions in some, e.g. Australia, New Zealand, Hawaii, South Africa, and islands in the Indian Ocean (Seychelles, Mauritius); also in the Atlantic and Pacific.

GENERAL HABITS. Along with the crow and sparrow a confirmed commensal of man, quick to colonize virgin areas in his wake, even far out in the desert. Sociable disposition, aggressive and self-possessed demeanour and omnivorous habits combine to make the Myna the highly successful colonist it is. Except in the breeding season keeps in family parties, usually of 5 or 6 birds, which join up into flocks sometimes of many hundred strong. Feeds on trees as well as on ground sauntering along or hopping jauntily sideways to dig for grubs and worms on inundated lawns and maidans. Grazing cattle and fired grass fields or scrub jungle likewise afford it attractive feeding opportunities. Flocks follow the plough for the insects and grubs turned up with the soil, the birds leap-frogging or flying ahead in their eagerness to keep up with the advancing bullocks. Usually tame and confiding, fearlessly entering kitchens and verandas of inhabited houses to pick up crumbs from within hand reach of the inmates. Roosts communally; in large leafy trees, coconut groves, reed-beds and sugarcane fields in company with other mynas, Rosy Pastors, parakeets, crows and sparrows, flock after flock converging on the site from considerable distances in all directions at sunset. Deafening clamour and pandemonium prevails before the vast congregation settles down to sleep, and even during night the silence is frequently broken by minor outbreaks of noisy chattering choruses from different sections of the roost. Railway stations and warehouse sheds

STURNIDAE

180

Occasionally builds a cup-shaped or domed nest in a tree like Pied Myna's, or appropriates an old crow's nest. Same site often used year after year. Eggs, 4 or 5 (rarely 6), uniform turquoise blue. Average size of 100 eggs 30.8 × 21.9 mm (Baker). Both parents share all the domestic chores. Incubation period 17 to 18 days (Lamba); 13–14 days! (Bengal, Sen Gupta); fledging period 22–24 days.

MUSEUM DIAGNOSIS. Head, neck and upper breast glossy black; rest rich vinous-brown, paler and albescent on abdomen. A large white patch at base of dark brown primaries. Tail brownish black with broad white tips to the rectrices.

Birds from NW. India tend to paleness, from S. India to darkness. Kerala population shows intergrading with *melanosternus* of Ceylon.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	138–153	25–30	34–42	81–95 mm
♀♀	138–147	25–28	35–41	79–86 mm
				(SA, HW)

Weight 17 ♂ ♀ 82–130 (av. 109.8) g — SA. 3 ♂♂ 120–138 g — BB.

COLOURS OF BARE PARTS. Iris brown or reddish brown mottled with white; orbital skin bright yellow. Bill yellowish, base of lower mandible brownish green; mouth dark slate. Legs, feet and claws yellow like bill, paler than orbital skin.

1007. Ceylon Myna. *Acridotheres tristis melanosternus* Legge

Acridotheres melanosternus Legge, 1879, Ann. Mag. Nat. Hist. 3: 168
 (Pasaden Korale, Ceylon)
 Baker, FBI No. 997, Vol. 3: 55

LOCAL NAMES. *Myna, Gon karadiyā* (Sinhala); *Nākanam petchi* (Tamil).

SIZE. Dove —; length c. 23 cm (9 in.).

FIELD CHARACTERS. As of 1006, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Subspecies endemic in Ceylon. Subject to slight local movements; abundant throughout the lowlands and lower hills to c. 1300 m, less commonly to c. 1600 m; occasionally higher. 'Is gradually increasing its range upwards' (Phillips).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 1006.

BREEDING. Season, February to December, but chiefly during April and again during August' (Phillips). Nest, eggs and breeding biology as in the Indian Myna.

MUSEUM DIAGNOSIS. Differs from nominate *tristis* as follows: White primary-coverts variegated irregularly with black; black of the chin, throat and breast very much darker in tint and produced down the centre of the abdomen till it meets the central white patch; vinous-brown of flanks and thighs very considerably darker.

Young (immature). Easily separable from juvenile of peninsular birds as follows: Rufous-brown on hindneck, mantle and rump much duller and darker, making the contrast between these parts and black head less pronounced; vinous-brown of underparts much darker, merging imperceptibly into the blackish chin, throat and upper breast; white patch on central abdomen virtually absent or small and sullied with vinous-brown; primary-coverts variegated with black.

STARLINGS, MYNAS

181

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂♂	143-149	27-29	37-42	82-96 mm
3 ♀♀	134-138	26-29	36-37	76-82 mm (HW)

COLOURS OF BARE PARTS. As in 1006.

1008. **Bank Myna.** *Acridotheres ginginianus* (Latham)
Turdus ginginianus Latham, 1790, Index Orn. 1: 362 (Gingee)
Baker, FBI No. 998, Vol. 3: 55

Plate 68, fig. 14

LOCAL NAMES. *Gāngā mynā* (Hindi); *Gāng sālīk* (Bengali); *Bārdā myna* (Bihar mirshikars); *Bārdī myna* (Nepal); *Lāli* (Sind); *Daryta myna* (Uttar Pradesh).

SIZE. Myna —; length c. 21 cm (8½ in.).

FIELD CHARACTERS. Like Indian Myna but slightly smaller and pale bluish grey overall instead of vinous-brown, also with black head. Naked skin below and behind eye brick-red instead of yellow. Wing-patch and tips of tail-feathers pinkish buff instead of white. A distinct tuft of feathers at forehead, as in Jungle Myna (1009) but smaller, sometimes very erect. Sexes alike.

Young (immature). Above, head and neck brown; rest of upperparts more brown-tinged than in adult; wings unglossed brown. Below, grey flank and breast-feathers edged with buff. Iris bluish grey. For details see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; patchy, and subject to regular seasonal local as well as nomadic movements in some areas. Plains of northern and central India from the Himalayan foothills, terai and duars southward roughly to a line from Bombay (c. 19°N.) to Balasore in N. Orissa (c. 21°N.); from NW. frontier districts and Indus Valley in Sind (W. Pakistan) eastward to W. Bengal and East Pakistan. A single example taken near Madras from amongst common mynas (Sundara Raj, JBNHS 23: 155) — probably an escaped cage bird. Locally up to c. 800 m altitude. Affects the neighbourhood of human habitations. The species does not occur extraliminally; a straggler once taken at Kandahar, Afghanistan (HW, JBNHS 45: 112).

GENERAL HABITS. Gregarious; more or less like Indian Myna. Keeps in flocks even during breeding season. Usually very tame and confiding. Commonly haunts railway stations, sauntering about jauntily on the platforms picking up titbits from in among the hurrying feet of the passengers and piles of baggage, almost drowning the hubbub by its own incessant screeching and chatter. Surreptitiously hops on to the vendors' handcarts to filch eatables, dodging clear of the owner's angry protestations. Is also quite at home in noisy and congested city bazaars (e.g. Old Delhi), cheekily bouncing into the foodstalls and helping itself to whatever scraps it can find. In the open countryside keeps to irrigated fields, sewage farms, and grazing grounds usually in attendance on cattle, or to cattle pens on the outskirts

STARLINGS, MYNAS

183

shafts of brick-lined wells often shared out with House Sparrows and pigeons. The wells sometimes so deep and narrow as to necessitate almost vertical rise to the top, a seemingly hazardous feat for an inexperienced fledgling on its initial flight. Eggs, 3-5, glossy pale blue, unmarked. Average size of 60 eggs 27.5 × 20.3 mm (Baker). Breeding biology as in *tristis* (1006), but incubation and fledging periods undetermined.

MUSEUM DIAGNOSIS. See Key to the Species and Museum Diagnosis.

Young (immature). Above, whole head and ear-coverts dark brown, glossless and unbacked; rest of upperparts brown. Tail dark brown, the pinkish buff tips replaced by dirty buffish white; tail-feathers narrower. Below, dirty pale buff, suffused with grey on breast and sides of body; wings and coverts dark brown with some rusty margins to most of the feathers and a slight gloss; primary-coverts and patch on wing buffish white. Postjuvinal moult complete. In fresh plumage upperparts dark slaty brown which later fades to paler brown. Bare parts as adult (Tiechurst).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	118-129	24-25	36-38	65-74 mm
♀♀	114-123			60-71 mm (SA, Marien)

Weight 6 ♂♂ 64-76 (av. 72) g — SA.

COLOURS OF BARE PARTS. Iris orange-red. Bill orange-yellow; naked orbital patch reddish orange. Legs, feet and claws yellow.

ACRIDOTHERES FUSCUS (Wagler)

Key to the Subspecies

	Page
I Upperparts slaty; iris yellow	
A Lighter, particularly on rump, and less smoky on abdomen....	183
..... <i>A. f. fuscus</i>	186
B Darker above; more smoky on abdomen.....	
..... <i>A. f. fumidus</i>	
II Upperparts brown; iris grey, bluish white or pale blue.....	185
..... <i>A. f. maharattensis</i>	
Cf. Amadon, D., 1956, <i>Amer. Mus. Novit.</i> , No. 1803: 32-4.	

1009. **Northern Jungle Myna.** *Acridotheres fuscus fuscus* (Wagler)

Pastor fuscus Wagler, 1827, Syst. Av. Pastor sp. 6

[India = East Bengal, Baker, 1921 = Sikkim (Whistler, 1933, JBNHS 36: 590)]
Baker, FBI No. 999 (part), Vol. 3: 57

Plate 68, fig. 15

LOCAL NAMES. *Pāhārī mynā*, *Jungli mynā* (Hindi); *Jhont sālīk*, *Jungli sālīk* (Bengali); *Vānā kābār* (Gujarati).

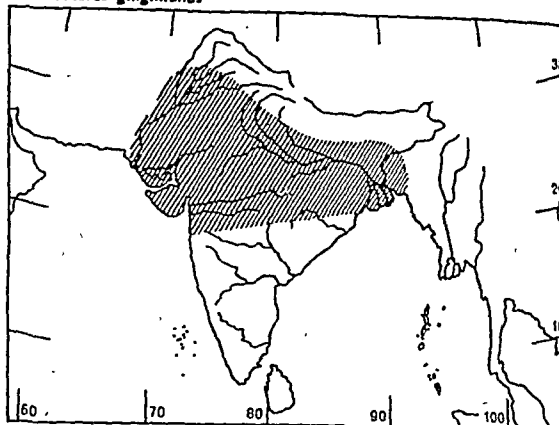
SIZE. Common Myna; length c. 23 cm (9 in.).

FIELD CHARACTERS. Very similar to Indian Myna (1006), also with the large white wing-patch but distinctly greyer brown overall. A prominent tuft of erect black feathers at base of bill on forehead, absence of bare

182

STURNIDAE

Acridotheres ginginianus



Distributional range

of villages and outlying herdsmen's settlements. Hunts insects disturbed by the grazing animals' feet; sometimes rides on their backs or clings to the ear of buffalo to pick out ticks, comically steadying itself in the precarious position by a vigorous flapping of wings each time the animal tries to shake it off. Likewise, municipal refuse dumps, and the neighbourhood of rivers, canals and jheels are amongst its favourite resorts. Flocks follow the plough for the insects and grubs turned up with the soil. Roosts in vast congregations in company with Indian Mynas and other birds in groves of large trees or reed-beds; frequently also among the trusses of corrugated iron roofs of railway stations and goods sheds, regardless of trains thundering past or shrieking locomotives.

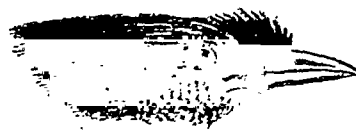
FOOD. As in Indian Myna: fruit, grain and insects. Very destructive locally to ripening crops of jowar (*Sorghum*). An important additional insect pest, recorded among stomach contents in Bihar, is larvae of the moth *Ophiusa melicerte* (Noctuidae), highly injurious to castor (*Ricinus*) (Mason & Lefroy, 1912).

VOICE AND CALLS. Similar to Indian Myna's (1006) but somewhat softer.

BREEDING. Season, overall March to August, principally April to June. Nesting colonial, often several score pairs together. Nest, a loose pad of straw, feathers and miscellaneous rubbish, commonly including bits of snake slough, placed in the widened chamber at the end of a horizontal earth tunnel. The tunnels c. 7 cm in diameter, from c. half to one metre deep, slightly upward-sloping, drilled honeycomb fashion in steep earth banks of rivers, sides of disused brick kilns, *kutcha* wells and the like. Commonly also stuffed within weep-holes in revetment of masonry bridges, and down

184

STURNIDAE

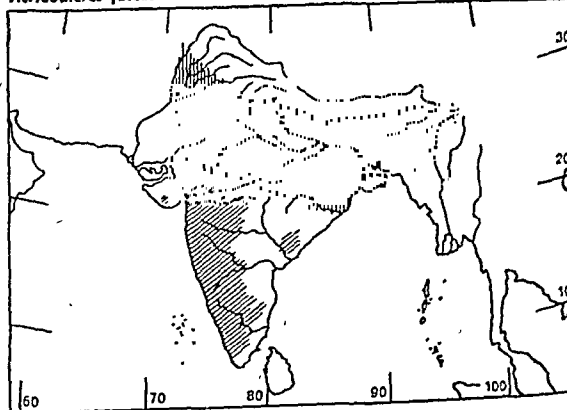


× c. 1

yellow skin round eyes, broadly white-tipped tail and yellow iris are diagnostic clues. Sexes alike. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; patchily distributed and subject to seasonal local movements. Throughout the lower Himalayas (breeding from the foothills to c. 2100 m) from about Murree in W. Pakistan eastward through Jammu, Himachal Pradesh, Nepal, Sikkim, Bhutan, and

Acridotheres fuscus



Distributional ranges

fuscus (1009). *maharattensis* (1010). *fumidus* (1011).

Assam Valley; southward roughly to a diagonal line from Mount Abu in Rajasthan to the mouth of Mahanadi river in Orissa (c. 20°20'N.), including Uttar Pradesh, northern Madhya Pradesh, northern Orissa, Bihar, West Bengal, western Assam and East Pakistan. In many of these areas very local, or perhaps only a seasonal visitor. Affects well-wooded country in the neighbourhood of cultivation, forest villages, and tea gardens, etc. chiefly in the foothills.

GENERAL HABITS. Not markedly different from Indian Myna but is less commensal with man. Often found in association with it and with other mynas. Keeps in family parties and flocks of 10 to 30 or so, commonly in

STARLINGS, MYNAS

185

attendance on grazing cattle. Also has large communal roosts in sugarcane fields, reed-beds and the like, shared with noisy congregations of common mynas and other birds. Is very partial to flower-nectar and an important cross-pollinator for many species, the feather-tuft on the forehead functioning as an efficient pollen brush.

FOOD. Fruits and berries, grain, flower-nectar, and insects.

VOICE and CALLS. Not appreciably different from Indian Myna including the courtship 'song' with its accompaniment of comical bowing and bobbing of the head.

BREEDING. Season, principally April to June or July; often two successive broods raised. Nest, a collection of twigs, roots, feathers, tin foil, paper and miscellaneous rubbish, often including bits of snake slough, stuffed in a tree-hollow or disused or usurped woodpecker boring, usually at moderate heights, c. 2-6 metres. Large colonies occupy weep-holes in buttressing walls along hill roads and in masonry revetments of bridges; less commonly under roofing of houses. Often the same sites are occupied year after year. Eggs, 4 to 6 — sometimes only 3 — like Indian Myna's, unmarked turquoise blue, smooth and with a slight gloss. Average size of 100 eggs 28.9 × 20.9 mm (Baker). Both sexes take part in building the nest, incubation and feeding the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. Adult. Whole head, lores and ear-coverts black, the feathers of the head hackled. Rest of upperparts cinereous brown becoming greyer with wear. Below, chin, throat and breast dark ashy grey; belly and under tail-coverts buffish white.

Young (immature). Upperparts brown to grey-brown, darkest on head which is not hackled; ear-coverts with pale shafts. Underparts brown with pale mottling on throat; belly and under tail-coverts buffish white. Tail-feathers narrower, dark brown with white tips as in adult. Postjuvénal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	122-130	26-28	72-76 mm
♀♀	120-125	25-27	67-75 mm

(Marien, BB)

Weight 1 ♂ 78; 1 ♀ 94 g (GD).

COLOURS OF BARE PARTS. Iris lemon-yellow. Bill yellow-orange, bluish black towards base of lower mandible. Legs and feet yellow-ochre; claws brown.

1010. Southern Jungle Myna. *Acridotheres fuscus maharattensis* (Sykes)

Pastor maharattensis Sykes, 1832, Proc. Zool. Soc. London: 95

[the Ghauts (near Poona)]

Baker, FBI No. 999 (part), Vol. 3: 57

LOCAL NAMES. *Kāṭhā nāhanarāi* (Tamil); *Kinnari mynā* (Malayalam); *Jungli mynā* (Hindi); *Vānā kābār* (Gujarati).

SIZE. Myna; length c. 23 cm (9 in.).

FIELD CHARACTERS. As of 1009, q.v. See Key to the Subspecies and Museum Diagnosis.

STARLINGS, MYNAS

187

from plains level to c. 650 m. Affects the neighbourhood of cultivation and outlying habitations in semi-evergreen biotope.

Extralimital. Undetermined.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 1009 and 1010.

BREEDING. Not specifically recorded; doubtless as in adjoining 1009.

MUSEUM DIAGNOSIS. Differs from nominate *fuscus* (1009) in being darker, more sooty on the upperparts particularly on the rump; darker, more smoky on the abdomen and belly.

MEASUREMENTS. Wing 4 ♂♂ 120-128 mm (SDR).

COLOURS OF BARE PARTS. Iris yellow; rest likewise as in 1009.

1012. Orangebilled Jungle Myna. *Acridotheres javanicus infuscatus* (Baker)

Aethiops fuscus infuscatus Baker, 1918, Bull. Brit. Orn. Cl. 38: 70

(Lower Chindwin, Burma)

Baker, FBI No. 1002, Vol. 3: 59

Plate 68, fig. 18

LOCAL NAME. *Hagrani dzo myna* (Cachari).

SIZE. Myna; length c. 23 cm (9 in.).

FIELD CHARACTERS. Very like Northern Jungle Myna (1009), also with a prominent white wing-patch, but much blacker, with wholly yellow bill and reddish to orange-brown irides. Sexes alike. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident (?). Nagaland, Manipur, Tripura (?), Mizo Hills district, and East Pakistan in the Chittagong Hill Tracts; from the foothills up to c. 1300 m. Affects fairly open country with elephant-grass, semi-cultivation, and village environs.

Extralimital. Burma.

Some intergradation may occur in eastern Assam and northern Burma at low elevations between this form and the species *fuscus*, and perhaps, further east with *cristatellus*.

GENERAL HABITS, FOOD, VOICE and CALLS. Similar to *A. f. fuscus* (1009). Commonly associates with Collared Myna (1013) insect-hunting on wet meadows among grazing cattle, or feeding from Silk Cotton (*Salmalia*) and other flowers. Likewise, roosts in vast mixed congregations with the above in sugarcane fields and elephant-grass.

BREEDING. Season, April-May. Nest, as in 1009, a collection of straw, feathers and rubbish almost invariably intermixed with bits of snake slough, placed in holes in trees or in earth banks of rivers. Frequently nests in association with Collared Myna but in segregated colonies. Eggs, 4 or 5, uniform blue, typical of the mynas. Average size of 30 eggs 29.2 × 20.7 mm (Baker). Breeding biology not specifically recorded.

MUSEUM DIAGNOSIS. Adult. Resembles *A. f. fuscus* (1009) but hackled feathers of head longer, and rest of upperparts near black; bronze on wings much darker. Underparts ashy black, ashy at vent; under tail-coverts with black bases. Bill wholly yellow with no blackish at base.

Young (immature). Like *A. f. fuscus* but darker above; entire underparts dark brown, with some pale margins only on belly; under tail-coverts dark brown with broad white tips. Moult as in *fuscus*, q.v.

186

STURNIDAE

STATUS, DISTRIBUTION and HABITAT. Resident; patchily distributed and subject to seasonal local movements. West and south of the range of 1009, viz. of a diagonal line roughly from Mount Abu in Rajasthan to the mouth of Mahanadi R. in Orissa. Chiefly on the western side of the Peninsula from Saurashtra (Gir) and northern Gujarat (Ahmedabad) southward along the coastal and Sahyadri tract to Kerala, including Goa (?), W. Mysore (Coorg), W. Tamil Nadu (Nilgiri and Palni hills); from sea level to c. 2400 m. Also found in M.P., southern Orissa and Shevaroy and Chitteri hills, but poorly recorded elsewhere in SE. India. Affects well-wooded deciduous country in the neighbourhood of cultivation, coastal and forest villages, tea and coffee plantations and hillmen's settlements; occasionally urban compounds. Avoids evergreen forest.

GENERAL HABITS, VOICE and CALLS. As in the northern subspecies (1009).

FOOD. As in 1009. Also scraps scavenged at municipal refuse dumps and on village outskirts. Figs of the various *Fici* and *Lantana* berries are among the major food items. Does considerable local damage to orchard fruit in the south Indian hills. Also feeds regularly on nectar of *Salmalia malabarica*, *Erythrina indica* and *E. suberosa*, *Bombax insignis*, *Butea monosperma* and *Careya arborea* as well as of the introduced Tulip Tree (*Spathodea campanulata*).

BREEDING. Season, chiefly February to May. Nest, eggs (c/3 or 4) and breeding biology as in 1009.

MUSEUM DIAGNOSIS. Differs from the northern (nominate) subspecies in being more brown, less slaty grey on the upperparts, and in the colour of the iris: grey or bluish white c. lemon-yellow.

Young (immature). Like *fuscus* (1009) but browner above and below.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	126-134	26-28	c. 36	73-79 mm
♀♀	121-131	25-27	c. 36	70-78 mm

(HW, Marien)

Weight 15 ♂♂ 72-98 (av. 82.8) g - SA.

COLOURS OF BARE PARTS. Iris bluish white or grey. Bill orange-yellow, dark brown at nostrils, gape and base of lower mandible; mouth dark slate. Legs and feet yellow; claws brown.

1011. Eastern Jungle Myna. *Acridotheres fuscus fumidus* Ripley

Acridotheres cristatellus fumidus Ripley, 1950, Postilla, Yale Peabody Mus., No. 1: 4

(Sadiya, northeastern Assam)

Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Myna; length c. 23 cm (9 in.).

FIELD CHARACTERS. As of 1009, q.v. See Key to the Species and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Presumably resident, with local movements as in the other forms. Nagaland, eastern Assam in the North Cachar and Lakhimpur dists., and the Sadiya-Mishmi tract of NEFA;

188

STURNIDAE

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	120-130	22-23	37-43	77-88 mm

(Baker)

COLOURS OF BARE PARTS. Iris light reddish to orange-brown or hazel. Bill orange-yellow. Legs and feet wax-yellow.

1013. Collared Myna. *Acridotheres albocinctus* Godwin-Austen & Walden

Acridotheres albocinctus Godwin-Austen & Walden, 1875, Ibis: 251

(Manipur Valley)

Baker, FBI No. 1003, Vol. 3: 60

Plate 68, fig. 17

LOCAL NAMES. None recorded.

SIZE. Myna; length c. 23 cm (9 in.).

FIELD CHARACTERS. An unmistakable myna with slightly tufted forehead: glossy slate-black above, greyish black below, with a prominent buffy white collar from side to side of neck (rather indistinct on hindneck). In flight a conspicuous white wing-patch and broadly white-tipped tail are additional pointers. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Said to be locally migratory, at least in part. Manipur Valley between c. 800 and 1200 m elevation. Stuart

Baker obtained a single specimen, apparently a straggler, in N. Cachar. May straggles to adjoining Nagaland or Mizo. Frequents damp localities and open elephant-grass country, and the vicinity of cultivation and villages.

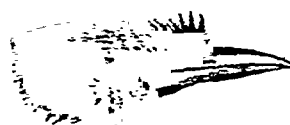
Extralimital. N. Burma and NW. Yunnan.

GENERAL HABITS. Very similar to Indian and Jungle mynas, qq.v. Keeps in pairs, family parties or flocks of up to 30 to 50 birds attending grazing cattle on marshland. Among stomach contents have been recorded tiny frogs and lizards in addition to the usual grasshoppers and other insects, fruit (largely *Ficus* spp.), flower-nectar and cereal grains — thus equally omnivorous with its relations and congeners.

BREEDING. In general similar to *A. f. fuscus* (1009), but unrecorded within our limits.

MUSEUM DIAGNOSIS. With wear the upperparts become browner, and the half collar becomes white.

Young (immature). Whole plumage dark brown, paler brown on throat and belly; under tail-coverts tipped whitish; white patch on primaries smaller, and that on primary-coverts tipped with black. Tail-feathers narrower and with narrower white tips. Postjuvénal moult complete (Tiechurst).



STARLINGS, MYNAS

189

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	110-120	23-25	c. 35	72-76 mm (Baker)

COLOURS OF BARE PARTS. Iris pale blue or azure blue. Bill orange-yellow. Legs and feet chrome yellow or bright wax-yellow.

Genus *Mino* Lesson

Mino Lesson, 1827, Bull. Sci. Nat. (Ferussac) 10: 159.
Type, by monotypy, *Mino Dumontii* Lesson
Ampeliceps Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 194.
Type, by monotypy, *A. coronatus* Blyth

Bill shorter than head, wide at base, culmen well curved. Frontal feathers curly, growing both upwards and inwards and inclining over base of bill. A large naked area round eye. Wings very long and pointed; tail short and square.

1014. **Goldcrested Myna.** *Mino coronatus* (Blyth)

Ampeliceps coronatus Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 194
(Tenasserim)
Baker, FBI No. 989, Vol. 3: 44
Plate 68, fig. 16

LOCAL NAME. *Dao myna rājā* (Cachari).

SIZE. Myna —; length c. 21 cm (8½ in.).

FIELD CHARACTERS. A dainty glossy black myna with golden yellow crested forehead, crown, and throat, and a naked orange-yellow patch round eye. A broad white and yellow band on wing-quills prominent in flight and diagnostic. Sexes more or less alike; for details see Museum Diagnosis.



x c. 1

nipur; from plains level to c. 1000 m. Affects moist-deciduous and semi-evergreen biotope: open forest and cultivation clearings with a scattering of tall relic trees.

May occur also in adjoining Nagaland, Mizo, Tripura and East Pakistan hill tracts.

Extralimital. Burma south to Tenasserim, Thailand, Indochinese countries.

GENERAL HABITS. Little known or documented. Arboreal; less gregarious than, e.g. Greyheaded Myna (987). Keeps in pairs or small parties to tree-tops.

FOOD. Mainly fruit; also insects.

VOICE AND CALLS. Described as varied and resembling the Hill Myna's (*Gracula*).

STATUS, DISTRIBUTION AND HABITAT. Resident? Uncommon. N. Cachar district (Assam) and Ma-

STARLINGS, MYNAS

191

1015. **Northern Hill Myna.** *Gracula religiosa intermedia*
A. Hay

Gracula intermedia A. Hay, 1844, Madras Jour. Lit. Sci. 13: 157
(Cachar)
Baker, FBI No. 964 (part), Vol. 3: 19
Plate 68, fig. 19

LOCAL NAMES. *Pāhārī mynā* (Hindi, Bengali); *Dao mynā*, *Mynā gashim* (Cachari).

SIZE. Myna +; length c. 29 cm (11½ in.).

FIELD CHARACTERS. A stocky jet-black myna with bright orange-yellow

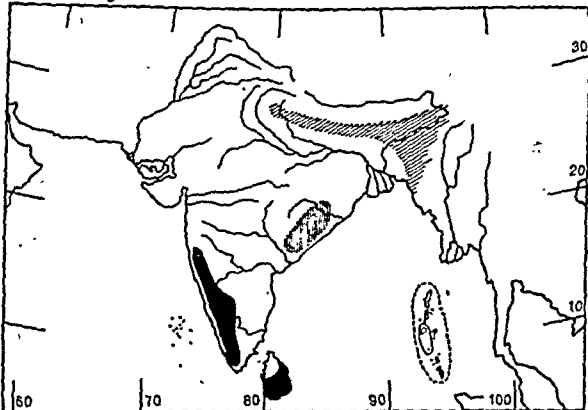


x c. 1

patches of naked skin and fleshy wattles on sides of head and nape. A broad white band on primaries, particularly conspicuous in flight. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, with slight but marked seasonal local movements. The submontane tract of the Himalayas from

Gracula religiosa



Distributional ranges

intermedia (1015).

indica (1016).

peninsularis (1017).

andamanensis (1018).

190

STURNIDAE

BREEDING. Very little recorded within our limits. *Season*, evidently c. April-May. *Nest*, of grass etc. placed in a hole c. 5 to 15 metres up in a tree-trunk standing in thin forest. *Eggs*, 3 (?), blue, like those of Greyheaded Myna, measuring c. 26 x 20 mm. Breeding biology undescribed.

MUSEUM DIAGNOSIS. Adult. *Male*. Forehead, crown, lores, supercilium, chin, centre of throat and short 'moustache' golden yellow. Rest of plumage, above and below, black highly glossed with blue. First six primaries (as.) with a broad white patch on inner webs; primaries 2-6 with a corresponding yellow patch on outer webs.

Female. Yellow of crown restricted to anterior half; lores, supercilium and moustache black. Rest as in male.

Young (immature). Whole head black, nearly always with a trace of yellow on throat. 'The black seems to be discarded by degrees, streaks and patches of black remaining until the second year' (Baker).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	121-133	c. 14	c. 27	59-63 mm (Baker)

Weight ♂♂ 2.75-3.5 oz = c. 78-99 g (Hume).

COLOURS OF BARE PARTS. Iris dark brown; orbital skin orange-yellow. Bill pale orange turning to blue at gape. Legs and feet dull orange or wax-yellow; claws brown.

Genus *GRACULA* Linnaeus

Gracula Linnaeus, 1758, Syst. Nat., ed. 10, 1: 108.

Type, by subsequent designation, *Gracula religiosa* Linnaeus

Eulabes Cuvier, 1816, Règne Anim. 1: 401.

Type, by monotypy, *Gracula religiosa* Linnaeus

Distinguished by nearly entire plumage being glossy black and presence of fleshy wattles on nape. Bill shorter than head: thick, high and curved. Feathers of crown very short, velvety and curved inwards, with indications of a 'centre parting' on the crown. Wing rather blunt with a small first primary (as.). Tail short and nearly square. Feet exceptionally strong.

Key to the Species

Some bare skin on sides of head.....	<i>G. religiosa</i>	Page 190
No bare skin on sides of head.....	<i>G. pitlogensis</i>	191

GRACULA RELIGIOSA Linnaeus

Key to the Subspecies

A Nape-wattles not extending to crown		
a Eye- and nape-wattles joined	<i>G. r. intermedia</i>	191
	<i>G. r. peninsularis</i>	195
b Eye- and nape-wattles joined or narrowly separated.....	<i>G. r. andamanensis</i>	196
B Nape-wattles extending up sides of crown		
Eye-wattles distinctly separated.....	<i>G. r. indica</i>	194

192

STURNIDAE

Kumaon (Almora, c. 80°E.) eastward through Nepal, Sikkim, Bhutan and NEFA — terai, bhabar, duar and foothills, locally up to c. 2000 m. Also Manipur, Nagaland and the hills and hill tracts of Assam and East Pakistan; in tropical moist-deciduous and semi-evergreen forest.

Extralimital. Burma south to Tenasserim, Thailand and the Indochinese countries.

GENERAL HABITS. Sociable and noisy. In non-breeding season keeps in parties of 5 or 6 birds to tree-tops on the edge of closed forest or in cultivation clearings with a sparse sprinkling of standing trees. Almost entirely arboreal; will occasionally descend to feed in berry-laden bushes, but hardly ever to the ground. Moves about on boughs etc. by hopping sideways, unlike most other mynas which have a characteristic jaunty walk. Large congregations of up to a hundred birds or more will sometimes collect to feed in a grove of fruiting *Ficus* trees in company with hornbills, barbets, green pigeons and other frugivorous birds, flying from one branch or tree to another with a noisy whirring of wings as in green pigeons. While feeding or resting during the day the birds constantly call and answer one another in low conversational croaks. Very lively and noisy towards sunset, settling individually on bare tree-tops and calling and answering in loud creaky whistles for long periods before flying to roost. Roosts individually, or in pairs or family parties, on leafy branches or in tree-holes, not in large mixed communities like Indian and many other mynas.

FOOD. Mainly fruits and berries, predominantly the various wild figs (*Ficus*); also flower buds, nectar, and insects. Flowers of Silk Cotton tree (*Salmalia malabarica* and *Bombax insignis*) provide a large part of the nectar diet everywhere, and from the coating of pollen always adhering to forehead and chin feathers the birds evidently play an important role in cross-pollination. Insect food mostly procured in trees, but winged termites often hawked in the air by awkward flycatcher-like sallies. Lizards and other small animals frequently taken.

VOICE AND CALLS. Both sexes make an extraordinarily wide range of loud calls, these being often whistles, wails, screeches and gurgles, sometimes melodious and often very human-like in quality. Each bird has a repertoire of between 3 and 13 such call-types. No bird shares any of these call-types with its mate, but it shares most of them with a few near neighbours of the same sex, having learnt them when young by selective imitation of neighbouring Hill Mynas. There is a very rapid rate of change of dialect with distance, such that birds living more than about 15 km apart have no call-types in common with one another (Brian Bertram, *in epist.*). In captivity this bird is renowned as a first-rate mimic, learning to reproduce many everyday sounds and particularly the human voice, even whistled tunes.

STARLINGS, MYNAS

193

with astonishing accuracy and clarity. In the wild state, however, Hill Mynas do not normally imitate other species, unlike Racket-tailed Drongos and contrary to popular belief, although some of their very varied notes may to the casual listener bear a resemblance to other species' calls. *Intermedia* also make a number of soft grunts and whispering sounds, audible only at close range, and a very loud piercing chip alarm squeak.

BREEDING. *Season*, principally April to July. *Nest*, a loose collection of fine twigs, grass, feathers and rubbish in a hole in a tall tree-trunk 10 to 15 metres from the ground, standing at the edge of forest or a tea garden, or isolated in the middle of a cultivation clearing. Holes usually appropriated by woodpeckers etc. Sometimes several nests one below the other in the straight bole of a lofty *Salmaal malabarica*, *Tetrameles nudiflora* or such-like tree, occupied apartment-house fashion by different pairs. *Eggs*, 2 or 3, bright blue, scantily speckled or blotched with reddish brown to deep chocolate. Average size of 30 eggs 36.2 × 25.6 mm (Baker). The birds pair for life and both sexes take part in all the domestic chores. Incubation period undetermined.

MUSEUM DIAGNOSIS. See keys to Species and Subspecies. Adult. Whole plumage black; central crown, hindneck, mantle and breast glossed with purple; lateral crown velvety black. Rest of plumage glossed with greenish. An irregular-shaped patch of feathers from posterior rim of eye just fails to divide the bare patch below eye from that over the ear-coverts; the latter patch joins the occipital wattle.

Young (immature). Upperparts, wings and tail like adult, but the black dull and with little gloss. Underparts unglossed brownish black. Bare patches on head like adult, but no occipital wattles. Tail-feathers narrower. Postjuvenile moult complete (Ticehurst).

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	166-176	31-32	c. 35	75-85 mm
♀♀	163-169	31-33	—	80-84 mm
			(HW, BB, Marien)	

Weight 2 ♂♂ 209, 211; 3 ♀♀ 178-229 g (BB).

COLOURS OF BARE PARTS. Adult. Iris dark brown. Bill orange or reddish orange, yellow at tip; bare skin on head and wattles bright yellow. Legs and feet yellow; claws dark horny; pads pale yellow. Young (immature). Iris grey-brown. Bill yellowish orange, dusky on culmen and anterior half of upper, and yellow on tip of lower mandible; bare skin on head lemon-yellow. Legs and feet as in adult (Biswas).

MISCELLANEOUS. This subspecies, and *peninsularis* of Orissa and northern Andhra, are popularly credited with being much superior to south Indian birds (*indica*) in learning ability and as talking birds; they are in greater demand by fanciers and command much higher prices. But this is partly a fallacy (see under *indica*). Enormous numbers of fledglings are taken from nests by local tribes and forest contractors for supplying bird markets in the cities and export to western countries where there is a growing demand. Good talking birds fetch high prices, in consequence of which over-exploitation threatens a serious depletion in Hill Myna populations in some areas. (See Brian Bertram, 1969, *Avicultural Magazine* 75: 253-5.) In the Garo

STARLINGS, MYNAS

195

liting squeak (in contrast to the sharp *um* grunt of *intermedia*). They do not imitate other species in the wild state (Brian Bertram, *in epist.*). Some of its wheezy whistling notes are casually confusable with the Black Bulbul's (*Hyphantornis m. ganessa*), though possessing a distinct myna quality.

BREEDING. *Season*, principally February to May in S. India; March to August (chiefly April and May) in Ceylon. *Nest*, site, *eggs* (c/2 or 3) and breeding biology as in 1015. Average size of 40 eggs 31.6 × 23 mm (Baker).

MUSEUM DIAGNOSIS. Smaller than *intermedia* (1015) with a weaker bill; white wing-patch rather less extensive; bare patch below eye separated by feathers from auricular patch. Side wattles extend up back of nape to crown in the shape of narrow tongues. These narrow tongues are appreciably diminished in birds from the northernmost part of the range (North Kanara) and are entirely absent in *intermedia* and *peninsularis*. That part of the wattle situated above the ear-coverts is also variable according to locality. In *indica* the band connecting the base of the two lobes is so narrow that it barely shows save as a parting of the feathers; in *intermedia* and *peninsularis* this band is broad and conspicuous.¹ There are further differences of the pattern in the nominate (extralimital) subspecies.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	139-155	29-32	29-33	55-72 mm
♀♀	140-149	28-31	31-33	60-70 mm
			(SA, HW)	

Weight 1 ♂ 126 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill orange with yellow tip; palate yellow, gullet pink. Wattles and infra-orbital patch bright yellow. Legs and feet orange-yellow; claws blackish brown.

MISCELLANEOUS. It is an entrenched popular belief that south Indian birds are much inferior to northern in their ability to learn to talk in captivity. Thus they are in lesser demand as pets and fetch considerably lower prices. The main cause of this, apparently, is the fact that northern birds are usually taken from the nest before fledging and then hand-reared, whereas southern birds are mostly trapped as adults, which rarely become really tame and which have already acquired their natural vocabulary. The few *indica* taken from the nest when young do become quite proficient talkers, although apparently less able than *intermedia* to reproduce deeper richer sounds with great accuracy. (See Sâlim Ali, 1963, JBNHS 60: 455-6.)

1017. Eastern Hill Myna. *Gracula religiosa peninsularis*

Whistler & Kinnear

Gracula religiosa peninsularis Whistler & Kinnear, 1933, Jour. Bombay nat. Hist. Soc. 36: 586 (Sambalpur) [Orissa, 21°28'N., 84°04'E.]

Baker, FBI No. 964 (part), Vol. 3: 19

LOCAL NAMES. As in 1015.

SIZE. Same as 1015: length c. 29 cm (11½ in.).

¹ *indica* differs from *intermedia* also in its alarm and social calls. 'If kept together the two races do not call to one another as they do to members of the same race, nor do they preen or pair with one another. The two races largely keep apart and ignore birds of the other

194

STURNIDAE

Hills district of Assam, the locals induce the birds to breed in artificial nests made of a split-bamboo framework covered with grass and put up in accessible positions in tall trees in a forest clearing or at the edge of a small village. The villagers are thus enabled to extract the young at the proper time for easy hand-rearing, making 'Hill Myna farming' a profitable minor cottage industry at present. (For details see Brian Bertram, 1967, JBNHS 64: 369.)

1016. Southern Hill Myna. *Gracula religiosa indica* (Cuvier)

Eulabes indicus Cuvier, 1829, Règne Anim., ed. 2, 1: 377

(India = South India vide Whistler & Kinnear, 1933, JBNHS 36: 585)

Baker, FBI No. 962, Vol. 3: 17

LOCAL NAMES. *Kēnkni mynā* (Hindi); *Kōndā gorinkā* (Telugu); *Kāttu mynā* (Malayalam); *Sela līhīniyā* (Sinhala); *Melāi nākanam pāthi* (Tamil, Ceylon).

SIZE. Myna +; length c. 25 cm (10 in.).

FIELD CHARACTERS. As of 1015, q.v. See Museum Diagnosis.



STATUS, DISTRIBUTION AND HABITAT. Resident, with slight seasonal local movements. Southwestern peninsular India in the Western Ghats (Sahyadri) complex from c. 17°N. southward through W. Mysore (including Coorg, Nilgiri and Palni hills) and Kerala. Stragglers — solos and pairs (once a party of five) observed in different years in wooded country in Greater Bombay. In evergreen forest biotope, from plains level up to c. 1700 m; commonest in the foothills and between c. 300 and 1300 m. Partial to edges of coffee plantations and to lofty natural shade-trees in cardamom sholas. Also Ceylon — locally distributed in the Wet zone and in the southern and eastern forest tracts of the Dry zone, up to c. 1100 m.

GENERAL HABITS AND FOOD. As in Northern Hill Myna (1015). Besides *Salmaal* and *Bombax* it is habitually in attendance for the nectar on flowers of *Erythrina suberosa* and *Grevillea robusta*, two important shade-trees grown in south Indian tea and coffee plantations. Large numbers descend to feed on nectar of the freely flowering forest shrub *Helicteres isora*, where most of the capturing is done with bird lime.

VOICE AND CALLS. The calls of this form are higher pitched and considerably less varied than those of *intermedia*, consisting of less mellow wheezes, screeches and chuckles. The alarm-call is a loud squeaky wheeze (unlike the sharp chip of *intermedia*), while the close-range contact sound is a soft

196

STURNIDAE

FIELD CHARACTERS. As of 1015, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, with slight seasonal local movements. Orissa, eastern Madhya Pradesh and northern Andhra; from plains level to c. 800 m in tropical semi-evergreen forest, especially foothills.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 1015 and 1016, qq.v.

BREEDING. *Season, nest, eggs* and breeding biology as in the sub-Himalayan population (1015).

MUSEUM DIAGNOSIS. Head wattles as in *intermedia* (1015); differs from it by somewhat smaller size and finer and shorter bill.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♀	158-165	29-31	c. 35	72-74 mm
				(HW, SA)

COLOURS OF BARE PARTS. As in 1015 and 1016.

1018. Andaman Hill Myna. *Gracula religiosa andamanensis*

(Beavan)

Eulabes andamanensis 'Tyder' = Beavan, 1867, Ibis: 331 (Andamans)

Gracula jacensis halibrecta Oberholser, 1926, Jour. Washington Acad. Sci. 16: 516 (Little Nicobar Island)

Baker, FBI No. 965, Vol. 3: 20

LOCAL NAMES. None recorded.

SIZE. Same as 1015: length c. 29 cm (11½ in.).

FIELD CHARACTERS. As of 1015, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Andaman and Nicobar islands. Common in Middle and South Andamans, and Central, Little and Great Nicobars. Not yet reported from the intervening Little Andaman or Car Nicobar. Affects high forest.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 1015 and other races.

BREEDING. Not recorded; presumably as in 1015.

MUSEUM DIAGNOSIS. Like sub-Himalayan *intermedia* (1015) but bill longer; the 'peninsula' of feathers projecting into the bare patch on side of head rather differently shaped. There is an increase in size from north to south, birds from the Nicobars being appreciably larger than from the Andamans. But the increase represents a continuous cline, and recognition of the Nicobar race *halibrecta* on this single character (as was originally done) seems unwarranted.¹

¹ race. Thus they would almost certainly not interbreed, and they should perhaps best be regarded as separate species. *Peninsularis* is very much closer to *intermedia* (Brian Bertram *in epist.*).

² However, Abdulali has recently pointed out (1967, JBNHS 64: 180-1) that birds from Little and Great Nicobar possess 'two large naked lappets joined at the back of the neck at the top end, leaving no feathered portion in between' which apparently distinguishes them from all others in the Andamans and the rest of the Nicobars. If this character can be established on more material, it may be used as an additional diagnosis for the recognition of *halibrecta*.

STARLINGS, MYNAS

197

MEASUREMENTS

	Wing	Bill (from anterior rim of nostril)	Tail
♂♂	165-182 (12 msd.)	20-23 (6 msd.)	81-89 mm (9 msd.)
♀♀	160-181 (17 msd.)	19-23 (8 msd.)	71-95 mm (15 msd.) (Abdulali)

COLOURS OF BARE PARTS. Not recorded; presumably as in the other races.

1019. Ceylon Hill Myna. *Gracula ptilogenys* Blyth*Gr. (acula) ptilogenys* Blyth, 1846, Jour. Asiat. Soc. Bengal 15: 285

(Ceylon)

Baker, FBI No. 966, Vol. 3: 21

Plate 68, fig. 20

LOCAL NAMES. *Sela līhinyā*, *Mal kawadiyā*, *Kampatiyā* (Sinhala); *Malāi nākanam pāchi* (Tamil, Ceylon).

SIZE. Myna +; length c. 25 cm (10 in.).

FIELD CHARACTERS. Like Southern Hill Myna (1016) but more glossy and with no bare patch on side of head. Two well-separated occipital wattles



x c. 1

which are half as broad as long. White wing-patch smaller than in northern birds. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Endemic to Ceylon. Resident in the Hill zone and low-country Wet zone. Moderately plentiful, but local, in forests and well-wooded areas in the hills to over 2100 m. In some localities found together with Southern Hill Myna (1016) but there is no interbreeding with it. Frequents high trees in tall forest, as well as on estates and village gardens in their neighbourhood.

GENERAL HABITS. Similar to 1016, but less gregarious, usually living in pairs in scattered colonies.

FOOD. Chiefly *Ficus* figs and other jungle fruit.VOICE AND CALLS. Various piercing whistles [distinctly louder and deeper than *indica* (SDR)] one of which sounds like a whistled *h'you*; sundry croaking and guttural conversational notes (Henry). Is an accomplished mimic like Southern Hill Myna, and also a popular cage bird.

CROWS, MAGPIES, JAYS

199

GARRULUS GLANDARIUS (Linnaeus)

Key to the Subspecies

Upperparts rich vinaceous fawn *G. g. bispecularis*Upperparts darker, more reddish brown *G. g. interstinctus*
Cf. Ripley, S. D., 1952, JBNHS 50: 513.

1020. West Himalayan Redcrowned Jay.

Garrulus glandarius bispecularis Vigors*Garrulus bispecularis* Vigors, 1831, Proc. Zool. Soc. London: 7

(Himalayan Mountains = Murree. Baker)

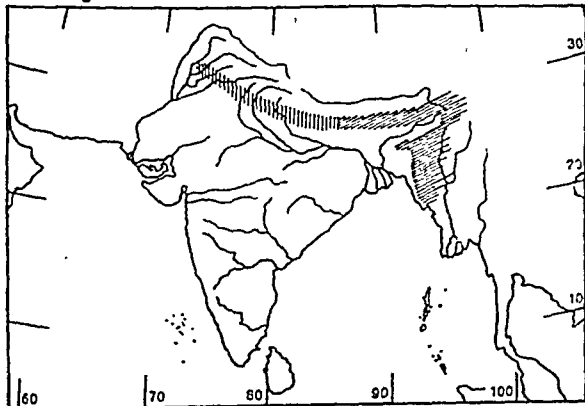
Baker, FBI No. 42, Vol. 1: 63

Plate 69, fig. 2

LOCAL NAMES. None recorded.

SIZE. Dove; length c. 33 cm (13 in.).

FIELD CHARACTERS. A vinaceous fawn coloured (or pinkish brown) bird with closely black-barred bright blue wings, a broad velvety black moustachial band, white rump and vent, and velvety black tail. Sexes alike. In flight fawn coloured back, glistening white rump-patch contrasting sharply with black tail diagnostic.

STATUS, DISTRIBUTION AND HABITAT. Resident, with slight winter-summer altitudinal movements: from Hazara dist. (c. 73°E.) in West Pakistan eastward through Kashmir, Himachal Pradesh, Punjab, Garhwal and Kumaon to central Nepal where intergradation with east Himalayan *interstinctus**Garrulus glandarius*

Distributional ranges

bispecularis (1020).

interstinctus (1021).

198

CORVIDAE

BREEDING. Season, February to May; sometimes again in August-September. Nest, of grass and rubbish placed in a cavity (sometimes unlined) in the bole or branch of a tall tree in deep forest or cultivated country. Eggs, 2, pale Prussian blue blotched with purplish brown. Average size of 34 eggs 33.3 x 22.9 mm (Baker). Breeding biology not specifically recorded.

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters; for a discussion of the taxonomic status, Ripley, S. D., 1946, *Spolia Zeylanica* 24: 237.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂	147-153	32-33	33-34	66-68 mm
1 ♀	158	31	35	69 mm (HW)

COLOURS OF BARE PARTS. Iris ♂ greyish white dotted with brown; ♀ yellowish white. Bill orange-red, black round base of nostrils and basal half of lower mandible; wattles yellow. Legs and feet deep yellow; claws black.

Family CORVIDAE: Crows, Magpies, Jays, etc.

Cf. Amadon, D., 1944, *Amer. Mus. Novit.*, No. 1251: 1-21.For description see Van Tyne, J. & Berger, A. J., 1959: 507; Baker, E. C. Stuart, 1922, FBI 1: 18; Thomson, A. L., 1964, *New Dict. Birds*. London & New York (Article 'Crow').

Key to the Genera

	Page
I Size very small; wing under 100 mm.....	<i>Podoces</i> 229
II Size large; wing well over 150 mm	
A Plumage predominantly black, or black with ashy nape	
1 Bill thick, black.....	<i>Corvus</i> 242
2 Bill slender, red or yellow.....	<i>Pyrrhocorax</i> 236
B Plumage brown, spotted with white.....	<i>Nucifraga</i> 231
C Plumage with brilliant or contrasting colours	
3 Inner web of all primaries white.....	<i>Pica</i> 212
4 Primaries not white (except for small patches)	
a Rectrices not elongated.....	<i>Garrulus</i> 198
b Two central rectrices elongated	
i Plumage with shades of blue.....	<i>Cissa</i> 203
ii Plumage without blue.....	<i>Dendrocyitta</i> 215

Genus GARRULUS Brisson

Garrulus Brisson, 1760, Orn. 1: 30, 2: 47.Type, by tautonymy, *Corvus glandarius* Linnaeus

Bill strong, about three-quarters the length of head; commissure straight. Feathers of crown elongated, forming an erectile crest; nasal bristles short and numerous, completely covering the roundish nostrils. 5th and 6th primaries (as.) longest; first about half as long. Tail of medium length, almost square, only slightly graduated.

Key to the Species

Tail tipped with white.....	<i>G. lanceolatus</i> 202
Tail not tipped with white.....	<i>G. glandarius</i> 199

200

CORVIDAE

occurs. From c. 1500 to 2500 m; occasionally down to c. 1000 m in winter. Affects wet temperate mixed forest of pine, oak, chestnut, rhododendron, etc.

GENERAL HABITS. Generally less common than *lanceolatus* (1022). In many respects unmistakably crow-like. Is inquisitive and clannish, and can be both bold and exceedingly wary as occasion dictates. Keeps in noisy pairs or parties of 4 or 5, joining up into larger flocks of 20 or more in autumn and winter. Associates with Blackthroated Jays, Himalayan Tree Pies, Blue Magpies and laughing thrushes in the itinerant hunting parties in forest. Flight seemingly laboured, with much flapping of wings. Has the characteristic crows' habit of rallying together and raising a loud hue and cry when one member of the party has come to grief. Feeds on the ground as well as in trees.

FOOD. Fruits and nuts, insects, lizards, small mammals, eggs and chicks of small birds, kitchen scraps around hill-station bungalows; almost anything that can be procured. Is destructive to fruit in hill orchards. Acorns plucked off oak trees or picked up off the ground; either carried to a branch or dealt with on the spot; held underfoot, the kernel hacked out by repeated hammer-blows of the short stout bill.

VOICE AND CALLS. Indistinguishable from *lanceolatus* (1022); most commonly a characteristic harsh, monosyllabic, and penetrating *shak*. Some very similar to the raucous croaks and chuckles of Himalayan Tree Pie, whistling squeals of Blue Magpie, and the rather similar cry of hawk-eagle (*Spizaetus*); others almost identical with the screeching and swearing 'Snake alert' of Indian Myna. Yet another call described as of three syllables *ko-kaw-lee* (Fleming). Rarely also a rather low, varied and almost pleasant 'song' uttered in the nature of a soliloquy, with good mimicry of other bird calls interlarded.

BREEDING. Season, March to June, chiefly April and May. Nest, a largish cup of twigs mixed with green moss, usually more compact than of 1022, but similarly lined with fibres and fine roots. Built up to c. 8 metres from the ground in a sapling or thick shrub, often standing on the edge of a steep declivity, and with little effort at concealment. Eggs, 3 to 5, olive-brown or olive-green, freckled and blotched with brown, more densely and forming a cap at the broad end. Average size of 80 eggs 28.4 x 22.1 mm (Baker). Both sexes take part in building the nest, incubation and tending the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. See keys to the Species and Subspecies; for details of plumage Baker, loc. cit.

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	160-178	c. 26	c. 32	c. 180 mm (Baker)
Birds from central Nepal (intergrading zone) (from skull)				
10 ♂♂	158-171	32-33	—	142-153 mm
8 ♀♀	158-164	30-32	—	135-145 mm (Birwas)

Weight 3 ♂♂ 127-130; 3 ♀♀ 120-128 g (GD).

CROWS, MAGPIES, JAYS

201

COLOURS OF BARE PARTS. Iris pinkish red to dark brown; orbicular skin plum-brown. Bill and mouth black. Legs and feet fleshy brown; claws plumbeous horny.

1021. East Himalayan Redcrowned Jay.

Garrulus glandarius interstinctus Hartert

Garrulus bispecularis interstinctus Hartert, 1918, Novit. Zool. 25: 430 (Darjeeling)

Garrulus bispecularis persaturatus Hartert, 1918, Novit. Zool. 25: 430 (Khasia Hills)

Garrulus bispecularis azureitinctus Koelz, 1951, Jour. Zool. Soc. India 3: 30

[Karong (Sungun), Manipur]

Baker, FBI No. 43, 44, Vol. 1: 64, 65

LOCAL NAMES. *Lho khario pho* (Lepcha); *Dao flampu* (Cachari).

SIZE. Dove; length c. 33 cm (13 in.).

FIELD CHARACTERS. As of 1020, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, rather local and with slight winter-summer altitudinal movements: Eastern Nepal, Darjeeling dist. (W. Bengal), Sikkim, Bhutan, NEFA, Assam hills south of Brahmaputra R., Nagaland, Manipur, Mizo (?), East Pakistan (Chittagong Hill Tracts?). Between c. 2000 and 3000 m altitude (recorded up to c. 3600 m) descending to at least 1500 m in winter. Affects wet temperate oak, rhododendron and conifer forest in summer, extending into the lower semi-tropical zone in winter.

EXTRALIMITAL. Neighbouring parts of SE. Tibet and SW. Sikkim. Other races in Burma. The species extends from Europe across Asia to E. Siberia and Japan.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 1020.

BREEDING. Season, presumably as in 1020, but not definitely recorded; chiefly during May and June in the Khasi Hills *vide* Baker. Nest and eggs (c/3 or 4) indistinguishable from 1020. Average size of 12 eggs (Khasi Hills) 29.6 × 22.2 mm (Baker). Breeding biology presumably as in the West Himalayan form.

MUSEUM DIAGNOSIS. Differs from *G. g. bispecularis* (1020) only in having both upper and lower parts more rufous in tint.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	160-170	29-32	38-43	142-156 mm (SA)

Weight 7 ♂ ♀ 102-125 g (SA); 3 ♂ ♂ 129-136; 3 ♀ ♀ 109-128 g (Paynter, BB).

COLOURS OF BARE PARTS. As in 1020. Also recorded as: Iris hazel brown; fine beaded ring round eye magenta. Bill horny brown. Legs and feet pale brownish flesh-colour; claws horny brown (SA).

CROWS, MAGPIES, JAYS

203

crest and flicking wings and tail while swearing angrily at the unwelcome presence as if to underline its disapproval.

FOOD, VOICE and CALLS. As in Redcrowned Jay (1020).

BREEDING. Season, April to June, chiefly May. Nest, a deep untidy cup of twigs lined with roots, fibres and grass stems — similar to 1020 but usually more loosely built. Placed in the top of an oak or suchlike sapling 5 or 6 metres up, in open forest on a hillside. Eggs, 3-5, brown stone colour or pale greenish white, minutely and variably freckled and mottled all over with pale sepia brown, sometimes forming a cap at the broad end. Average size of 89 eggs 28.8 × 22 mm (Baker). Both sexes take part in all the domestic chores. Incubation period undetermined.

MUSEUM DIAGNOSIS. See Key to the Species.

Young (immature). Like adult but crown duller black and crest shorter; upper- and underparts with more brownish less vinous cast; white lanceolation on chin and throat less defined, the streaks smaller; white tips to secondaries absent, and instead a subterminal white patch on outer web; white tips to tertiaries absent or a mere white mottling, and black subterminal band less defined.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂ ♀	144-158	c. 28	141-169 mm (Paludan, BB)

Tarsus 32-34 mm (Baker)

Weight 14 ♂ ♂ 88-104 (av. 99.8); 11 ♀ ♀ 84-103 (av. 95) g — Paludan, Paynter.

COLOURS OF BARE PARTS. Variable: Iris light or dark brown or vinous red. Bill lavender or steel-grey or slate, darker towards tip of culmen. Legs steel grey or plumbeous (Whistler).

Genus *Cissa* Boie¹

Cissa Boie, 1826, Isis von Oken, col. 975.

Type, by monotypy, *Coracias chinensis* Boddaert

Urocissa Cabanis, 1851, Mus. Hein., pt. 1: 87.

Type, by original designation, *Corvus erythrorhynchus* Boddaert

Brightly plumaged long-tailed magpies blue or green in colour, with red or yellow bills. Nostrils situated near base of culmen and covered by rather soft plumes contra stiff bristles in true magpies (genus *Pica*).

Key to the Species

Page

A	Belly white or primrose yellow ²	
1	Crown black.....	<i>C. flavirostris</i> 206
2	Crown partly white-spotted.....	<i>C. erythrorhynchos</i> 209
B	Belly not white	
3	Head rich chestnut.....	<i>C. ornata</i> 205
4	Head turquoise with black eye-band.....	<i>C. chinensis</i> 204

¹ Cf. Peters's *Check-list of Birds of the World*, Vol. 15: 242, footnote.

² Fading to lilac-white in older museum skins.

202

CORVIDAE

1022. Blackthroated Jay. *Garrulus lanceolatus* Vigors

Garrulus lanceolatus Vigors, 1831, Proc. Zool. Soc. London: 7

(Himalayan mountains = Simla-Almora district)

Baker, FBI No. 39, Vol. 1: 60

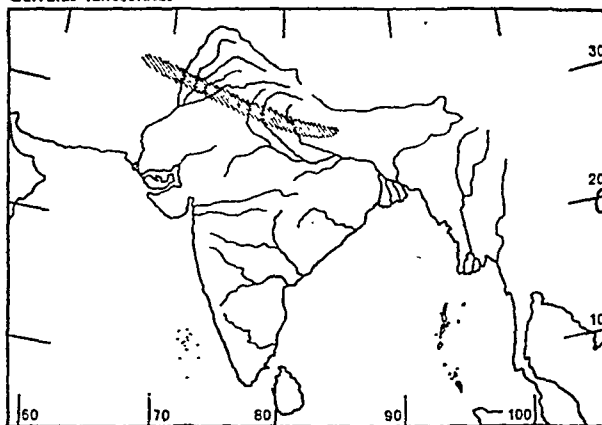
Plate 69, fig. 1

LOCAL NAME. *Bān sārrah* (or *Bān bākra*?) — Simla.

SIZE. Dove; length c. 33 cm (13 in.).

FIELD CHARACTERS. Overall vinous-grey with black (tufted) head, chin, throat and foreneck, the last three boldly streaked with white. Wings and tail black, closely barred with bright blue. A white 'mirror' on wing conspicuous in flight. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, with slight summer-winter altitudinal movements: NW. frontier hills of West Pakistan from c. 70°E. (including Chitral), and outer ranges and valleys of the western Himalayas

Garrulus lanceolatus

Distributional range

through Kashmir, Himachal Pradesh, Garhwal and Kumaon east to c. 86°E. in central Nepal; between c. 1500 and 2500 m, even up to 3000 m. Affects open mixed oak and conifer forest, commonly keeping around hill-stations especially in winter.

EXTRALIMITAL. Contiguous eastern Afghanistan in Nuristan province (Paludan, 1959).

GENERAL HABITS. Largely as in Redcrowned Jay (1020), q.v. As a rule less shy, commonly entering hill-station gardens and backyard of bungalows. Noisy and excitable, missing no opportunity to mob hawks and owls, raising

204

CORVIDAE

1023. Green Magpie. *Cissa chinensis chinensis* (Boddaert)

Coracias chinensis Boddaert, 1783, Table Pl. enlum.: 38

(China, corrected to southern Thailand by Robinson & Kloss, 1923 = *Mergui rida*

Stresemann, 1952, Ibis 94: 516)

Baker, FBI No. 24, Vol. 1: 45

Plate 69, fig. 4

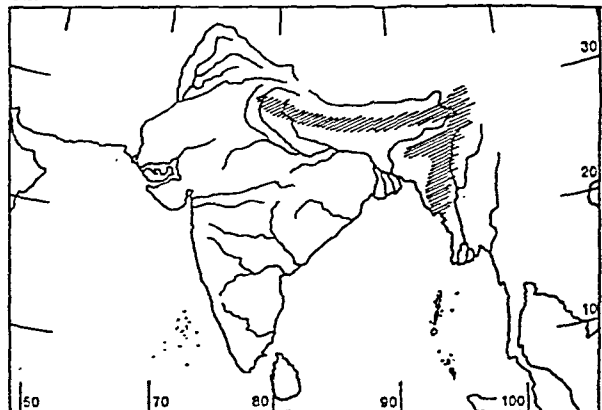
LOCAL NAMES. *Sirgoom* or *Sirgang* (Bengal); *Dhori kaili* (Paharia in Sikkim); *Chap ling pho* (Lepcha); *Rab ling chapa* (Bhutaneese); *Telpili* (Dafila); *Lil sordi* (Assamese), *Dao gatang lili* (Cachari).

SIZE. Myna ± with a long tail; overall length c. 38 cm (15 in.).

FIELD CHARACTERS. A bright leaf-green long-tailed bird with arresting cinnamon-red wings and a broad black band running backward through eyes to meet on nape. Sexes alike.

Black-and-white-tipped graduated tail especially conspicuous in the treepie-like flight, and bright coral-red bill and legs, are further diagnostic clues.

STATUS, DISTRIBUTION and HABITAT. Resident. The lower Himalayas from c. 78°E. in Garhwal eastward through Kumaon, Nepal, Sikkim, N. Bengal (Darjeeling dist.), Bhutan and NEFA. Assam hills south of Brahmaputra R., Nagaland, Manipur, Mizo, Tripura (?) and East Pakistan (Chittagong

Cissa chinensis

Distributional range

C. c. chinensis (1023).

Hill Tracts). Terai, bhabar, duars and foothills, occasionally wandering into the adjoining plains. Normally up to c. 1200 m, rarely and locally to c. 1600 m. Affects tropical and subtropical wet evergreen secondary jungle in nullahs with dense tangles of vines etc.; also mixed moist-deciduous bamboo forest.

CROWS, MAGPIES, JAYS

205

Extralimital. Burma, Thailand, N. Vietnam. The species extends to Cambodia, Malay Peninsula, Borneo, Sumatra, Java.

GENERAL HABITS. Keeps singly or in pairs, sometimes in small noisy parties, and almost unfailingly in association with hunting flocks of laughing thrushes and racket-tailed and other drongos up in shrubs as well as on ground — occasionally in tall trees. Many of its habits closely resemble those of laughing thrushes. Usually shy and wary and, aided by concealing coloration, is oftener heard than seen — this chiefly when flying from one covert to another.

FOOD. Mainly animal; large insects (grasshoppers, beetles, mantises, etc.), frogs, lizards, snakes, and small birds; even carrion recorded.

VOICE AND CALLS. A loud discordant quick-repeated *peep-peep* or *kik-wee*. Also a raucous mewling note, and some rich melodious squealing whistles. Mimics other birds' calls convincingly — e.g. hawk-eagle (*Spizaetus*).

BREEDING. Season, April/May to July. *Nest*, a well-made broad massive but rather shallow cup of twigs, tendrils and bamboo and other leaves often intermixed with moss, lined with finer roots; placed up in a small tree in dense jungle, occasionally in a bamboo clump. *Eggs*, 4 to 6, variable, greyish or pale greenish in ground colour blotched and freckled all over with reddish brown, more densely and forming a cap at the broad end — closely resembling those of laughing thrushes (*Garrulax*). Average size of 200 eggs 30.2 × 22.9 mm (Baker). Breeding biology and incubation period unrecorded.

MUSEUM DIAGNOSIS. Apart from bright green colour and shorter, stiffer tail, differs from the Blue Magpie in having a bright red ring of wattled skin encircling eyes — prominent in life.

Museum skins fade rapidly if exposed to light; the green turns to pale blue and the cinnamon wings to yellowish olive. This is usually the case also with birds in captivity; a tendency towards it is likewise noticeable in wild birds inhabiting comparatively dry areas.

Young (immature) like adult but crest shorter, underparts paler and under tail-coverts white. Rectrices more pointed.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	137-157	37-42	46-47	193-210 mm
♀♀	138-155	34-39	43-44	171-210 mm
			(SA, HW, BB)	

Weight 4 ♂♂ 130-133; 3 ♀♀ 120-124 g (SA, Paynter, SDR).

COLOURS OF BARE PARTS. Iris brownish crimson to blood-red; a fine rim round eye bright orange-crimson. Legs, feet and claws bright orange-crimson or 'Chinese lacquer'.

1024. Ceylon Blue Magpie. *Cissa ornata* (Wagler)

Pica ornata Wagler, 1829, Isis: 749 (India Orientali = Ceylon)

Baker, FBI No. 25, Vol. 1: 46

Plate 69, fig. 5

LOCAL NAME. Kehibellā (Sinhala).

CROWS, MAGPIES, JAYS

207

1025. Western Yellowbilled Blue Magpie.

Cissa flavirostris cucullata (Gould)

Urocissa cucullata Gould, 1861, Bds. Asia 5, pl. 51 (Kuloo Valley)

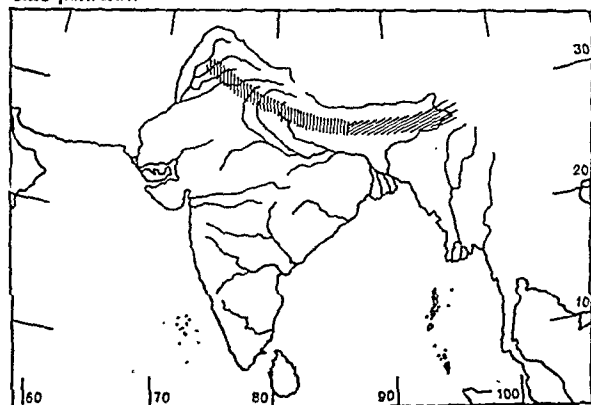
Baker, FBI No. 23, Vol. 1: 44

LOCAL NAMES. Chainchal (Kangra); Lot rūzā, Literāz (Kashmir).

SIZE. Pigeon ±, with tail c. 39-43 cm (15-17 in.) long. Overall length c. 66 cm (26 in.).

FIELD CHARACTERS. As of nominate *flavirostris* (1026), q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; with some winter-summer altitudinal movements. Range almost identical with that of *Garrulus g. bispecularis* (1020): the outer Himalayas from Hazara dist. (c. 73°E.) in West Pakistan eastward through Kashmir, Himachal Pradesh, Punjab,

Cissa flavirostris

Distributional ranges

■ *cucullata* (1025).

■ *flavirostris* (1026).

Garhwal and Kumaon to central Nepal where intergradation with *flavirostris* occurs. From c. 3300 m in summer (breeding chiefly between 1600 and 2700 m), occasionally down to c. 800 m (Dehra Dun) in winter. Affects wet temperate mixed forest of pine, oak, chestnut, rhododendron, etc.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the eastern form *flavirostris*. Associates locally with Redbilled Blue Magpie (1027) though normally occupying a higher altitudinal zone. Is unusual below c. 1600 m whereas 1027 is unusual above this elevation. Whether the breeding ranges of the two actually overlap at any point needs determining.

BREEDING. Season, principally May and June. *Nest*, eggs (c/3-6), site and breeding biology as in 1026.

206

CORVIDAE

SIZE. Myna +, with a long graduated tail. Overall length c. 47 cm (17 in.).

FIELD CHARACTERS. A showy bright blue magpie with whole head, nape, upper back and breast rich chestnut. Long graduated tail blue, tipped with white and sub-tipped with black — this pattern prominent in flight. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Endemic to Ceylon. Resident. South-western aspects of the Hill zone up to c. 2100 m and adjacent forests of the Wet zone down to c. 150 m. Confined to dense evergreen forest; occasionally entering tea gardens.

GENERAL HABITS. By and large as of Green Magpie (1023), q.v. Keeps in parties of up to 6 or 7 — sometimes pairs or solos — usually associated with mixed flocks of other birds, hunting energetically for food on the ground or in trees and bushes, sometimes clinging upside down to pry into crevices of bark or sprigs of leaves.

FOOD. Mainly animal: items specifically recorded are hairy caterpillars (rubbed against mossy branches to remove the stinging hairs), beetles, tree frogs; also fruit (Henry). 'Very' partial to large Sphinx moth caterpillars which infest cinchona trees' (A. L. Butler).

VOICE AND CALLS. Squeaks and chirps when feeding; a variety of loud raucous or rasping notes; a loud jingling call uttered with beak wide open and audible at a considerable distance described as 'chink chink, or cheek cheek' — in various repetitions and variations. Other notes are: a very rasping crrak-crrak; a plain, loud whee whee, sometimes rendered as twee-twee. Solitary birds indulge in a quaint sub-song of squeaks, chatterings and sucking noises, interspersed with imitations of the notes of other birds' (Henry).

BREEDING. Season, mid January to end March. *Nest*, has rarely been found. One described as resembling a crow's nest but smaller, lined with 'beard' lichen; well concealed in the top of a small jungle tree. *Eggs*, 3-5, said to be indistinguishable from those of Green Magpie (1023): greyish, or greenish white, profusely spotted and speckled with various shades of brown. Average size of 24 eggs 30.5 × 22.1 mm (Baker). Breeding biology and incubation period unrecorded.

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	155-170	c. 37	c. 40	235-255 mm
				(Baker)
1 ♀	159	36	—	246 mm
				(SDR)

Weight 1 ♀ 196 g (SDR).

COLOURS OF BARE PARTS. Iris brown; wattled eyelid deep red, orbital skin somewhat paler. Bill, legs and feet coral-red, claws more horny.

CISSA FLAVIROSTRIS (Blyth)

Key to the Subspecies

Underparts primrose yellow.....*C. f. flavirostris*
Underparts almost pure white.....*C. f. cucullata*

¹ Fading to lilac-white in older museum skins.

CORVIDAE

208

MUSEUM DIAGNOSIS. Like nominate *flavirostris* (1026) but upperparts and wings bluer; underparts, below the black breast, quite white or with only a very faint tinge of yellow.

MEASUREMENTS AND COLOURS OF BARE PARTS as in 1026.

Weight 6 ♂♂ 130-165; 5 ♀♀ 123-163 g (Paynter, GD).

1026. Eastern Yellowbilled Blue Magpie.

Cissa flavirostris flavirostris (Blyth)

Ps. (ilorhinus) flavirostris Blyth, 1846, Jour. Asiat. Soc. Bengal 15: 28

(Darjeeling)

Baker, FBI No. 22, Vol. 1: 43

Plate 69, fig. 6

LOCAL NAMES. Lām pūchhāri (Paharia in Sikkim); Tying jongring (Lepcha); Pīangring jabring, Tūu (Bhutane).

SIZE. Pigeon ±, with tail c. 39-43 cm (15-17 in.) long. Overall length c. 66 cm (26 in.).

FIELD CHARACTERS. A spectacular purplish blue bird with black head, neck and breast, whitish underparts and long graduated black-and-white-tipped tail ending in pliant arching streamers. A small white patch on nape. Bill yellow, legs bright orange. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident; with some winter-summer seasonal altitudinal movements. The eastern Himalayas from about central Nepal (where intergradation with *cucullata* occurs) eastwards through Sikkim, N. Bengal (Darjeeling dist.), Bhutan and NEFA, between c. 2000 and 3300 m; in winter down to c. 1000 m.¹ Affects wet temperate mixed forest of pine, oak, chestnut, rhododendron, etc.

Extralimital. SE. Tibet, Burma, NW. Yunnan west to Mekong Valley.

GENERAL HABITS. Sociable, inquisitive and rather parochial. Keeps in noisy parties and flocks of 4 to 10 individuals in non-breeding season, commonly in association with jays and laughing thrushes, on forest-clad hillsides often wandering out to feed in the open glades, or terraced cultivation, tea gardens, etc. adjoining forest. Usually frequents the same patch of forest or wooded ravine day after day. Mainly arboreal, procuring its food in low bushes, but will descend to the ground to feed on insects and windfallen fruit or to glean grain in harvested fields. Hops comically on the ground with the long pliant tail partially cocked like a robin's. The parties fly from tree to tree or across a glade in follow-my-leader style, the

¹ *Cissa flavirostris shufeldti* Sick, 1939, Orn. Monath. 47: 78 (Mount Victoria) of the Chin Hills, Burma, is quite likely to occur in SE. Manipur, Mizo (Lushai) hills and Chittagong Hill Tracts of E. Pakistan. It differs from the nominate form in having shorter wings and tail (Wing 5 ♂♂ 166-177, 9 ♀♀ 162-174 mm).

long graduated tail spread out and the streamers trailing behind. Flight typical of the pies — a few rapid wing-flaps followed by a glide, sometimes with a curious butterfly-like 'delayed action' of the wings which almost clap over the back.

FOOD. Varied and all-embracing, mainly animal: insects (grubs, beetles, white ants, etc.), tree frogs, lizards, small snakes, eggs and nestling birds, small mammals, carrion. Land leeches recorded. Also fruits and berries (sometimes becomes a nuisance in hill orchards) and kitchen scraps around camps and hill-station bungalows.

VOICE and CALLS. Has a remarkable and often intriguing vocabulary of loud, harsh and creaking calls and sharp squealing whistles interlarded with faithful imitations of other birds' calls and improvisations. Some mimicked species recorded are Giant Squirrel (*Ratufa*), the jays (*Garrulus*), Pied Crested Cuckoo (*Clamator*), Hawk-Eagle (*Spizaetus*) and Serpent Eagle (*Spilornis*).

BREEDING. Season, chiefly May-June. Nest, a rather shallow cup of twigs like a small crow's nest, lined with rootlets etc., 5 or 6 metres up in the top of a small leafy oak, rhododendron or suchlike tree standing away from the edge of open forest. Eggs, 3 or 4 (5 ?) pale cream coloured, blotched with bright reddish brown, with sparse secondary blotches of neutral tint. Average size of 9 eggs 34.8 x 23.4 mm (Baker). Both sexes build the nest, incubate, and tend the young. Incubation period unrecorded.

MUSEUM DIAGNOSIS. Less bright blue, more ashy above than west Himalayan birds. In live or freshly killed specimens the underparts, tips of all rectrices excepting central pair, wing margins, under wing-coverts and lower back are strongly suffused with primrose yellow. This fades to pale lilac in museum skins.

Young (immature). Like adult but the black parts browner; upperparts and all wing-coverts tinged with slate-brown; feathers of nuchal patch slightly fringed with black. First-year birds recognized by the browner primary-coverts (CBT, HW).

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	175-195	37-42	48-51 (SA, Stresemann, BB)	345-423 mm

Weight 5 ♂♂ 168-180; 3 ♀♀ 132-143 g (SA, BB, Paynter).

COLOURS OF BARE PARTS. Iris dark brown. Bill orange-yellow. Legs and feet yellowish orange; claws horny brown with a yellowish tinge.

CISSA ERYTHORHYNCHA (Boddaert)

Key to the Subspecies

Paler above.....*C. e. occipitalis*
Darker above; bill longer.....*C. e. magnirostris*

1027. Himalayan Redbilled Blue Magpie.

Cissa erythrorhyncha occipitalis (Blyth)

Ps. (Ilorhinus) occipitalis Blyth, 1846, Jour. Asiat. Soc. Bengal 15: 27
(Nepal and to the N.W., as at Mussooree)

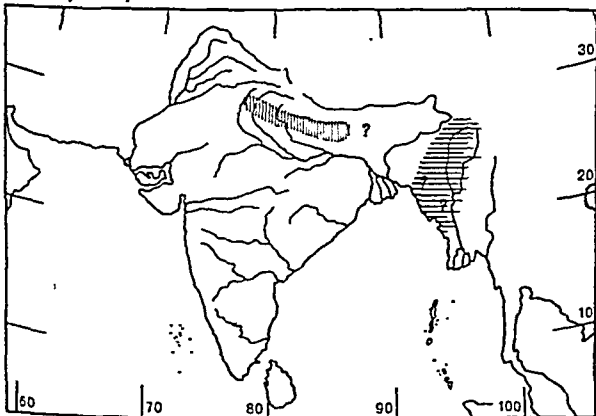
Baker, FBI No. 20, Vol. 1: 41

Plate 69, fig. 7

LOCAL NAMES. *Nilkānth* (Mussooree, U.P.); *Digdal* (Simla).

STATUS, DISTRIBUTION and HABITAT. Resident, with some summer-winter altitudinal movements: the Himalayas from c. 77°E. in Himachal Pradesh (Kangra dist.) eastward through Garhwal and Kumaon to c. 87°E. in eastern Nepal (Okhaldhunga dist.); between c. 1000 and 2100 m. Reported occurrence in western Sikkim needs verification. Ecology and habitat as

Cissa erythrorhyncha



Distributional ranges

□ *occipitalis* (1027). ▨ *magnirostris* (1028).

in Yellowbilled (1025) and both sometimes found together, especially in winter, but it normally occupies a lower altitudinal zone, being unusual above c. 1600 m whereas 1025 is unusual below this elevation. Whether the breeding ranges of the two actually overlap at any point needs determining.

GENERAL HABITS, FOOD, VOICE and CALLS. Not noticeably different from 1025, q.v. Is much less shy than Yellowbilled and oftener met with at Himalayan hill-stations. One call is rendered as 'a piercing quier-pig-pig' (Fleming).

BREEDING. Season, between April and June chiefly during May. Nest, a rough and flimsy smallish cup of twigs, coarse roots and leaves; normally c. 6 to 8 metres up — sometimes higher — in trees on wooded slopes or growing at the edge of hill cultivation. Eggs, 5-6, clay- or stone-coloured, boldly blotched with dark brown or reddish brown, often densely to form a ring or cap at the broad end. Average size of 60 eggs 33.9 x 23.9 mm (Baker). Both sexes take part in building the nest, incubation and feeding the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. White nuchal patch larger, more vertical, covering almost entire nape and continuing on to upper back v. smaller, more transverse and restricted in Yellowbilled (1025).

SIZE. Pigeon ±, with a tail c. 39-43 cm (15-17 in.) long. Overall length c. 70 cm (27 in.).



FIELD CHARACTERS. A showy purplish blue magpie with long graduated tail, the central feathers elongated into gracefully arching streamers. Head, neck and breast velvety black, with a large white patch on nape. Underparts below breast greyish white. Sexes alike.



x c. 1

Very similar to and confusable with 1025, but larger nuchal patch and bright red bill and legs (v. yellow) diagnostic.

Young (immature). Pattern much as in adult. Black of head replaced by dark brown; most of the crown white. Upperparts, lesser, median and greater coverts dark ashy grey-brown tinged bluish; upper tail-coverts with no black tips or grey band. Underparts whiter than in adult. First-year birds distinguished by browner primaries and primary-coverts (HW, CBT).

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	199-207	39-43	c. 45	390-469 mm
♀♀	187-199			

(HW, BB, Fleming)

Weight 5 ♂♂ 205-232; 3 ♀♀ 196-230 g (GD, Paynter).

COLOURS OF BARE PARTS. Iris brown or red-brown. Bill, legs and feet coral red; claws yellowish.

1028. Burmese Redbilled Blue Magpie.

Cissa erythrorhyncha magnirostris (Blyth)

Ps. (Ilorhinus) magnirostris Blyth, 1846, Jour. Asiat. Soc. Bengal 15: 27, 28
(Ya-ma-dong Mountains, separating Arracan from Pegu)

Baker, FBI No. 21, Vol. 1: 42

LOCAL NAMES. Not recorded.

SIZE. Pigeon ±. Overall length c. 70 cm (27 in.) including long tail (c. 40 cm).

FIELD CHARACTERS. As of 1027, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Rather equivocal. Hills of N. Cachar dist. (Assam), Nagaland, Manipur, Mizo (?), and probably East Pakistan in the Chittagong Hill Tracts: from the edge of the plains up to c. 1600 m, in tropical and subtropical dry- and moist-deciduous forest.

EXTRALIMITAL. All Burma south to northern Tenasserim. Other races extend the species to the Indochinese countries and SW. China.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 1027 and 1025, qq.v.

BREEDING. Not recorded within our limits. Season in Burma, March-April. Nest, eggs (c/3-6), and breeding biology as in the Himalayan form (1027).

MUSEUM DIAGNOSIS. Differs from the Himalayan population in being darker and more suffused with purple-blue on upperparts; bill 4-5 mm longer.

MEASUREMENTS (excepting bill), and COLOURS OF BARE PARTS as in 1027.

Genus PICA Brisson

Pica Brisson, 1760, Orn. 1: 30, 2: 35.

Type, by tautonymy, *Cerrus pica* Linnaeus

Like *Corvus*, q.v., but tail very long and graduated; first primary (aa.) peculiarly shaped: attenuated and falcate. Plumage strongly contrasting black and white.

PICA PICA (Linnaeus)

Key to the Subspecies

Rump white.....*P. p. bactriana*
Rump black.....*P. p. bottanensis*

CROWS, MAGPIES, JAYS

213

1029. Kashmir or Whiterumped Magpie. *Pica pica bactriana* Bonaparte

P.(ica) bactriana Bonaparte, 1850, Consp. Gen. Av. 1: 383
(Kandahar ex Hutton)
Baker, FBI No. 16, Vol. 1: 38
Plate 69, fig. 3

LOCAL NAMES. *Dūd* (= thief), *Shākūk* (Brahui); *Khashim brah* (Kashmir, Suru).
SIZE. Myna ±, with a tail c. 30 cm (12 in.) long. Overall length c. 52 cm (21 in.).

FIELD CHARACTERS. Strongly contrasting black and white plumage and long graduated black tail adequately diagnostic.



× c. 1

Adult. Above, head (all round) and back black; scapulars and a broad band across rump white; wings and tail black, the former brilliantly glossed with bluish green, the latter with bronze-green and purple. Below, breast, thighs, vent and under tail-coverts black; rest of underparts white. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to winter-summer altitudinal movements. The mountainous northwestern regions of W. Pakistan and India: N. Baluchistan, NW. Frontier districts, Chitral, Gilgit, Baltistan, Ladakh and Himachal Pradesh (Chamba); between c. 1500 and 4500 m. Chiefly trans-Himalayan: common and familiar about villages in the upper Indus Valley and side valleys; only a rare vagrant in Kashmir proper south and west of the Zoji La pass. In Baluchistan its distribution coincides more or less with juniper forest, between c. 2000 and 2500 m. Affects cultivated upland valleys among the barren windswept hills (as in Ladakh), and the vicinity of villages with orchards and planted poplar and willow groves.

Extralimital. E. Russia and the Urals, south through the Aral-Caspian region to Iran, S. Iraq, Afghanistan and Russian Turkestan to Lake Balkhash. (For details see Vaurie, 1959, 2: 150-1.) The species in numerous races is widely distributed across Europe and Asia.

GENERAL HABITS. Omnivorous. Keeps in the vicinity of upland village cultivation and orchards mostly in pairs, sometimes in loose parties of 8 to 12 and even up to 30 birds or so. Stalks about on the ground in search of food with a rather upright carriage and strutting gait, tail held low, jerked and flicked at all angles to the body on every little excitement or

CROWS, MAGPIES, JAYS

215

1030. Tibet or Blackrumped Magpie. *Pica pica bottanensis* Delessert

Pica Bottanensis Delessert, 1840, Rev. Zool.: 100 (Butan)
Baker, FBI No. 18, Vol. 1: 39

LOCAL NAMES. None recorded.

SIZE. Myna ±, with a tail c. 30 cm (12 in.) long. Overall length c. 52 cm (21 in.).

FIELD CHARACTERS. As in 1029, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident? Bhutan, evidently only in Bumthang dist. (c. 27°30'N., 91°E.), from c. 3400 to 4600 m in Tibetan Plateau country; perhaps also NEFA in similar facies. Frequents buildings, cliffs, cultivated fields, and clumps of trees around upland villages. Occurs chiefly north of the main Himalayan range, apparently not south of the Tang La pass into Sikkim.

Extralimital. 'Northern Tsinghai south to central Sikang (Batang), then west through southwestern Sikang . . . to southeastern Tibet' (Vaurie).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 1029. In addition to the usual harsh corvine calls of the family has a note deceptively similar to the *scape* or *pench* of a rising snipe (Ludlow).

BREEDING. Not recorded within our limits. *Season* in neighbouring SE. Tibet, April to June. *Nest* and *eggs* (c/4 or 5, sometimes 6) as in 1029, the latter likewise greatly variable in size; average of 22 eggs 38 × 26 mm (Ludlow).

MUSEUM DIAGNOSIS. Rump black. The largest subspecies of *P. pica* with the biggest bill and proportionately the shortest tail. Tail length only 101 per cent of wing v. 115-130 per cent in other races (Vaurie).

MEASUREMENTS

Wing 35 ♂ 224-268 mm (Vaurie, Kinnear)
1 o? Wing 234, Bill (from skull) 43, Tarsus 57, Tail 240 mm (SA).

COLOURS OF BARE PARTS. As in 1029.

Genus DENDROCITTA Gould

Dendrocitta Gould, 1833, Proc. Zool. Soc. London: 57.
Type, by monotypy, *Dendrocitta leucogastra* Gould

Bill black, stout and comparatively short, with the commissures strongly curved. Nostrils entirely concealed by numerous short stiff bristles. Tail long and graduated, the central rectrices broadening gradually towards the tip throughout their length.

Key to the Species

A	Belly white.....	<i>D. leucogastra</i>	223
B	Belly not white		
1	All rectrices entirely black		
a	Nape ashy.....	<i>D. frontalis</i>	222
b	Nape blackish.....	<i>D. bayleyi</i>	228
2	Central rectrices partly ashy		
c	Belly ochraceous.....	<i>D. vagabunda</i>	216
d	Belly ashy.....	<i>D. fermeuse</i>	223

214

CORVIDAE

change of emotion. Sometimes progresses in long hops. When not feeding sits about in trees, on roof-tops, rocks or the piled stone, boundary walls of cultivation patches. Characteristically of the crow family, is highly inquisitive; wary, suspicious and cunning where persecuted, but otherwise tame and fearless around the village houses. Flies at sunset in straggling flocks to roost communally in favourite trees. Flight rather laboured, flapping and undulating — the wing action, together with the long tail trailing behind, reminiscent of a Pheasant-tailed Jaçana.

FOOD. All-embracing: insects, lizards, small mammals (mice, voles, etc.), young birds and eggs (including those of domestic poultry), and carrion; cereal grains, fruits and berries (often destructive to ripening cherries etc.); kitchen scraps, and almost everything else that can be procured.

VOICE AND CALLS. Normally a subdued rasping *querk* or *kick*. 'Sometimes a curious call in flight sounding like *ker-plonk*' (Trott). Alarm: a loud harsh *kekky kekky kekky* run together as a rattling note; this uttered with bill wide open, head and neck a little outstretched, and with an occasional expressive flick of the wings and upward jerk of the tail.

BREEDING. *Season*, in Ladakh March to May. *Nest*, a conspicuous, massive domed structure of sticks and thorny twigs reinforced within with a thick layer of mud and lined with fine roots etc., with a lateral entrance-hole. Occasionally nest undomed and crow-like. Frequently same nest repaired or built upon in successive years (once 'not less than five one on top of the other making a pyramid many feet high' — Wathen, JBNHS 29: 697). Built in willow, poplar or ilex trees in the vicinity of villages, 2 or 3 metres up. In treeless country thorn thickets flanking streams, e.g. *Hippophae rhamnoides* are used. Nests often serve as roosting shelters during winter. *Eggs*, 3 to 7, rarely 8 (mostly 5 or 6) pale blue-green profusely blotched, freckled and spotted with dull reddish brown, more densely at the broad end, showing considerable variation in size. Average size of 112 Ladakh eggs 36.5 × 24.9 mm (BBO). Breeding biology not specifically recorded; presumably as in the nominate form, namely, incubation by female alone; period 17-18 days; young fed by both parents (Witherby).

MUSEUM DIAGNOSIS. See Key to the Subspecies. First primary (as) falcate; black on outer web, white on inner.

In first-year birds first primary not falcate and tip of its inner web black.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	182-227 (mostly over 200)	30-32	40-45	200-270 mm (usually c. 240) (Baker)

Weight 1 ♂ 249; 5 ♀ 190-212 g (Paynter).

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs, feet and claws black.



First primary, × c. 1

CORVIDAE

216

DENDROCITTA VAGABUNDA (Latham)

Key to the Subspecies

		Page
A	Back and scapulars ochraceous tawny	
1	Belly fulvous-buff.....	<i>D. v. pallida</i> 217
2	Belly pale cream-fulvous.....	<i>D. v. cernayi</i> 221
B	Back and scapulars tawny brownish rufous	
3	Largest; darkest above; tail over 260 mm.....	<i>D. v. bristoli</i> 216
4	Medium; tail over 240 mm.....	<i>D. v. vagabunda</i> 218
5	Smallest; tail under 240 mm.....	<i>D. v. parvula</i> 220

1030a. Northwestern Tree Pic. *Dendrocitta vagabunda bristoli* Paynter

Dendrocitta vagabunda bristoli Paynter, 1961, Jour. Bombay nat. Hist. Soc. 58: 381
(Jabri, c. 11 miles west of Murree alt. 900 m, Hazara District, West Pakistan)
Baker, FBI No. 26 (part), Vol. 1: 48

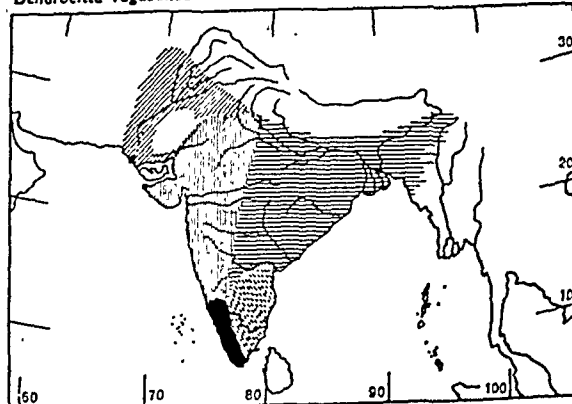
LOCAL NAMES. *Māhālāi*, *Mootri* (Hindi); *Khata khan* (Baluchistan); *Māhtāb*, *Māidā*, *Malang*, *Chānd* (Sind).

SIZE. Myna±, with tail c. 30 cm (12 in.) long. Overall length c. 50 cm (20 in.).

FIELD CHARACTERS. As of 1032, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Mainly resident; partial seasonal local migrant in some areas. Lower ranges of the westernmost Himalayas

Dendrocitta vagabunda



	<i>bristoli</i> (1030a).		<i>pallida</i> (1031).
	<i>vagabunda</i> (1032).		<i>parvula</i> (1033).
	<i>cernayi</i> (1034).		

CROWS, MAGPIES, JAYS

217

from Hazara district (West Pakistan) southeast to the vicinity of Dehra Dun (India); from plains level to c. 2100 m. Intergrades into *pallida* in Baluchistan and Sind and into nominate *vagabunda* in eastern Kumaon and extreme western Nepal. Affects forest plantations, secondary jungle, cultivation and habitations, gardens, etc., in dry- and moist-temperate biotope.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 1032.

BREEDING. Season, April to June. Nest, eggs (c/4 or 5), and breeding biology, as in 1032 and other races.

MUSEUM DIAGNOSIS. The largest of the races of *D. vagabunda*, with a considerably longer tail than *pallida* and a somewhat longer wing; as richly coloured as the nominate form (1032). These characters are most pronounced at the northwestern-most limit of its range, which probably is also the limit of the distribution of the species *D. vagabunda*. To the east, south, and southeast there are marked clines toward the contiguous races *pallida* and *vagabunda* (Paynter).

MEASUREMENTS

	Wing	Tail
12 ♂♂	157-179	265-363 mm (11 msd.)
7 ♀♀	158-174	269-349 mm (5 msd.) (RAP)

Weight 3 ♂♂ 141-146; 3 ♀♀ 120-143 g (from type locality) — RAP.

COLOURS OF BARE PARTS. As in 1032.

1031. Western Tree Pie. *Dendrocitta vagabunda pallida* (Blyth)

Cy. (ypirina) pallida Blyth, 1846, Jour. Asiat. Soc. Bengal 15: 30

(Western Himalaya. Restricted to Galkund, Surat Dang (Gujarat) by Paynter, 1961, Jour. Bombay nat. Hist. Soc. 58: 381]

Baker, FBI No. 26 (part), Vol. 1: 48

LOCAL NAMES. *Māhālāt*, *Mootri* (Hindi); *Tākhāchār* (Marathi); *Khākhedo* (Gujarati); *Chhotā māhūkā* (Saugor, M.P.).

SIZE. Myna +, with tail c. 30 cm (12 in.) long. Overall length c. 50 cm (20 in.).

FIELD CHARACTERS. As of 1032, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Rajasthan southward through Gujarat, Saurashtra (apparently absent in Kutch), western Madhya Pradesh and Maharashtra. Locally abundant in the plains and hills up to c. 1700 m. Affects well-wooded country about villages and cultivation, mango topes, open deciduous forest and scrub jungle. Intergrades into *bristoli* in the north and west (Sind, Baluchistan), into *vagabunda* on the east, and into *parvula* in the south. The populations are contiguous and their differences entirely clinal, therefore no more than an approximation of their ranges is possible or warranted.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the nominate race 1032, q.v.

BREEDING. Season, overall March to July, the peak periods varying according to locality, but mostly between April and June. Nest, eggs, and breeding biology as in 1032.

CROWS, MAGPIES, JAYS

219

GENERAL HABITS. Social, arboreal and omnivorous. Keeps in noisy pairs or family parties of 4 or 5 — sometimes larger temporary gatherings of up to 20 or so, e.g. at a heavy swarming of winged termites. Is a regular member of the itinerant commensal parties of assorted insectivorous birds, its very regular and close association with racket-tailed drongos and woodpeckers, in particular, often commented on by observers. Seizes moths and other large insects flushed by its associates from tree-trunks or amongst litter of fallen leaves; also attends grass and forest fires to feast on the fleeing refugees. Joins the company of barbets, green pigeons and other frugivorous birds to feed on fruit-laden banyan and peepul trees, sometimes descending to the ground and hopping about with tail partly cocked to pick up food. Characteristically of the crow family is highly inquisitive at all times, and can likewise be excessively cunning and wary when occasion dictates. Where unmolested will boldly enter verandas of bungalows to hunt wasps and geckos, and small bats roosting in crannies of the ceiling. Is usually the first to discover kills of the larger cats in forest, from which it greedily tears out and devours titbits of flesh. Flight noisy and dipping — a few rapid wing-flaps alternated with sailing on stiffly outspread wings and partially expanded tail.

Extralimital. The species in other races extends through Burma and Thailand to the Indochinese countries.

FOOD. Practically all-embracing. A large variety of fruits including neem (*Melia*) and even the poisonous *Trichosanthes palmata*, but preponderantly wild figs (*Ficus* spp.) — banyan, peepul, *guler* and others. Highly destructive to orchard fruit, e.g. cultivated figs, mulberries, papaya, etc. Cereal crops; and flower-nectar (*Salmaia*, *Erythrina*, etc.). Frogs, lizards (*Hemidactylus* and *Calotes*), small snakes, small bats, young rodents; eggs, nestlings and young or sickly birds (sunbird, tailor bird, white-eye and Indian Robin recorded). Has been observed systematically tearing holes in weaver birds' nests above the egg-chamber and extracting and devouring the eggs and young; carrion from fresh tiger kills or newly shot game animals; a wide assortment of insects including crickets, grasshoppers, beetles, wasps, moths, ants and termites, caterpillars and grubs. Also spiders, centipedes, snails, and almost any other small animal. In an intensively cultivated area in Bihar the following insects specifically identified among stomach contents of specimens and by direct field observation: weevils *Myloecerus discolor* and *M. maculor*, ants *Crematogaster subnuda*, *Camponotus* sp., *Myrmecocystus* sp., wasps *Sphex lobatus*, *Pelictes hebraeus*, *Vespa orientalis*, *Rhynchium* sp. in addition to Noctuid and Geometrid moths and smooth-bodied caterpillars (Mason & Lefroy, 1912).

VOICE AND CALLS. Has a large repertoire of harsh and raucous as well as musical melodious calls. A loud harsh *kitter kitter kitter* or *ke* (or *ka*)-*ke-ke-ke* strung out as a rattling call (*kā-kā-kā-kā-kā*) and reminiscent of a Magpie; this often interspersed with a metallic flute-like *ko-ki-la* or *ku-lo-lee* (or *to-o-lit*) recalling Blackheaded Oriole, uttered with back arched and tail depressed and turned in under the perch. A very metallic *te-chuck* *chuck* *chuck*; a long-drawn *mee-aw* in breeding season. Particularly noisy in courtship. The pair will sit side by side a few centimetres apart, half turning and bobbing ludicrously at each other like mechanical toys, craning

218

CORVIDAE

MUSEUM DIAGNOSIS. Slightly smaller and paler than *bristoli*, with a markedly shorter tail. Back and scapulars isabelline with a tinge of dusky but no rufous; rump paler. Belly and under tail-coverts pure isabelline or buff cream colour.

MEASUREMENTS

	Wing	Tail
38 ♂♂	149-173	218-297 mm (36 msd.)
28 ♀♀	144-165	219-279 mm (27 msd.) (RAP)
	Bill (from skull)	Tarsus
♂♂	32-37	33-37 mm
♀♀	30-35	32-37 mm (SA, HW)

Weight 13 ♂♂ 90-118 (av. 100) g — SA. 1 ♂ 130 g (BB).

COLOURS OF BARE PARTS. As in 1032.

1032. Northeastern Tree Pie. *Dendrocitta vagabunda vagabunda* (Latham)

Coracias vagabunda Latham, 1790, Index Orn. 1: 171

(India, restricted to Calcutta by Ticehurst, 1922, Ibis: 537)

Baker, FBI No. 26, Vol. 1: 48

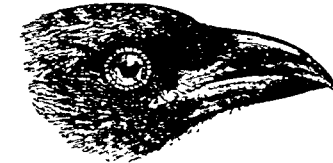
Plate 69, fig. 10

LOCAL NAMES. *Māhālāt* (Hindi); *Kotri*, *Tākā chōr* [= stealer of rupee coins], *Handi chāchā* (Bengali); *Kola Mea* (= plantain-eater. Dibrugarh, Assam); *Cekuragi*, *Kōndā kati gāda* (Telugu); *Vāl kākai* (Tamil, Madurai dist.).

SIZE. Myna +, with tail c. 30 cm (12 in.) long. Overall length c. 50 cm (20 in.).

FIELD CHARACTERS. A long-tailed bright rufous arboreal bird with dark sooty grey head, neck and breast. Broad black tips to graduated greyish tail, and greyish, white and black pattern on wings conspicuous and diagnostic, particularly in flight. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident. The Himalayan submontane tract (terai, bhabar, duars, etc.) from extreme western Nepal eastward to NEFA, southward through Assam, Manipur, East Pakistan, West Bengal, Bihar, Uttar Pradesh, Madhya Pradesh, eastern Maharashtra, Orissa and northern Andhra; south to c. 17-18°N. and west to c. 78th meridian; plains and hills up to c. 2000 m. Affects lightly wooded country in dry- and moist-deciduous biotope. Forest plantations, thin tree- and scrub jungle, mango topes, village groves, sprawling jungly gardens and compounds in urban areas, and roadside avenues of ancient banyan and suchlike trees are amongst its favourite haunts.



220

CORVIDAE

their necks till the bills almost touch and uttering strange musical croaks and chuckles.

BREEDING. Season, overall March to July, varying locally; chiefly May and June. Nest, crow-like: a scanty and flimsy deepish cup of thin, often thorny twigs lined with finer twigs, rootlets, etc. — rather small for the size of the bird. Placed c. 6 to 8 metres up in trees such as sheesham (*Dalbergia*), mango, salai (*Boswellia*) or *Acacia* standing alone at edge of cultivation or in open deciduous forest, or in a village grove or roadside avenue. Though often built in a leafless tree, nest not unduly conspicuous thanks to its small size. Eggs, 4 or 5, rather variable in shape, size and colour. Commonest type pale reddish- or salmon-white, boldly splashed and streaked with bright reddish brown and inky grey, more densely at the broad end. Average size of 100 eggs 29 × 21.5 mm (Baker). Both sexes take part in building the nest, incubation and feeding the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. A richly coloured form: back and scapulars dark brownish rufous; rump, belly and under tail-coverts fulvous buff.

Young (immature). Head, neck, throat and mantle concolorous brown; rump, upper tail-coverts and entire underparts buffy cream; the white wing-coverts tinged rusty cream towards tips, the smallest lesser coverts at edge of wing greyish brown. Rest of wings and tail as in adult but browner instead of black, and tips of all rectrices pale rufous, least marked on the centrals.

First-year birds recognized by pale tips to the rectrices and browner remiges, these feathers not being covered by the postjuvinal moult (Whistler).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	146-168	30-35	31-35	204-263 mm
♀♀	136-161	30-33	31-34	198-240 mm (SA, HW, RAP)

Weight 3 ♂♂ 112-128; 3 ♀♀ 98-118 g (RAP).

COLOURS OF BARE PARTS. Iris orange-brown to brownish red. Bill dusky plumbeous, paler towards base of lower mandible; mouth slaty (in juvenile flesh-coloured till after postjuvinal moult). Legs and feet dusky plumbeous.

1033. Kerala Tree Pie. *Dendrocitta vagabunda parvula* Whistler & Kinnear

Cercus rufus Latham, 1790, Index Orn. 1: 161, based on 'La Pie rousse de la Chine' ex Sonnerat. (Malabar, fixed by Baker, preoccupied)

Dendrocitta vagabunda parvula Whistler & Kinnear, 1932, Jour. Bombay nat. Hist. Soc. 35: 515, new name for *Cercus rufus* Latham (Malabar)

Baker, FBI No. 26 (part), Vol. 1: 48

LOCAL NAMES. *Vāl kākai* (Tamil, Madurai dist.); *Olē nāli*, *Kānākkān* (Malayalam).

SIZE. Myna +, with tail c. 25 cm (10 in.) long. Overall length c. 46 cm (18 in.).

FIELD CHARACTERS. As of the nominate race 1032, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. The SW. coastal and Sahyadri strip (from c. 13°-14°N.) in Mysore southward through Kerala

to Kanyakumari (Cape Comorin), east to c. the 77th or 78th meridian. Affects moist-deciduous and semi-evergreen biotope, from sea level to c. 1600 m, especially favoured haunts being the kampongs or gardens of coconut, mango, jack-fruit, cashew, plantains and pepper surrounding the homesteads by the backwaters, and light open forest. Replaced in moister evergreen by Whitebellied Tree Pie (1036).

Curiously enough this widespread Indian species (*D. vagabunda*) does not extend to Ceylon.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 1032.

BREEDING. Season, principally March–April. Nest and eggs (c/4 or 5) and breeding biology as in the nominate subspecies. Bhendi (*Thespesia populnea*) in coastal areas, and neem (*Melia azadirachta*) are popular with the birds as nest trees. Eggs somewhat smaller, measuring about 27 × 21 mm.

MUSEUM DIAGNOSIS. The smallest race of *D. vagabunda*; as richly coloured as the nominate form: back and scapulars dark brownish rufous; rump, belly and under tail-coverts fulvous buff; chin, throat and breast blackish.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	133–152	31–35	189–239 mm
♀♀	131–144	29–32	196–204 mm (HW, SA)

COLOURS OF BARE PARTS. As in 1032.

1034. Southeastern Tree Pie. *Dendrocitta vagabunda vernayi* Whistler & Kinnear

Dendrocitta rufa vernayi Whistler & Kinnear, 1930, Bull. Brit. Orn. Cl. 51: 17 (Nallamalai Range, 2000 ft, S. Kurnool)
Baker, FBI No. 26 (part), Vol. 1: 48

LOCAL NAMES. *Vāl kākāi* (Tamil, Madurai dist.); *Gokurayi*, *Kūdā kāti gādu* (Telugu); *Olī nāli* (Malayalam).

SIZE. Myna +, with tail c. 30 cm (12 in.) long. Overall length c. 50 cm (20 in.).

FIELD CHARACTERS. As in 1032, q.v. See Museum Diagnosis.

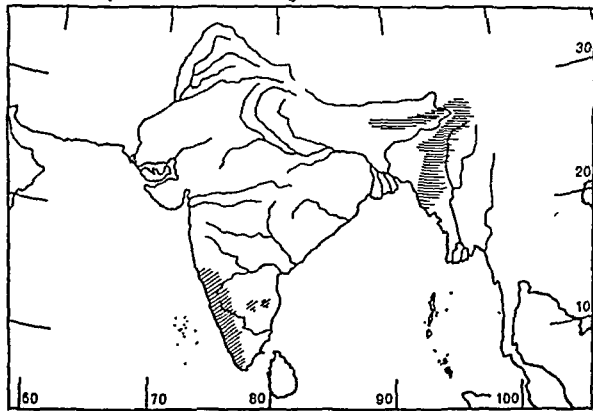
STATUS, DISTRIBUTION and HABITAT. Resident. Andhra Pradesh south of Godavari R., Tamil Nadu (including the Nilgiris and associated hills) and southeastern Mysore; plains level and up to c. 2000 m. Affects dry- and moist-deciduous wooded country — open forest and the neighbourhood of cultivation and habitations; also urban gardens and compounds.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 1032.

BREEDING. Season, principally March to May. Nest and eggs (c/4 or 5), and breeding biology, as in nominate *vagabunda* and other races.

MUSEUM DIAGNOSIS. Smaller and even paler than *pallida* (1031): about same size as *vagabunda*. Chin, throat and breast sooty grey; belly and under tail-coverts pale creamy fulvous. Intergrades into *vagabunda* at the Godavari Delta and into *pallida* and *parula* along its western boundary.

Dendrocitta frontalis and *D. leucogastra*



Distributional ranges

■ *D. f. frontalis* (1035). ■ *D. leucogastra* (1036).

BREEDING. Season, April to July. Nest, like that of Himalayan Tree Pie (1038), somewhat more compact: of twigs etc. lined with fern roots and softer material. Built up in bamboo clumps or tall thorny bushes near the edge of forest. Eggs, 3 or 4, like those of 1038, rather more profusely marked. Average size of 100 eggs 27 × 19.9 mm (Baker). Breeding biology presumably as in 1038.

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	120–126	c. 25	c. 30	245–255 mm (Baker)

COLOURS OF BARE PARTS. Iris reddish brown. Bill, legs, feet and claws black.

1036. Whitebellied Tree Pie. *Dendrocitta leucogastra* Gould

Dendrocitta leucogastra Gould, 1833, Proc. Zool. Soc. London: 57 (Eastern Asia = Malabar Coast)
Baker, FBI No. 31, Vol. 1: 51
Plate 69, fig. 9

LOCAL NAMES. *Neela rāl kākāi* (Telugu); *Kātu nāli* (Malayalam).

SIZE. Myna +, with tail c. 30 cm (12 in.) long. Overall length c. 50 cm (20 in.).

FIELD CHARACTERS. An unmistakable tree pie, distinguished from the Indian (1032) by chestnut-bay back and pure white rump and underparts.

Juveniles of the races indistinguishable, all having pale creamy fulvous underparts, a character which normally persists in adult *vernayi* and distinguishes it.

First-year bird, as in other races, distinguished from adult by the pale tips to the unmoulted rectrices of the juvenal plumage.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	145–158	29–35	31–34	197–236 mm
♀♀	137–152	29–33	31–33	188–225 mm (HW)

Weight 3 oo? 90–95 g (SA).

COLOURS OF BARE PARTS. As in 1032 and other races.

1035. Blackbrowed Tree Pie. *Dendrocitta frontalis frontalis* Horsfield

Dendrocitta frontalis Horsfield, 1840, Proc. Zool. Soc. London: 163 (Assam)
Baker, FBI No. 34, Vol. 1: 54
Plate 69, fig. 11

LOCAL NAMES. *Hamshi bon* (Lepcha); *Kolio ko* (Bhutane); *Dao ka link gashim* (Cachari).

SIZE. Myna ±, with a tail up to c. 25 cm (10 in.) long. Overall length c. 38 cm (15 in.).

FIELD CHARACTERS. A pale grey and chestnut tree pie with very white nape, black face, throat and foreneck, and heavy bowed black bill. Readily distinguished from the rather similar Himalayan Tree Pie (1038) by entirely black tail (v. ashy and black), and absence of the large white wing-patch. Sexes alike.

STATUS, DISTRIBUTION and HABITAT.

Resident. Sikkim (apparently very rare and local), Bhutan (?), NEFA (Dafia, Abor and Mishmi hills) and round the head of the Brahmaputra Valley (in the Luhit and Tirap

frontier divisions and Dibrugarh, N. Cachar and Khasi Hills districts). Also Nagaland, Manipur, and possibly East Pakistan (hill tracts); foothills and up to c. 2100 m altitude. Affects dense mixed evergreen forest and bamboo jungle.

Extralimital. Adjoining northern Burma (fairly common). Another race in N. Vietnam.

GENERAL HABITS. Similar to those of Himalayan Tree Pie (1038), q.v. Keeps in small parties; said to be less noisy and less shy.

FOOD. Fruits, seeds, insects, lizards, eggs and nestlings of birds, etc. Has been observed hawking winged termites from tops of bamboos in the manner of drongos — springing vertically a few metres up in the air and diving back to the perch after each capture.

VOICE and CALLS. The characteristic tree pie range of discordant as well as musical metallic notes, but claimed to be clearly distinguishable from those of its congeners.

Forecrown, face, throat and breast black; hindcrown and hindneck white. A large white patch on the black wings, and the long grey-and-black graduated tail conspicuous in flight. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident. The Sahyadri or Western Ghats complex from c. 16°N. (Goa, Belgaum), southward through western Mysore (Malnaad), Nilgiri Hills (W. Tamil Nadu) and Kerala; from c. 60 to 1500 m, in wet evergreen biotope: dense forest, cardamom sholas and ravines, secondary jungle, abandoned and neglected overgrown rubber plantations, etc. Has been recorded from Bangalore and east to Palmaner (c. 13°15'N., 78°45'E.) in southern Andhra Pradesh.

McMaster (*Jour. Asiat. Soc. Bengal*, 1871, pt. 2: 214) claims to have procured a specimen in May in the Gawilgarh Hills at Chikalda (c. 21°30'N., 71°20'E.) far beyond the known range of the species. Lack of confirmation since that time, and total absence of compatible habitat in that area renders the record open to suspicion.

GENERAL HABITS. Similar to the more widely distributed *vagabunda* species (see under 1032). Chiefly arboreal, but will sometimes descend to feed in low bushes or to the ground. Keeps in pairs or noisy parties of 3 to 5 often in company with the roving hunting parties of flycatchers, tits, nuthatches and other insectivorous forest birds, but is seen almost unfailingly in association with racket-tailed drongos in particular. Flight, as typical of the tree pies, noisy and dipping — a few rapid wing-flaps followed by a short glide on stiffly outstretched wings and expanded tail, rocketing down at a steep angle with wings closed for alighting in a tree. As a rule keeps segregated from *vagabunda*, completely replacing it in moist-evergreen biotope. But the two species may occur side by side locally in the intermediate zone with a mingling of the deciduous and evergreen forest types.

FOOD. Fruits, seeds, flower-nectar, insects and small animals: lizards, young rodents, etc.; also eggs and nestlings of small birds. Very fond of the seeds of *Sterculia villosa* Roxb., which are avidly plucked from the ripe orange-scarlet pods on the tree.

VOICE and CALLS. Similar to Indian Tree Pie's but louder, harsher and more metallic, some notes closely resembling those of its constant associate the racket-tailed drongo. When hunting among the foliage, a subdued quick-repeated castanet-like rattle *kt-kt-kt-kt-kt* etc. ending in a short frog-like croak. A throaty *chuff-chuff* frequently given with tail cocked and body horizontal, accompanied by a ludicrous mechanical jumping or bobbing up and down on the perch like some cheap clockwork toy! 'Two birds on the ground faced each other and emitted grotesque rhythmical creaking as of a heavily laden bullock cart with ungreased wheels and wooden brakes applied, coming along the road. Courtship?' (Alice M. Barnes). During breeding season 'one call curiously like that of a duck' (J. Stewart). The significance of the various vocalizations and behaviour needs study.

BREEDING. Season, February to April, and reportedly again in August. Nest crow-like, a deepish cup of thorny twigs lined with finer twigs and rootlets. Placed in tall shrubs or moderate-sized saplings in heavy rain-forest, away from human habitations. Often built in the same or a nearby tree in successive years. Eggs, 3 or 4, variable in colour: creamy white, pale stone, reddish white or pale greenish white, blotched and streaked

CROWS, MAGPIES, JAYS

225

(more richly than in 1032) with various shades of brown, from greyish brown to reddish- or dark brown with underlying markings of lilac, these often confined to the broad end as a ring or cap. The eggs resemble those of Himalayan Tree Pie (*D. formosae*) more closely than of the *vagabunda* group (cf. also Museum Diagnosis). Average size of 50 eggs 28.3 × 20.5 mm (Baker). Breeding biology not recorded; presumably as in Indian Tree Pie (1032).

MUSEUM DIAGNOSIS. Colour pattern of wings and tail, and also of body plumage, very similar to Himalayan Tree Pie (1038) suggesting close relationship between the two.

Juvenal plumage almost exactly like adult save for narrower, less spatulate tail-feathers and a slight brown fringing to tips of lesser wing-coverts and rump.

First-winter birds distinguished from adults by shape of the rectrices retained from juvenal plumage (as is characteristic of the moult in the family Corvidae). As in *formosae* these feathers lack the pale rufous tips of *vagabunda*, emphasizing closer affinity with the former group.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	141-157	34-38	32-34	278-324 mm (SA)

Weight 1 ad. ♀ 3.5 oz. (99.25 g) — Davison.

COLOURS OF BARE PARTS. Iris dark crimson. Bill horny black; mouth dark slate. Legs, feet and claws blackish brown.

DENDROCITTA FORMOSAE Swinhoe

Key to the Subspecies

Larger; tail over 240 mm.....	<i>D. f. occidentalis</i>
Smaller; tail under 240 mm.....	<i>D. f. himalayensis</i>

1037. West Himalayan Tree Pie. *Dendrocitta formosae occidentalis* Ticehurst

Dendrocitta formosae occidentalis Ticehurst, 1925, Bull. Brit. Orn. Cl. 46: 22

(Simla)

Baker, FBI No. 32 (part), Vol. 1: 52

LOCAL NAME. Kokiā kāk (U.P., Mussooree).

SIZE. Myna ±, with tail up to c. 25 cm (10 in.) long. Overall length c. 43 cm (17 in.).

FIELD CHARACTERS. As of 1038, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, with marked summer-winter altitudinal movements. Foothills and outer ranges of the western Himalayas from about Murree (c. 73°E.) and the Jhelum Valley eastward through Jammu, Himachal Pradesh, Punjab and Garhwal to about Almora and W. Nepal (c. 81°E.); from c. 600 to 1500 m, occasionally to 2100 m; patchily distributed and less common in the western part than between Mussooree and Almora. Affects well-wooded country and edges of terraced cultivation on forested hillsides.

GENERAL HABITS, FOOD, VOICE and CALLS. As in 1038.

BREEDING. Season, April to July, chiefly May and June; between c. 700 and 1600 m altitude, sometimes up to 2000 m. Nest, eggs (c/3 or 4) and breeding biology as in 1038.

CROWS, MAGPIES, JAYS

227

SIZE. Myna ±, with tail up to c. 23 cm (9 in.) long. Overall length c. 41 cm (16 in.).

FIELD CHARACTERS. A typical, long-tailed, slender, grey and sooty brown tree pie with the elongated central rectrices (blunt and rather spatulate) ashy grey and broadly black-tipped.

Above, forehead black; sides of head sooty brown; crown, nape, and upper mantle ashy grey; lower mantle and scapulars buffy brown; rump and upper tail-coverts paler. Wings black with a pure white patch. *Below*, chin and throat dark sooty brown; rest chiefly rusty brown and whitish; under tail-coverts chestnut. Sexes alike.

White wing-patch and chestnut under tail-coverts particularly conspicuous in flight.

STATUS, DISTRIBUTION and HABITAT. Resident, with marked summer-winter altitudinal movements. The Himalayas from western Nepal eastward through Sikkim, W. Bengal (Darjeeling and Jalpaiguri districts), Bhutan and NEFA (including Dafia, Abor; Miri and Mishmi hills, and Luhit and Tirap frontier divisions); Assam ranges south of Brahmaputra R., Nagaland, Manipur, Mizo and East Pakistan (hill tracts). Duns, duars, foothills and outer ranges between c. 600 and 1500 m, occasionally up to 2300 m; in broad-leaved forest (oak, rhododendron, etc.) at the higher elevations, tropical evergreen in the duars. The Eastern Ghats complex in Orissa and northern Andhra, between c. 18° and 20°N; up to c. 1000 m, in tropical semi-evergreen. *Extralimital*. Northern Burma, Yunnan, Vietnam, N. Laos. The species extends to S. China, Hainan and Taiwan.

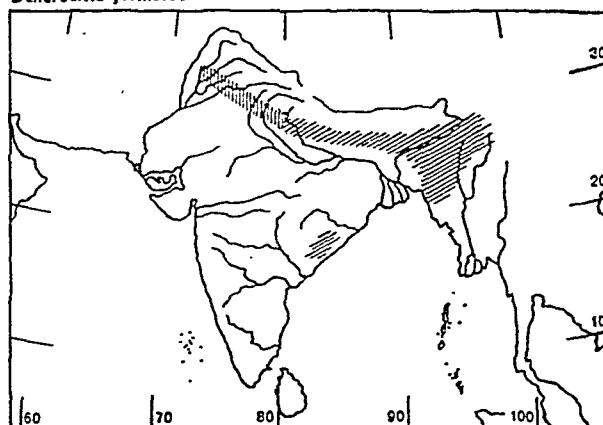
GENERAL HABITS. Keeps in small parties of 4 or 5 birds or loose flocks of up to 20 or so in tall forest and around abandoned cultivation and tea gardens, etc., often in commensal association with various laughing thrushes (*Garrulus* spp.). Chiefly arboreal, but will occasionally descend to feed in low bushes or to the ground, e.g. in harvested terraced fields, several birds together hopping about to pick up scattered grain with tails comically cocked. Feeding parties in fruit-laden trees flutter restlessly among the canopy foliage, now flying off from the tree now back again, with a noisy whirring of wings. Flight undulating, typical of the pies — a few rapid wing-flaps followed by a short glide. When flitting from one tree-top to its neighbour, the actions curiously jerky, with deep 'saw-edge' undulations and closed-wing nose dives.

FOOD. Fruits, seeds, flower-nectar (*Salmalia*, *Erythrina*, *Rhododendron*, etc.), insects (beetles, moths, larvae; destructive to semi-wild 'mooga' silkworms in Assam), centipedes, lizards, eggs and young of small birds, and doubtless other small animals.

VOICE and CALLS. Very varied: harsh and raucous as well as fluty and musical: of same general pattern as *D. vagabunda*'s but distinctive and unmistakable. One common call rendered as a rather nasal *koki-ko-ko-ko*; another frequently heard as 'wot-wot-ek-ek' with strong emphasis on the penultimate note (Lister). 'Song' common in pre-nuptial season, a mixture of harsh and musical *tū-tū-tū-kākā* (or *-kākā-kākā*). A peculiar, rather comical, creaky long-drawn *kree-ee-chok* uttered two or three times in succession at c. 5 second intervals by itself and not as part of the *tū-tū-tū-kākā-kākā* song. Significance of this obscure.

226

CORVIDAE

Dendrocitta formosae

Distributional ranges

occidentalis (1037).

himalayensis (1038).

MUSEUM DIAGNOSIS. Differs from *D. f. himalayensis* (1038) only in being larger. Young (immature) as in 1038.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂ ♂	145-160	35-40	243-260 mm
♀ ♀	149-157	35-40	241-261 mm (BB, CBT)

Weight 1 ♀ 104.5 g (Paynter).

COLOURS OF BARE PARTS. As in 1038.

1038, 1039. East Himalayan Tree Pie. *Dendrocitta formosae himalayensis* Blyth

Dendrocitta himalayensis Blyth, 1865, Ibis: 45

(Sikkim, restricted by Ticehurst, 1925, Bull. Brit. Orn. Cl. 46: 22)

Dendrocitta formosae sarkari Kinnear & Whistler, 1930, Bull. Brit. Orn.

Cl. 51: 17 (Anantgiri, Vizagapatam)

Baker, FBI No. 32, Vol. 1: 52

Plate 69, fig. 8

LOCAL NAMES. Kokila (Paharia); Kario pho (Lepcha); Karioah ban (Bhutanes); Kok long ah (Assamese, Dibrugarh); Dao ka link (Cachari); Inru ko kink (Naga).

¹No. 1039 of *Synopsis*. Examination of more material shows that the measurements (including 'smaller' bill on which character *sarkari* was described) fall well within the range of those of *himalayensis*. The subspecies is thus considered untenable (Biswas, B., 1964, JBNS 60: 650-1).

CORVIDAE

228

BREEDING. Season, April to July, chiefly May and June. Nest, of the crow type: a rather flimsy shallow platform of twigs, tendrils, coarse roots and leaves with the central depression lined with finer material. Placed 3 to 7 metres up in a bush or sapling on the edge or in the neighbourhood of a scrub-covered ravine, in oak and similar forest, with little effort at concealment. Eggs, 3 or 4, rarely 5, pale bluish or yellowish stone colour, boldly blotched with dark brown or reddish brown with some inky secondary markings. Average size of 200 eggs 28.8 × 20.1 mm (Baker). Both sexes take part in building, incubation and feeding the young, and are very quiet and secretive in their comings and goings throughout the nesting. Incubation period undetermined.

MUSEUM DIAGNOSIS. Differs from the West Himalayan population only in being smaller, with a shorter tail.

Juvenile. Upperparts like adult, but black forehead not so broad, and grey of hindneck less clear; faint rufous tips to all the feathers including inner tertials, lesser and median coverts; chin blackish; throat dusky, hardly different from rest of underparts; belly whitish; under tail-coverts paler chestnut; outer rectrices narrower. Postjuvenal moult of body, lesser and median coverts.

First-year birds recognized by the rather duller primary-coverts and unmoulted wings and tail of juvenal plumage.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	135-151	32-40	28-35	191-236 mm
♀ ♀	133-148	30-39	28-35	192-230 mm (BB, SA)

Weight 16 ♂♂ 90-112; 9 ♀♀ 93-115 g (SDR, GD, SA, BB). 22 ♂♂ 90-121; 12 ♀♀ 89-106 g (Paynter).

COLOURS OF BARE PARTS. Iris brownish crimson. Bill horny black. Legs, feet and claws blackish brown.

1040. Andaman Tree Pie. *Dendrocitta bayleyi* Tytler

Dendrocitta bayleyi Tytler, 1863, Jour. Asiat. Soc. Bengal 32: 88

(Andamans)

Baker, FBI No. 35, Vol. 1: 55

Plate 69, fig. 12

LOCAL NAMES. None recorded.

SIZE. Myna ±, with tail c. 22 cm (8½ in.) long. Overall length c. 36 cm (14 in.).

FIELD CHARACTERS. A smallish slender-bodied tree pie with the typical long graduated tail and elongated central rectrices.

Above, feathers round base of bill black; head, neck, and mantle dark bluish ashy; lower back and rump pale rufous-olive; upper tail-coverts bluish ashy. *Below*, upper breast dark bluish ashy, diffusing to rufescent ashy on lower breast; rest of underparts chestnut. Tail and wings black, the latter with a large white patch on primaries and secondaries, very conspicuous in flight. Sexes alike.

CROWS, MAGPIES, JAYS

229

STATUS, DISTRIBUTION AND HABITAT. Endemic to Andaman Islands. Not uncommon in South and Middle Andamans. Evidently absent in the Great and Little Cocos and the Nicobars. Affects tall trees in dense evergreen forest.

GENERAL HABITS, FOOD, VOICE AND CALLS. Typical of tree pies cf. 1032. Keeps in pairs or family parties; sometimes loose flocks of a dozen to twenty or so. Has 'a sharp metallic note something like that produced by drawing a coarse file across the teeth of a saw' (Davison).

BREEDING. Poorly known. Apparently the only authentic records are a nest with c/3 taken by B. B. Osmaston on 27 May (1907) and another by Wickham, in the same month, 3 years later. *Nest*, described by Osmaston as 'a flimsy cup-shaped structure of bents and fine sticks, lined with rootlets, 15 ft from the ground in a small thickly foliated sapling growing in forest'. *Eggs*, pale creamy yellow with numerous small blotches of light brown and inky grey, rather denser at the broad end. Size c. 25 x 20 mm.

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters.

MEASUREMENTS		Wing	Bill (from skull)	Tarsus	Tail
3	♂♂	119-124	26-28	27-28	193-206 mm
4	♀♀	117-123 (3 msd.)	26-28	27-28	180-183 mm (3 msd.) (HA)

Weight ♂ ♀ 3.25-4 oz. (c. 92-113 g) — Hume.
COLOURS OF BARE PARTS. *Iris* variable: olive-green, bright yellow, or rich golden yellow. 'Bill, legs, feet and claws black; soles plumbeous grey' (Hume).

Genus *PODOCES* Fischer

Podoces Fischer, 1821, *Lettre adressée* . . . Pander: 6.

Type, by monotypy, *Podoces panderi* Fischer

Pseudopodoces Zarudny & Loudon, 1902, *Orn. Monatsb.*

10: 185. Type, by original designation and monotypy, *P. humilis* Hume

Bill slender and very long; nostrils completely concealed by stiff plumes. Wings short and rounded; tarsi long and strong. Only a single species within our limits.

1041. **Hume's Ground Chough.** *Podoces humilis* Hume¹

Podoces humilis Hume, 1871, *Ibis*: 408 (Kitchik-Yilak = Sanju Pass, Hill Yarkand)
Pseudopodoces humilis saxicola Stresemann, 1928, *Orn. Monatsb.* 36: 82
(Mantuse Lamasery, Sining-fu region, northern Kansu)
Baker, *FBI* No. 50, Vol. 1: 71
Plate 69, fig. 15

LOCAL NAME. *Day-day* (Tibetan).

SIZE. Myna —; length c. 20 cm (8 in.).

¹ *Podoces pleikei* Zarudny, 1896 (Alkor, Eastern Persia) probably enters West Pakistan near the Iran-Baluchistan boundary at Nokkundi (Ludlow, 1945, *JBNHS* 45: 233). It is a cinnamon-coloured bird, about hoopoe size, with black throat and tail and black-and-white wings. Largely terrestrial and fast-running.

CROWS, MAGPIES, JAYS

231

Weight 4 ♂♂ 1.5-1.65 oz. (= c. 42.5-48.5 g) — Scully.
COLOURS OF BARE PARTS. *Iris* brown. Bill, legs, feet and claws brownish black.

Genus *NUCIFRAGA* Brisson

Nucifraga Brisson, 1760, *Orn.* 1: 30, 2: 59.

Type, by tautonymy, *Corvus caryocatactes* Linnaeus

Plumage soft and full, blackish brown, more or less spotted with white. Bill about as long as head, somewhat rounded laterally, straight and pointed. Nostrils circular, entirely concealed by bristles. 4th to 6th primaries (as.) almost equal and longest, 3rd very little shorter, 1st not much more than half 2nd. Tail about three-quarters length of wing, slightly rounded at end, almost square. Only one species within our limits.

NUCIFRAGA CARYOCATACTES (Linnaeus)

Key to the Subspecies

		Page
A	Rump marked with white.	<i>N. c. multipunctata</i> 231
B	Rump not marked with white	
1	White spots above and below larger and more numerous.	<i>N. c. hemispila</i> 233
2	White spots smaller and less numerous.	<i>N. c. macella</i> 235

Cf. Biswas, B., 1950, *Jour. Zool. Soc. India* 2: 26; Paynter, R. A., 1961, *JBNHS* 58: 383.

1042. **Larger-spotted Nutcracker.** *Nucifraga caryocatactes multipunctata* Gould

Nucifraga multipunctata Gould, 1849, *Proc. Zool. Soc. London*: 23
(NW. Himalayas, restricted to Kashmir north of the Pir Panjal Range by Vaurie, 1954, *Amer. Mus. Novit.*, No. 1668: 13)
Baker, *FBI* No. 47, Vol. 1: 67
Plate 69, fig. 13

LOCAL NAMES. *Khākārra* (Pushtu); *Linnpia* (Lahuli); *Tong she sha ga* (Tibetan).

SIZE. Pigeon ±; length c. 32 cm (12½ in.).

FIELD CHARACTERS. A chocolate and umber-brown crow, streaked and spotted with white all over. Bill black, stout, wedge-shaped and pointed.



x c. 1

230

CORVIDAE

FIELD CHARACTERS. A greyish sandy brown bird with darker brown wings, a whitish collar round neck (broad and conspicuous on nape), a dark streak through eyes, and long, slender, blackish curved bill. Tail square-ended, largely sandy white, with the central rectrices brown. Sexes alike.

General effect of a chat or wheatear; colour pattern at rest and in flight reminiscent of Large Grey Babbler (1258).

STATUS, DISTRIBUTION AND HABITAT. Resident? Extreme northern Sikkim (Gyagong, Thangu) c. 4200 to 5200 m; in semi-arid Tibetan steppe facies above tree-line, with scattered dwarf rhododendron and furze (*Caragana*) bushes. Affects sandy stone-littered hillsides and hummocky country cut up by dry watercourses etc.

Extralimital. Southern Kansu, NW. Szechuan westward through Tsinghai and Sikang to Tibet and southern Sinkiang (Vaurie).

GENERAL HABITS. Mainly terrestrial; very active and sprightly; usually tame and fearless. Keeps singly, or in pairs or loose parties of 6 to 8. Rum-mages amongst the shingle for food, 'pick-axing' the soil energetically with its bill like a Jungle Babbler, peering under stones and probing into crevices of boulders etc. Very obliteratingly coloured in its native environment, its presence often detected only by the momentary flicker of the whitish tail-feathers even at close range. Progresses on the ground in a stiffly erect posture by long bouncing hops like a rubber ball. Mounts a stone every now and again to bob or curtsy violently a couple of times like a chat, flicking open the tail and wings while so doing. Flight weak and laboured, reminiscent of a shrike, and seldom sustained for over fifty or a hundred metres. When approaching nest-hole, which often entered directly from the air, wing action rapid and vibratory. In Tibet often found in proximity of habitations, entering villages freely, perching on piled stone boundary walls and roof-tops of the houses.

FOOD. Ground beetles and other insects.

VOICE AND CALLS. A feeble/cheep like a munia's but more prolonged. A plaintive whistling chip (slight pause) . . . cheep-cheep-cheep-cheep (quick repeated) reminiscent of Yelloweyed Babbler (*Chrysomma sinense*, 1231); also of Chestnutbellied Nuthatch (*Sitta castanea*, 1830).

BREEDING. Not recorded within our limits. *Season* in adjacent Tibet May to July. *Nest*, a large untidy pad of sheep's wool, yak hair, etc. (in one case weighing over 700 g), sometimes on a foundation of moss, grass and fibres, stuffed in the widened chamber at the end of a horizontal tunnel, some 75 mm in diameter and 1½ to 2 metres long, excavated by the birds in the side of a steep earth bank. *Eggs*, 4 to 6, white, unmarked, with a pinkish translucence when fresh. Average size of 6 Tibet eggs 23.6 x 16.75 mm (SA). Both sexes feed the young and attend to nest sanitation. Share in building nest and incubation, and incubation period, undetermined.

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters.

MEASUREMENTS		Wing	Bill (from skull)	Tarsus	Tail
♂ ♀		85-94	22-24	26-34	52-64 mm (SA)

232

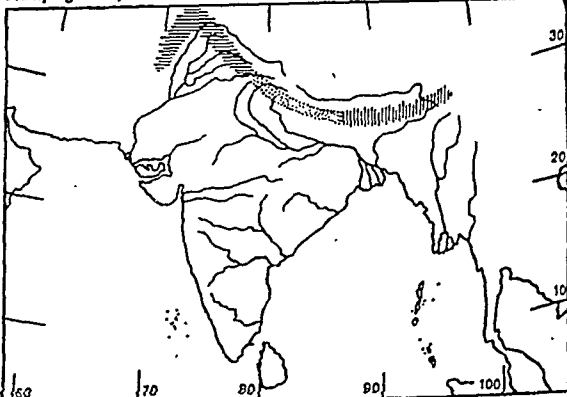
CORVIDAE

Central rectrices black, faintly tipped with white; rest of tail largely, under tail-coverts wholly, white. Sexes alike.

In flight partly spread white tail and white under tail-coverts contrasting strongly with dark body, diagnostic. White-spotted rump and upper tail-coverts distinguish it from Himalayan Nutcracker (1043) which has these parts immaculate chocolate-brown.

STATUS, DISTRIBUTION AND HABITAT. Resident; rather patchily distributed. West Pakistan and NW. India from Fort Sandeman (c. 31°21'N., 69°31'E.) in N. Baluchistan northward along the Suliman Range; Chitral, Gilgit, Baltistan (north of Pir Panjal Range), Kashmir (Sind Valley, Kishtwar,

Nucifraga caryocatactes



■ *multipunctata* (1042). ■ *hemispila* (1043)
▨ *macella* (1044).

Badrawar, etc.), Himachal Pradesh (Chandra-Bhaga Valley, Lahul). Stragglers recorded from Peshawar, Bilaspur, and Sulej Valley. From c. 2000 to 3000 m, wandering as low as 1000 m and occasionally up to 4000 m. In moist- and dry-temperate oak and conifer forest, especially Blue Pine (*Pinus excelsa*) and spruce (*Picea morinda*).

Intergrades with *hemispila* (1043) in Kangra between c. 77° and 79°E. **Extralimital.** Eastern Afghanistan (Safed Koh and southern side of the Hindu Kush mountains).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 1043.

BREEDING. No authentic record; presumably as in 1043, but season earlier. Young hardly able to fly have been recorded in Astor, Kashmir (c. 35°20'N., 74°50'E.) at end April (Buchanan), and evidence of gonads and moult indicates that breeding is normally finished by May.

CROWS, MAGPIES, JAYS

233

MUSEUM DIAGNOSIS. Differs from *hemispila* (1043) in having the white spots much larger especially below, making the underparts look very whitish. See also Key to the Subspecies.

Juvenile. Like adult but upperparts and ear-coverts pale sandy grey-brown, the white centres not much more than shaft lines except on mantle and scapulars where they are as large as in adult. Upper tail-coverts darker brown. Remiges browner (v. glossy black in adult) and with the coverts less glossy, all the white markings not so pure or so sharply defined. Outer rectrices more pointed. *Below*, chin and throat dull white; vent and under tail-coverts white; rest of underparts with dull white centres and sandy brown fringes. Postjuvenile moult of body and lesser and median wing-coverts.

First-year bird distinguished by browner remiges and by less glossy primary- and greater-coverts, the latter with white tips. If not worn, the more pointed outer rectrices are distinctive.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	190-210	c. 50	c. 40	160-170 mm (Baker)

Weight 1 ♂ 191; 3 ♀ 148-165 g (Paynter).

COLOURS OF BARE PARTS. As in 1043.

1043. *Himalayan Nutcracker*. *Nucifraga caryocatactes hemispila* Vigors

Nucifraga hemispila Vigors, 1831, Proc. Zool. Soc. London: 8

(Himalayan mountains, restricted to Simla-Almora dist. by Ticehurst & Whistler, 1924, *tom. cit.*)

Baker, FBI No. 46 (part), Vol. 1: 66

Plate 69, fig. 14

LOCAL NAME. *Lho kariyo pho* (Lepcha).

SIZE. Pigeon ±; length c. 32 cm (12½ in.).

FIELD CHARACTERS. As of 1042, q.v., but white spots smaller generally and entirely lacking on rump and upper tail-coverts which are immaculate chocolate-brown. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident; rather patchily distributed. The Himalayas from about Kangra dist. in Himachal Pradesh (c. 77-79°E.) eastward, apparently intergrading into the Yunnan subspecies *macella* (1044) from about east-central Nepal; from c. 2000 to 3300 m, occasionally straggling lower or higher. Affects tall rhododendron, fir, spruce and deodar forest where interspersed with open glades and alpine meadows.

GENERAL HABITS. Keeps to the tops of tall conifers on hillsides in widely separated pairs or family parties of 4 or 5 birds, these sometimes uniting in small flocks of 10 to 15 or so. Attracts notice from afar by its characteristic loud, grating and far-carrying calls. Usually shy, curious and inquisitive. Sometimes descends to the ground in a forest glade moving about in long hops to pick up nuts and other titbits, or to hack out seeds from fallen pine cones by vigorous hammer blows of the bill. Seldom undertakes long flights except to cross a valley; then flies straight and direct with deliberate wing-flaps like a crow but with a curious 'delayed action' effect between the

234

CORVIDAE

flaps. More commonly seen flapping lazily from one pine-top to another in a manner recalling the jays (*Garrulus*) and Blue Magpies (*Cissa*), with the same jerky hesitant wing-beats. In flight tail partially spread, the central rectrices showing as a dark wedge contrasting strongly with the rest. When alighting on a branch, and from time to time while perched, flicks tail open and shut flashing the white tail-feathers, producing a curious effect while the bird itself remains camouflaged amongst the dark pine foliage. On alarm or suspicion, as when its nest is being handled, becomes very noisy and demonstrative, flying around fussily from tree to tree peering down at the intruder with harsh swearing cries, which soon attract other nutcrackers in the vicinity to join in the outcry.

FOOD. Largely pine and spruce seeds, especially those of Blue Pine (*Pinus excelsa*) and *Picea morinda*. The seeds are often extracted, before the mature cones open naturally, by prising apart the 'scales' with the tips of the mandibles from below, or while swinging from a twig upside down, causing the seed to fall into the open gullet (Osmaston). Also wild walnuts and hazelnuts and others; grubs and beetles (*Caccobius himalayanus* and dung beetles like *Onthophagus* identified), and allegedly eggs and young of other birds.

VOICE AND CALLS. Harsh, grating, far-carrying and distinctly corvine. A single *gurrrr* or *kurrrr* or *kraak*, or sometimes several run rapidly together as a discordant rattling note. Flying young following parents utter a nasal bleat as of a goat kid, sometimes ending in a guttural *kraak*.

BREEDING. An early nester. Many young already on the wing by end March when parts of the habitat still under snow. *Season*, March to May/June. *Nest*, a platform of twigs, rather like a crow's but more neatly and compactly built, sometimes with a little lichen intermixed on the outside; lined with grass and pine needles. Placed 6 to 18 m up in a lateral branch near the trunk of a large deodar or suchlike tree preferably in mixed forest on a steep hillside. *Eggs*, 3 or 4, pale bluish white with a few blotches and numerous specks of dull brown and inky brown scattered all over the surface, rather more densely at the broad end; size c. 35 × 26 mm. Both sexes take part in building the nest (?), incubation and tending the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. Differs from *multipunctata* (1042) in the white spots being generally smaller giving the impression of a much darker bird. Rump and upper tail-coverts without any white markings.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	208-227	45-52	41-43	137-147 mm (Stresemann, SA).

Weight 1 ♂ (Nepal) 212 g (GD); 2 ♂♂ (Darjeeling dist.) 206, 214; 2 ♀♀ 183, 184 g (Paynter).

COLOURS OF BARE PARTS. Iris rich brown. Bill (and mouth), legs, feet and claws black.

CROWS, MAGPIES, JAYS

235

1044. *Yunnan Nutcracker*. *Nucifraga caryocatactes macella* Thayer & Bangs

Nucifraga hemispila macella Thayer & Bangs, 1909, Bull. Mus. Comp. Zool. 52: 140 (Hsien-shan-hsien, Hupeh, China, 7000 ft)

Nucifraga yunnanensis Ingram, 1910, Bull. Brit. Orn. Cl. 25: 86 (Mountains of Yunnan)

Baker, FBI No. 46 (part), Vol. 1: 66

LOCAL NAMES. *Lek bhali* (Paharia); *Lho kariyo pho* (Lepcha).

SIZE. Pigeon ±; length c. 32 cm (12½ in.).

FIELD CHARACTERS. As of 1043, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident; rather patchily distributed. The eastern Himalayas from about east-central Nepal (where the zone of intergradation with *hemispila* apparently begins) through Sikkim, Bhutan and NEFA (including Dafia, Abor and Mishmi hills); from c. 2000 to 3600 m, in moist-temperate and alpine conifer forest.

Extralimital. Western Hupeh, Shensi (Tsinling Range), northern and western Szechuan, eastern, southern and southeastern Sikang to northern Yunnan, SE. Tibet and northern Burma (Vaurie).

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 1043.

BREEDING. Not authentically known within Indian limits. Doubtless as in 1043.

MUSEUM DIAGNOSIS. Like *hemispila* (1043), also with unspotted rump but slightly darker, with the spots on breast and back averaging smaller, and less numerous. However, coloration and spotting very variable, and subject moreover to pronounced seasonal changes in the living bird and to foxing in museum skins: on the whole a relatively weak and equivocal race.

MEASUREMENTS AND COLOURS OF BARE PARTS as in the Himalayan form (1043). Weight (Bhutan birds) 6 ♂♂ 200-235 (av. 217.3); 5 ♀♀ 189-200 (av. 194) g —BB, SA.

Genus PYRRHOCORAX Tunstall

Pyrrhocorax Tunstall, 1771, Orn. Brit.: 2. Type, by monotypy, *Upupa pyrrhocorax* Linnaeus

Cf. Hemming, F., 1952, *Bull. Zool. Nomencl.* 9: 54-61
Vaurie, C., 1954, *Amer. Mus. Novit.*, No. 1651: 1-7

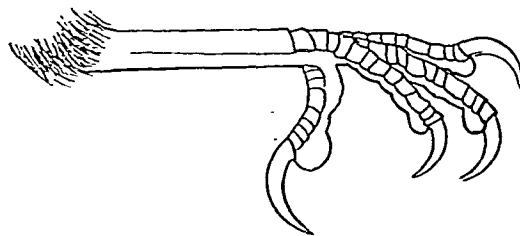
Plumage entirely black. Bill comparatively slender, red or yellow. Narial plumes very short and dense. Tarsus quite smooth in front and behind ('booted'), differing from true crows (*Corvus*) in the respect.

Key to the Species

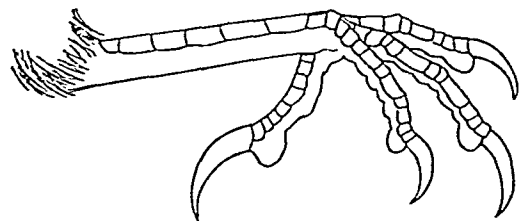
	Page
Bill red..... <i>P. pyrrhocorax</i>	233
Bill yellow..... <i>P. graculus</i>	236

236

CORVIDAE



Foot of *P. p. himalayensis* (1047), × c. 1



Foot of *C. macrohynchus* (1054), × c. 1

1045. *Himalayan Yellowbilled or Alpine Chough*. *Pyrrhocorax graculus digitatus* Hemprich & Ehrenberg

Pyrrhocorax alpinus var. *digitatus* Hemprich & Ehrenberg, 1833, Symb. Phys., fol. 2 (Syria)

P. (pyrrhocorax) Forsythi Stoliczka, 1874, Stray Feathers 2: 462 (Lamaguru to the Indus)

Baker, FBI No. 49, Vol. 1: 70

Plate 70, fig. 2

LOCAL NAMES. None recorded.

SIZE. House Crow —; length c. 38 cm (15 in.). Slightly smaller than Redbilled Chough.

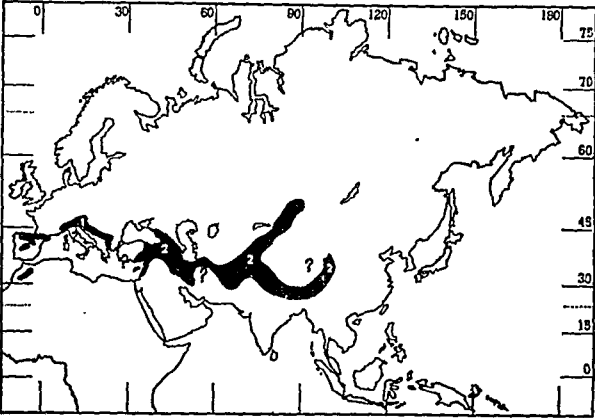
FIELD CHARACTERS. A glossy jet black crow with yellow bill and bright red legs. Sexes alike.



× c. 1

STATUS, DISTRIBUTION and HABITAT. Resident at high altitudes, largely in the main Himalayan range in West Pakistan and India, normally between 2700 and 5000 m, descending in winter to c. 2400 and even 1800 m. Northern Baluchistan (only in the higher hills above c. 3300 m), and from Safed Koh

Pyrrhocorax graculus



1 *graculus* (RE).
2 *digitatus* (1045).

through Chitral, Gilgit, Baltistan, Astor, Ladakh, Kashmir, Himachal Pradesh (Lahul, Spiti), Garhwal, Kumaon, Nepal, Sikkim, Bhutan and NEFA. Affects moist- and dry-temperate high mountain biotope with cliffs, alpine meadows and pastures, and upland cultivation.

Extralimital. Lebanon, Iran, Transcaspia, Afghanistan, Russian Turkestan, SE. Tibet, Sikang to Kangting (for details see Vaurie, 1959, 2: 163).

GENERAL HABITS. Very gregarious and sociable keeping in family parties and flocks, sometimes quite large, throughout the year. Occupies a higher altitudinal zone than Redbilled Chough, but where both occur together the flocks intermingle freely. Is apparently more tolerant of cold than Redbilled, keeping to higher elevations even in severe winters. Frequents the neighbourhood of upland villages and cultivation, and alpine meadows and pastures, sauntering about like a starling digging vigorously in the soil for grubs and insects. Everest climbers have reported Alpine Choughs scavenging regularly for kitchen scraps etc. round their camps up to 8000 metres, and it has been observed flying even at c. 8600 m (Charles Evans, *pers. comm.*). Usually tamer and more confiding than Redbilled, entering villages and traders' and herdsmen's bivouacs and encampments to pick up food among and around the houses and animal pens. Nevertheless not known to roost or nest in buildings or monasteries as the shyer Redbilled commonly does. Flight and general behaviour characteristically crow-like.

1046. West Himalayan Redbilled Chough. *Pyrrhocorax pyrrhocorax centralis* Stresemann

Pyrrhocorax pyrrhocorax centralis Stresemann, 1928, Jour. f. Orn. 76: 344 (Semirjetchensk. Gebirge bei Dscharkent [Tschischkan])
Baker, FBI No. 48 (part), Vol. 1: 68
Plate 70, fig. 4

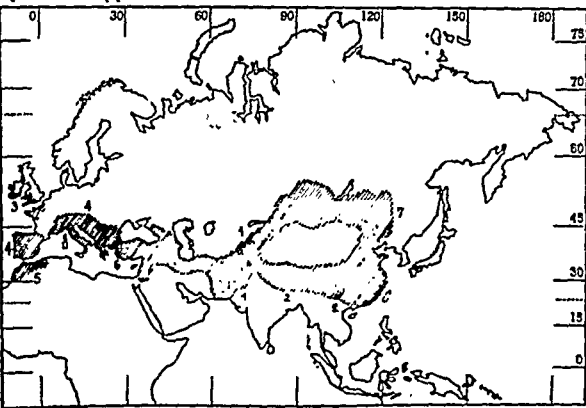
LOCAL NAMES. *Zāgh* (Persian Baluchistan); *Wān kāvīn*, *Wozij tēnti kāvīn* (Kashmir); *Kāngni* (Garhwal).

SIZE. House Crow ±; length c. 45 cm (17½ in.).

FIELD CHARACTERS. A glossy jet-black crow with bright red legs, and slender slightly curved red bill. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident at high altitudes, with appreciable winter-summer altitudinal movements. West Pakistan and India, in N. Baluchistan (Nushki, Quetta, Ziarat, Kach — breeding in the highest hills), Chitral, Gilgit, Ladakh, Baltistan, Kashmir, Himachal Pradesh (Lahul, Spiti); eastern limits not yet determined. Between c. 2400 and 3500 m in summer, down to c. 1800 in winter; largely coincident with Alpine

Pyrrhocorax pyrrhocorax



1 *centralis* (1046).
2 *himalayensis* (1047).
3-7 extralimital races (see Vaurie, 1959, 2: 160-2).

Chough (1045) except at altitudes above c. 3500 m. Affects moist- and dry-temperate high mountain biotope with precipitous cliffs, alpine meadows, steep pastures, and upland cultivation; also barren mountains beyond penetration of monsoon.

Flocks love to disport themselves, especially during the middle of the day, quite obviously just for fun. The birds mill around in a rabble up in the sky sometimes at immense heights, making full use of every wind-current and eddy, sailing buoyantly round contours and precipices on motionless wings, tail fully spread and canted from side to side to act as rudder. Now and again the circling flock is lifted almost vertically upward on a thermal and the birds engage in fantastic aerobatics with lightning twists and turns and sidesteps, and swishing nose-dives with wings pulled in, of maybe several hundred metres down into the valleys, ending in an effortless upward zoom to alight gracefully on a high cliff or resume the extravagant evolutions.

FOOD. Beetles and grubs, crickets, larvae of (noctuid) moths, carrion from pack animal carcasses, kitchen scraps, etc. Other recorded items: berries (*Hippophae rhamnoides*, *Berberis lycium*, *Juniperus*), mulberries, red hips of wild rose (*Rosa*), barley grains.

VOICE and CALLS. Less noisy than Redbilled Chough; calls of same general pattern, pleasant and high-pitched, more reminiscent of Starling than of Jackdaw. Usual note, uttered also during the aerial frolics, a high-pitched musical *quee-ah* or *cree-ah*. Full-grown young have a curious persistent mewling note exactly like the *cheep* of a half-grown domestic chicken.

BREEDING. *Season*, chiefly May-June. *Nest*, in holes in vertical cliff faces and precipices, usually inaccessible, thus not authentically described in the Indian range. Presumably as of Redbilled Chough, a platform of sticks lined with sheep's wool. *Eggs* (c/3 or 4?), indistinguishable from 1046-7, q.v., but averaging slightly smaller, c. 39 × 29 mm. Breeding biology little recorded.

MUSEUM DIAGNOSIS. Entire plumage black faintly glossed with green, more particularly on wings and tail.

Juvenile. Like adult, but body plumage softer and more sooty brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	274-298	34-38	42-48	174-193 mm
♀♀	262-273	32-36	41-46	165-178 mm
				(HW)

Weight 3 ♂♂ 223-244; 4 ♀♀ 203-213 g (Paynter, GD). 1 ♀ (September) 234 g — SDR.

COLOURS OF BARE PARTS Adult. Iris dark brown. Bill yellow; mouth livid greenish yellow, bluish posteriorly. Legs and feet dull coral-red; claws black. **Juvenile.** Iris dark brown. Bill horny livid. Legs and feet olive-brown mottled with dark brown; claws black (HW). 2 specimens (♀) recorded with legs and feet 'almost as black as the feathers' (Fulton, JBNHS 16: 46).

PYRRHOCORAX PYRRHOCORAX (Linnaeus)

Key to the Subspecies

Wing more pointed, primaries and rectrices narrower.....*P. p. centralis*
Wing more rounded, primaries and rectrices broader.....*P. p. himalayensis*
Cf. Rand, A. L. & Fleming, R. L., 1957, *Feldiana: Zoology* 41 (1): 111-13.

Extralimital. Russian Turkestan (Djarkent, western Tien Shan, Ferghana, Bukhara, Alai and Pamirs — Vaurie). The species in several races extends over Europe, N. Africa, central and eastern Asia.

GENERAL HABITS. Very similar to 1045, q.v. Often collects in huge flocks of several hundred during winter to grub in fallow barley fields around upland villages and on yak pastures even partly under snow, in company with Yellowbilled Choughs, Turkestan- and Snow pigeons, and sometimes ravens. Quite tame and fearless near habitations perching freely on rooftops, prayer-flag posts, etc. but less inclined than 1045 to feed on scraps and refuse among the houses and nomadic encampments. The birds roost gregariously in caves and fissures in high precipitous cliffs, as well as on ledges and under eaves etc. of Buddhist monasteries and dzongs.

FOOD. Insects (wireworms, crickets, beetles, grubs); apparently no carrion *contra* 1045. Berries (*Hippophae*, *Ephedra*, *Berberis*); barley grains. In winter occasionally destructive to ripened barley crop, taking a head and thrashing out the grain from the ears by blows of the bill.

VOICE and CALLS. A shrill, rather musical, plaintive-sounding *chido*, *chido* described as between caw of jackdaw and scream of Large Parakeet, at times sounding in the distance like the *piu, piu, piu* of Pied Crested Cuckoo (*Clamator jacobinus*, 570). Other call-notes, high-pitched and rather squeaky, *khew* and *jack* and *chee-o-kah* and *kor-quick*. Far-carrying and often with a curious ventriloquial effect; audible from immense heights when the bird itself is a mere speck in the sky. Sometimes a loud clear *queit* (alarm?).

BREEDING. *Season*, March-May. *Nest*, a large cup or platform of stick and twigs lined with wool; sometimes minus the sticks, merely a thick pad of wool and hair. Placed in holes and fissures of inaccessible rock cliffs or in walls of derelict or inhabited houses, monasteries and dzongs in mountain villages. Occasionally several nests close to one another in a colony. In soft sandstone cliffs, holes up to a metre or so deep may be excavated by the birds themselves. The same sites are commonly used year after year. *Eggs*, 3 or 4, indistinguishable from 1045, variable, white, sometimes with a faint blue or green tinge, or pinky white or pale salmon-pink, blotched, spotted and speckled with reddish brown or dark brown and secondary markings of lavender and grey; scattered all over the surface but tending to coalesce into a cap at the broad end. Average size of 36 Kashmir and Ladakh eggs 39.2 × 27.6 mm (BBO). Both sexes take part in building the nest, incubation and tending the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. Adult. Entire plumage glossy black; gloss greenish on wings and tail, bluish elsewhere.

Juvenile. Like adult but body plumage softer and brownish black.

First-year birds slightly duller and more brownish on the worn wings and tail retained from juvenal dress.

P. p. centralis differs from east Himalayan *himalayensis* (1047) in having a shorter tarsus, more pointed wing and narrower primaries and tail-feathers. Distance between tips of 5th and 6th primaries (as.) 25-30 mm (c. 15-20 mm in 1047). (For other details see Vaurie, 1954, *Am. Mus. Nat. Hist.*, No. 1638: 1-7.)

CROWS, MAGPIES, JAYS

241

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus
♂ ♀	290-336 (mostly above 310)	50-56	50-58 mm

(NBK, Law)

Wing/tail index 53 (Vaurie)

Weight (Ladakh) 5 ♂♂ 318-341; 1 ♀ 274 g (RM).

COLOURS OF BARE PARTS. Iris dark brown. Bill coral-red; mouth orange-salmon. Legs and feet coral-red, darker than bill; claws black. Juvenile. Iris dark brown. Bill black, gape and tip salmon; mouth fleshy salmon. Legs and feet black; soles and interstices of scales salmon (HW).

1047. East Himalayan Redbilled Chough. *Pyrrhocorax pyrrhocorax himalayanus* (Gould)*Fregilus himalayanus* Gould, 1862, Proc. Zool. Soc. London: 125

(Himalaya Mountains = Kumaon, restricted by Meinertzhagen, 1927, Ibis: 372) Baker, FBI No. 48 (part), Vol. 1: 68

LOCAL NAME. Chumboo (Lepcha).

SIZE. House Crow \pm ; length c. 45 cm (17½ in.).

FIELD CHARACTERS. As in 1046, q.v. See Museum Diagnosis.



x c. 1

STATUS, DISTRIBUTION and HABITAT. Resident at high altitudes with appreciable winter-summer altitudinal movements. From about Garhwal and Kumaon eastward through Nepal, Darjeeling dist., Sikkim, Bhutan and NEFA, between c. 2400 and 4800 m; occasionally down to c. 1600 m in winter and up to 6000 m in summer. Affects moist- and dry-temperate high mountain biotope near and above tree-line, with precipitous cliffs, alpine meadows, steep pastures, etc.

Extralimital. W. Sinkiang, W. Kun Lun, Karakoram, SE. Tibet, N. Burma (?), N. Yunnan eastward to W. Szechuan (Vaurie).

GENERAL HABITS, FOOD, VOICE and CALLS. As in 1046.

BREEDING. Season, nest and eggs (c/3 or 4) as in 1046. Eggs somewhat larger; average size of 17 eggs 42.75 x 28 mm (Ludlow).

MUSEUM DIAGNOSIS. Differs from *centralis* (1046) in having the wings and tail glossed with bluish rather than greenish; tarsus longer; primaries and rectrices

CROWS, MAGPIES, JAYS

243

1048. Sind House Crow. *Corvus splendens zugmayeri* Laubmann

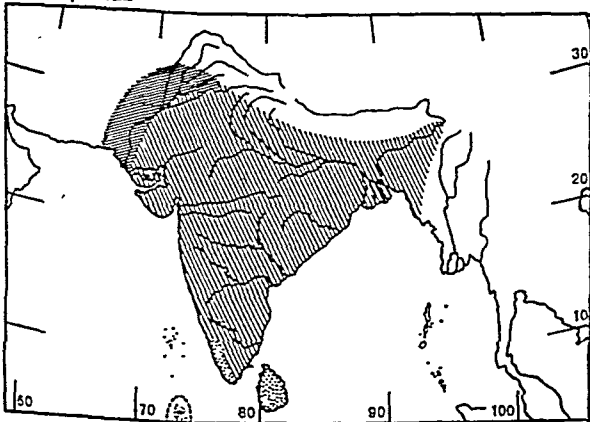
Corvus zugmayeri Laubmann, 1919, Orn. Monatsb. 21: 93 (Las Bela, Baluchistan) Baker, FBI No. 12, Vol. 1: 34

LOCAL NAMES. Kān (Sind); Kān (Kashmir).

SIZE. Pigeon \pm ; length c. 43 cm (17 in.).

FIELD CHARACTERS. As of 1049, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. Baluchistan (Sibi Plain, coastal Makran), Sind, Punjab and NW. frontier districts; southern Kashmir

Corvus splendens

Distributional ranges

zugmayeri (1048).

splendens (1049).

protegeus (1050).

maledivicus (1051).

and Jammu. From plains level to c. 1600 m. Affects all types of country in and around human habitations, especially towns and cities.

Extralimital. Coastal and southern Iran.

GENERAL HABITS, FOOD, VOICE and CALLS. As in the nominate form 1049.

BREEDING. Season, May to July. In Kashmir Valley principally May, in Rawalpindi dist., second half June; occasionally some in November. Nest and eggs (c/5) as in 1049. Average size of 17 Kashmir eggs 39 x 26.6 mm (BBO). Willow and poplar trees and groves near villages favoured for nesting in Kashmir.

MUSEUM DIAGNOSIS. Differs from nominate *splendens* (1049) in having a much paler collar and underparts: pale smoke-grey in fresh plumage, ashy sandy white in worn dress. No difference in size.

MEASUREMENTS: ♂ ♀ Wing 255-290 mm (CBT).

COLOURS OF BARE PARTS. As in 1049.

242

CORVIDAE

broader. Wing more rounded: distance between tips of 5th and 6th primaries (as) 15-20 mm (c. 25-30 mm in 1046).

Juvenile and First-year birds as in 1046.

MEASUREMENTS

	Wing	Bill	Tarsus
♂ ♀	291-332	50-103 (widely variable)	55-65 mm

(RM, S. C. Law, SA)

Wing/tail index 50 (Vaurie)

Weight 7 ♂♂ 318-422 (once 450); 4 ♀♀ 274-385 g (RM, GD, SA, BB).

COLOURS OF BARE PARTS. As in 1046.

Genus *CORVUS* Linnaeus*Corvus* Linnaeus, 1758, Syst. Nat., ed. 10, 1: 105.Type, by tautonymy, *Corvus corax* LinnaeusCf. Meinertzhagen, R., 1926, *Nevit. Zool.* 33: 57-121.

Coloration in Indian forms glossy black or black and grey. Bill stout; nostrils placed far forward, about one-third length of bill from forehead, entirely concealed by stiff straight bristles that reach almost to middle of bill. Tail shorter than wing, slightly graduated or rounded at end. 1st primary (as.) at least half as long as 2nd; 3rd and 4th primaries longest. Primaries exceed longest secondaries by more than length of tarsus; four outermost primaries with inner webs sinuated.

Key to the Species

	Page
A Plumage entirely black	
1 Size large; wing over 380 mm.....	<i>C. corax</i> 261
2 Size smaller; wing under 380 mm	
a Whole plumage glossed with purple; base of bill bare in adults	
.....	<i>C. frugilegus</i> 248
b Plumage duller black ¹	
i Upper mandible more curved, ridge of culmen nearly flat, not covered with bristles at base.....	<i>C. macrorhynchos</i> 251
ii Upper mandible less curved, ridge of culmen not flattened, and covered with bristles to over 10 mm at base.....	<i>C. corone</i> 258
B Plumage black and ashy	
3 Ashy restricted to nape.....	<i>C. monedula</i> 250
4 Ashy extending down to breast.....	<i>C. splendens</i> 242

CORVUS SPLENDENS Vieillot

Key to the Subspecies

A Contrast between grey and black parts of plumage well defined.....	<i>C. s. splendens</i> 244
B Pale parts of plumage very pale, contrasting sharply with black.....	<i>C. s. zugmayeri</i> 243
C Darkest; contrast between pale and dark parts of plumage slight.....	<i>C. s. protegeus</i> 246
D Nearest C; averaging larger.....	<i>C. s. maledivicus</i> 247

¹ But see Key to the Subspecies of *Corvus corone*, p. 258.

244

CORVIDAE

1049. Indian House Crow. *Corvus splendens splendens* Vieillot

Corvus splendens Vieillot, 1817, Nouv. Dict. d'Hist. Nat. 8: 44 (Bengal) Baker, FBI No. 11, Vol. 1: 33

Plate 70, fig. 6

LOCAL NAMES. Kowwā, Dīsi kowwā (Hindi); Kāolā (Marathi); Kāgo (Gujarati); Kāg, kāk (Bengali); Pāt kākori (Assamese, Nowgong); Manchi kākī (Telugu); Nāllā kākā, Mariyen kākāi (Tamil).

SIZE. Pigeon \pm ; length c. 43 cm (17 in.).

FIELD CHARACTERS. A medium-sized crow: glossy black with dusky grey or mouse-grey nape, neck (all round), upper breast and upper back. Forehead, crown and throat contrasting glossy black. Sexes alike. Colour pattern similar to Jackdaw (1053), which is smaller and has whitish eyes.

STATUS, DISTRIBUTION and HABITAT. Resident; subject to altitudinal and/or seasonal movement in northern cold-winter areas; common to excessively common locally. All India except Kerala (cf. 1050) east and south of a line roughly from Himachal Pradesh to Kutch (including lowlands of Nepal, Sikkim, Bhutan and Assam); Laccadive Is. (introduced ?); East Pakistan; from sea coast and plains level up to c. 2100 m. Inseparable from human habitations; abundant to pest proportions in many urban and metropolitan areas. Absent or rare at small hill-stations, but quickly spreading to them with population growth and increased garbage potential. Introduced in the Andamans c. the 1860s but has not become established.

Extralimital. Arakan (Burma). Introduced and now well established in Zanzibar, Aden and Mauritius.

GENERAL HABITS. A confirmed commensal of man, almost an element of his social system. Very useful as a municipal scavenger and an indispensable ally to neglectful or incompetent sanitary administrations! Intelligent, inquisitive and impudently familiar, yet excessively wary and alert at all times, possessing an uncanny capacity for scenting and avoiding danger and distinguishing a harmless human from one not to be trusted. Gregarious, sociable, clannish, cunning, and omnivorous — other essential qualifications for successful co-existence with man. Moves on the ground with a perky walking gait and sidling hops, accompanied by a constant uneasy flicking of the wings. Normal flight with unhurried shallow wing-flaps, straight, and with tail closed. Much given to the same sort of aerial gambolling as choughs. In urban localities numbers collect at sunset on top of a tower or high building especially when a stiff wind is blowing, and engage in a variety of amusing and spectacular games, supplanting one another from some coveted vantage-point, or vying in fantastic aerobatics — shooting down through space with wings closed or with lightning twists, turns and sidslips and somersaulting and looping-the-loop, thoroughly enjoying themselves. While commuting long distances to and from the communal roost, especially across wide rivers, flies very high up in the sky. When over its destination shoots steeply down at tremendous velocity in a series of the same remarkable aerobatic evolutions. Has 'traditional' community roosts in ancient banyan trees, mangrove jungle, coconut and forest plantations and the like, where vast numbers, sometimes maybe thousands, converge at sunset flying in a steady stream of straggling rabbles

over considerable distances from all points of the compass. Roosts commonly shared with parakeets and mynas who contribute to the deafening clamour that precedes sleep. The birds disperse before sunrise, radiating in disorderly groups each headed towards its respective scavenging ground. Besides intelligence and a limited capacity for seeming ratiocination, possesses a distinct sense of humour. Revels in puckish antics such as playfully tweaking tails of other birds, or ears of sleeping cow or dog, or toes of flying foxes hanging on their diurnal roosting-trees, with no apparent object other than to enjoy their annoyance and discomfort! Monogamous and evidently pairing for life; even in non-breeding season pairs will often sit on a shady branch during daytime snuggled lovingly together, first one bird scratching the other's lowered head then presenting its own to be similarly scratched by its mate, turn by turn, for ten minutes or more at a time.

FOOD. All-embracing: practically everything that can be eaten. Recorded items include grain, groundnuts, fruits, flower-nectar (*Salmalia*, *Erythrina*, *Butea*, *Sesbania*, *Spathodea* and others), eggs and young or sickly birds (very destructive in heronries; systematically marauds Baya nests in colonies), lizards, small rodents (mice, squirrels, gerbils in semi-desert areas), fish (stranded by receding floods, filched from protesting fishwives' baskets or curing yards, or captured from near the surface while flying above water (Acharya, JBNHS 50: 169), insects (winged termites hawked by ungainly aerial sallies from roof-tops with awkward zigzags and contortions), and crabs (*Paratelphusa*) inland, fiddler crabs (*Uca*) on seashore, kitchen scraps, garbage, offal and carrion. In an intensely cultivated area in Bihar stomach contents of 42 birds, in addition to other matter, contained 226 insects: 1 beneficial, 153 injurious, 72 neutral. Among them were crickets and grasshoppers (Orthoptera: *Schizodactylus monstrosus*, *Gryllotalpa africana*, *Chrotogonus* sp., *Brachytrypes achatinus*), beetles (Coleoptera, largely Tenebrionidae and Scarabaeidae: *Opatrum* sp., *Gymnopleurus miliaris*, *Mesomorpha villiger*, *Catharus sabaeus*, *Onthophagus spinifer*, *Onitis distinctus* and *Oniticellus pallipes*), also ants (Hymenoptera, Formicidae) and noctuid larvae (Heterocera). Economic status in agricultural areas evaluated as on the whole neutral.

VOICE AND CALLS. Ordinary call-note a rather shrill *quah quah* (or nasal *kaan, kaan*) softer than that of Jungle Crow. When resting contentedly and relaxed on a shady branch, soliloquizes in a rather musical *kurrrrrr* lasting half to one second, suggestive of the running down of a watch spring. When bringing up food from throat-pouch into bill for courtship feeding to female, a short distinctive caw; female accepts in crouching pre-copulatory posture, emitting a subdued *kree-kree-kree* and flirting her wings. In addition has a very large expressive and eloquent vocabulary to suit every mood and emotion — suspicion, alarm, anger, invitation to copulate (given by female), announcement of food finding, contentment, 'distress' at losing mate, and so on. During night some roosting individuals occasionally emit a single drawn-out caw unlike anything heard during daytime, but somewhat resembling the courtship-feeding caw (talking in sleep? or nightmare?!).

BREEDING. Season, overall March-April to July-August, chiefly April, May and June, but peak periods varying locally. Some birds (probably of previous year, c. 15 or 16 months old) breed October-December.

FIELD CHARACTERS. As of 1049, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident: common and abundant, from sea coast and off-shore islets to c. 1600 m locally in the hills. Ceylon and Kerala. Intergrades into nominate *splendens* in southwestern Tamil Nadu, in the southern Nilgiris and Palghat Gap area. Affects lowland urban areas everywhere, but in Kerala especially the vicinity of the home-steads and copra drying yards along the coastal backwaters.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in the nominate form (1049).

BREEDING. Season, in Ceylon May to August-September, chiefly June; in Kerala January to June, chiefly March to May, before the onset of the SW. monsoon squalls. *Nest, eggs* (c/3-5) and breeding biology as in *splendens*. Average size of 100 eggs 34.8 x 25.6 mm (Baker). As elsewhere, nests regularly brood-parasitized by Koel (*Eudynamis scolopacea*).

MUSEUM DIAGNOSIS. Differs from the nominate race (1049) of the rest of India in having the paler (greyish) parts much darker, presenting less contrast with rest of plumage.

Juvenile and First-year, as in 1049.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	225-284	49-55	45-48	147-169 mm
♀♀	219-264	42-50	45-48	128-155 mm
				(HW, SDR, Phillips)

COLOURS OF BARE PARTS. As in 1049 and other races.

1051. **Maldivian House Crow.** *Corvus splendens maledivicus* Reichenow
Corvus splendens maledivicus Reichenow, 1904, Wiss. Ergebn. Deutsch. Tiefsee Exped.: 356 (Maldives)
Not in Baker

LOCAL NAME. *Kārlu* (Maldivian).

SIZE. Pigeon +; length c. 43 cm (17 in.).

FIELD CHARACTERS. As of 1049, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident. Abundant on Malé and throughout the Maldivian Archipelago excepting Addu Atoll. 'Their numbers seem to be kept in check largely by the Koels' cuckolding and by the Maldivian custom of shooting them on Friday afternoons' (Phillips).

GENERAL HABITS, FOOD, VOICE AND CALLS. Not specifically recorded; doubtless as in the Indian bird.

BREEDING. Season, between May and September, i.e. during the SW. monsoon (Gardiner, 1903); also December and January and probably throughout most of the year (Phillips). *Nest, eggs*, etc. as in *splendens*.

MUSEUM DIAGNOSIS. Practically identical in colour with *prolegatus* of Ceylon. 'Grey of nape and neck almost imperceptibly clearer in tone' (Phillips). Eye of faith! Slightly larger in size, but subspecies equivocal.

MEASUREMENTS	Wing	Bill (culmen)	Tail
3 ♂♂	262-274	50-54	158-172 mm
3 ♀♀	256-269	47-49	158-168 mm
			(Phillips)

COLOURS OF BARE PARTS. As in 1049 and other races.

Nest, an untidy platform of sticks and twigs sometimes largely mixed with or entirely of iron wire or hoop iron — with a cuplike depression in the centre lined with tow, coir, and other fibres. Normally placed in the fork of a branch at any height from 3 or 4 metres up, not colonially but sometimes 3 or 4 nests in the same tree. Mango trees frequently selected, but apparently has no special preferences. Ornamental roadside trees along city thoroughfares freely patronized. Nests sometimes built on ledges on exterior of buildings. *Eggs*, 4 or 5, pale blue-green, speckled and streaked with brown. Average size of 200 eggs 37.2 x 27 mm (Baker). Both sexes share in building the nest, incubation, and tending the young. Incubation period 16-17 days (Lamba). Contrary to the deep-rooted popular belief, copulation takes place in the normal manner of birds ('treading') either on the ground or a branch, or very commonly while the female is sitting on the nest. Copulating pairs are frequently mobbed by other crows, and there is good circumstantial evidence for more than occasional promiscuity in the mating. Nests regularly and extensively brood-parasitized by Koel (*Eudynamis scolopacea*, 590). For a good account of the breeding biology of the House Crow see Lamba, B. S., 1963, JBNHS 60: 122-33.

MUSEUM DIAGNOSIS. In worn dress the mouse-grey parts of the plumage become slightly paler, but never the pale cream tint found in *zugmayeri*.

Juvenile. Crown, chin and throat blackish with little gloss, rest of plumage almost uniform deep mouse-grey, slightly glossed on mantle; practically no contrast between nape, ear-coverts and upper breast and rest of body plumage. Wings and tail as adult, but less black and less glossy. Outer rectrices less square-cut at end, and narrower. Postjuvenile moult of body, lesser and most or all median coverts.

First-year birds recognized by rather browner, less glossed wings and tail, with narrower and more pointed (less square-ended) outer tail-feathers. In worn plumage wings and tail practically glossless, the feathers becoming much browner and usually more ragged at tips than in adult at same time of year.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	266-284	51-56	45-51	162-175 mm
♀♀	252-282	45-50	44-48	154-175 mm
				(HW, SA)

Wing ♂♀ 256-294 mm (CBT)

Weight 2 oo? 266, 280 g (SA). 2 ♂♂ 310, 362; 5 ♀♀ 252-304 g (Paynter).

COLOURS OF BARE PARTS. Iris brown. Bill black; mouth brownish slaty. Legs, feet and claws black. Gape in juvenile pink.

1050. **Ceylon House Crow.** *Corvus splendens protegatus* Madarász
Corvus splendens protegatus Madarász, 1904, Orn. Monatsb. 12: 195
(Mt Lavinia, W.P., Ceylon)
Baker, FBI No. 14, Vol. 1: 35

LOCAL NAMES. *Kaputā*, *Kolamba kākā* (Sinhala); *Oor kākām* (Tamil); *Kākkā* (Malayalam).

SIZE. Pigeon +; length c. 43 cm (17 in.).

1052. **Rook.** *Corvus frugilegus frugilegus* Linnaeus
Corvus frugilegus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 105 (Sweden)
Corvus frugilegus lichenii Hartert, 1903, Vög. pal. Fauna 1: 14 (Gilgit)
Baker, FBI No. 9, Vol. 1: 30
Plate 70, fig. 5

LOCAL NAMES. None recorded.

SIZE. House Crow +; length c. 48 cm (19 in.).

FIELD CHARACTERS. A glossy jet-black crow. Adult distinguished from Jungle Crow by bare unfeathered face and chin, straighter and slenderer



pointed bill, and shaggy-feathered ('trousered') thighs, particularly noticeable when bird walking on ground. Sexes alike.

Young (immature), duller black with face normally feathered. Confusable with Jungle Crow, but see Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor and/or passage migrant varying in abundance year to year. West Pakistan and India, in NE. Baluchistan, NW. frontier dists. (Mardan to Kohat), Hazara, Chitral, Gilgit, Kashmir and south to the Rawalpindi plateau and Sialkot. Regular visitor to the Punjab plains north of the Salt Range: occurs about Gujranwala, Lahore and Lyallpur, occasionally east to Hoshiarpur and Ludhiana, c. 76°E. Affects cultivation round human habitations — irrigated fields etc.

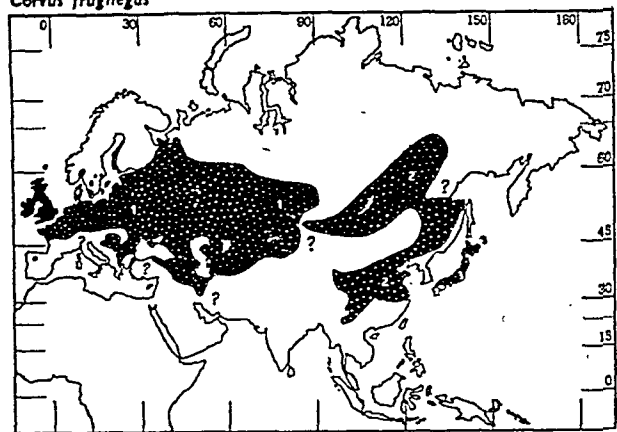
Extralimital. Breeds in Europe (except the northernmost parts and the Mediterranean region) and a large part of western and central Asia. Winters also in N. Africa, Egypt, Arabia, Iraq, Afghanistan, etc. (For details see Vaurie, 1959, 2: 167.)

GENERAL HABITS. Arrives in October-November; mostly gone by end March, a few immature birds (with feathered faces) remaining till as late as mid April. In winter keeps in large flocks usually associated with jackdaws and starlings, grubbing in ploughed and irrigated fields or scavenging on outskirts of towns and cantonments. Roosts communally at night in vast congregations in large trees and groves, like the House Crow, converging on them at sunset in a succession of loose flocks from all directions. The roosts are often shared by Jackdaws and House Crows.

FOOD. Practically all-embracing, but is less of a municipal scavenger. Ascertained food items in an agricultural area in West Pakistan (Lyallpur) included wheat and other grains, tender shoots of gram, and other vegetable

CROWS, MAGPIES, JAYS

249

Corvus frugilegus

matter; insects: ants, gram caterpillars, cutworms, beetles, etc. (Husain & Bhalla, JBNHS 39: 832).

VOICE AND CALLS. Normal calls *kaa, kaa* similar in type to the House Crow's but mellow and distinctive. Also possesses a large vocabulary to express various emotions and situations.

BREEDING. Extralimital. Nest, eggs and breeding biology as in the House Crow (1049), but nests gregariously in large colonies or rookeries.

MUSEUM DIAGNOSIS. Adult. Chin and upper throat more or less covered with greyish brown down-like feathers. Rest of plumage glossy black; gloss on head purple-blue, on rest of upper- and underparts purple-violet, on primaries and lateral rectrices greenish. Wing-formula: 2nd primary (as.) = 5th or 6th (cf. Carrion Crow, 1058).

Juvenile. Upperparts brownish black with slight gloss on head, mantle and scapulars which are more bluish less purple; underparts brownish black practically glossless; nasal bristles well developed; face feathered; otherwise as adult. Post-juvenal moult of body, lesser, median, and innermost greater coverts.

First-year birds with face feathered; face moulted January to May, nasal bristles being the last to go (HW).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	301-314	61-65	52-61	165-177 mm
♀♀	291-309	57-64	50-56	157-180 mm (HW)

Weight 1 ♀ 13½ oz. (= c. 383 g) — HW.

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs, feet and claws black.

CROWS, MAGPIES, JAYS

251

distance like clouds, commute very long distances daily to and from their outlying feeding grounds shortly before sunrise and at sunset, these spectacular mass flights being one of the sights of Srinagar town during the winter months. Flight less leisurely-looking than House Crow's, and with quicker wing-flaps.

FOOD. Insects, larvae, slugs, worms, small frogs, small fruits, cereal grains, and occasionally eggs and nestlings of small birds. Feeds mostly on ground; flying insects (winged ants, termites) sometimes captured in the air, fly-catcher style, by awkward vertical leaps and volplaning back to perch, like a bulbul or starling; also takes crumbs and untidy picnickers' leavings. Is more or less omnivorous, but less of a town scavenger and normally also avoids carrion.

VOICE AND CALLS. A single note *chack* or *jack* or *kwai*, softer and more musical than other crows'; sometimes varied by quick repetition or in different keys.

BREEDING. Season, in Kashmir April to June, principally May. Nest an untidy collection of sticks and twigs lined with wool, rags, hair, grass and other rubbish. Built in roofs of houses or in holes in walls, ruined buildings, earth cliffs, etc., or in hollows in trunks and boughs of ancient chenar (*Platanus*) and suchlike trees; sometimes several nests in the same tree. In smaller holes the sticks are dispensed with, only the softer materials used. Eggs, 4 to 6 (rarely 7), pale bluish sea-green, sparsely speckled and spotted with dark brown and purple. Average size of 55 Kashmir eggs 35.1 × 24.8 mm (BBO). Both sexes take part in building the nest and feeding the young. Incubation by both sexes but apparently mostly by female. Incubation period recorded as 17-18 days. The birds evidently pair for life; even when in flocks during non-breeding season pairs often keep and forage together.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Juvenile. Like adult, but body plumage dull dark brown; little gloss on lesser and median coverts, and less gloss on rest of wings and tail; flight-feathers browner.

First-year birds distinguished by less gloss on wings and tail and browner flight-feathers, especially when worn; hind-collar usually not prominent (HW).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	230-250	32-34	c. 44	c. 135 mm (Baker)

Weight 1 ♂ 265; 1 ♀ 235 g (Paynter).

COLOURS OF BARE PARTS. Iris pale greyish white. Bill, legs, feet and claws black.

CORVUS MACRORHYNCHOS Wagler

The races of the Jungle Crow within our limits show rather unsatisfactory and clinal distinctions. There is a gradual intergradation from a small-billed bird in Ceylon to large birds with comparatively small bills in the Himalayas and a medium-sized bird with stout deeply bowed bill in Bengal. Examples can seldom be confidently assigned to a particular race without knowledge of their provenance. Individual variation is great, and responsible for the lengthy discussions and divergent conclusions reached by earlier authors. Eastward, in the Australasian Region, confusion is still more confounded! However, *C. m. intermedius* and *C. m. tibetensis* of the higher Himalayas

CORVIDAE

250

1053. Jackdaw. *Corvus monedula monedula* Linnaeus

Corvus monedula Linnaeus, 1758, Syst. Nat., ed. 10, 1: 106 (Sweden)

Corvus soemmerringii Fischer, 1811, Mém. Soc. Imp. Nat. Moscou 1: 3 (Moscow)

Baker, FBI No. 15, Vol. 1: 36

Plate 70, fig. 3

LOCAL NAME. *Kāṭā* (Kashmiri).

SIZE. Dove; length c. 33 cm (13 in.).

FIELD CHARACTERS. A small slaty black crow — a passable miniature of House Crow in general effect — distinguished by a broad silvery grey hind-collar, rather short thick neck and greyish white eyes which give it a distinctly 'wall-eyed' look. Sexes alike.



In flight the short thick neck with a slight hump, shorter bill, quicker wing-beats and fanned-out tail (rather pigeon-like in silhouette) distinguish it from House Crow.

STATUS, DISTRIBUTION AND HABITAT. Resident and/or winter visitor and passage migrant. Breeds abundantly in Kashmir (in main Srinagar valley, Lolab and side valleys) normally between c. 1700 and 2100 m. Disperses after breeding, c. August, adults and young then straggling up to the higher margs or upland pastures above tree-line, to c. 3500 or higher. Chiefly winter visitor and/or passage migrant in N. Baluchistan (Quetta Valley), along the W. Pakistan-Afghanistan border, Chitral, Gilgit, Ladakh, Punjab; most abundant, though in variable numbers year to year, in the Rawalpindi and Jhelum districts arriving c. mid October, departing towards end February or early March; occasionally reaches the plains near Amritsar and Ambala. Frequents damp meadows and pastures, camping grounds, neighbourhood of cultivation and habitations (e.g. in the Vale of Kashmir) with ancient chenar groves and the like, and willow beds bordering the waterways.

Extralimital. N. Afghanistan, Russian Turkestan, Tien Shan. The species in several rather ill-defined races ranges widely from the Yenisey westward through Siberia, W. Asia and Europe.

GENERAL HABITS. Gregarious, sociable and inquisitive; can be both tame and impudent or excessively shy and alert as conditions dictate. Usually keeps in flocks, sometimes of huge proportions, consorting with rooks and other crows and starlings to grub on damp pastureland and flooded meadows. Struts about with a characteristic upright carriage on its longish legs with the short tail held well off the ground. Digs into the turf for food with energy and purpose, often while still partially blanketed by snow. Commonly in attendance on grazing sheep and cows or following the plough in company with starlings and mynas for the insects and grubs turned up with the soil. Roosts communally in hollow tree-trunks, holes in old houses and walls — also in willow-beds and groves of ancient trees, often sharing these with House Crows. In winter enormous close-packed hordes, looking in the

CORVIDAE

252

are our largest birds, while *C. m. culminatus*, especially from the southernmost part of the Peninsula and Ceylon, is the smallest. *C. m. leucillanti* of Bengal, Assam and the Andamans is intermediate in size and has, moreover, a heavy deeply bowed raven-like bill. (For a discussion of the Indian races see Whistler & Kinnear, 1932, JBNHS 35: 510-13; of the Burmese-Javanese forms Mayr, E., 1940, *Ibis*: 694-5.) Cf. also Vaurie, C., 1959, 2: 168-70.

Key to the Subspecies

	Page
A Wing ♂ ♀ 320-380 mm; bill very large and raven-like.....	256
B Wing ♂ ♀ 280-335 mm; bill stout and more arched; plumage more glossy black.....	254
C Wing ♂ ♀ 292-378 mm; bill comparatively weak; plumage dull greyish black.....	252
D Wing 260-319 mm; bill strong, plumage black and glossy.....	256

1054. Himalayan Jungle Crow. *Corvus macrohynchus intermedius* Adams

Corvus intermedius Adams, 1859, Proc. Zool. Soc. London: 171

(Kashmir, Daghai and Simla, restricted to Kashmir by Stresemann, 1916,

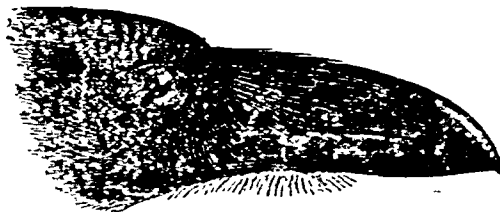
Verh. Orn. Ges. Bayern 12: 282)

Baker, FBI No. 7, Vol. 1: 28

LOCAL NAMES. *Kār*, *Dira kār*, *Pantsāl kār* (Kashmiri); *Kāk* (Paharia).

SIZE. House Crow +; length c. 50 cm (20 in.).

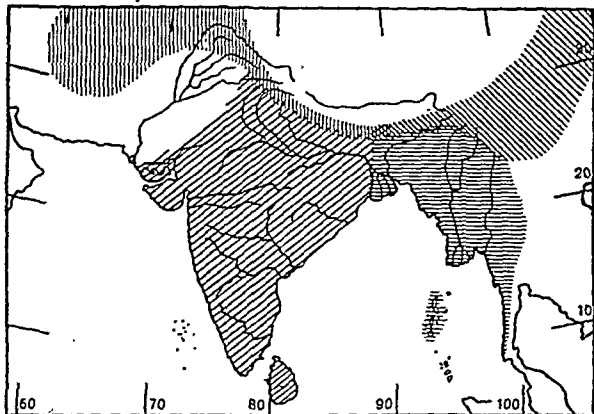
FIELD CHARACTERS. A large uniformly black crow with metallic purplish sheen and heavy black bill. Sexes alike.



× c. 1

Caw deeper and hoarser than House Crow's or of Jungle Crow of the plains (*culminatus*) — more raven-like. In overhead flight tail distinctly wedge-shaped in this race. Indistinguishable from Carrion Crow unless in the hand. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, with slight summer-winter altitudinal movements. West Pakistan and India from Baluchistan north through NW. frontier area and eastward along the Himalayas from Gilgit, Chitral and Kashmir through Himachal Pradesh, Garhwal, Kumaon,

Corvus macrorhynchos

Distributional ranges

culminatus (1057)

leuallantii (1055)

tibetosinensis (1056)

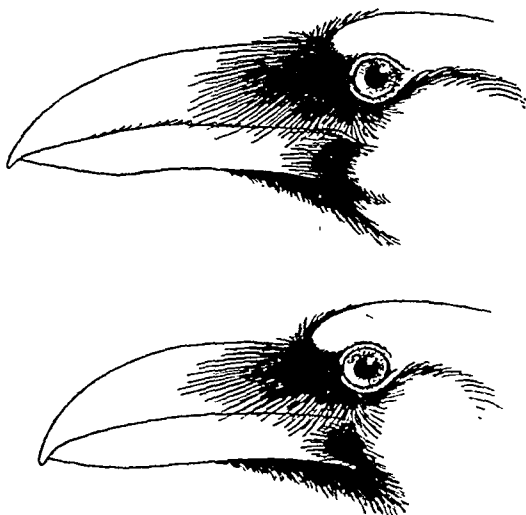
intermedius (1054)

Nepal, Darjeeling dist. (W. Bengal), Sikkim and Bhutan¹, between c. 1800 and 4500 m. Affects oak-rhododendron-conifer forest biotope keeping around upland hamlets up to tree-line, and shepherds' encampments and alpine pastures beyond. Recorded following Everest climbers up to their camp at 6400 m (Hingston, JBNHS 32: 320).

Extralimital. Adjacent Afghanistan (Safed Koh and Kafirstan) to southern Tadzhikistan and southern Transcaspia; reportedly also to eastern Iran in the Paropamisus and Scistan (Vaurie).

GENERAL HABITS. Largely as in 1057, q.v., but is pre-eminently a mountain bird hence with consequential peculiarities. In summer follows herds of goats and sheep driven to upland pastures, and accompanies traders' caravans to the highest Himalayan passes. Small parties, sometimes larger flocks of up to 50 birds or so, associate with choughs at the higher altitudes. Like them is extremely fond of gambolling high up in the air over deep valleys, switchbacking and gliding on outspread motionless wings (tips upturned), tumbling, side-slipping, nose-diving and zooming effortlessly upward again, taking full advantage of every wind-current and eddy. Pairs or trios will often perform a variety of other spectacular aerobatics — 'formation-flying', one bird slightly behind another or wing-tip to wing-tip, wheeling and banking in unison with sudden twists and turns; this even in the coldest weather and all purely for fun. Is quite at

¹ Birds from NE. Nepal (Khumbu), and presumably the Sikkim-Darjeeling area, are intermediate between *intermedius* and *tibetosinensis*; those from NW. Bhutan tend more towards *tibetosinensis*.



Above, *C. m. culminatus* (1057)
Below, *C. m. leuallantii* (1055)
x c. 1

Extralimital. Burma, northern Thailand.

GENERAL HABITS, FOOD, VOICE AND CALLS. Largely as in 1057, q.v. A deep, heavy caw, less hoarse or 'wooden' than of Himalayan birds but of a markedly different 'dialect' from Indian *culminatus* (1057). Call of Manipur birds noted as 'a short, quick-repeated distinctly nasal quānk, quānk, etc. reminiscent of Walt Disney's Donald Duck!' (SA).

BREEDING. Season, overall November to April in W. Bengal, Assam and E. Pakistan, chiefly January to March. *Nest, eggs* and breeding biology as in the peninsular form *culminatus* (1057).

MUSEUM DIAGNOSIS. A large bird with a markedly heavy, deeply-bowed bill. Plumage deeper and more glossy black than in other forms. Base of nape-feathers dusky grey (darker than in *intermedius*).

MEASUREMENTS (Bengal)	Wing	Bill (from skull)	Tarsus	Tail
♂♂	308-335	61-69	53-59	181-197 mm
♀♀	280-329	55-65	53-57	165-192 mm
				(HW, RAF)

Weight 3 ♂♂ 554-626; 9 ♀♀ 419-566 g (Paynter).

COLOURS OF BARE PARTS. As in 1057.

home in deep snow even in mid winter, e.g. at Gulmarg (Kashmir) c. 3000 m, scrounging round restaurants and ski-ing huts etc. and then very tame, feeding almost from the hand.

FOOD. As in 1057, all-embracing: both animal and vegetable matter.

VOICE AND CALLS. Markedly deeper and hoarser than of *culminatus* of the plains; guttural and rather raven-like. Rendered by Whistler as *help, help, help!* When sitting completely relaxed, utters a peculiar *krredk* in the nature of a soliloquy, as of a hollow bamboo drawn across the wooden spokes of a wheel (or like a wooden rattle) with many amusing variations but all of same tone quality (SA).

BREEDING. Season, March to May, chiefly April and May. *Nest*, as in 1057, of sticks thickly lined with wool and hair placed 7 to 18 m up in a poplar, deodar or similar tree at edge of forest; usually up to c. 3000 m altitude, rarely even to 4000 m. *Eggs* (c/4 or 5) as in 1057. Average size of 14 Kashmir eggs 42.5 x 29.7 mm (BBO). Breeding biology as in 1057.

MUSEUM DIAGNOSIS. A large bird with comparatively weak bill. Plumage comparatively dull greyish black with little gloss on hindneck and underparts. Base of nape-feathers usually whiter than in the other forms. Nasal plumes well developed but at base of culmen, in centre, rather short and all lying parallel (cf. Carrion Crow, 1058). Throat hackles moderate and not reaching pectoral region (cf. Carrion Crow). Nape and pectoral region silky and glossless.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	311-378	54-73	53-62 (65)	194-242 mm
♀♀	292-343	54-65	51-59	174-224 mm
				(HW, Stresemann, SA)

Weight 7 ♂♂ 460-582; 10 ♀♀ 392-495 g (RAP).

COLOURS OF BARE PARTS. As in 1057.

1055. Eastern Jungle Crow. *Corvus macrorhynchos leuallantii* Lesson

Corvus leuallantii Lesson, 1831, *Traité d'Orn.*: 328 (Bengal)

Corvus andamanensis Tytler = Beavan, 1866, *Ibis*: 420 (Port Blair, Andamans) Baker, FBI Nos. 5 & 8, Vol. 1: 27, 29

LOCAL NAMES. *Kāgh* (Bihar); *Dānd kāk*, *Jāngli kowwā* (Bengali); *Kāk sorāi*, *Jāngla kāk sorāi* (Assamese); *Dhora kaari* (Assam, Nowgong); *Hagroni dao-kāk* (Cachari); *Inrai kāk* (Kacha Naga); *Vo kāk* (Kuki); *Kiēk* (Manipur).

SIZE. House Crow +; length c. 48 cm (19 in.).

FIELD CHARACTERS. As of 1054 and 1057. A large glistening jet-black crow with heavy black bill. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, with slight local altitudinal movements. Eastern India in W. Bengal, lowlands of SW. Bhutan, Assam, Nagaland, Manipur; also E. Pakistan and Andaman Islands. Plains, duars and foothills, normally up to c. 1000 m (Gangtok, c. 1850 m). A specimen from eastern Nepal terai (Fleming, JBNHS 65: 330). Affects a forest biotope — outskirts of forest villages and outlying hamlets, as well as of towns and cities.

1056. Tibetan Jungle Crow. *Corvus macrorhynchos tibetosinensis* Kleinschmidt & Weigold

Corvus macrorhynchos tibetosinensis Kleinschmidt & Weigold, 1922, *Abh. Ber. Zool. Mus. Dresden* 15 (3): 2 (Southeast Tibet in the Sifan region)

Cf. Ali, Sâlim & Ripley, S. D., 1949, JBNHS 48: 36-7 Not in Baker FBI

LOCAL NAMES. *Ulkā*, *Ōlā* (Bhutaneese); *Ulakpho* (Lepcha).

SIZE. House Crow +; length c. 50 cm (20 in.).

FIELD CHARACTERS. As of 1054: a large uniformly jet-black crow with heavy black bill, deep hoarse raven-like caw and rather wedge-shaped tail in overhead flight, similar to *intermedius* (1054), q.v. Sexes alike. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, with some altitudinal movements: N. Sikkim, N. Bhutan¹ and NEFA in the Mishmi Hills. A high-elevation form met with up to c. 3800 m. Affects forested uplands chiefly around clearings, yak pastures and habitation.

Extralimital. SE. Tibet adjoining NEFA, Ningsia (Aia Shan), Kansu and Tsinghai, south through Sikang and mountains of W. Szechuan to N. Yunnan, NE. Burma (Vaurie).

GENERAL HABITS, FOOD, VOICE AND CALLS. Like the western mountain form *intermedius* (1054) in its aerobatics etc.; like it also has a much hoarser, deeper and more 'wooden' call than *culminatus* of the plains.

BREEDING. Not recorded within our limits. Doubtless as in 1054.

MUSEUM DIAGNOSIS. Plumage very black and glossy; bases of nape-feathers from grey to dusky. Bill large and raven-like, totally different from *intermedius*.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
6 ♂♂	325-380	69-73	62	201-260 mm
			(1 mud)	
12 ♀♀	320-341	60-67	57-59	185-240 mm
			(4 mud)	
				(RM, SDR, BB, SA)

Height of bill 21-26 mm (Vaurie)

Weight 4 ♂♂ 560-650; 7 ♀♀ 450-565 g (SA, BB).

COLOURS OF BARE PARTS. As in 1057 and the other races.

1057. Indian Jungle Crow. *Corvus macrorhynchos culminatus* Sykes

Corvus culminatus Sykes, 1832, *Proc. Zool. Soc. London*: 96

(Dukhun = Poona vide Whistler & Kinnear, 1932, JBNHS 35: 512)

Baker, FBI No. 6, Vol. 1: 28

Plate 70, fig. 7

LOCAL NAMES. *Kāla kowwā*, *Pādhāri kowwā*, *Jāngli kowwā* (Hindi); *Kāgh* (Bihar); *Dīm kaulā* (Marathi); *Gimāri Lāgdō* (Gujarati); *Aīlā kākī* (Telugu); *Andam kākī*, *Karun kākī* (Tamil); *Tennā kākī*, *Velī kākī* (Malayalam); *Kākā*, *Kepwā* (Sinhala); *Kākā*, *Kākām* (Tamil, Ceylon).

¹ See footnote p. 253.

CROWS, MAGPIES, JAYS

257

SIZE. House Crow +; length c. 48 cm (19 in.).

FIELD CHARACTERS. A uniformly glossy jet-black crow with a heavy black bill and deep guttural voice. Sexes alike. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. The Gangetic Plain, all peninsular India south to Kanyakumari, and Ceylon; from the sea coast up to c. 2000 m in Ceylon and c. 2300 m in S. India (Nilgiris — breeding). Virtually absent from desert and semi-desert areas west of Delhi. Affects well-wooded country, outskirts of forest villages and hamlets, as well as of towns and cities.

GENERAL HABITS. Less gregarious and sociable than House Crow, usually keeping singly or in pairs and small scattered parties; occasionally larger gatherings where food abundant. Chiefly a rural bird but everywhere being increasingly lured into urban surroundings and commensalism with man by prospects of profitable scavenging. Less sophisticated, cunning or alert than House Crow, but curious and inquisitive as rest of family, and as audacious on occasion. Is a regular marauder of birds' nests, and often becomes a serious menace to poultry keepers as chicken-lifter, especially so when rearing its own nest-young. Serves as a useful indicator to sportsmen and vultures of the presence of tiger- or panther kills hidden within forest. Has the usual evening and morning flights to and from communal roosts which are often shared with House Crows, mynas and other birds. In keeping with family tradition collects in disorderly rabbles to 'weep' noisily over brethren who have come to grief. Frequently indulges in puckish pranks, apparently with no object other than fun, such as surreptitiously tweaking its fellows' wing-tips or toes, or a sleeping dog's tail, and enjoys chivvying and annoying birds of prey and any other creatures that can be subjected to such indignity. Normal flight like House Crow's, with deliberate rather shallow wing-beats. Aerobatics, chiefly in the hilly districts, less frequent and less spectacular than in its Himalayan congeners, qq.v. Peculiar short flights commonly observed with neck outstretched, wings held vertically back to back above body level, only their tips flapping through a small arc, the bird cawing the while in a high-pitched key. The significance of this behaviour not properly understood.

FOOD. Practically all-embracing: animal as well as vegetable matter. Items recorded include carrion (from animal carcasses and audaciously filched from vulture nest-young regardless of protesting parents); garbage and offal; birds' eggs, young and sickly birds, chicks of poultry; rats, mice, squirrels; lizards (*Calotes*); and frogs; land and sand crabs (*Paratelphusa* and *Ogypode*); centipedes; insects [dung and other beetles, locusts, grasshoppers, moths, ants (*Camponotus*), winged termites clumsily hawked in air, swarming caterpillars, etc.]. Wild and orchard fruits; cereal grains (*Sorghum*, *Oryza*, *Pennisetum*, *Triticum*, *Zea*, etc.), entire cobs often wrenched off; groundnuts (*Arachis*) dug up from fields; flower-nectar and petals (*Salmatia*, *Bombax*, *Erythrina*, *Butea*, *Grevillea*, *Spathodea*, etc.).

VOICE and CALLS. More raucous and guttural than House Crow's, and distinct in 'dialect' from that of the mountain-inhabiting forms *intermedius* and *tibetensis*: less hoarse and 'wooden'. Like House Crow has a wide vocabulary expressive of various moods and situations (over 10 distinct calls noted). When completely relaxed and resting on a shady

CROWS, MAGPIES, JAYS

259

1058. Eastern Carrion Crow. *Corvus corone orientalis* Eversmann

Corvus orientalis Eversmann, 1841, Add. Pallas Zoogr. 2: 7
(Naryn R., Turkestan)

Baker, FBI No. 4, Vol. 1: 24
Plate 70, fig. 8

LOCAL NAMES. *Kelāgh* (Persian); others same as for Jungle Crow (1054) where applicable.

SIZE. House Crow +; length c. 47 cm (18½ in.).

FIELD CHARACTERS. A glossy jet-black crow, indistinguishable from Jungle Crow unless in the hand. Sexes alike. See Distribution and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident and/or winter visitor in small numbers; from c. 2400 to 3600 m. N. Baluchistan (Quetta, winter; Shinghar and Takht-i-Suleiman, breeding), NW. frontier districts (upper Kurram Valley, breeding; Bannu, winter), Gilgit (breeding), Ladakh (breeding in Indus Valley from c. Kargil to Himis, and side valleys — Shingo, Suru), Baltistan (Braldu Valley and Shigar, winter; possibly breeding), Kashmir north of main Himalayan Range (winter; breeding?). Affects rather open barren country with patches of irrigated cultivation and *chilgoza* pine and alpine forest; often keeping near nomadic encampments and upland habitations.

EXTRALIMITAL. Siberia from the Yenisey to Anadyr and from Kashgaria, Afghanistan and E. Turkestan through N. Mongolia to China and N. Vietnam. (For details see Vaurie, 1959, 2: 171-2.) It is the breeding crow of most parts of Afghanistan, hybridizing with Hooded Crow (1058a) in a zone along the northwestern border of the country (Paludan, 1959). The species, in other races, has a wide range in Europe east of c. 10°E., exclusive of Scandinavia.

GENERAL HABITS. Usually shy and unobtrusive, keeping in pairs and feeding around upland settlements and cultivation, and traders' and nomadic shepherds' encampments.

FOOD. More or less omnivorous as other crows. Ascertained items include barley, maize, insects, caterpillars and other larvae.

VOICE and CALLS. Very different to that of Jungle Crow: harsher and more raven-like in comparison. When bird resting and relaxed, said to utter another, softer, note 'in meditative fashion'.

BREEDING. *Season* (in N. Baluchistan c. 2500 and Ladakh c. 3300 m) April-May. *Nest*, of typical crow pattern, a platform of sticks and twigs mixed with a little earth, lined with hair, wool and sometimes a few feathers; built c. 8-10 metres up in *chilgoza* pine (*Pinus gerardiana*), chenar (*Platanus*), willow or poplar trees usually growing near habitations. *Eggs*, 4 or 5, indistinguishable from Jungle Crow's (1057). Average size of 21 Ladakh eggs 42.5 × 28.1 mm (BBO). For bionomics and breeding biology etc., of the slightly smaller nominate race, see Witherby, 1938, 1: 14-17.

MUSEUM DIAGNOSIS. Gloss much as in Jungle Crow (1054) but variable on body; on the whole less glossy. Throat more violet-blue than greenish blue. Bill smaller and weaker than Jungle Crow's and lacking the rounded arch to the culmen which gives it that heavy appearance. Nasal plumes well developed, those at base of culmen inclined to cross over from each side of the centre (cf. Jungle Crow). Base of nape-feathers pale grey but variable. Hackles of throat moderate and extending to pectoral

258

CORVIDAE

branch emits, in the nature of a soliloquy, some curious soft and amusing gurgling chuckles and short musical croaks *kaa-kāk* . . . *kaa-kāk* etc., or just a single *kaa*, from time to time, head lowered neck stretched horizontally, bill open, and throat puffed with the feathers standing away. The wing-tips stick out in a point behind rump, and the tail bobs deeply at each call. These vocalizations are responded to by mate nearby with short undertone croaks with throat puffed and a peculiar retching motion. This chiefly with approaching breeding season.

BREEDING. *Season*, overall February to June varying locally: chiefly March-April in northern India, earlier in the south; in Ceylon April to September, chiefly May to July. *Nest*, a platform of sticks and twigs with a neat central cup, c. 15-18 cm in diameter and 10-14 cm deep, lined with coir, tow, hair or wool. Placed 7 to 10 metres up in a forking branch or crotch in a mango, casuarina, *Millingtonia*, sheesham or suchlike large tree (sometimes in the head of a coconut or palmyra palm) growing on the outskirts of habitation. *Eggs*, 3 to 5, similar to those of House Crow but larger: pale blue-green speckled and streaked with brown. Average size of 60 eggs 38 × 28.1 mm (Baker). Both sexes partake in building the nest, incubation and tending the young though major share in incubation believed to be female's; period 17-19 days, normally 18; young fledge and leave nest in 3 or 4 weeks. (For more details of breeding biology see Lamba, B. S., 1965, JBNHS 62: 425-33.) Nests commonly brood-parasitized by Koel (*Eudynamis scolopacea*, 590) though less frequently than House Crow's. Nine koels' eggs recorded in a single nest along with 4 of the owner's (Jones, JBNHS 24: 370).

MUSEUM DIAGNOSIS. A small bird with a comparatively strong bill. Plumage black and glossy. Base of nape-feathers dusky.

First-year birds retain shorter (brownier) wings and tail unmoulted from juvenal plumage. No difference in size of bill and tarsus, but age for age female smaller in all measurements.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	273-319	55-67	49-59	156-189 mm
♀♀	260-301	52-63	49-55	147-183 mm (HW, SA)

Weight 3 oo? 320-352 g (SA).

COLOURS OF BARE PARTS. Adult. Iris brown. Bill black; mouth slaty black. Fledgling. Iris bluish grey (like jackdaw's). Gape, baldish chin, and mouth pink; tongue blotched with black.

CORVUS CORONE Linnaeus

Key to the Subspecies

Plumage all black.....	<i>C. c. orientalis</i>
Plumage contrasting drab-grey and black.....	<i>C. c. sharpii</i>

260

CORVIDAE

region (*contra* Jungle Crow). Second primary (as.) = 6/7 (cf. Rook, 1052). Outer rectrices rather graduated.

JUVENILE. Glossy black of adult replaced by dull blackish brown. Body plumage, lesser and median coverts, wings and tail slightly less glossy than in adult, but the distinction increased by wear when wings and tail also distinctly browner; outer rectrices narrower and more pointed.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
Siberia			
10 ♂♀	345-366	59-69	200-218 mm (Vaurie)
Afghanistan			
1 ♂	345	55	206 mm
4 ♀♀	320-335	48-52	195-203 mm (Paludan)

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs, feet and claws black.

1058a. Eastern Hooded Crow. *Corvus corone sharpii* Oates

Corvus sharpii Oates, 1889, Fauna Brit. India, Bds. 1: 20

('Siberia, Turkestan, Afghanistan and a portion of India').

Type from Mardan, Punjab, *sic* Ticehurst, 1926, JBNHS 31: 93)

Baker, FBI No. 10, Vol. 1: 32

Plate 70, fig. 9

LOCAL NAMES. None recorded.

SIZE. House Crow +; length c. 47 cm (18½ in.).

FIELD CHARACTERS. Unmistakable with any other crow by its pale drab-grey mantle and underparts. Head, wings, tail and rest of plumage glossy black, the crown contrasting sharply with grey hindneck. Sexes alike. See Distribution and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Rather uncommon but regular winter visitor, arriving about November, departing by end March. NW. frontier districts of W. Pakistan (Peshawar, Mardan, Hazara, Bannu, Kohat). Also Gilgit, Ladakh, Baltistan, Kashmir (rare); between c. 2000 to 3500 m. Affects open barren country with patches of irrigated cultivation and upland habitations.

EXTRALIMITAL. Breeds in western Siberia from the Urals to Yenisey R. and Lake Baikal and to W. and N. Iran, N. Afghanistan, W. Turkestan. Winters also in S. Afghanistan, N. Baluchistan (?), S. and E. Iran, etc. (For details see Vaurie, 1959, 2: 172-3.) Hybridizes with Carrion Crow (1058) in a zone along the northwestern border of Afghanistan (Paludan 1959).

GENERAL HABITS. Very like Carrion Crow's. Keeps in pairs or small parties, often in association with it and with rooks, but prefers the wilder more open parts.

FOOD. Varied, comprising both animal and vegetable matter — insects, maize, barley, etc.

VOICE and CALLS. Doubtfully distinguishable from Carrion Crow's.

BREEDING. Extralimital. Largely as 1058.

CROWS, MAGPIES, JAYS

261

MUSEUM DIAGNOSIS. Nasal plumes (black) well developed and, as in Carrion Crow (q.v.) inclined to cross over culmen from either side of its base. Whole head, neck, central part of upper breast, throat, wings, under wing-coverts and thighs black, more or less glossy; upper tail-coverts black mixed with grey. Rest of plumage drab-grey; shafts of feathers of upperparts black, of underparts brown. Gloss on crown and throat purple-blue as also on lesser, median, and greater coverts and secondaries; gloss on primary-coverts and primaries greenish, on tail purplish blue, the laterals more greenish. Structure and wing-formula ($2 = 6/7$) as in Carrion Crow.

Juvenile. Like adult but head, throat and upper breast dark brown; the drab-grey of adult slightly paler and less pure; thighs sooty. Postjuvenile moult of body, and lesser and median coverts.

First-year bird hardly distinguishable from adult; but when worn, wings less glossy and browner.

MEASUREMENTS

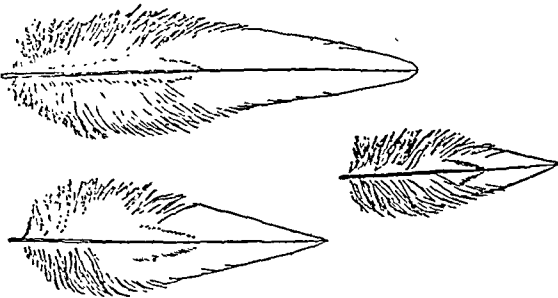
	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	320-340	47-54	c. 55	c. 200 mm (Baker)

COLOURS OF BARE PARTS. Iris brown. Bill, legs, feet and claws black.

CORVUS CORAX Linnaeus

Key to the Subspecies

A	Plumage wholly black	Page
1	Wing ♂ ♀ c. 400-450; bill c. 70 mm; throat hackles short and pointed	C. c. <i>subcorax</i> 262
2	Wing ♂ ♀ c. 450-480 mm; bill c. 80 mm; throat hackles long and blunt	C. c. <i>tibetanus</i> 264
B	Plumage brown on neck, upper back and scapulars; wing ♂ ♀ c. 360-415 mm	C. c. <i>ruficollis</i> 265



(Above) Throat-hackles of *C. c. tibetanus* (1060) and (below) *C. c. subcorax* (1059).
(Right) Throat-hackle of *C. c. ruficollis* (1061), $\times c. 1$

CROWS, MAGPIES, JAYS

263

Stragglers recorded from Vidarbha in Maharashtra (D'Abreu, JBNHS 38: 95) and Mhow in Madhya Pradesh (Briggs, *ibid.* 35: 382). Affects the vicinity of towns and villages as well as outlying hamlets and nomadic herders' settlements in desert and semi-desert canal areas.

Extralimital. Afghanistan and Iran to Syria, Israel and Jordan; Kashgaria and W. Turkestan plains to Transcaspia and Dzungaria. (For details see Vaurie, 1959, 2: 176-7.)

GENERAL HABITS. Less social and gregarious than Rook or House Crow. Usually seen in pairs, but fair numbers will collect where an abundance of food attracts. Commonly joins kites, neophrons and other vultures to feast on animal carcasses. Feeds chiefly on the ground, stalking about with a rather waddling gait or moving in clumsy loping hops. Is curious and inquisitive as other crows and wary and suspicious, but can be bold and audacious on opportunity. Quite tame in out-of-the-way desert habitations and along caravan routes, scrounging for scraps around the nomadic encampments in close proximity of the occupants. Has communal roosts in selected trees often shared with kites and house crows (on old buildings or even the ground in desert tracts) at which considerable numbers will congregate at sunset, flighting in twos and threes from various directions. Flight strong and direct, the stiff wing-quills producing a peculiar creaking noise well likened to the rustle of a silk dress. Occasionally pairs or small parties rise aloft on thermals to circle on motionless wings and disport themselves in remarkable aerobatics. Monogamous, pairing for life, and exceptionally long-lived (one in captivity authenticated to be over 70 years old).

FOOD. All embracing: animal as well as vegetable matter — carrion, eggs and young or sickly birds, small mammals, lizards, fish (left high and dry by receding floods), frogs, insects (locusts, grasshoppers, ants, gram caterpillars, cutworms, beetles and larvae recorded); ripening fruits and cereal grains; kitchen scraps and refuse.

VOICE AND CALLS. A deep, hoarse, frequently uttered *prāk, prāk* reminiscent of a wooden cow-bell. Like other crows has a large vocabulary of variants to express different situations, some calls quite pleasing and musical.

BREEDING. *Season*, December to March, chiefly February. *Nest*, a platform of sticks as in 1060, placed near the top of a solitary tree (*Dalbergia*, *Acacia*, *Prosopis*, *Tamarix* or other) standing in a field; also in gardens and along roadsides. Not colonial. In semi-desert often in stunted trees hardly more than 3 or 4 metres high. Nests also built near tops of rock- or earth cliffs; in many cases the same site used year after year. Unconventional sites such as the platform of a railway signal tower and iron girders of a railway bridge have been recorded. *Eggs*, $c/4-6$, as in 1060. Average size of 100 eggs 50.7×33.6 mm (Baker). Both sexes take part in all the domestic chores. Incubation period said to be 17-18 days but requires confirmation.

MUSEUM DIAGNOSIS. Whole plumage steely blue-black, becoming somewhat brownish on nape, mantle and throat with wear; then separable from *ruficollis* (1061) by larger size. Bases of nape-feathers grey. Throat hackles shorter and sharply pointed *v.* long and blunt in the larger subspecies *tibetanus* (1060). Nasal bristles well developed. 2nd primary (as.) = 5.6.

First-year birds, especially when worn, have browner wings and tail, and less gloss.

262

CORVIDAE

1059. Punjab Raven. *Corvus corax subcorax* Severtzov

Corvus subcorax Severtzov, 1872, *Verlik. Turkest. Zhivotn.*: 115 (NW. and SE. Turkestan)

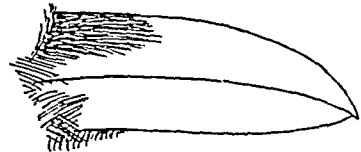
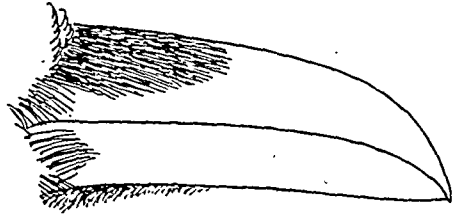
Corvus laurentei Hume, 1873; Lahore to Yarkand: 235 (Punjab) Baker, FBI No. 1, Vol. 1: 21

Plate 70, fig. 11

LOCAL NAMES. *Dōrkāk* (Hindi); *Dodā kaang* (Punjab); *Takru kaang* (U. Sind).

SIZE. Kite +; length c. 69 cm (27 in.).

FIELD CHARACTERS. An enlarged heavy replica of Jungle Crow: glistening jet-black with massive bill and hoarse wooden bell-like caw. Sexes alike.



Above, *C. corax subcorax* (1059)
Below, *C. corax orientalis* (1058)
 $\times c. 1$

In flight large size, peculiar creaking noise of wing-quills and wedge-shaped outline of tail very striking.

STATUS, DISTRIBUTION AND HABITAT. Locally resident (breeding) and/or winter visitor in variable numbers. N. Baluchistan (Quetta Valley), Sind (Jacobabad — abundant, Khairpur, Nawabshah, Sukkur, Thar Parkar districts, Khirthar Range), Punjab (Bahawalpur, Hissar, Ludhiana, Batala dists., Salt Range and foot of outer Himalayas up to c. 600 m, only occasionally higher*), NW. frontier districts (Kohat, Rawalpindi, Peshawar), W. Rajasthan (Jaisalmer, Jodhpur, Bikaner dists., Sambhar Lake, Ajmer), Delhi (occasional, rare), Kutch (borders of Great and Little Ranns).

* See Eates, K. R., 1939, 'The Distribution and Nidification of the Indian (Punjab) Raven (*Corvus corax laurentei* Hume) in Sind.' JBNHS 40: 747-50.

* There is apparently a wide gap in the distribution of this subspecies and *tibetanus* (1060) between the outer and main Himalayan ranges, which includes all Kashmir proper.

264

CORVIDAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	419-448	66-74	—	—
♀ ♀	399-430	—	—	(HW)
2 ♂ ♂	420, 448	74, 78	65 (1)	229, 242 mm
2 ♀ ♀	410, 413	69, 74	62 (1)	220, 223 mm
				(SA)

Weight ♂ ♂ 2 lb. to 2 lb. 2 oz. (c. 907-964 g); ♀ ♀ 1 lb. 12 oz. to 1 lb. 14 oz. (c. 794-850 g); heaviest bird out of c. fifty 2 lb. 5 oz. (1049 g) — Hume.

COLOURS OF BARE PARTS. Iris brown. Bill, legs, feet and claws black.

1060. Tibet Raven. *Corvus corax tibetanus* Hodgson

Corvus Tibetanus Hodgson, 1849, *Ann. Mag. Nat. Hist.* 3: 203 (Tibet) Baker, FBI No. 2, Vol. 1: 23.

LOCAL NAMES. *Nika uāk*, *Phoro* or *Oro* (Tibetan); *Botin kāv* (Kashmiri); *Foreg* (Lahuli).

SIZE. Kite +; length c. 71 cm (28 in.).

FIELD CHARACTERS. As of 1059; a large, heavy jet-black high-altitude crow with a massive bill. Sexes alike. In overhead flight the wing-quills look slate coloured, contrasting strongly with the jet-black under wing-coverts.

STATUS, DISTRIBUTION AND HABITAT. A high-altitude, essentially trans-Himalayan form normally resident between c. 4000 and 5000 m in typical Tibetan plateau facies or the transition zone. May descend south of the main axis to c. 3000 m in exceptionally severe winters. Ladakh (specially numerous round Leh), Baltistan, Spiti, Lahul, Garhwal, Sikkim, Bhutan, NEFA. Recorded by the First Mt Everest Expedition round their Camp 3 at c. 6400 m (Hingston, JBNHS 32: 320). Affects dry rocky desert country above tree-line.

Extralimital. Pamirs, Altai, Tien Shan, E. Bokhara, Tibet to Kansu, mountains of C. Asia.

GENERAL HABITS. More or less as in 1059 with some differences consequential to high mountain living. Usually met in pairs, but sometimes a dozen or more together feeding in cornfields round upland habitations or Buddhist monasteries. Naturally wild, wary and suspicious but becomes bold and almost familiar when scavenging round villages or searching for scraps and carrion in the vicinity of nomadic traders' encampments. Consorts with griffon vultures and lammergeiers to feast on carcasses of pack animals along the well-worn caravan routes. With a high wind blowing, pairs or trios revel in spectacular aerobicatic gambolling like choughs, gliding in formation at speed, wing-tip to wing-tip or one bird close behind the other, suddenly turning, twisting, sidestepping, looping-the-loop or nose-diving deep into the valley below and then zooming effortlessly up again, quite obviously enjoying the exercise.

GROWS, MAGPIES, JAYS

265

FOOD. As in 1059, practically all vegetable and animal matter that can be procured, dead or alive. Has been observed to stoop on and carry off a full-grown Tibetan Partridge (Ludlow) and to maraud a chough's nest and snatch a half-fledged young regardless of repeated onslaughts by the frantic parents (Osmaston). As with other Corvidae pellets of undigested hair and bones etc. are cast up.

VOICE AND CALLS. As in 1059. The hoarse, wooden bell-like quick-repeated *prük, prük* sometimes sounds in the distance curiously like bits of the call of Banded Jungle Owlet (*Glaucidium radiatum*, 636) minus its resonance. Another common call is a high-pitched guttural, almost musical, *kretük* or *kretah* reminiscent of Brown-headed Gull (*Larus brunnecephalus*, 454).

BREEDING. An early breeder, often while the country still under snow at 3300 to 4500 m and, *vide* Meinertzhagen, sometimes up to at least 5800 m. *Season*, February to early April. *Nest*, a rough platform of sticks with the central cup thickly lined with wool, yak and other mammals' hair. Usually placed near the top of an inaccessible cliff in a cleft or niche in the vertical face. *Eggs*, 3 to 6, variable in shape from broad to long ovals, practically glossless; pale bluish green with smudges and clouds of pale grey and pale sepia, and spots and streaks of deep blackish brown. Average size of 60 Punjab eggs 47.5 × 33.1 (HW), of 14 from SE. Tibet 51.75 × 35.5 mm (Ludlow). Breeding biology as in 1059.

MUSEUM DIAGNOSIS. The largest of our three races. Like *subcorax* (1059) but with the throat hackles strongly lanceolate—long and blunt *v.* short and sharply pointed; bases of nape-feathers dark to medium grey. Also distinguished by its even more massive bill.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
2 ♂♂	461, 477	78, 87 (depth at angle 26, 28)	69, 70	266, 288 mm
3 ♀♀	448-465	73-78 (depth at angle 26-27)	64-69	257-260 mm

(HW)

COLOURS OF BARE PARTS. Iris brown. Bill, legs, feet and claws black. Mouth in adult black; in juvenile whitish fleshy with a black mark on tongue.

1061. Brown-necked Raven. *Corvus corax ruficollis* Lesson*Corvus ruficollis* Lesson, 1830, *Traité d'Orn.*: 329(Cape Verde Islands *vide* Hartert, 1921)

Baker, FBI No. 3, Vol. 1: 23

Plate 70, fig. 10

LOCAL NAMES. None specifically recorded.**SIZE.** Kite ±; length c. 58 cm (23 in.).

FIELD CHARACTERS. As of 1059, but smaller and with the black plumage tinged with brown and a slenderer bill. Sexes alike. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident and/or winter visitor or vagrant (?). Sind (Larkana and Jacobabad dists.). Baluchistan (coastal

WAXWINGS

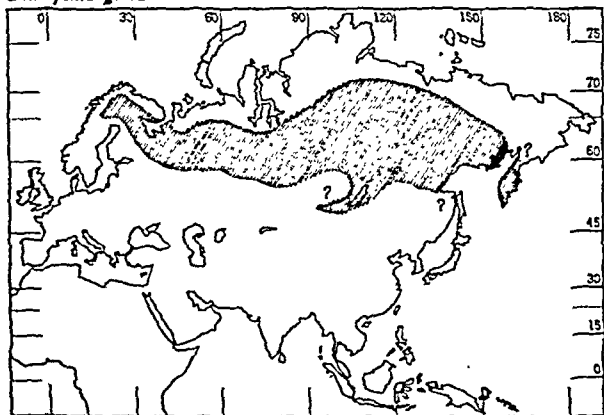
267

FIELD CHARACTERS. A dumpy chestnut and pinkish brown myna-like bird with long full crest and short yellow-tipped tail. Wings dark, boldly marked with white and yellow, with brilliant scarlet drop-shaped waxy tips to the secondaries. Throat black; rump grey; under tail-coverts chestnut.

Bushy crest, black throat, brilliant wing-pattern and yellow-tipped tail make its identity unmistakable.

Female paler with the yellow on wings whiter, and tipping of tail narrower.

STATUS, DISTRIBUTION AND HABITAT. An irregular and erratic vagrant during winter. Odd individual specimens have been collected between January and March (between 2000 and 2500 m) on the NW. frontier (Bannu—Magrath, Samana Range—Whitehead), Baluchistan (Quetta—

Bombycilla garrulus

Breeding

For intralimital winter occurrences see text

Meinertzhagen), Kashmir (Dachigam Nala nr. Srinagar—Ward) and the most recent in Nepal (Kosi-Gandak watershed at c. 3650 m, December, Fleming, Jr., 1968, JBNHS 65: 488). Apart from these only one sight record of a flock 'upwards of 20' at Quetta in March 1947 (T. J. Phillips, JBNHS 47: 160).

Extralimital. Widely distributed in the Holarctic Region, migrating erratically in winter *inter alia* to Asia Minor, N. and SW. Iran. For details see Vaurie, 1959, 2: 178.

GENERAL HABITS. Mainly arboreal, feeding in tree-tops as well as low bushes; occasionally on ground. Keeps in parties and flocks in non-breeding season. The Nepal birds were in association with *Mycerobas carpinus* (1985) and *Turdus r. ruficollis* (1764) in a mixed forest of *Rhododendron*, *Magnolia*, *Juniperus* and *Abies* at c. 3650 m altitude. Usually quiet, and tame and sluggish. Flight strong and direct, rather starling-like.

266

BOMBYCILLINAE

and central Makran, Chagai, Quetta. (scarce, winter). Straggler to Peshawar Valley (BBO), Bahawalpur (?) — SA. Replaces *subcorax* (1059) in pure desert facies.

Extralimital. Afghanistan, desert parts of Transcaspiia to Kyzyl Kum, E. Iran, E. and S. Arabia, Sinai, etc.; also Africa (Sahara south to N. Nigeria etc.). For details see Vaurie, 1959, 2: 173-4.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 1059 and 1060, but is essentially a bird of pure desert facies scavenging round nomadic encampments etc. where quite tame. Replaces the other subspecies ecologically, therefore often found within the same general area or even district.

BREEDING. Very little authentic data. Nests reported from the Sind-Baluchistan frontier hills and the Kalat area of Baluchistan, January and March, but confirmation desirable; also clarification of its status within our limits. Elsewhere nests mostly on ledges of clay cliffs etc.; sometimes on trees: *Eggs* (c/3-6) as of 1059. Average size of 44 eggs 45 × 30.9 mm (Baker).

MUSEUM DIAGNOSIS. Like *subcorax* (1059) but smaller in size and with a brownish (coppery) tinge over whole head and body (accentuated in worn dress). Nasal plumes often shorter and bill usually slenderer.

Juvenile. 'Like adult but with only a trace of the coppery tinge' (Meinertzhagen).

MEASUREMENTS, very variable.

10 ♂♂ (India and Iran) Wing 370-413. Bill (from skull) 62-70; depth at angle 21-25.5 mm (RM)

5 ♀♀ (Makran) Wing 360-372. Bill (from skull) 61-69 mm (CBT)

COLOURS OF BARE PARTS. Iris brown. Bill, legs, feet and claws black.

Family BOMBYCILLINAE

Subfamily BOMBYCILLINAE: Waxwings

For description see Van Tyne, J. & Berger, A. J., 1959: 529; Greenway, J. C., Jr., 1964, Article 'Waxwing' in Thomson, A. L. (ed.), *New Dict. Birds*. London & New York.

Genus BOMBYCILLA Vieillot

Bombycilla Vieillot, 1808, *Hist. Nat. Ois. Amér.* Sept. 1: 88.Type, by monotypy, *Bombycilla cedrorum* Vieillot

Characters as of the Subfamily. Remarkable for its full long crest and the wax-like prolongation of the shafts of the secondaries whence the name Waxwing. Wing long and pointed, of 10 primaries: 1st primary (as.) minute. Tail, of 12 feathers, short and square. Bill short and stout, slightly curved and notched. Tarsi very short.

1062. Waxwing. *Bombycilla garrulus garrulus* (Linnaeus)*Lanius Garrulus* Linnaeus, 1758, *Syst. Nat.*, ed. 10, 1: 95

(in Europa et America boreali = Sweden)

Baker, FBI No. 1140, Vol. 3: 223

Plate 66, fig. 16

LOCAL NAMES. None recorded.**SIZE.** Bulbul —; length c. 18 cm (7 in.).

268

HYPOCOLIINAE

FOOD. Insects and berries (of juniper etc.). Flying insects sometimes taken in the air.

VOICE AND CALLS. 'A high *zeeee zeeeee* given when about to fly' (Fleming).

BREEDING. Extralimital. *Nest*, a cup of twigs etc. usually in coniferous forest. A ♂ procured at Bannu (33°N., 70°40'E.) on 20 March (1907) reported as excessively fat and with much enlarged gonads.

MUSEUM DIAGNOSIS. For description of plumages and structure (also bionomics) see Witherby, 1938, 1: 296-9.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	112-120	10-11.5	20-22	59-67 mm
♀♀	112-119			

(Witherby)

2 ♀♀ (Nepal) Wing 114, 116 mm (Fleming)

COLOURS OF BARE PARTS. Iris brown or reddish brown. Bill blackish, flesh-coloured at base of both mandibles. Legs and feet black.

Subfamily HYPOCOLIINAE: Hypocolius

For description see Greenway, J. C., Jr., 1964, Article 'Hypocolius' in Thomson, A. L. (ed.), *New Dict. Birds*. London & New York.

Genus HYPOCOLIUS Bonaparte

Hypocolius Bonaparte, 1850, *Consp. Gen. Av.* 1: 336.Type, by monotypy, *H. ampelinus* Bonaparte

Bill stout and broad at base, about half the length of head. Nostrils small, oval, exposed. Rictal bristles weak but always clearly visible. Wing short, pointed: 1st primary (as.) minute, 2nd reaching to tip of wing. Tail long and slightly graduated. Tarsus very short and stout, shorter than middle toe and claw; coarsely scutellated.

1063. Grey Hypocolius or Shrike-Bulbul. *Hypocolius ampelinus* Bonaparte*H. (Hypocolius) ampelinus* Bonaparte, 1850, *Consp. Gen. Av.* 1: 336('ex California' = NE. Africa (Botta coll.), restricted by Baker *et al.*)*Hypocolius ampelinus orientalis* Koelz, 1939, *Proc. Biol. Soc.*

Washington 52: 64 (Kandahar, Afghanistan)

Baker, FBI No. 378, Vol. 1: 357

Plate 66, fig. 19

LOCAL NAMES. None recorded.**SIZE.** Bulbul +; length c. 25 cm (10 in.).

FIELD CHARACTERS. A glaucous blue-grey bird strongly reminiscent of a shrike (or bulbul), with a distinctive black band from lores running backward through eyes over ear-coverts and looping round nape. Wing-quills black broadly tipped with white. Tail longish blue-grey with a broad black terminal band. When nape and crown feathers erected on excitement, eye-band becomes enlarged and very prominent. Female more isabelline-grey above.



HYPOGOLIUS

269

dirty cream coloured below, lacking the black eye- and nape-band. Primaries grey-brown with black terminal ends and white tips.



Wing ♂, x c. 1/2 (after Hartert)

STATUS, DISTRIBUTION and HABITAT. Rare vagrant. Individual examples seen and collected within our limits only at long intervals, all between November and April: Sind-Baluchistan boundary (Mazarani Nai in the Kirthar Range), S. Kalat (Nal), Sind (Karachi), Gujarat (Kuar Bet in Great Rann of Kutch), and Maharashtra (Kihim, Kolaba dist.). In semi-desert and open deciduous scrub jungle.

Extralimital. S. Iran, Afghanistan, Iraq, Arabia, N. Africa. For details of range see Vaurie, 1959, 2: 180.

GENERAL HABITS. Superficially very suggestive of Grey Shrike (*Lanius e. lahtora*, 933), but in non-breeding season, in its native land, keeps in flocks of 5 to 20 individuals. Chiefly arboreal, active and restless, feeding in trees and bushes, occasionally dropping to the ground like a shrike to pick up an insect and back again. Movements and actions in shrubbery more babbler-like. Perches low on a branch with feathers of underside fluffed; erects head-feathers when excited like Whitechecked Bulbul (*Pycnonotus l. leucotis*, 1123). Flight strong and direct, without undulations.

FOOD. Stomachs of specimens examined in India showed berries exclusively: *Lantana aculeata*, *Salvadora persica* and *Zizyphus (juzuba ?)*. In Iraq said to live largely on fruits (dates, figs) with a small quantity of insects (beetles etc.).

VOICE and CALLS. Not recorded in India. Elsewhere described as an 'unmistakable squeaking note' (Ticehurst); 'very pleasing and liquid, nothing like harsh cry of shrike' (Cumming). During flight utters a call-note rather reminiscent of Bee-eater (*Merops apiaster*, 746) — Paludan. Is usually silent except when in flocks, then very noisy and can be heard a long way off.

BREEDING. Extralimital. Season (in Iraq and S. Iran) chiefly June-July. Nest, large, cup-shaped, like bulbul's, 1 to 3 metres or so up in a bush or on leaf of small date palm. Eggs, 4 or 5, white, with or without brownish blotches at broad end, resembling those of *Lanius e. lahtora*. Size c. 26 x 19 mm. (For more details see Cumming, W. D., JBNHS 12: 760-5; Ticehurst, C. B., *ibid.* 28: 381-2.)

MUSEUM DIAGNOSIS. Juvenile. 'Pale sandy brown all over without black or white in the primaries, but with black terminal band on tail' (RM).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	96-106	14-15	23-25 (SA, Koelz, Paludan)	96-109 mm

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271

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270

HYPOGOLIINAE

Weight 2 ♂♂ 2 oz. (= 57 g); 1 ♀ 2 oz. (= 57 g) — Cumming. 1 ♂ 48; 3 ♀♀ 49-55 g (Paludan).

COLOURS OF BARE PARTS. Breeding. Iris brown or reddish brown. Bill black, horn colour at base. Legs and feet yellowish flesh (HW). Non-breeding. Iris brown. Bill: upper mandible horny brown, lower flesh coloured with dark tip. Legs and feet brownish flesh (SA).

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CUCKOO-SHRIKES, MINIVETS

5

1066. Ceylon Pied Flycatcher-Shrike. *Hemipus picatus leggei* Whistler

Hemipus picatus leggei Whistler, 1939 (May 15), Bull. Brit. Orn. Cl., 59: 101 (Ohiya, Ceylon)
Hemipus picatus insulæ Koeltz, 1939 (June 5), Proc. Biol. Soc. Washington, 52: 69 (Wavenden, Ceylon)
Baker, FBI No. 724 (part), Vol. 2: 306

LOCAL NAMES. *Paru-kurullā* (Sinhala); *Asurappottan* (Malayalam).
SIZE. Sparrow ±; length c. 14 cm (5½ in.).
FIELD CHARACTERS. As of 1065. The sexes are alike in Ceylon, but apparently dimorphic in Kerala.

STATUS, DISTRIBUTION and HABITAT. Resident, southern Kerala (where it intergrades with *picatus*) and Ceylon. It is found in forest, or well-wooded country up to 1800 m; rare and local in the low country, especially in the Dry zone.

GENERAL HABITS. A bird of the tree canopy met with in pairs or family parties, often in company with other species in the roving hunting parties.

FOOD. Insects, chiefly caterpillars.

VOICE and CALLS. 'Its song sounds like *tirity tirity tirity*, and it has other little chirps besides' (Henry).

BREEDING. Season, February to August, chiefly March and April; apparently single-brooded. The favourite site for the nest is a dead, lichenous and gnarled branch, high up in a tree (up to 12 metres) with no foliage to hide it except the overhead leaf-canopy. Nest as that of *picatus*. When the young are fledging, they look like a part of the branch owing to their 'lichenous' coloration and their normal attitude, which suggest a broken-off snag (Henry). They sit facing one another, with their bills pointing upward and nearly touching in the centre, their eyes kept half-closed. For details of nesting, see W. W. A. Phillips, *Ibis* 1940: 450-4. Eggs, 3, buffy-white in colour evenly speckled all over with pale brown and grey, measuring c. 15 × 12 mm. Both parents incubate and tend the young.

MUSEUM DIAGNOSIS. The Ceylon population differs from *picatus* in that its sexes are not dimorphic, i.e. both male and female are black-backed like male *picatus*. Complete postnuptial moult takes place from the end of July to October. There is presumably no spring moult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	61-65	15-17	11-13	53-60 mm (HW)

COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet black.

Genus *TEPHRODORNIS* Swainson

Tephrodornis Swainson, 1832 (Feb.) (1831), Fauna Boreal-Amer., Birds, App.: 482.

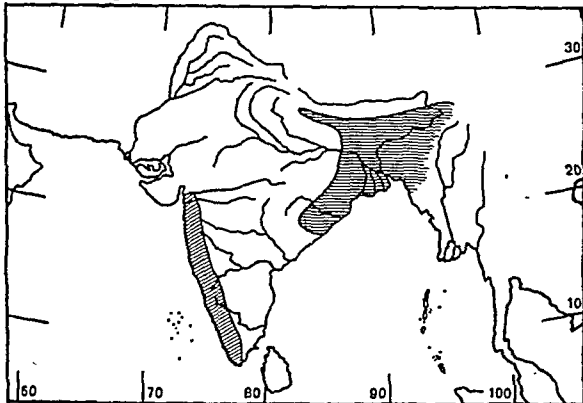
Type, by original designation, *Lanius virgatus* Temminck = *Lanius gularis* Raffles.

Bill very stout, about three-quarters length of head, strongly hooked and notched. Nasal bristles very numerous, entirely concealing the nostrils. Wing rather rounded; tail short and square. Feathers of rump very ample, but soft and not spinous as in *Pericrocotus*. Sexes more or less alike.

CUCKOO-SHRIKES, MINIVETS

7

Tephrodornis gularis



Distributional ranges

▨ *peltica* (1067). ■ *sylvicola* (1068).

the ground. An active and restless bird but quite tame. Hunts for insects on branches, moving slowly along them in a series of clumsy hops. Also launches short flycatcher-like sallies after insects. The individuals follow one another among the trees, gracefully volplaning from branch to branch. It is usually found in small parties of four to six often in association with minivets, drongos and other insectivorous birds; in winter in larger flocks often up to thirty individuals, which break up into pairs in April and May.

VOICE and CALLS. Harsh notes resembling those of Shrikes, vaguely reminiscent also of *Nucifraga* (SA); others rendered as a mellow *tra-a-a* and *thul, thul* (Fleming). Also a rather musical *kew-kew-kew* quickly repeated four to six times. The latter calls noted as appreciably different in dialect from those of the Western Chats race, q.v. (SA).

FOOD. Insects, especially, mantids, crickets, grubs and caterpillars including hairy ones.

BREEDING. Season, April and May. Nest, placed in a bare, outlying horizontal fork, three to eight metres up in medium-sized trees standing in forest. It is built on top of the bough where it broadens out at the point of division, so that very little is discernible from below. It is a shallow saucer made of fine grass-stems and roots, beautifully interwoven, the outer wall well plastered with cobwebs. It is reminiscent of minivets' nests but is usually without the adornment of lichen and moss. Betts remarks that the bird sits with the head back and bill pointing vertically upwards; with its grey plumage it looks just like a broken stub of the tree itself. Eggs 2 to 4, white faintly tinged with green or brown, marked with small irregular blotches of inky brown scattered all over the surface or more restricted to the larger

6

CAMPEPHAGIDAE

Key to the Species

	Page
A Outer rectrices brown, tipped with rufous. Wing over 100 mm <i>T. gularis</i>	6
B Outer rectrices largely white. Wing under 100 mm..... <i>T. pondicerianus</i>	9

TEPHRODORNIS GULARIS (Raffles)

Key to the Subspecies

Crown and nape ashy grey; upper back ashy brown..... *T. g. peltica*
Crown and nape bluish grey, not differing markedly from upper back..... *T. g. sylvicola*

1067. Nepal Wood Shrike. *Tephrodornis gularis peltica* (Hodgson)

Tenthaca peltica Hodgson, 1837, Ind. Rev., 1 (10): 447 (Nepal)
Baker, FBI No. 727, Vol. 2: 309

LOCAL NAMES. *Vohpigli* (Mikir); *Ramun-pho* (Lepcha).

SIZE. Myna; length c. 23 cm (9 in.).

FIELD CHARACTERS. A short and square-tailed grey-brown shrike, distinguished from *T. pondicerianus* by its larger size and brown outer rectrices.

Male. Above, crown and nape ashy grey changing to ashy brown on back, wings and tail, the last tipped blackish and rufous. A broad black band from lores through eye to ear-coverts, which are whitish. Rump and upper tail-coverts fluffy, whitish and ashy brown, barred with black and with a pure white band across. Below, chin, throat and breast pale ashy fawn, fading to white on centre of abdomen.

Female. Like male, but with crown same colour as back, and eye-band brown.

Young (fledgeling) when leaving nest speckled grey all over, especially on head.

STATUS, DISTRIBUTION and HABITAT. Resident; any movements are local or altitudinal. From Nepal (terai and duns up to c. 1000 m), Sikkim (duars and foothills up to 1500 m), Bhutan (to at least c. 1200 m), Assam (throughout the plains and in Cachar and Khasi Hills), Nagaland, Manipur, E. Pakistan (in the eastern foothills and Chittagong region). South in Bihar and Orissa to the Eastern Ghats and northern Andhra up to 1000 m. Shows a preference for evergreen forest but is also found in open deciduous secondary jungle and other types of well wooded country.

EXTRALIMITAL. Other races south through India and east in the Indochinese and Malaysian subregions.

GENERAL HABITS. Arboreal. Keeps to the tree-tops more than *T. pondicerianus* does, and unlike the latter, only very occasionally descends to

8

CAMPEPHAGIDAE

end where they form an indistinct ring; very like those of minivets. Average size of nine eggs 22 × 17.6 mm (Baker). The male assists in incubation.

MUSEUM DIAGNOSIS. Male. Forehead, crown and nape ashy grey; back, scapulars and lesser coverts ashy brown; rump ashy brown tipped white or obscurely barred brown; the shorter upper tail-coverts white, the longer ashy brown; nasal plumes and head band thence through eye to nape, black; part below this, chin, belly and under tail-coverts white; rest of underparts very pale cinereous, tinged with buff or vinaceous on breast; tail ashy brown with a rufous tinge and very narrow whitish tips. The shafts reddish brown; median and greater coverts and the flight-feathers ashy brown with lighter tips, with obsolete darker bars on outer edges of three inner secondaries; under-wing and axillaries brown.

Female. Like male but forehead, crown and nape like back; band through eye pale brown in front, darker brown behind.

Young. Much as in juvenile *pondicerianus* (1070) q.v. The tail is like that of the adult but the feathers are narrower and more pointed and the dark subapical contour lines are more marked. The postjuvinal moult includes body, all coverts except primary, tertials and tail. First-year males indistinguishable from females but all first-year birds recognizable by pale tips to primary coverts. Breeds also in subadult plumage.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	115-124	23-29	20-23 (once 26)	82-91 mm
♀ ♀	115-124	25-29	20-23	81-92 mm (SA, BB)

Weight 2 ♂♂, 2 ♀♀ 38-46 g (SA).

COLOURS OF BARE PARTS. Iris ♂ golden yellow, ♀ glaucous blue; bill ♂ black, ♀ horn brown, flesh at gape (Whistler). Iris yellowish brown; upper mandible brownish black with brownish horny on base; lower mandible brownish horny, paler on base; legs and feet dull plumbeous, claws black; pads yellowish grey (Biswas).

1068. Malabar Wood Shrike. *Tephrodornis gularis sylvicola* Jerdon

Tephrodornis sylvicola Jerdon, 1839, Madras Jour. Lit. Sci., 10: 236 (Malabar Coast)
Baker, FBI No. 728, Vol. 2: 311

Plate 71, fig. 13

LOCAL NAMES. *Pūhāri lōlōra* (Hindi); *Asurakkātan* (Malayalam).

SIZE. Myna; length c. 23 cm (9 in.).

FIELD CHARACTERS. As of 1067, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident and fairly common in well-wooded regions. Gujarat from the Narbada river south through Maharashtra to Tamil Nadu (confined to the western part), western Mysore (Malnaad) and Kerala. Found up to c. 1300 m in the Kerala hills and 1800 m in the Nilgiris and Palnis but is rare so high. Affects tall trees in evergreen and moist-deciduous forest, shade trees in cardamom plantations; sometimes even the drier zone in old teak plantations.

CUCKOO-SHRIKES, MINIVETS

9

Extralimital. See 1067.

GENERAL HABITS. Met with in small flocks, sometimes in the mixed hunting parties, flitting or parachuting from branch to branch after insects, making lithe aerial sallies after winged prey and returning to the same perch or moving on to the next. But their favourite hunting grounds are the trunks and branches where they will often cling to the bark and pry into the fissures for lurking insects. The flight is undulating with slow, sailing wing-beats; at times reminiscent of Spotted Owlet's — a few rapid flaps followed by a downward dip. In the evening the flocks may be seen bathing in a pool or stream, swooping down and dipping on the wing as flycatchers and drongos do (Betts).

VOICE AND CALLS. A loud, clear and musical quick-repeated *witoo-witoo-witoo* (4 to 6 times), occasionally punctuated by a harsh querulous single *chack* or *chrr*.

FOOD. Insects of the largest size, big moths, locusts and caterpillars.

BREEDING. Season, December to June, chiefly March and April. During the breeding season they become shy and secretive and the nests are hard to find. They are built on horizontal forks of branches six to nine metres from the ground. *Nest*, a shallow saucer about 10 cm in diameter made of roots, fine twigs and tendrils fastened together with cobweb and felted lichen, and secured with cobweb to the upper surface of a bough where it widens into a fork. The lining is of grass and leaf-stems. Two eggs appear to be the normal clutch (Betts); they are pale greenish white or buff, blotched and spotted with brown and with secondary markings of neutral tint. Average size of nine eggs 22 × 18 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *pelica* in having the crown and upperparts bluish grey merging gradually into dark ashy brown. Below it is a much darker vinous-ashy on the breast and flanks. Female also darker generally. Birds from Thailand and Malaysia are closer to *gylciola* than to their adjacent race *pelica*.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	112-120	25-30	19-21	79-84 mm
♀♀	111-121	23-27	19-20	80-88 mm (SA, HW)

COLOURS OF BARE PARTS. Male. Iris lemon-yellow or greenish yellow. Bill horny black. Legs and feet plumbeous (SA). Female. Iris khaki. Bill pale horn brown (Whistler).

TEPHRODORNIS PONDICERIANUS (Gmelin)

Key to the Subspecies

	Page
A Upperparts ashy brown	
a Darker; lores and eye-streak dark brown..... <i>T. p. pondicerianus</i>	11
b Paler; lores and eye-streak pale brown..... <i>T. p. pallidus</i>	10
B Upperparts ashy grey..... <i>T. p. affinis</i>	12

CUCKOO-SHRIKES, MINIVETS

11

MUSEUM DIAGNOSIS. Male and female like *pondicerianus* but paler ashy grey above and less ashy, more creamy, on the underparts. Birds of the Kutch and Jodhpur area intergrade with *pondicerianus*.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in *pondicerianus* (1070).

1070. Indian Wood Shrike. *Tephrodornis pondicerianus pondicerianus* (Gmelin)

Muscicapa pondiceriana Gmelin, 1789, Syst. Nat., 1: 939 (Coromandel)
Lanius griseus Tickell, 1833, Jour. Asiat. Soc. Bengal, 2: 573
(Borabhum and Dholbhum)

Tephrodornis pondicerianus thai Kloss & Chasen, 1925, Bull. Brit. Orn. Cl., 46: 58
(Ta Chang Thai, Raheng, west Siam)

Tephrodornis pondiceriana waerei Koelz, 1939, Proc. Biol. Soc. Washington, 52: 69
(Londa, Bombay Presidency)
Baker, FBI No. 729, Vol. 2: 312
Plate 71, fig. 10

LOCAL NAMES. *Keroula* (Hindi); *Tariti-taiya* (U.P.); *Tentha*, *Tentheca* (Nepal); *Chudukka* (Bengal); *Anurattan* (Malayalam); *Ulapilla* (Telugu).

SIZE. Bulbul ±; length c. 16 cm (6½ in.).

FIELD CHARACTERS. A short and square-tailed plain greyish brown shrike-like bird with a dark stripe below the eye from lores to ear-coverts, and a conspicuous whitish supercilium; outer tail-feathers nearly all white. Sexes alike, only female has the eye-streak paler.

STATUS, DISTRIBUTION AND HABITAT. Resident and common over most of its range, south and east of a line from Cambay to Kumaon, Nepal (terai and up to c. 450 m), Assam and East Pakistan. Intergrades with *pallidus* in the Jodhpur area. Locally distributed in the Deccan. A bird of the lowlands avoiding hills though it may be abundant at their bases, exceptionally up to c. 1000 m (Kerala) but usually below 200 m. Replaces *T. gularis* in the dry zone and affects scrub and secondary jungle, lightly wooded country (sal, teak and other deciduous forest), roadside avenues and rambling jungly gardens in and around towns and villages.

Extralimital. Extends east to Thailand and Laos; replaced by *orientis* in Cambodia and Vietnam, *pallidus* in northwestern India and West Pakistan, and *affinis* in Ceylon.

GENERAL HABITS. A quiet, tame bird met with in pairs or small parties of 5 or 6 in trees and bushes, creeping about the leaves and branches like loras, hopping or volplaning from one to another and moving from tree to tree in follow-my-leader fashion. At times descends to the ground, or takes insects on the wing like a flycatcher. Frequently seen in mixed hunting parties. It has a superficial resemblance to shrikes, but is much closer to minivets in habits and behaviour.

FOOD. Beetles, moths, caterpillars and other insects, and spiders.

VOICE AND CALLS. Male has several pleasant, rather plaintive whistling notes *wret-wret*, followed by a quick interrogative *whi-ehi-ehi-ehi-ehi*?. Also some soft trills in the breeding season.

BREEDING. Season, mainly March and April but extends from February to July especially in the more southern parts. *Nest*, a neat, thick-sided cup

10

CAMPEPHAGIDAE

1069. Sind Wood Shrike. *Tephrodornis pondicerianus pallidus* Ticehurst

Tephrodornis pondicerianus pallidus Ticehurst, 1920, Bull. Brit. Orn. Cl., 41: 56
(Larkhana, Sind)

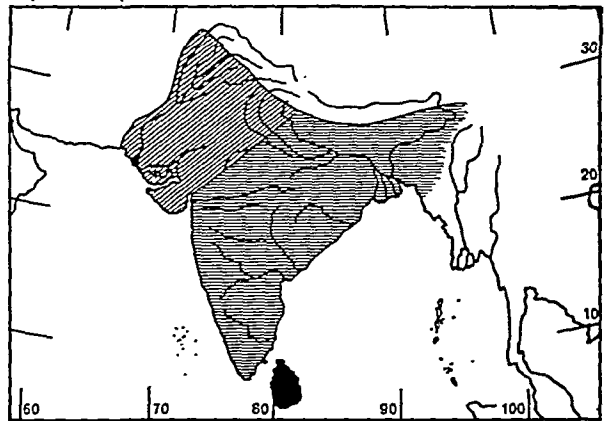
Tephrodornis pondiceriana freta Van Tyne & Koelz, 1936, Occ. Papers, Mus. Zool., Univ. Michigan, No. 334: 5 (Bhadwar, Kangra Dist., Punjab)
Baker, FBI No. 731, Vol. 2: 314

LOCAL NAME. *Keroula* (Hindi).

SIZE. Bulbul ±; length c. 16 cm (6½ in.).

FIELD CHARACTERS. As of 1070, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident in West Pakistan (Baluchistan [Hab Valley, Las Bela (?) and Sibi Plain (?)], Sind, and NW. frontier districts). Also Punjab, Delhi, western U.P., Rajasthan, Saurashtra and Kutch, south to a line from Cambay north and east to Kumaon. In

Tephrodornis pondicerianus

Distributional ranges
 ▨ *pallidus* (1069). ▨ *pondicerianus* (1070). ▨ *affinis* (1071).

babool and scrub jungle, better cultivated parts of arid regions, and groves of babool in the desert. In the plains generally and up to 900 m (Simla), rarely to 1400 m along the Duala Dhar.

GENERAL HABITS, VOICE AND FOOD. Those of the species (see 1070).

BREEDING. Season, February to June, mainly March and April. *Nest*, mostly under 3 m above the ground. Breeding biology otherwise much as in the nominate race. *Eggs*, 3 exceptionally 4; in a series, darker and duller than those of *pondicerianus* and often with a distinctly brownish buff ground. Average size of 30 eggs 18.9 × 15.1 mm (Baker).

12

CAMPEPHAGIDAE

of soft bark, fibres, etc., cemented with cobwebs and draped on the exterior with bits of paper-like bark or lichen which render it inconspicuous, and lined with silky vegetable down and fibres. Comparatively small for the size of the bird and as a rule difficult to find; diameter of cup c. 5 cm, depth 3 cm. It is entirely exposed, wedged tightly into the angle of a horizontal forked branch of a leafless tree, or sometimes concealed in thick foliage, from two to six, occasionally up to nine metres above the ground. It is usually completed in a week or ten days. *Eggs*, usually 3, rarely 4, pale greenish grey or cream with brown specks forming a ring round the broad end. Average size of 50 eggs 19 × 15.1 mm (Baker). Both parents build the nest, incubate, and feed the young; these are clad in grey down, exactly the colour of the nest and the lichen-covered bough on which it is built. Copulation on nest with one fresh egg has been observed (SA).

MUSEUM DIAGNOSIS. Sexes almost alike. Upperparts and lesser wing-coverts ashy brown, the rump-feathers white at base and at tips; upper tail-coverts black; broad supercilium whitish; lores, cheeks and ear-coverts dark brown (paler in ♀); underparts ashy, whiter on throat and belly; under tail-coverts white; flight-feathers and wing-coverts ashy brown; two outer pairs of tail-feathers white, the bases brown and a brown patch near the tip; the rest dark brown, the median tinged ashy.

Juvenile. Supercilium fulvous white; upperparts, lesser and median coverts brown with fulvous white triangular tips; upper tail-coverts dark brown with faint pale tips, greater coverts, tertials and innermost secondaries pale brown with pale edges and tips and an irregular dark contour line; primary-coverts dark brown with pale tips; ear-coverts dark brown; underparts white with obsolete brown streaks on breast and running up at side of throat to gape; tail as in adult, but feathers narrower and more pointed. Postjuvenile moult includes body, all coverts except primary, three or four innermost secondaries and tertials and whole tail. First-year as adult, except for light margin of unmoulted inner secondaries and pale tips to primary-coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	82-94	19-23	(17) 19-22	59-73 mm
♀♀	80-89	18-23	(16) 19-21	56-71 mm (SA, HW)

Tail tends to be shorter in South Indian birds: ♂♂ 59-67; ♀♀ 56-63 mm.

Weight 9 ♂♂ 18-27 (av. 22) g—SA.

COLOURS OF BARE PARTS. Iris greenish brown. Bill horny brown, darker on culmen and at tips; mouth greyish pink. Legs and feet horny brown, claws darker. Juvenile. Iris brown. Bill horny brown; gape cream colour; mouth pale lemon-yellow. Legs and feet bluish slate; claws brown.

1071. Ceylon Wood Shrike. *Tephrodornis pondicerianus affinis* Blyth

Tephrodornis affinis Blyth, 1847, Jour. Asiat. Soc. Bengal, 16: 473 (Ceylon)
Baker, FBI No. 730, Vol. 2: 313

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 16 cm (6½ in.).

CUCKOO-SHRIKES, MINIVETS

13

FIELD CHARACTERS. As in 1070, q.v.
STATUS, DISTRIBUTION and HABITAT. Ceylon, in all zones up to 1500 m, rarely higher and then only as a straggler. Edges of jungle, low spreading trees round village compounds, by the sides of roads, well-wooded country but not in dense forest. Commonest in the Dry zone.
GENERAL HABITS. As of 1070.
VOICE and CALLS. 'A frequently uttered whistle *twééé twee twee twee* on a descending scale which has a peculiar peevish quality' (Henry).
FOOD. Caterpillars, green crickets and other insects.
BREEDING. Season, January to August, mostly March to May. Nesting as in nominate race. Eggs, 2 or 3. Average size of fifty 19 × 15.1 mm (Baker).
MUSEUM DIAGNOSIS. Differs from *pondicerianus* in being much more grey and in having the white supercilium smaller. Tail shorter.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	81-88	21-23	16-18	54-59 mm
♀♀	81-86	21-23	16-18	54-58 mm (HW)

COLOURS OF BARE PARTS. Iris yellowish brown. Bill dark horn. Legs and feet dusky slate.

Genus CORACINA Vieillot

Coracina Vieillot, 1816, *Analyse nouv. orn.*: 37. Type, by subsequent designation, *Corvus papuensis* Gmelin (Gray, 1840)

Cf. Ripley, S. D., 1941, *Auk*, 58: 381-95; Delacour, J., 1951, *Amer. Mus. Novit.*, No. 1497: 1-15.

Contains birds in which the predominating colour is grey. Bill slightly bent down at tip and notched. Nostrils nearly concealed by plumes. Wing pointed; rectrices graduated.

Key to the Species

A	Page
1 Wing over 150 mm	
1 Tail broadly tipped white..... <i>C. novaehollandiae</i>	13
2 Tail very narrowly tipped with pale brown or whitish..... <i>C. striata</i>	18
B Wing 110-130 mm..... <i>C. melaschistos</i>	19
C Wing under 110, generally less than 106 mm	
3 A conspicuous white supercilium at all ages..... <i>C. nigra</i>	23
4 Supercilium absent or only faintly indicated	
a Throat black, abdomen grey..... <i>C. melanoptera</i> ♂ ad.	20
b Throat and abdomen white cross-banded with brown..... <i>C. melanoptera</i> ♀	20

CORACINA NOVAEHOLLANDIAE (Gmelin)

Key to the Subspecies

1 Large size; wing 173 mm or over..... <i>C. n. nipalensis</i>	16
2 Small size; wing under 155 mm (Ceylon)..... <i>C. n. layardi</i>	17
3 Medium size	
a Wing c. 153-169 mm (peninsular India)..... <i>C. n. macei</i>	14
b Wing c. 167-176 mm (Andaman Is.)..... <i>C. n. andamana</i>	17

CUCKOO-SHRIKES, MINIVETS

15

Pakistan. Extends to Mount Abu in Rajasthan but is absent in the desert portions. In plains and lower hills up to 1000 m (1200 m in Kerala). Well but rather patchily distributed in open wooded country such as gardens, cultivations with tall trees, groves often near villages, rubber plantations, light deciduous and mixed forest on the edge of evergreen.

GENERAL HABITS. A bird of the tree-tops found in pairs or loose parties which 'follow-my-leader', the flight being undulating with a few strokes of the wings alternated with short glides. Upon alighting on a branch it flicks up one wing, then the other, repeating this in 'a way reminiscent of a nervous gentleman tugging at his tie, an action rendering its identification easy at a distance' (SA). It indulges in this behaviour when courting, calling as it does so. In the breeding season it is a common sight to see a pair following one another from tree to tree uttering their distinctive shrill screaming calls to the accompaniment of a slight fluttering of the wings. Though keeping mainly to high trees, at times descends to bushes and even the ground to forage among dead leaves. Moves about a great deal locally in the non-breeding season.

FOOD. Mantids and other large insects and their larvae. Among stomach contents the following have been identified: weevils (*Astyce* and *Myloceus* spp.), bugs (*Nezara viridula*), crickets (*Gryllotalpa africana* and *Gryllodes melanoccephalus*) (Mason & Lefroy, 1912). Also feeds largely on the figs of the various wild *Ficus* spp.; caterpillars are fed to the young.

VOICE and CALLS. A very noisy bird. A long bisyllabic whistle *tee-treee* or *ti-tee*, of shrill parrot-like quality with the accent on the second syllable, frequently uttered as they fly among the tree-tops. See also General Habits.

BREEDING. Season, overall January to October, but mainly March to July. In western India there appear to be two periods of breeding, first February to April and again August to October. Nest, a shallow and rather flimsy saucer-shaped structure of twigs and grass coated exteriorly with cobweb, without lining, wedged or welded into the fork of a horizontal branch up to 18 metres above the ground, usually at more moderate heights; it is decidedly small for the size of the bird, about 13 cm in diameter and 3 cm deep. The normal clutch appears to be three in the Peninsula and two in Bengal. Ground colour yellowish buff — sometimes pale green — blotched with chocolate-brown markings distributed evenly over the surface. Average size of 22 eggs 31 × 22.4 mm (Baker).

MUSEUM DIAGNOSIS. Adult male has dark ear-coverts and black lores; throat and breast uniform grey, abdomen and flanks barred; centre of abdomen, vent and under tail-coverts white. In adult female lores dark coloured same as ear-coverts; throat, breast, abdomen and flanks barred, the barring usually extending further down than in the male, sometimes almost absorbing the white area.

First-year male and female after the postjuvinal moult alike and similar to adult female. He may however be distinguished from her by two points: (1) the primary coverts are more or less uniform in colour with a white edge running round the whole of the tip. In adults (both sexes) these coverts are blackish with marked grey edges and a white edge only on the outer side of the tip; (2) the outer tail-feather on each side is narrow and pointed, being of course retained from the juvenal plumage.

14

CAMPEPHAGIDAE

1072. Indian Large Cuckoo-Shrike. *Coracina novaehollandiae macei* (Lesson)

Graucalus macei Lesson, 1830, *Traité d'Orn.*: 349 (Calcutta, Bengal)

Baker, FBI No. 758, Vol. 2: 343

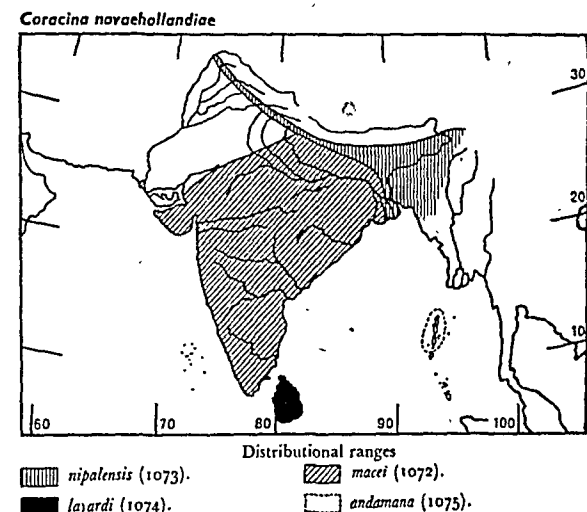
Plate 71, fig. 11

LOCAL NAMES. *Kāya* (Hindi); *Khāki popiya* (U.P.); *Kābāri* (Bengal); *Prāda ekurai* (Telugu); *Māṭā kārio* (Gujarati); *Bāhrām* (Saugar dist, M.P.).

SIZE. Pigeon —; length c. 28 cm (11 in.).

FIELD CHARACTERS. Male grey, whitish underneath, with a broad dark eye-streak. Wings and tail black. Heavy slightly hooked bill. Female has the eye-streak less conspicuous and her underparts are barred grey and white. Perches upright. The white rump-patch is conspicuous in flight.

STATUS, DISTRIBUTION and HABITAT. Resident but subject to local migrations in the non-breeding season. The entire Peninsula roughly south of a line from Kutch and Deesa (c. 24°N.) in northern Gujarat, east through northern Madhya Pradesh and Bihar to southern West Bengal and central East



16

CAMPEPHAGIDAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	153-173	27-31	24-27	111-134 mm
♀♀	156-167	26-30	23-27	108-135 mm

Tail tends to be shorter in S. Indian birds: Kerala ♂♂ 111-119, ♀♀ 108-119 mm (SA, HW)

COLOURS OF BARE PARTS. Adult: Iris reddish or orange-brown. Bill, legs and feet brownish or slaty brown. Juvenile. Iris brown. Bill slate, paler at base of lower mandible. Legs and feet bluish slate.

1073. Himalayan Large Cuckoo-Shrike. *Coracina novaehollandiae nipalensis* (Hodgson)

Graucalus Nipalensis Hodgson, 1836, *Ind. Rev.*, 1(8): 327 (Nepal)

Coracina jarensis lushaiensis Koelz, 1954, *Contrib. Inst. Regional Exploration*, No. 1: 15 (Sangau, Lushai Hills [= Mizo])

Baker, FBI No. 759, Vol. 2: 344

LOCAL NAME. *Talling-pho* (Lepcha).

SIZE. Pigeon —; length 30 cm (12 in.).

FIELD CHARACTERS. Like *macei* (1072) but larger; in addition, the adult female and the first-year male and female have the chin, throat and breast grey, followed by a certain amount of barring on the belly; the adult male is without any barring.

STATUS, DISTRIBUTION and HABITAT. Resident, nomadic, and apparently seasonal local migrant. The Himalayas from Rawalpindi (up to c. 1000 m) in West Pakistan east to Nepal, Sikkim, Assam, and East Pakistan to the Chittagong region; from the plains normally to 1800 m. In Nepal it ascends the hills up to 2400 m in summer, and is found up to 1800 m in winter, occasionally to 2400 m (Proud). Affects different types of forest. Generally keeps to openly wooded country but frequents also scrub jungle, and in Assam scanty scrub on the Brahmaputra *churs*. There is a withdrawal from the higher levels in winter.

Extralimital. Other races in southern China and south across Malaysia to Australia.

BREEDING. Season, April to June. Nest and eggs as in *macei*, the latter averaging 33.6 × 23.4 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *macei* (1072) in being larger. Adult female and first-year birds (both sexes) have the throat and breast grey, followed by a certain amount of barring; they are practically identical with the adult male of the nominate form though the amount of barring is somewhat less. Adult male uniform grey from throat to the white ventral patch, without any barring.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	175-193	30-34	126-148 mm
♀♀	173-188	30-32	126-143 mm

CUCKOO-SHRIKES, MINIVETS

17

COLOURS OF BARE PARTS. Iris brownish red. Bill, legs, feet and claws black; soles grey or yellowish grey (Biswas).

1074. **Ceylon Large Cuckoo-Shrike.** *Coracina novaeollandiae layardi* (Blyth)

Gauculus layardi Blyth, 1866, Ibis: 368 (southern India and Ceylon; restricted by Ripley to Ceylon)
Baker, FBI No. 760, Vol. 2: 345

LOCAL NAMES. None recorded.

SIZE. Myna \pm ; length c. 27 cm (10½ in.).

FIELD CHARACTERS. As of 1072, q.v.

STATUS, DISTRIBUTION AND HABITAT. A rather scarce but widely distributed resident in Ceylon. Affects well-wooded country in the drier parts and natural openings in forest, ascending the hills to c. 900 m.

GENERAL HABITS, FOOD AND VOICE. As in *macei* (1072).

BREEDING. Season, March to June (Phillips); July and August (Wait). Nest as in *macei*. Eggs 2, average size c. 31 × 22.3 mm (Baker).

MUSEUM DIAGNOSIS. Separated from *macei* on its small size. There is no difference in plumage.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
4 ♂♂	145-151	27-30	—	104-111 mm
2 ♀♀	140, 154	27, 30	22, 24	108, 109 mm (HW)

COLOURS OF BARE PARTS. As in *macei*.

1075. **Andaman Large Cuckoo-Shrike.** *Coracina novaeollandiae andamana* (Neumann)

Gauculus macei andamanus Neumann, 1915, Orn. Monatsb., 23: 181 (Andaman Islands)

Gauculus javensis andamanensis Whistler, 1940, Ibis: 731 (S. Andamans)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Pigeon —; length c. 28 cm (11 in.).

FIELD CHARACTERS. As of 1072, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident and fairly common in the Andaman Islands. Open country (clearings and cultivation), scrub and light forest. 'Does not occur in the Nicobars' (Abdulali, 1964, JBNHS 61: 556).

GENERAL HABITS, FOOD AND VOICE. Similar to those of *macei*, but 'Unlike *C. s. dobsoni* [1076] not found in thick forest, keeping to gardens, clearings, or trees standing in the open' (A. L. Butler, 1899, JBNHS 12: 395).

CUCKOO-SHRIKES, MINIVETS

19

1077. **Dark Grey Cuckoo-Shrike.** *Coracina melaschistos melaschistos* (Hodgson)

Velocivora Melaschistos Hodgson, 1836, Ind. Rev., 1 (8): 328 (Nepal)
Baker, FBI No. 753, Vol. 2: 337
Plate 71, fig. 16

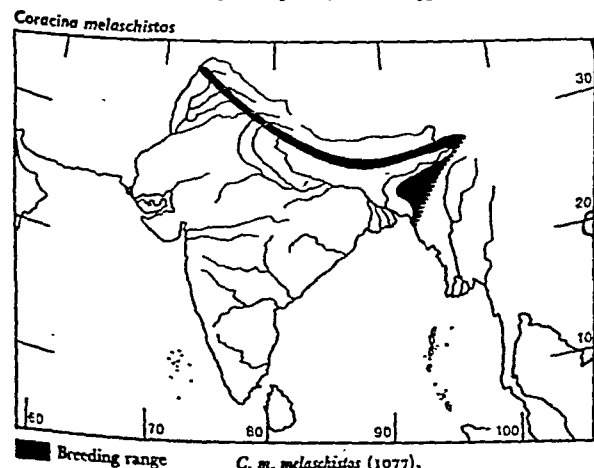
LOCAL NAME. *Kubasi* (Bengal).

SIZE. Between bulbul and myna; length 22 cm (9 in.).

FIELD CHARACTERS. Male. A dark bluish grey bird with dark eye-stripe; wings black; tail black, the central rectrices narrowly, the lateral ones broadly tipped white.

Female similar but paler grey and often with barred underparts as in the young. A roundish white patch under each wing, and white terminal margin to the tail conspicuous in flight, the latter particularly when the bird is alighting. Adult superficially confusable with adult Plaintive Cuckoo (584).

STATUS, DISTRIBUTION AND HABITAT. An altitudinal migrant in the Himalayas from Murree in West Pakistan (up to 2000 m) east through the outer ranges of Garhwal, Nepal and Sikkim (up to 1800 m), Bhutan (between 1000 and 1900 m), Assam (from 750 to 1500 m and up to 2100 in the Naga hills), and the hills of East Pakistan (winter). Does not breed in the lower foothills. In most of its range, particularly in the western part and in Nepal, it is a summer visitor in the hills from the end of March to October, wintering in the terai, duars and adjacent plains, and straggling in the Peninsular



CAMPEPHAGIDAE

18

BREEDING. Season, May and June. Nest undescribed, presumably as in *macei*. Eggs 2.

MUSEUM DIAGNOSIS. Adult ♂ of *nipalensis* type, but slightly paler and hardly different in colour from *siamensis* of Burma and Thailand.

Adult ♀ also like *nipalensis*, but paler, more especially on underparts, the grey throat and breast merging into pale indistinct barring on the underparts, which, however, does not extend as far down the abdomen.

First-year birds, paler above and below than *siamensis*; barring on underparts fainter, but extending from chin to lower breast.

MEASUREMENTS. Wing ♂♂ 173-176, ♀♀ 167-174 mm (HW).

COLOURS OF BARE PARTS. As in *macei*.

1076. **Barred Cuckoo-Shrike.** *Coracina striata dobsoni* (Ball)

Gauculus dobsoni Ball, 1872, Jour. Asiat. Soc. Bengal, 41: 281 (Andamans)
Baker, FBI No. 762, Vol. 2: 346
Plate 71, fig. 17

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 26 cm (11 in.).

FIELD CHARACTERS. Very similar to *novaeollandiae* but vent, under tail-coverts, face and throat grey. Furthermore, in the female the underparts below the breast, lower back, rump and upper tail-coverts are barred with black and white. The male has the flanks and rump faintly barred.

STATUS, DISTRIBUTION AND HABITAT. Resident. Andaman Islands, apparently confined to forest.

Extralimital. Other races in the Malay Peninsula and the islands of Malaysia to Celebes and the Philippines.

GENERAL HABITS. Unlike *novaeollandiae* exclusively a forest bird never venturing into the open fields. Often in association with mynas, minivets, drongos, etc. in the itinerant mixed hunting parties. Flight undulating and seldom extended beyond tree to tree or branch to branch, and is weaker than that of the Large Cuckoo-Shrike. Keeps fairly high up in the trees, usually in pairs.

FOOD. Unrecorded.

VOICE AND CALLS. A quiet bird without the noisy whistle of the Large Cuckoo-Shrike and has a pleasing short song (A. L. Butler).

BREEDING. No definite data. A nest with one egg, doubtfully of this species, recorded by Baker as taken in the latter half of April — a shallow cup well bound with cobweb, placed high in a tree. The egg measured 34 × 22 mm.

MUSEUM DIAGNOSIS. See Key to the Species; for details of plumage Baker, loc. cit. Postjuvinal moult of body, lesser, median and greater coverts. First-year bird distinguished by retention of juvenal characters in primary coverts, tertials and outer rectrices.

MEASUREMENTS. Wing ♂♂ 153-170, ♀♀ 151-172 mm (Baker, Richmond).

COLOURS OF BARE PARTS. Iris crimson. Bill, legs and feet black.

CAMPEPHAGIDAE

20

through Orissa, Madhya Pradesh and Andhra as far south as Mysore (Londa, c. 15°30'N.). Affects open forest, riverine bamboo jungle, pine forest, oak and chestnut woods, abandoned land, and groves.

Extralimital. Central and eastern China, Formosa and Indochinese subregion.

GENERAL HABITS. Arboreal. For the most part keeps well up in trees although it might be seen working through rough undergrowth. Once observed hopping about on the ground under tea bushes. Normally singly or in pairs, often associating with drongos and minivets in the itinerant hunting bands. Their general actions and behaviour — hopping and volplaning from branch to branch, upright stance when perched, and fluttering or hovering in front of leaf-sprigs to take insects — are all strongly reminiscent of the minivets and wood shrikes.

FOOD. Insects.

VOICE AND CALLS. A descending three- or four-note song *do-la-fa* (Fleming) syllabled as *pi-yo-to-be* or *twet-twet-twee-or*, fairly loud but rather monotonous and plaintive, uttered from a branch or in flight. Song period in Nepal, beginning of March till end of September (Proud).

BREEDING. Season, chiefly May to June. Nest, a shallow cup of pliant twigs, roots and fibres matted together with cobwebs, draped on the outside with lichens and bits of bark. Jones describes it as an extraordinary structure made almost entirely of caterpillars' web with their droppings still adhering to the exterior, while Osmaston describes a nest as a flimsy structure composed almost entirely of the dead deciduous shoots of *Phyllanthus* woven with cobwebs and decorated with lichen. It is fixed on or in the fork of a branch from three to eight metres above the ground. Eggs, usually 3, sometimes 2, rarely 4, pale olive-grey longitudinally blotched all over with pale brown. Average size of 30 eggs 24.3 × 17.4 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Species.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	118-128	19-23	21-24	111-123 mm (once 95, once 96)
♀♀	114-124	19-22	21-24	109-120 mm (SA, BB, SDR)

The sexes do not differ in size significantly.

Weight 4 ♂♀ 35-42 g (SA).

COLOURS OF BARE PARTS. Iris reddish-brown. Bill, legs, feet and claws black; soles dirty white, sometimes with a yellowish tinge (Biswas).

CORACINA MELANOPTERA (Rüppell)

Key to the Subspecies

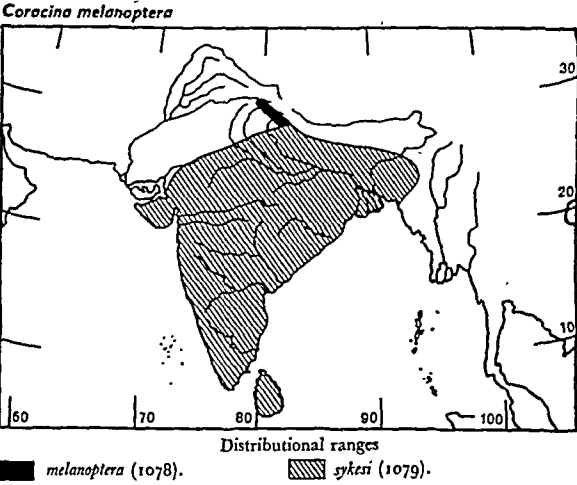
Darker and larger, wing ♂ 107 mm or over.....*C. m. melanoptera*
Paler and smaller, wing ♂ 106 mm or under.....*C. m. pyleri*

CUCKOO-SHRIKES, MINIVETS

21

1078. **Himalayan Blackheaded Cuckoo-Shrike.** *Coracina melanoptera melanoptera* (Rüppell)
Cebblepyris melanoptera Rüppell, 1839, Mus. Senckenbergianum, 3: 25, pl. 2, Fig. 1 (Neu Holland, *error*, Bhadwar, Punjab)
Lalage sykesi eximia Van Tyne & Koelz, 1936, Occ. Papers Mus. Zool., Univ. Michigan, No. 334: 4 (Bhadwar, Kangra District, Punjab, British India)
Baker, FBI No. 756, Vol. 2: 340

LOCAL NAMES. None recorded.
SIZE. Bulbul; length c. 20 cm (8 in.).
FIELD CHARACTERS. As of 1079, q.v.
STATUS, DISTRIBUTION and HABITAT. Resident and local migrant; from Hoshiarpur and Kangra districts — possibly also adjoining submontane districts of W. Pakistan Punjab — (April to September) east to the Himalayan districts of U.P., up to c. 1000 m in the foothills. Winters in the adjacent



plains (exact localities not recorded). Affects open deciduous forest and scrub jungle.
Extralimital. Replaced by *sykesi* in peninsular India and Ceylon.
GENERAL HABITS, FOOD and VOICE. As of 1079.
BREEDING. Season, presumably July and August, but nesting unrecorded.
MUSEUM DIAGNOSIS. Differs from *sykesi* in being larger and darker on the back and upper tail-coverts, lower breast and belly.
MEASUREMENTS. Wing ♂ 107–112 mm; tail 85–92 mm (Koelz).
COLOURS OF BARE PARTS. Not recorded.

CUCKOO-SHRIKES, MINIVETS

23

wheel wheel wheel (Henry). The female has a monosyllabic chirp. One call is also described as 'a lazy buzzing snarl' (Nichols).
BREEDING. Season, chiefly March to May in Ceylon, April–May in the southern Peninsula, June to August in the Deccan, and June to September in the northern parts of its range. Nest, a shallow saucer c. 8 cm in diameter, made of dry grasses, lightly bound with cobweb, forming a compact and firm structure, but lacking the finish of the nests of minivets and wood shrikes, and devoid of any lining. Very small for the size of the bird and difficult to find; placed in the fork or on a bare branch of a large tree from two to eight metres above the ground. Eggs, 2 in Ceylon, and 3, sometimes 2 in the Peninsula; greenish white thickly blotched and streaked throughout with shades of pale brown, particularly towards the large end. Average size of 50 eggs 22.4 × 16.2 mm (Baker). The male shares incubation.
MUSEUM DIAGNOSIS. Differs from *melanoptera* in being smaller and paler on the back and upper tail-coverts, lower breast and belly.
MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	98–110	18–20	19–22	72–84 mm (once 94)
♀♀	98–104	17–20	20–22	71–80 mm (SA, HW, BB)

Weight 19 ♂♀ 24–36 g (SA).
COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet horn brown.

1079a. **Nicobar Pied Cuckoo-Shrike.** *Coracina nigra davisoni* (Kloss)
Lalage nigra davisoni Kloss, 1926, Jour. Malay Branch Roy. Asiat. Soc., 4: 159 (Nicobar Islands)
Baker, FBI No. 757, Vol. 2: 341
Plate 71, fig. 15

LOCAL NAMES. None recorded.
SIZE. Bulbul; length c. 18 cm (7 in.).
FIELD CHARACTERS. Male. Above, forehead and superciliaries white; crown and mantle glossy black; back and rump pale grey; tail black with white tips; wings black and white. Below, white; breast washed with grey. Female brown above; dirty white lightly barred with black below. Young (immature) brownish, mottled above and streaked below.
STATUS, DISTRIBUTION and HABITAT. Resident; Nicobar Islands (Trinik, Camorta). Not yet recorded from Car Nicobar or Little and Great Nicobar. Affects forest edges and secondary growth.
Extralimital. Other races in the Malay Peninsula and the islands of Malaysia to Celebes and the Philippines.
GENERAL HABITS. Found in pairs or small parties in low scrubby undergrowth, feeding close to the ground.
FOOD. Insects.
VOICE and CALLS. Unrecorded.
BREEDING. Season? Eggs have been found in May. Nest, described as a slight structure of fine sticks fastened to a small branch with cobwebs, and

CAMPEPHAGIDAE

22

1079. **Peninsular Blackheaded Cuckoo-Shrike.** *Coracina melanoptera sykesi* (Strickland)
Lalage sykesi Strickland, 1844, Ann. Mag. Nat. Hist., 13: 36 (Calcutta, *ride* Baker = Dukhun, Sykes, 1832, Proc. Zool. Soc. London, pt. 2: 77, 87)
Baker, FBI No. 756, Vol. 2: 340
Plate 71, fig. 14

LOCAL NAMES. *Jungli kāsya* (Hindi); *Chhota bahram* (Saugar dist., M.P.); *Chirra akurayi* (Telugu); *Kālā mātāhāo kāsio* (Gujarati); *Karimtoppi* (Malayalam).
SIZE. Bulbul; length c. 19 cm (7½ in.).
FIELD CHARACTERS. Male, light grey with black head, wings and tail, the latter conspicuously white-tipped on all but the middle pair of rectrices; abdomen and vent white.
Female and young (immature) browner, with no black on head, the underparts buff-white, barred with dark brown except on the abdomen, vent and under tail-coverts.
STATUS, DISTRIBUTION and HABITAT. Resident, subject to considerable seasonal local movements. But silent in non-breeding season and then liable to be overlooked. Ceylon and the whole of the Indian peninsula east of a line from Kutch and northern Saurashtra roughly through Mount Abu to Barcilly. Nepal duns (one record, Hitaure May 21, Biswas), West Bengal (monsoon, June to September), Assam south of the Brahmaputra, Nagaland, Manipur, and East Pakistan (winter), in the plains and hills up to 1500 m. A rare resident in the Nilgiri Hills, found up to 2100 m but chiefly as a winter visitor (October to April). In Ceylon locally distributed in the lowlands, ascending to 1650 m on the eastern side but less high in the wetter western aspect. Affects secondary jungle, open light deciduous or mixed forest, thick hedges, fruit gardens, mango groves, young date scrub, mangroves.
Local Migration. Movements unclear. A marked passage has been recorded in June and again in September–October at Dhulia (Khandesh dist., Maharashtra) and Belgaum (Mysore). In Mysore and Kerala it is most common as a winter visitor.
GENERAL HABITS. Found singly, in pairs or small parties, often in association with the roving hunting flocks of tree-picks, babblers, wood shrikes, Grey Tits, minivets, etc. According to Wait the males are solitary out of the breeding season, the females and the young associating in small troops. The birds fly from bush to bush or tree, searching methodically the leaves and twigs as they proceed from branch to branch. They prefer tall trees and only occasionally do they descend to the ground in search of insects, progressing by long hops like a thrush.
Display. As the breeding season approaches, the male seems to become exceedingly vociferous and quarrelsome, darting repeatedly at his mate with outspread wings and tail and uttering all the while a sharply repeated chattering cry (E. H. N. Gill).
FOOD. Mostly insects; also berries (*Lantana*, *Ficus* figs, etc.).
VOICE and CALLS. The song consists of some clear mellow whistling notes followed by a quick-repeated *pit-pit-pit*, heard only during the hot weather and rains. Also rendered as *twit wit wūt tuy tuy tuy tuy* and *wit wit wheel*

CAMPEPHAGIDAE

24

covered with lichen externally; taken in very dense forest. Eggs 2, similar to those of 1079 but rather brown. Two eggs measure 21.8 × 16 and 22.1 × 15 mm.
MUSEUM DIAGNOSIS. See Key to the Species; for details of plumage Baker, loc. cit.
MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂	88–92	18–19	19–21	65–72 mm
2 ♀♀	88, 89	18, 19	20, 22	69, 73 mm (Grubb)

COLOURS OF BARE PARTS. Iris brown or reddish brown. Bill, legs and feet black.

Genus PERICROCOTUS Boie

Pericrocotus Boie, 1826, Isis, col. 972. Type, by monotypy, *Muscicapa miniata* Temminck
Genus remarkable for its brilliant coloration in which reds and yellows predominate. Bill about half length of head, strong, hooked and notched. Nostrils concealed by plumes. Wing long and pointed; tail long and steeply graduated. Feet weak.

Key to the Species

	Page
I Tail black and red; upper tail-coverts red	
A Crown and back glossy black	
a Innermost secondaries with oval red drops.....	<i>P. flammeus</i> ♂ 25
b Innermost secondaries with no oval red drops	
1 Red of wing-patch extending down along outer webs of secondaries.....	<i>P. ethologus</i> ♂ 32
2 Red of wing-patch not extending down along outer webs of secondaries.....	<i>P. brevirostris</i> ♂ 30
B Crown and back ashy or grey, never black	
c Wing over 80 mm	
3 Lower plumage bright scarlet.....	<i>P. solaris</i> ♂ 36
4 Lower plumage rosy red.....	<i>P. roseus</i> ♂ 37
d Wing under 75 mm	
5 Throat grey to black; breast scarlet.....	<i>P. cinnamomeus</i> ♂ 40
6 Lower plumage all pale yellow.....	<i>P. cinnamomeus</i> ♀ 40
II Tail black and yellow; upper tail-coverts yellow	
C Innermost secondaries with oval yellow spots.....	<i>P. flammeus</i> ♀ 25
D Innermost secondaries with no oval yellow spots	
e Upper and lower back not concolorous.....	<i>P. solaris</i> ♀ 36
f Upper and lower back concolorous	
7 Rump and upper tail-coverts all deep yellow	
i Yellow of forehead extending on crown to level of eye....	<i>P. brevirostris</i> ♀ 30
.....	<i>P. ethologus</i> ♀ 32
ii Yellow of forehead not extending on crown.....	<i>P. roseus</i> ♀ 37
8 Rump and upper tail-coverts margined with yellow.....	<i>P. roseus</i> ♀ 37

CUCKOO-SHRIKES, MINIVETS

25

III Tail black and white; upper tail-coverts grey, brown or black	Page
E Rump red, or white marked with red	
g Dark parts of upper plumage glossy black..... <i>P. erythrogygius</i> ♂	45
h Dark parts of upper plumage smoky brown..... <i>P. erythrogygius</i> ♀	45
F Rump with no trace of red..... <i>P. dicaricatus</i>	39

PERICROCOTUS FLAMMEUS (Forster)

Key to the Subspecies
Males

A Underparts deep scarlet	
a First two primaries with no red on the outer webs	
1 Larger, wing 96 mm or over..... <i>P. f. speciosus</i>	25
2 Smaller, wing c. 90 to 98 mm..... <i>P. f. fraterculus</i>	28
b First three primaries with no red on the outer webs; bases of rectrices with a considerable amount of black..... <i>P. f. andamanensis</i>	27
B Underparts more orange, less scarlet..... <i>P. f. flammeus</i>	27
3 Size as 1; more red in tail..... <i>P. f. semiruber</i>	29

1080. North Indian Scarlet Minivet. *Pericrocotus flammeus speciosus* (Latham)

Turdus speciosus Latham, 1790, Index Orn., 1: 363
(India, restricted to Darjeeling by Baker)

Phainicormis elegans Horsfield, 1840, Proc. Zool. Soc. London: 156-7 (Assam; type locality restricted by Deignan, 1946, to the neighbourhood of Sadiya, north-eastern Assam)

Cf. Deignan, H. G., 1946, Auk, 63: 512-33.

Baker, FBI No. 733, Vol. 2: 319

Plate 71, fig. 9

LOCAL NAMES. Pākāri būlāchāshn (Hindi); Sākāli (Himalaya); Sōyāli (Bengali); Rājālāl, Rāni chārā (Nepali).

SIZE. Bulbul +; length c. 23 cm (9 in.).

FIELD CHARACTERS. A slim glossy black and deep scarlet bird.



× c. 1

with scarlet replaced by yellow; underparts bright yellow.

The male differs from *ethologus* and *brevirostris* by its larger size and the greater amount of red on tail as seen from above; the female by its larger size and the brighter yellow of the underparts.

STATUS, DISTRIBUTION AND HABITAT. Resident, moving to lower altitudes and extending into the plains in winter. The Himalayas from Murree

CUCKOO-SHRIKES, MINIVETS

27

1080a. Andaman Scarlet Minivet. *Pericrocotus flammeus andamanensis* Beavan

Pericrocotus andamanensis 'Tytler' = Beavan, 1867, Ibis: 382 (Andaman Islands)
Baker, FBI No. 736, Vol. 2: 322

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 21 cm (8½ in.).

FIELD CHARACTERS. As of 1080.

STATUS, DISTRIBUTION AND HABITAT. Resident. Andaman Islands, in forest. 'Not uncommon about Mt Harriet, Aberdeen, and other localities in the vicinity of Port Blair' (Hume, 1874, SF 2: 208).

GENERAL HABITS. As in *flammeus* (1081). Frequents the crowns of trees in small parties.

FOOD. Insects.

VOICE AND CALLS. None recorded.

BREEDING. Unrecorded.

MUSEUM DIAGNOSIS. The black extending over the whole length of the central rectrices is a distinctive character. First three primaries of adult male unspotted; first four primaries of adult female and young male unspotted.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
6 ♂♂	92-96	19-20	—	87-98 mm
1 ♀	92	—	—	93 mm (HW)
♂♀	89-95	(from feathers) 13-14	c. 18	75-89 mm (Baker)

COLOURS OF BARE PARTS. As in *flammeus*.

1081. Peninsular Indian Scarlet (or Orange) Minivet. *Pericrocotus flammeus flammeus* (Forster)

Muscicapa flammea Forster, 1781, Ind. Zool.: 25-26, pl. 15 (No locality = Ceylon, vide Whistler & Kinnear, 1933, JBNHS 36: 341)

Baker, FBI No. 737, Vol. 2: 322

Plate 71, fig. 8

LOCAL NAMES. Pākāri būlāchāshn (Hindi); Kēsariyo rājālāl (Gujarati); Māmbēla kūrri, Pētkūrri (Tamil); Gīri-kūrulla (Sinhala); Teekūrri (Malayalam).

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. As of 1080, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident. From about the Tapi river in Gujarat south through Maharashtra, Mysore and western Tamil Nadu to Kerala, east to the Shevaroy Hills. More common in the hills than in the plains; in the Nilgiris up to 1800 m; in the Palnis to the top of the hills. Ceylon, in the hills up to c. 2100 m and locally in the low country. Affects deciduous, mixed and evergreen forest.

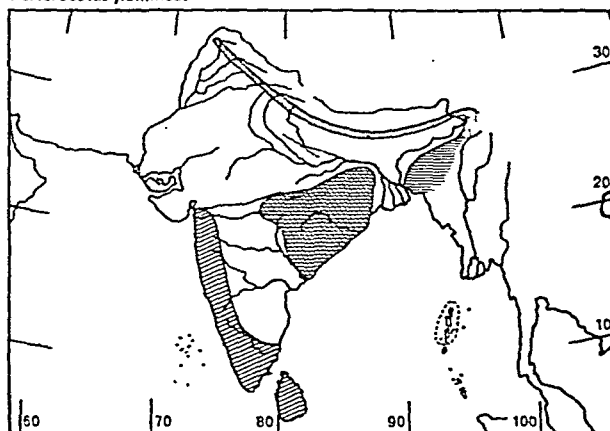
GENERAL HABITS. Arboreal. In flocks of up to 20 birds or more in the non-breeding season, often in mixed hunting parties. Flits restlessly among the forest canopy hovering in front of a sprig or flower to capture insects

26

CAMPEPHAGIDAE

east through Nepal, Sikkim, Bhutan (common in the foothills), and the hills of Assam north of the Brahmaputra south to the Patkai Hills; breeding from c. 900 m up to at least 1800 metres (common from 1500 to 2700 m in Nepal — Proud, 1955, JBNHS 53: 62). Recorded in the plains at Lucknow

Pericrocotus flammeus



Distributional ranges

speciosus (1080). fraterculus (1082). semiruber (1083).
flammeus (1081). andamanensis (1080a).

(U.P.), Madhubani (N. Bihar) and in the Jalpaiguri district (northern W. Bengal). Affects forest only; in winter it may be seen in mango tops.

GENERAL HABITS, FOOD AND VOICE. As in *flammeus* (1081).

BREEDING. Season, April to July. Breeding biology as in *flammeus*. Average size of 13 eggs 22.4 × 16.8 mm (Baker). According to him the male also incubates.

MUSEUM DIAGNOSIS. See Key to the Subspecies. First two primaries in male unspotted (first three in female). In specimens from the western Himalayas the red of the central rectrices is usually absent. In the eastern Himalayas the red is more often found and is greater in extent though it seldom reaches the shaft.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	95-110	19-21	17-19	96-113 mm
♀♀	96-108	19-22	17-19	94-110 mm

Weight ♂♂ ♀♀ 28-37 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs, feet and claws blackish brown.

28

CAMPEPHAGIDAE

and spiders and also makes short aerial sallies in pursuit of winged prey. Flight direct, with the graduated tail frequently spread, the flock flitting from tree to tree in follow-my-leader style.

Display. A display flight has been recorded in which the male — or both sexes — soars up with outspread wings, then spirals down, wings still outstretched, and alights on the top of a tree, the performance being repeated.

FOOD. Caterpillars, green crickets, cicadas and other insects.

VOICE AND CALLS. A sweet-toned clear double whistle *tree-tree* repeated every 2 or 3 seconds. Also *twety-tree-twety-tree-twety*, similar to that of *Hemipus* but somewhat irregular and readily distinguishable from the latter. The song is merely a more elaborate version of the same sounds, a shrill pleasant warble not often heard.

BREEDING. Season, in Ceylon mainly February-May, with a second brood in August-September; an occasional occupied nest may be found in other months (Henry); in Kerala nests are found in February and from June to September, therefore presumably having two broods; in Mysore from June to September, and in Maharashtra July-August. Nest, a neat small cup of lichens bound together with cobwebs, plastered with flakes of bark and spiders' egg-cases, and lined with mid-ribs of dry leaves harmonizing perfectly with the supporting branch; usually at a considerable height — 6 to 18 metres from the ground. Favourite sites are a tree growing on the edge of jungle or tall trees in tea plantations. Eggs, 2 or 3, pale blue-green, freckled with pale yellowish brown, lavender and grey; they measure about 23 × 17 mm. Incubation by female only, feeding of young by both sexes. When nest-young in danger from predator, e.g. tree pie, both parents observed fluttering frantically from branch to branch, screeching piteously as if wounded. The male with fluffed plumage even fell fluttering to the ground to heighten the effect.

MUSEUM DIAGNOSIS. Underparts in male more orange than scarlet; the first three primaries lack the red spot, and the central rectrices are wholly black; in the female the first three primaries lack the yellow spot.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	87-97	17-20	16-17	82-101 mm
♀♀	87-96	16-19	16-17	86-96 mm (SA, HW)

Weight 3 ♂♂ 25-27; 1 ♀ 25 g (Rensch, SA).

COLOURS OF BARE PARTS. Iris brown. Bill black; mouth pink, yellowish pink or brown and greyish pink. Legs, feet and claws black; soles yellowish.

1082. Burmese Scarlet Minivet. *Pericrocotus flammeus fraterculus* Swinhoe

Pericrocotus fraterculus Swinhoe, 1870, Ibis: 244 (Hainan)

Pericrocotus speciosus bakeri La Touche, 1922, Bull. Brit. Orn. Cl., 42: 54
(Southeast Yunnan)

Baker, FBI No. 734, Vol. 2: 320

LOCAL NAMES. Dās rīti gāḍā (Cachari); Ingōrā (Kacha Naga); Vēshēnē (Mikir); Sōrā pākhi (Comilla, E. Pakistan).

CUCKOO-SHRIKES, MINIVETS

29

SIZE. Bulbul; length c. 22 cm (8 in.).
FIELD CHARACTERS. As of 1080, q.v.
STATUS, DISTRIBUTION and HABITAT. Resident. Garo, Khasi, Cachar and Naga hills of Assam, Manipur (?) and south to the East Pakistan hills, from plains level to c. 1800 m. Affects open deciduous and evergreen forest.
GENERAL HABITS, FOOD and VOICE. As in *flammeus*. In courtship, described by McCann (JBNHS 34: 1061-2), a female flew up from branch high into the air accompanied by a feeble whistle. The male pursued and seized her tail-tip in his bill, both birds then spiralling down through space thus — 'like a plane "spinning"'. Male released female before returning to the same perch. These antics were soon repeated.
BREEDING. April to June. Breeding biology as in the nominate race. Egg measurements: 23 × 14.3 to 23 × 15.8 mm (Baker).
MUSEUM DIAGNOSIS. See Key to the Subspecies. In the adult male, the first two primaries lack the red spot and the central rectrices are wholly black; in the female the first three rectrices lack the yellow spot.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	90-97	13-14	c. 18	78-81 mm (Baker)

Wing ♂♂ 96-103; ♀♀ 93-101 mm (Deignan).
COLOURS OF BARE PARTS. As in *flammeus*.

1083. East Indian Scarlet Minivet. *Pericrocotus flammeus semiruber* Whistler & Kinnear

Pericrocotus speciosus semiruber Whistler & Kinnear, 1933, Jour. Bombay nat. Hist. Soc., 36: 340 (Sankrametta, Vizagapatam)

LOCAL NAME. *Sāyāli* (Bengali).

SIZE. Bulbul; length c. 22 cm (8½ in.).

FIELD CHARACTERS. As of 1080, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. From western Madhya Pradesh (Betul) to Orissa, southern Bihar and West Bengal, and northern Andhra. Affects moist-deciduous and evergreen forest of the hill tracts.

GENERAL HABITS, FOOD and VOICE. As in *flammeus*. The males are said to have a 'superb courtship flight above the tree-tops in April and May'.

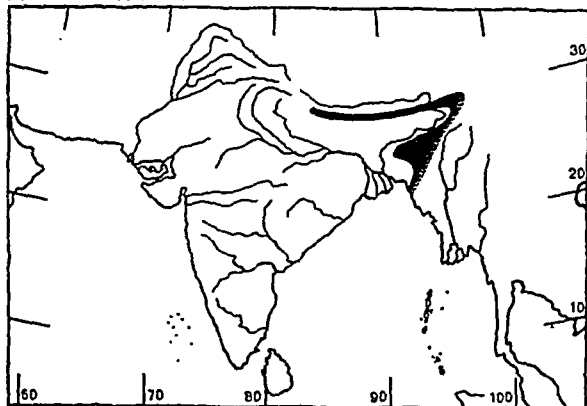
BREEDING. Season, presumably May and June as sexual display was observed during the latter end of April in the Visakhapatnam and Betul districts. Nesting as in *flammeus*.

MUSEUM DIAGNOSIS. Differs from *speciosus* in the greater amount of red in the tail. First two primaries unspotted in the male, first three (usually) in the female. The red on the central pair of rectrices usually occupies the terminal two-thirds of the outer webs. *P. f. fraterculus* has the central rectrices wholly black and is slightly smaller.

CUCKOO-SHRIKES, MINIVETS

31

Pericrocotus brevirostris



P. b. brevirostris (1084).

Extralimital. Extends to western Burma and western Yunnan. The species ranges to Kwangtung and North Vietnam.

GENERAL HABITS and FOOD. Similar to those of *ethologus*, q.v.

VOICE and CALLS. The following notes are described by Lister (JBNHS 52: 47) for *brevirostris*, but identity not absolutely certain. A shrill persistent *tiwi-twi* (first note lower) given by both sexes when perched or in flight. A churring *shrrri...shrrrei* (rising)... *twi-twi* (last note lower)... A loud *shi-chi-wi-chi-wi-chi-wau* (high-rising-low) with variations given by a female. *Twai-twi-twi* — *swit-twee* (high-low-low-rising) with variations given by male when flying round; also a more complicated song too involved and too rapid to record phonetically; the basis is a loud *switi* (pitched fairly high) with many variations and often run together to form phrases. Also recorded: a highpitched *se-sei* while foraging, a soft *wi...wi* given by both sexes, and calls in flight rendered as *re-wa-wa-wui* and *whi-whi-whi-see*. A comparative study of the vocalizations of *P. brevirostris* and its 'double', *P. ethologus*, seems desirable.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Adult male. Generally a deeper more crimson-red underneath than *P. ethologus*. Gloss of upperparts more purplish. Black of throat deeper, more glossy and extending farther down the throat. First primary all black. Distinguished from it mainly by the black secondaries, without a red margin. The central rectrices are narrowly margined with red on the outer webs. In the next pair, the red stretches not only on the outer web right up to the tip, but also over much of the inner web, so that the tip is wholly red with a black wedge-shaped zone from the base towards the edge ending about 25 mm before the tip.

30

CAMPEPHAGIDAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	100-106	20-21	18-19	94-102 mm
♀♀	96-102	19-20	18	92-101 mm (HW)

COLOURS OF BARE PARTS. As in *flammeus*.

1084. Shortbilled Minivet. *Pericrocotus brevirostris brevirostris* (Vigors)

Muscipeta brevirostris Vigors, 1830, Proc. Zool. Soc. London: 43 (Himalayas = Sikkim foothills, *ride* Mayr, 1940)

Phaenicornis affinis McClelland, 1840 (1839), Proc. Zool. Soc. London: 157 (Sadiya, Assam)

Pericrocotus brevirostris sanguineus Koelz, 1952, Jour. Zool. Soc. India 4: 42 (Shillong Peak, Khasia Hills)
Baker, FBI No. 739, Vol. 2: 324, Plate 71, fig. 5

LOCAL NAMES. *Lālī rāja sorāi* (Assam); *Dao ribi kashiba* (Cachari).

SIZE. Bulbul —; length c. 17 cm (7 in.).

FIELD CHARACTERS. Male, a black and scarlet bird with a broad scarlet band running through the black wing, black throat, a black and scarlet steeply graduated tail, and a scarlet rump. Very similar to *ethologus* and difficult to distinguish from it in the field; in the latter the red extends down along the outer webs of the secondaries, forming a rough, inverted U on the wing.

Female has a grey back, yellow throat, and all the red parts of male replaced by yellow.

Young (first-year) male resembles female. Wing pattern of females is practically similar.

P. brevirostris may be distinguished by the more extensive yellow of the forehead (extending to the top of head) and on the sides of neck. Voice is probably different but comparative data are wanting. The slightly larger species *flammeus* is distinguished by the red spots on the secondaries (yellow in the female) separated from the larger wing-patch by a black band. Male of *solaris* has a dark grey, not black throat; female has a whitish throat contrasting with the remaining yellow underparts. *P. cinnamomeus* is smaller, has grey head, back and throat and yellow-orange belly; the female has the underparts whitish and an orange-red rump. *P. roseus* has grey upperparts and rosy red underparts. Except for the latter two species, shades of red in minivets cannot be appraised in the field.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements; much less common than *P. ethologus*, at least in the Himalayas. From west central Nepal (two records) to Sikkim, Bhutan, NEFA, Assam south to the Mizo Hills, Nagaland, Manipur and the hills of East Pakistan; from c. 1800 to 2400 m descending to the foothills in winter. Affects open deciduous forest, edges of evergreen, and secondary growth near cultivation.

32

CAMPEPHAGIDAE

In the female the throat is yellow, concolorous with the underparts; the yellow on forehead extends to the crown to the level of the eyes. This species is also a little smaller than *ethologus* with a relatively shorter tail.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	85-91	15	88-103 mm
♀♀	85-90	15	90-100 mm

Tail c. 105% of wing. (Stresemann, Mayr, BB)
Weight ♂♀ 16-17 g (SDR).

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet black.

PERICROCOTUS ETHOLOGUS Bangs & Phillips

Key to the Subspecies

	Page
A Smaller; deeper grey on upperparts.....	<i>P. e. mariae</i> 33
B Lighter grey on upperparts with an olive wash.....	<i>P. e. latus</i> 34
C Larger; red lighter, tail longer.....	<i>P. e. flavilaceus</i> 32

1085. West Himalayan Longtailed Minivet. *Pericrocotus ethologus flavilaceus* Bangs & Phillips

Pericrocotus brevirostris flavilaceus [sic] Bangs & Phillips, 1914, Bull. Mus. Comp. Zool., Harvard Univ. 58: 293 (Kooloo Valley, northern India)
Baker, FBI No. 738, Vol. 2: 323
Plate 71, fig. 6

LOCAL NAMES. *Wozul mini* (Kashmiri); *Chhōta pāhāri bālāchāsh* (Hindi); *Rājālsāi* (♂), *Rāni chāra* (♀) (Paharia).

SIZE. Bulbul —; length c. 18 cm (7 in.).

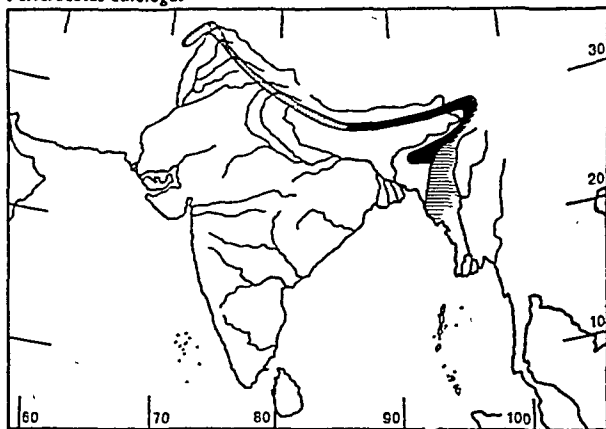
FIELD CHARACTERS. Male, a slim glossy black and deep scarlet bird with a large scarlet patch on the black wing, black throat and a black-and-scarlet graduated tail.

Female has a yellow throat and all the red parts of the male replaced by yellow. For distinction between this species and *P. brevirostris* as well as other members of the genus, see 1084 (under Field Characters).

STATUS, DISTRIBUTION and HABITAT. Mostly a summer visitor (March to October) along the Himalayas from the Sated Koh (Whitehead, *Ibis* 1909: 30), Chitral and the Kaisargarh Range (Stockley, JBNHS 34: 575; Christison, *ibid.* 43: 487 (recorded as '*speciosus*' or '*brevirostris*') east through Gilgit, Kashmir to central Nepal where it intergrades with *latus* (Büwas, JBNHS 58: 457). Breeds from c. 1200 to 3000 m; in east Nepal from 1500-3400 m (Diesselhorst). Birds recorded as high as 3900 m in northwestern Nepal (Lowndes); optimum zone 1800-2400 m. Winters (October to March) in the foothills, usually below 1000 m (up to 1500 m in Kathmandu Valley) and in the plains from Peshawar, the Salt Range and Bahawalpur east through Uttar Pradesh and Madhya Pradesh south to Betul, Seoni and Jabalpur. Straggles south to Sind (Malir near Karachi), Baluchistan (Sibi), Jodhpur, Mount Abu, Maharashtra (Sangola), Gujarat

CUCKOO-SHRIKES, MINIVETS

33

Pericrocotus ethologus

Distributional ranges

▨ *ethologus* (1085). ■ *laetus* (1086). ▤ *mariae* (1087).

(Deesa). Affects open forest (mainly pine forest in the western parts of its range) and trees bordering cultivated areas; in the plains in winter visits wooded compounds, mango groves, forest and tamarisk jungle.

Extralimital. A summer visitor to Nuristan (Afghanistan).

MIGRATION. No ringing data. Arrives in its breeding grounds at the end of March or early in April; after the breeding season, flocking starts in July and a leisurely descent takes place from August to November. Usually the foothills are reached by September and the plains by November though a few may come as early as September in the more northern plains. Some are found however in the hills up to 2000 m during the winter.

GENERAL HABITS. Highly gregarious except when breeding, parties of 20 to 40 or more individuals being met with as they fly from tree-top to tree-top. One of the conspicuous birds of the Himalayas. Strictly arboreal; flits from sprig to sprig, sometimes hovers in front of a flower and occasionally hawks insects in the air; seldom if ever descends to bushes. Sits upright while at rest.

FOOD. Ascertained food consists of spiders, orthoptera, hymenoptera, beetles, diptera and various larvae as well as buds of acacias and fruits.

VOICE AND CALLS. Notes recorded with certainty for this species are a finch-like *chib-chib* (Schäfer), also rendered as a mellow, interrogative *wee-twee?* (SA). Other calls recorded as *tig-tig-per-wa-lee* (Fleming), *switswit-swititit* and *swisweet-sweet-sweet* (Magrath) and a tit-like chatter when travelling along the tree-tops. Also a frequent 3-syllabled call well rendered by the word *minivet* (Diesselhorst). See also 1084.

BREEDING. *Season*, April (once in March) to June. *Nest*, a beautiful cup of grass bents, fine twigs or rootlets, thickly coated on the outside with

CUCKOO-SHRIKES, MINIVETS

35

the foothills and extending into the plains as far as southeast Orissa (Russell-konda), West Bengal and the Brahmaputra valley. Affects open forest, deciduous or evergreen.

GENERAL HABITS, FOOD AND VOICE. As in 1085.

BREEDING. As in 1085.

MUSEUM DIAGNOSIS. Male. Generally more orange or scarlet-red below than *P. brevirostris*. Gloss of upperparts more bluish or even greenish blue. Black of throat duller and more restricted to upper throat. Second innermost rectrix black except for a narrow red line along the outer web and an occasional small red spot on the inner web. Size generally larger; tail relatively longer. Distinguished from it mainly by the red margin on the secondaries; first primary with a whitish or pink margin along the outer web (all black in *brevirostris*). Female has a narrower yellow area on the forehead and a whitish or pale yellow upper throat.

Male (adult) is similar to that of *ethologus*, but the red in general somewhat deeper; very slightly smaller, the tail somewhat shorter.

Female (adult), crown of a pure dark grey with very little yellow on forehead, back almost solid olive-green; feathers around the eye white or yellowish white; yellow of underparts richer, more cadmium yellow, but upper throat still distinctly paler than breast and abdomen; ear-coverts greyish.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	89-95	15-16	101-107 mm
♀♀	86-92	15-16	98-108 mm

(Mayr, Stresemann, BB)

Tail c. 113% of wing.

Weight 1 ♂ 18; 1 ♀ 18 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill, legs, feet and claws black.

1087. Nagaland Longtailed Minivet. *Pericrocotus ethologus mariae* Ripley

Pericrocotus ethologus mariae Ripley, 1952 (May 20), Jour. Bombay nat. Hist. Soc. 50: 486 (Phek, eastern Naga Hills)

Pericrocotus brevirostris curvus Koelz, 1952 (Sept.), Jour. Zool. Soc. India 4: 42 (Himnitha, Lushai Hills)

Not in Baker, FBI

LOCAL NAME. *Dao ribi kashiba* (Cachari).

SIZE. Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. As in 1085, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident subject to vertical movements. Nagaland, Manipur, southern Assam in Cachar and Mizo Hills, and East Pakistan in the Chittagong Hill Tracts; up to at least 1800 m. Affects open forest, deciduous or evergreen.

Extralimital. The Chin Hills of Burma. The species ranges east to central Vietnam and north to Manchuria.

GENERAL HABITS, FOOD AND VOICE. As in 1085.

BREEDING. Unrecorded.

MUSEUM DIAGNOSIS. Compared to *laetus*, the adult female is deeper and more pure grey on the upperparts, lacking the olive-green wash; rump and upper

CAMPEPHAGIDAE

34

cobweb and lichen. There is no real lining but occasionally a few feathers, down or hair are found. Placed towards the extremity of a horizontal branch high up in tall trees, usually between 15 and 24 metres from the ground, sometimes as low as 5 m. Eggs, 3 or 4, white usually tinged with pale green, spotted and blotched with light brown to blackish brown, with secondary marks of pale lavender and inky grey. Average size of 15 eggs 19.8 × 15.1 mm (Baker). Both parents build the nest and feed the young. One brood is reared. While their nest was being examined, the birds have been observed to 'turn their tail inward between their legs, spread out their wings, and flutter down from a neighbouring tree on to the ground just as a young bird which could scarcely fly would do' (Dodsworth).

MUSEUM DIAGNOSIS. Male (adult) similar to *laetus*; however differences are bridged over by individual variation (Mayr).

Female (adult) back very greyish with only a slight greenish tinge; a fair amount of yellow on forehead; underparts variable but generally pale lemon-yellow.

Young, upperparts, median and lesser coverts dark grey, rump and upper tail-coverts yellowish and all except last with subterminal blackish bars and narrow white tips; ear-coverts grey with darker bars; underparts greyish white, suffused with yellow and with dark bars; under tail-coverts pale yellow; greater coverts and tertials yellowish white at tip; rest of wing and tail as in adult. Postjuvinal moult includes body, all wing-coverts except primaries, and tertials. First-year males resemble females.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	89-96	14	104-114 mm
♀♀	86-94	14-15	101-114 mm

(Mayr, SA)

Tail c. 114% of wing.

COLOURS OF BARE PARTS. As in 1086.

1086. East Himalayan Longtailed Minivet. *Pericrocotus ethologus laetus* Mayr

Pericrocotus ethologus laetus Mayr, 1940, Ibis: 717 (Jeyluck, Sikkim)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. As in 1085, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements. The Himalayas from central Nepal east to Sikkim, Bhutan, NEFA, Assam in the Khasi Hills and East Pakistan in the northeastern hills. Ludlow's report of '*P. brevirostris affinis*' as frequent between 1500 and 3300 m in Bhutan (Ibis 1937: 283) as well as Stevens's records of '*affinis*' up to 3600 m in winter in Sikkim probably pertain to *P. ethologus*. This species breeds in a higher zone than *P. brevirostris* but previous records are mixed up. The breeding zone appears to be between c. 1500 and 3300 m (up to 3500 m in Tibet). Most birds descend to lower altitudes in winter, reaching

CAMPEPHAGIDAE

36

tail-coverts somewhat richer, more orange-yellow. Below there is a rich, strong orange-yellow wash particularly on the lower throat, breast and abdomen. Adult male slightly deeper red. For distinguishing from *P. brevirostris* see 1086.

MEASUREMENTS. Wing 1 ♂ 88, 2 ♀ 85, 86; tail ♂ 100, ♀ 104 mm.

COLOURS OF BARE PARTS. As in 1086.

1088. Yellowthroated Minivet. *Pericrocotus solaris solaris* Blyth

Pericrocotus solaris Blyth, 1846, Jour. Asiat. Soc. Bengal, 15: 310 (Darjeeling)

Baker, FBI No. 742, Vol. 2: 326

Plate 71, fig. 4

LOCAL NAMES. *Dao tisha raja gaherba*, *Dao ribi gaherba* (Cachari).

SIZE. Bulbul —; length c. 17 cm (7 in.).

FIELD CHARACTERS. Male. Above, crown and back dark slaty, not black; rump and upper tail-coverts deep scarlet; wings and tail black and red. Below, chin greyish white; throat orange-yellow; rest of lower plumage bright scarlet.

Female. Above, crown, neck and upper back ashy grey, changing to olive-green on lower back and to dark yellow on upper tail-coverts. Wing and tail as in male but red replaced by yellow. Below, chin greyish white, rest of underparts yellow.

The male of this race differs from other minivets by the whitish chin and orange-yellow wash on the throat; the female by the whitish chin and absence of yellow on the forehead.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements. Nepal where it appears to be scarce [observations and specimens from Deorali (Biswas, JBNHS 58: 457) are the only post-Hodgsonian records], Sikkim common and recorded up to 3000 m, Bhutan, common from 1500 to 3000 m (Ludlow, Ibis 1937: 283), the hills of Jalpaiguri district (W. Bengal), Assam (Abor, Cachar, Khasi and Manipur hills) and the hills of East Pakistan, up to the highest peaks. An old Kashmir record is very doubtful (Hume, SF 11: 97). Affects open forest.

Extralimital. Ranges east to northern and western Burma. The species extends through the Indochinese subregion, south China, Sumatra, Borneo and Formosa.

GENERAL HABITS. Little known. Essentially a montane species; arboreal like other minivets but seems to keep in smaller flocks and frequents the tops of tall trees.

FOOD. Insects.

VOICE. Unrecorded.

BREEDING. The only two nests recorded were found by Baker in June (the pairs form in April). *Nest*, a cup of twigs, roots and grass stems well interwoven and matted with cobweb, more or less covered with grey lichen, looking like an excrescence of the branch on which it is placed. Eggs 3, pale yellow-brown, marked with blotches of dark brown and purple-grey, or pale sea green flecked with tiny specks of pale reddish; size about 19 × 14 mm. Males also breed in subadult female plumage.

CUCKOO-SHRIKES, MINIVETS

37

MUSEUM DIAGNOSIS. See Key to the Species.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	78-90	14-16	15-17	83-102 mm (BB, SA)

Weight 2 ♂♂ 11, 17; 2 ♀♀ 12, 16 g (SA).

COLOURS OF BARE PARTS. Iris deep brown. Bill, legs and feet brownish black.

1089. Rosy Minivet. *Pericrocotus roseus roseus* (Vieillot)

Muscicapa rosea Vieillot, 1818, Nouv. Dict. d'Hist. Nat., nouv. ed., 21: 486 (Bengal)
Baker, FBI No. 744, Vol. 2: 328

Plate 71, fig. 1

LOCAL NAME. *Dao ribi* (Cachari).

SIZE. Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. Male, upperparts ashy brown; rump and upper tail-coverts rosy pink; wings and tail much as in other minivets but scarlet replaced by deep pink. Underparts from chin to vent rosy pink which distinguishes it from other species of the genus.

Female, like male but rosy and red parts replaced by pale yellow. Differs from other ♀ minivets in having an olive or olive-yellow, not bright yellow rump, but may be easily confused with immature ♀ Shortbilled Minivet (1084) on a casual sighting.

STATUS, DISTRIBUTION AND HABITAT. A partial migrant. Breeding in the lower zone of the outer Himalayas from N.W.F.P. eastward, and through the hills of Assam and Manipur, from 600 to 1800 metres (down to plains level in Upper Assam). There are no records from Nepal since Hodgson's days, one winter record from the Sikkim terai and no records from Bhutan, but it is reported as a fairly common resident in the hills and duars of Jalpaiguri district (W. Bengal). Obtained at 1000 m in December in the Naga Hills (Ripley). All records from the eastern Himalayas are from April to October. Winters widely but sporadically over the Peninsula, recorded west to Sind (once) and south to Delhi (once), Andhra (Godavari Valley), Maharashtra (Bombay environs, Aurangabad dist., Nagpur) and Kerala (no recent records), and appears to be rare. Not uncommon in Orissa and eastern Madhya Pradesh (Bastar dist.). All records from the Peninsula are from winter months except in the Visakhapatnam Ghats whence there are some April data. La Personne found them uncommon at Sankrametta and obtained specimens on 4 April, while Whistler thought 'the breeding season was commencing, to judge by the organs of the specimens collected' (Sankrametta, 4 April).¹ Affects deciduous or evergreen forest; also lightly wooded country and gardens.

¹ Possibly belated migrants?

CUCKOO-SHRIKES, MINIVETS

39

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	87-94	15-17	15-16	87-94 mm
♀♀	90-94	15-17	15-16	89-91 mm (SA, HW)

Weight 2 ♂♂ 14, 18; 2 ♀♀ 18, 19 g (GD).

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet black.

1089a. Ashy Minivet. *Pericrocotus divaricatus divaricatus* (Raffles)

Lanius divaricatus Raffles, 1822, Trans. Linn. Soc. London, 13: 305 (Singapore)
Baker, FBI No. 751, Vol. 2: 334 (= *cinereus*)

Plate 71, fig. 7

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. A slim grey and white minivet distinguished from all others in having no red in the plumage.

Male. Above, forehead white; posterior crown and nape black; back and rump grey; tail black with white outer rectrices. Below, including sides of neck, white. A white patch on wing visible in flight.

Female, similar to male, but upperparts entirely grey, no black on crown; forehead faintly whitish.

STATUS, DISTRIBUTION AND HABITAT. An accidental winter vagrant recorded twice: near Port Blair, Andamans, 19 November 1897 (Butler, JBNHS 12: 394), and at Karnala, near Bombay, 31 January 1965 (Navarro, ibid. 62: 303). The latter, one of a pair, was collected in a rather thick patch of forest. Another pair was observed the same day.

Extralimital. Breeds in Amurland, Manchuria, Korea, central Japan and Formosa. Winters south to southern Tenasserim, Malaysia, Sumatra, Borneo and the Philippines.

GENERAL HABITS. Keeps in pairs or small flocks in association with other species. The Andaman bird was found in company with *P. flammeus*; the Bombay birds were in pairs in a mixed party of warblers and flycatchers and were moving in the light foliage canopy in forest about six metres from the ground.

FOOD. Insects.

VOICE AND CALLS. Navarro describes their calls as resembling the harsh voice of a shrike rather than the melodious and pleasant trilling call of other minivets. According to Austin (*Birds of Korea*), the rattling but somewhat musical call easily distinguishes them. Calls uttered when perched or in flight.

MUSEUM DIAGNOSIS. See Key to the Species; for details of plumage Baker, loc. cit.

MEASUREMENTS

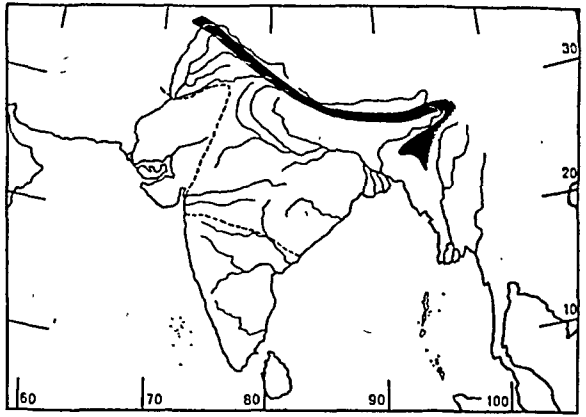
	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	95-101	c. 16	c. 17	86-94 mm (Baker)

COLOURS OF BARE PARTS. Iris dark brown. Bill and feet black.

38

CAMPEPHAGIDAE

Pericrocotus roseus



■ Breeding range Broken line = winter extension of *P. r. roseus* (1089).

Extralimital. Extends east through northern Burma and southern China to North Vietnam. *P. r. cantonensis* is found in China north of the range of *roseus*.

GENERAL HABITS. Little recorded. Gregarious after the breeding season and somewhat erratic in winter. Arboreal and rather more sluggish than other minivets, often sitting still on the tops of the trees.

FOOD. Insects.

VOICE AND CALLS. A squeaky whistling *whiririri-whiririri-whiririri*, very similar to the calls of the Pied Flycatcher-Shrike (1065).

BREEDING. Season, principally May and June (c/3 near Mussooree on 9 April, Mackinnon). Nest, much as that of *brevirostris* (1084) — a deepish cup — perhaps not so profusely plastered exteriorly with cobwebs or decorated with lichen although some nests are lined inside as well as outside with lichen. Main materials are roots, long needle-like twigs and stems of grass. Generally placed on a moss- or lichen-covered branch, from 3 to 10 metres above the ground, usually at a fair height and in dense or open forest; rarely in clumps of trees in open country or in a garden. Eggs, 3 or 4, nearly white, pale clay or olive-stone marked with blotches of dark brown and lavender, often decidedly more numerous at the large end. Average size of 40 eggs 19.4 × 15.2 mm (Baker). Nest building chiefly by female, as in other minivets, but male accompanies her when gathering material and putting it together.

MUSEUM DIAGNOSIS. See Key to the Species. Postjuvénal moult of body, lesser, median and most of the greater coverts and the tertials. First-year male like female but underparts have some pinkish feathers (perhaps not always).

CAMPEPHAGIDAE

PERICROCOTUS CINNAMOMEUS (Linnaeus)

Key to the Subspecies

	Page
A Throat dark grey or blackish grey; upperparts dark	
a Above more grey, less brownish grey; abdomen very white.....	41
b Throat blacker; flame-orange on breast deeper; smaller.....	42
c Female with flanks and abdomen washed with rich yellow.....	44
B Throat black.....	43
C Throat grey; upperparts much paler.....	40

1090. Sind Small Minivet. *Pericrocotus cinnamomeus pallidus* Baker

Pericrocotus cinnamomeus pallidus Baker, 1920, Bull. Brit. Orn. Cl., 40: 115
(Larkhana, Sind)
Baker, FBI No. 748, Vol. 2: 332

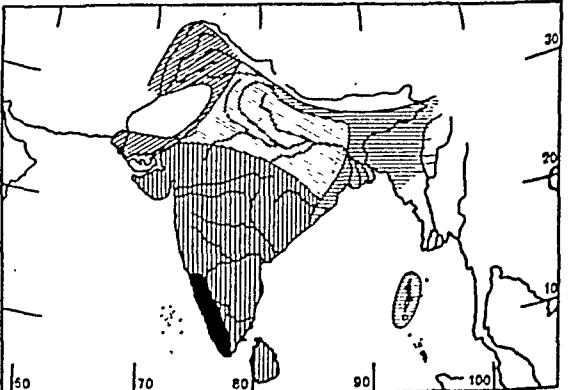
LOCAL NAMES. *Būlāchāshūm* (Hindi); same as for Yellow-eyed Babbler (1231).

SIZE. Sparrow —; with longer tail. Length c. 15 cm (6 in.).

FIELD CHARACTERS. As of 1093, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident and fairly common in semi-desert biotope wherever sufficient trees for its requirements are found.

Pericrocotus cinnamomeus



Distributional ranges
▨ *pallidus* (1090). ■ *peregrinus* (1091). ▨ *cinnamomeus* (1093).
■ *malabaricus* (1094). ■ *viridis* (1095).

CUCKOO-SHRIKES, MINIVETS

41

West Pakistan along the valley of the Indus to Jammu, and southwest Punjab, up to c. 600 metres in the Himalayan foothills. Has been obtained in Baluchistan at Quetta in August, and quite possibly occurs in Sibi plains and Las Bela. Intergrades with *peregrinus* in Kutch, central Rajasthan (Mount Abu) and Kangra district, Punjab. Affects clumps of thorn (*Acacia*, *Prosopis*, etc.) and subtropical dry forest, scrub jungle, mango topes, sheesham plantations and wooded compounds.

Extralimital. A male collected in Khorasan (Iran) by Captain Watson was received by Baker (Bull. Brit. Orn. Cl., 40: 115, 1920).

GENERAL HABITS, FOOD AND VOICE. As in *peregrinus* (1093).

BREEDING. Season, March–April and August–September. Nest and eggs as in *peregrinus*.

MUSEUM DIAGNOSIS. ♂ Throat grey. Compared with the nominate race, the grey of the upperparts is paler; the flame colour of rump and upper tail-coverts less intense and yellower. Lower plumage white; yellow and red confined to a narrow band below the throat and a wash on the upper flanks. Wing-spot largely white; tail tips very pale. In the female, the upperparts, wing-spot and tail tips are paler even than in ♀ *peregrinus*.

MEASUREMENTS 'as in other races' (Baker).

	Wing	Bill (from skull)	Tarsus	Tail
4 ♂♂	64–70	11–12	15 (2 msd.)	64–76 mm
1 ♀	64	—	—	67 mm (SA, BB)

Weight 2 ♂♂ 8, 8 g (BB).

COLOURS OF BARE PARTS. As in *peregrinus*.

1091. Northern Small Minivet. *Pericrocotus cinnamomeus peregrinus* (Linnaeus)

Parus peregrinus Linnaeus, 1766, Syst. Nat., ed. 12, 1: 342 (No locality, Ambala, Punjab, fixed by Baker, 1920)

Pericrocotus cinnamomeus iredalei Baker, 1929, Bull. Brit. Orn. Cl., 49: 64 (Ambala, Punjab)

Pericrocotus peregrinus galbinus Van Tyne & Koelz, 1936, Occ. papers, Mus. Zool., Univ. Michigan, No. 334: 4 (Bhadwar, Kangra)
Baker, FBI No. 745, Vol. 2: 329

LOCAL NAMES. *Būlālchāsh, Rājālāl* or *Rājālāl* (Hindi); *Sāhili* (Himalaya).

SIZE. Sparrow —, with longer tail. Length c. 15 cm (6 in.).

FIELD CHARACTERS. As for the nominate race (1093) q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident, the commonest of the minivets. From East Punjab (plains and Himalayan foothills up to 600 metres) where it intergrades with *pallidus*, east to Bihar along the Nepal terai where it intergrades with *viridis*, and south to northern Madhya Pradesh and northern Orissa. Affects open forest, scrub and bush country interspersed with small trees, roadway avenues, mango topes and orchards, and trees in cultivation.

CUCKOO-SHRIKES, MINIVETS

43

FIELD CHARACTERS. Male, head, throat and back dark grey, rump orange-red; wings black with a yellow-orange patch; a long tail, black above, yellow-orange below; breast bright orange becoming yellow on belly.

Female, upperparts as in male but paler; underparts whitish grey suffused with yellow (no black throat); wings as in male but yellow patch smaller and less bright; tail as in male.

STATUS, DISTRIBUTION AND HABITAT. Resident. From Saurashtra (Gujarat), southern Rajasthan, Madhya Pradesh and southern Orissa south through the Peninsula to Tamil Nadu and Ceylon, exclusive of the range of *malabaricus*. In plains and hills up to c. 1500 m; in Ceylon up to c. 1200 m in the Wet zone and 1650 m in the drier eastern regions. Affects deciduous forest, open scrub, groves of trees in cultivation, etc.

GENERAL HABITS, FOOD AND VOICE. As in *peregrinus*.

BREEDING. Season, in the Peninsula overall February–March to August–September varying locally; newly fledged young observed in November in central Maharashtra. In Ceylon main season February to May but an occasional nest may be found outside these months. Breeding biology as in *peregrinus*.

MUSEUM DIAGNOSIS. See Key to the Subspecies. The first-winter male at the postjuvinal moult assumes a plumage similar to that of the adult female. Almost immediately after the moult, however, odd feathers of the chin, throat and upper breast are accidentally lost and replaced by corresponding adult feathers, the process being accelerated by a partial spring moult of those parts. First-summer males are therefore distinguishable by a piebald black and grey throat with a slight nimbus of flame colour, and they breed in this state moulting to adult plumage in the postnuptial moult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	66–72	13–14	16–18	66–76 mm
♀♀	65–71	13–14	16–18	68–75 mm (SA, HW)

Weight 1 ♂ 12 g (SA).

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs, feet and claws horny black.

1094. Malabar Small Minivet. *Pericrocotus cinnamomeus malabaricus* (Gmelin)

Parus malabaricus Gmelin, 1789, Syst. Nat., 1: 1012 (Malabar Coast, type locality restricted to Mahé by Deignan)
Baker, FBI No. 747 (part), Vol. 2: 331

LOCAL NAME. *Techinnan* (Malayalam).

SIZE. Sparrow —, with longer tail. Length c. 15 cm (6 in.).

FIELD CHARACTERS. As of 1093, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident. Kerala north to north-western Mysore as far as Belgaum and Goa. Affects deciduous and mixed

42

CAMPEPHAGIDAE

GENERAL HABITS. A bird of the plains and less a forest species than *P. flammeus*. Purely arboreal; goes about in small flocks of 8 to 10 or so in the non-breeding season, frequently in mixed company of wood shrikes, flycatchers and others. Flits about in the foliage, hunting insects among the leaves, sometimes fluttering before a sprig or launching short aerial sallies in pursuit of winged prey.

FOOD. Moths, caterpillars and other insects.

VOICE AND CALLS. In flight and when foraging, the birds give a constant chorus of high feeble whistles, *swee-swee* . . .

BREEDING. Season, overall March to September, presumably a first brood in March to May and a second in July to September. Nest, a deep little cup of fine twigs, grass stems, chips of lichen, dead leaves or bark bound together with cobwebs and welded to the upper surface of a branch or in a fork, and lined with rootlets; walls extremely thin though firm and strongly woven. Diameter of the nest about 5 cm; invisible from below and appears to be a part of the branch itself. Eggs, usually 3, sometimes 2, exceptionally 4, pale blue or greenish white with stipples of red-brown which in some tend to form a zone at the broad end. Average size of 80 eggs, 16.4 × 13.1 mm (Baker). Both sexes share in construction (chiefly female) and in tending the young; incubation apparently by female alone; she is fed on the nest by the male.

MUSEUM DIAGNOSIS. ♂ Throat blackish or sooty grey. In intensity of colours, this subspecies is intermediate between *pallidus*, *cinnamomeus* and *viridis*. See also 1093, Museum Diagnosis.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	63–72	12–14	14–16	65–77 mm
♀♀	64–72	12–13	14–16	65–78 mm

COLOURS OF BARE PARTS. Iris dark brown. Bill black; mouth pinkish orange. Legs and feet horny brown.

1093. Southern Small Minivet. *Pericrocotus cinnamomeus cinnamomeus* (Linnaeus)

Motacilla cinnamomea Linnaeus, 1766, Syst. Nat., ed. 12, 1: 335 (Ceylon)

Pericrocotus peregrinus ceylonensis Whistler & Kinnear, 1933, Jour. Bombay nat. Hist. Soc., 36: 344 (Cocawatte, Ceylon)

Pericrocotus cinnamomeus sidhoutensis Koelz, 1939, Proc. Biol. Soc. Washington, 52: 69 (Sidhout, Cuddapah, Madras)

Pericrocotus peregrinus dharmakumari Koelz, 1950, Amer. Mus. Novit., No. 1452: 6 (Jambala, Junagadh, Kathiawar)

For discussion on nomenclature and taxonomy, see R. S. Van Schauburg, *Treubia*, 11: 309–12, 1930.

Baker, FBI Nos. 745, 747 (part), Vol. 2: 329, 331

Plate 71, fig. 3

LOCAL NAMES. *Būlālchāsh, Rājālāl, Sāhili* (Hindi); *Kinkumpu jitta* (Telugu); *Techinnan* (Malayalam); *Kos-kurullā, Botugene-kurullā* (Sinhala).

SIZE. Sparrow —, with a longer tail. Length c. 15 cm (6 in.).

44

CAMPEPHAGIDAE

forest, plantations and cultivated areas; from the plains up to c. 1000 m in the hills.

GENERAL HABITS, FOOD AND VOICE. As in *peregrinus*. A courtship is described as consisting largely of the male chasing the female, uttering a feeble but excited *swee-swee* . . .

BREEDING. Season, overall March to October; as in *cinnamomeus*, there appear to be two main periods one from March to May, the other in July–August. Nest as in *peregrinus*. Eggs 3, rarely 4 or 2. Average size of 30 eggs, 16.6 × 13.4 mm (Baker). A pair and a third bird (♀-plumaged) have been observed working together at nest-building, all three later feeding the chicks cooperatively (Neelakantan, JBNHS 49: 554–5).

MUSEUM DIAGNOSIS. Differs from *cinnamomeus* in being considerably darker and more richly coloured, with the chin and throat glossy black instead of dark grey or sooty grey (in male).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	69–75	12–14	16–17	66–74 mm
♀♀	68–76	13–14	c. 15	67–70 mm (SA)

COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet blackish brown; mouth pale flesh to slaty pink (in juvenile, gape and mouth pale orange-brick colour).

1095, 1092. Eastern Small Minivet. *Pericrocotus cinnamomeus viridis* Baker¹

Pericrocotus cinnamomeus viridis Baker, 1920, Bull. Brit. Orn. Cl. 40: 114 (Attaran River, Amherst Dist., Tenasserim Div., Burma, restricted to Pabyouk, 22 m. SE of Moulmein, by Deignan)

Pericrocotus peregrinus thai Deignan, 1947, Jour. Washington Acad. Sci. 37: 254 (Amphoe Chom Thong = Ban Luang, Chiang Mai Province, northwestern Siam)
Baker, FBI No. 746, Vol. 2: 331

LOCAL NAMES. *Ghōlō sāl sōyālī* (Bengali); *Das ribi gejo-i-cha* (Cachari); *Igerai* (Kacha Naga).

SIZE. Sparrow —, with longer tail. Length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1093, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident, not common. From the western Nepal terai where it intergrades with *peregrinus* (Ripley, JBNHS 49: 382; Rand & Fleming, *Fieldiana* 41: 102), West Bengal, Orissa south to extreme northeastern Andhra Pradesh where it intergrades with *cinnamomeus* (Whistler, JBNHS 36: 342), east through the duars and Assam north

¹ Further examination of series of this form from India, Burma, Thailand and the Andamans convinces us that this is a population of varying amounts of colour on the underparts including the throat in the male. In addition two male specimens (one the unique type of *superstus* Deignan, 1947, the other a male from the Andamans) have large bills. Other Andaman birds have moderate bills equivalent in size to the mainland population, and the pale underparts of Andaman females can be matched in series. We believe that *thai* Deignan, 1947 and *superstus* Deignan, 1947 (Tenasserim) are therefore synonymous with *viridis*.

and south of the Brahmaputra, Nagaland, Manipur, East Pakistan and the Andaman Islands. From the plains up to c. 1600 m, in forested areas, open country and gardens; also mangroves in the Andamans.

Extralimital. Extends to Burma, Thailand and Laos; other subspecies in Vietnam, Cambodia, Malaysia, Indonesia and Palawan.

GENERAL HABITS, FOOD AND VOICE. As in *peregrinus*.

BREEDING. Season, February to June, chiefly March and April; May to July in the Andaman Islands. The nest is placed high in trees, up to 12 metres. Other nesting habits as in *peregrinus*. Eggs, usually 3 sometimes 2 or 4. Average size of 50 eggs 16.8 × 13.8 mm (Baker).

MUSEUM DIAGNOSIS. Darker and browner above than *peregrinus*, the throat rather a blacker grey and the lower parts brighter yellow with the red of the breast extending further down. Separable from *pallidus*, *peregrinus* and *cinnamomeus* by the absence of white on the underparts; from *malabaricus* by its breast being less flame-coloured and chin less consistently black.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	66-72	12-14	16-18	66-76 mm
♀♀	65-71	13-14	16-18	68-75 mm

COLOURS OF BARE PARTS. As in *peregrinus*.

1096. **Whitebellied Minivet.** *Pericrocotus erythropygius erythropygius* (Jerdon)
Muscicapa erythropygia Jerdon, 1840, Madras Jour. Lit. Sci., 11: 17 (S. India = Ajanta)
Baker, FBI No. 749, Vol. 2: 332
Plate 71, fig. 2

LOCAL NAMES. *Kābārōrājālāl* (Gujarati); *Sāfid rājālāl* (Hindi, Madhya Pradesh).
SIZE. Sparrow —, with a longer tail. Length c. 15 cm (6 in.).

FIELD CHARACTERS. Male, distinguished from other minivets by its contrasty black and white or pied coloration, and white wing-patch, forming a V-shaped design when seen from the rear. Rump orange-red; tail black and white. Below, breast orange-red; rest of underparts white.

In the female the black parts are replaced by dark brownish grey; forehead and lower plumage white; rump white and orange.

STATUS, DISTRIBUTION AND HABITAT. Resident. Locally distributed in peninsular India southeast of a line from Ambala, Jodhpur and Kutch, south and east to Belgaum, Hyderabad, the Chota Nagpur plateau, southwest Bihar and southeast U.P. Reported by Baker to occur in the dry districts of West Bengal. His record (*apud* Stewart) of its breeding, or even occurrence, in Kerala (loc. cit. and *Nidification*, 2: 300) lacks confirmation, but it has been observed at the foot of the Nilgiris (W. Davison, SF 10: 366). One record only north of the Ganges: Tirhut, north Bihar, in April (Hume collection). Apparently an occasional wanderer to Sind in winter (Karachi, Ticehurst, 1922, *Ibis*: 614). Affects babool, *Prosopis* and *Butea* jungle in broken stony country; also semi-desert facies interspersed with bushes of *Salsadora*, *Euphorbia*, etc. and open grassy forest in the drier regions.

¹ The illustration is of the extralimital Burmese race *albifrons* (male) from which ours differs in having no white on the forehead, and black sides of head, and throat.

FAIRY BLUEBIRDS, IORAS, ETC.

47

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	68-70	12-13	14-15	75-78 mm (once 87!) (SA)

COLOURS OF BARE PARTS. Iris dark brown. Bill dark horny brown; mouth yellowish brown. Legs and feet dark horny brown.

Family IRENIDAE: Fairy Bluebirds, Ioras, Leaf Birds

For description see Van Tyne, J. & Berger, A. J., 1959, p. 519.

Key to the Genera

	Page
General coloration yellow	<i>Aegithina</i> 47
General coloration grass-green	<i>Chloropsis</i> 54
General coloration deep blue	<i>Irena</i> 63

Genus AEGITHINA Vieillot

Aegithina Vieillot, 1816, Analyse nouv. orn.: 44. Type, by monotypy, *Sylvia leucopetra* Vieillot

Cf. Whistler, H. & Kinnear, N. B., 1932, JBNHS 35: 749-51; Marien, D., 1952, Amer. Mus. Novit., No. 1589: 1-18; Hall, B. P., 1957, *Ibis*, 99: 143-56.

Bill notched and pointed, about two-thirds the length of the head, culmen nearly straight; wings rounded, tail short and square; plumage of rump soft and copious. All species green and yellow. Two moults annually.

Key to the Species

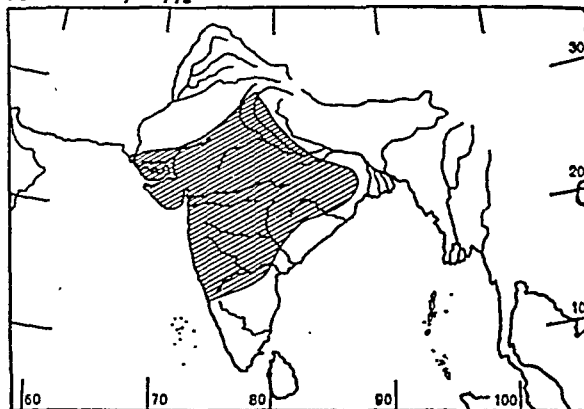
	Page
Tail black or green throughout.....	<i>Ae. tiphia</i> 47
Tail tipped with white.....	<i>Ae. nigrolutes</i> 53

AEGITHINA TIPHIA (Linnaeus)

Key to the Subspecies

I Tail black	
A Upperparts black.....	<i>Ae. t. multicolor</i> ♂ (breeding) 53
B Upperparts greenish more or less marked with black	
1 Upperparts with more black, a great deal of yellow showing through	<i>Ae. t. humei</i> ♂ (breeding) 50
2 Upperparts with more greenish.....	<i>Ae. t. tiphia</i> ♂ (breeding) 49
3 Upperparts yellower, throat and upper breast more golden.....	<i>Ae. t. septentrionalis</i> ♂ (breeding) 48
4 Rump more greyish green.....	<i>Ae. t. deignani</i> ♂ (breeding) 52
C Upperparts dark yellowish green	
5 Paler.....	<i>Ae. t. tiphia</i> ♂ (non-breeding) 49
6 Darker.....	<i>Ae. t. multicolor</i> ♂ (non-breeding) 53
II Tail green	
7 Above paler, more yellowish	
a Bill and wing averaging shorter.....	<i>Ae. t. humei</i> ♂ (non-breeding) 50
b Bill and wing averaging longer.....	<i>Ae. t. septentrionalis</i> ♂ (non-breeding) 48
8 Above darker, less yellowish.....	<i>Ae. t. deignani</i> ♂ (non-breeding) 52
9 Above greenish yellow.....	<i>Ae. t. tiphia</i> ♀ 49

Pericrocotus erythropygius



Distributional range of *P. e. erythropygius* (1096)

Extralimital. *P. e. albifrons* is found in central Burma.

GENERAL HABITS. Less arboreal than other minivets and much more addicted to open grassy scrub-and-bush country than they. Keeps in small parties of six to eight individuals in the non-breeding season. Has been noted hovering over and dropping into grass, and also pecking at weeds a foot or so high. Perches erect. Flight very like a wagtail's or bunting's — a few flaps followed by a dipping glide. The sexes appear to segregate outside the breeding season; somewhat erratic in winter.

FOOD. Insects and spiders.

VOICE AND CALLS. 'A whistle often reminiscent of a wagtail's *teept-teept*. Also a short sweet song' (Dharmakumarsinhji). Agitated alarm-notes, e.g. when nest in danger, very like the *chit-chit* of the Baya (*Ploceus philippinus*) but slightly more musical.

BREEDING. Season, June to October, mainly between July and September. Nest, a little cup of fibres composed inside of fine flowering stems of grasses and coated outside with silky vegetable down and cobwebs; as a rule not ornamented with moss or lichen as in other minivets; placed fairly low down in bushes one or two metres from the ground, always in a vertical or horizontal fork; apparently not on the upper side of horizontal branches. Eggs, normally 3, greyish white or rarely greenish grey densely covered with longitudinal blotches of grey-brown with paler secondary marks of grey. Average size of 30 eggs 17.3 × 13.5 mm (Baker). Both sexes build, incubate and tend the young *sic* J. Davidson. 'Female alone incubates. Male was often seen feeding female while she was incubating' (Dharmakumarsinhji).

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters. Postjuvinal moult includes body, lesser, median and greater coverts.

IRENIDAE

48

	Page
10 Above dark greenish.....	<i>Ae. t. multicolor</i> ♀ 53
11 Above very pale dull greenish yellow	
a Bill and wing averaging shorter.....	<i>Ae. t. humei</i> ♀ 50
b Bill and wing averaging longer.....	<i>Ae. t. septentrionalis</i> ♀ 48
12 Intermediate between 10 and 11.....	<i>Ae. t. deignani</i> ♀ 52

1097. **Northwestern Iora.** *Aegithina tiphia septentrionalis* Koelz

Aegithina tiphia septentrionalis Koelz, 1939, Proc. Biol. Soc. Washington, 52:63 (Bhadwar, Kangra, Punjab)
Not in Baker, FBI

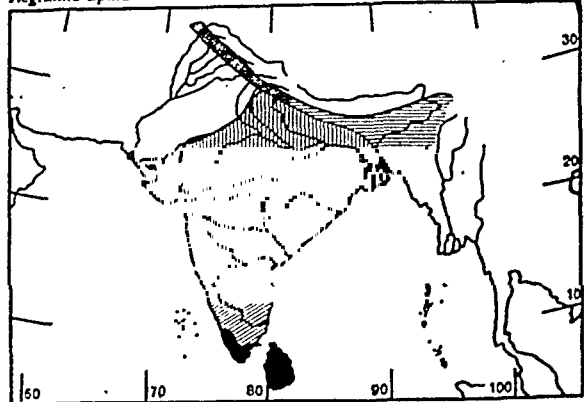
LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As of 1098, q.v.

STATUS, DISTRIBUTION AND HABITAT. West Pakistan and India in N.W.F.P., West Punjab and East Punjab, from the plains to c. 600 m; in scrub brush and forest fringe.

Aegithina tiphia



Distributional ranges

septentrionalis (1097) *tiphia* (1098) *humei* (1099).
deignani (1100). *multicolor* (1101).

1 *Lanius collurio*, Chestnutrumped Shrike (938). 2 *Lanius c. cristatus*, Brown Shrike (949), imm. 3 *Lanius t. tricolor*, Blackheaded Shrike (948). 4 *Lanius t. tephronotus*, Tibet Greybacked Shrike (945). 5 *Hemipus p. pictus*, Blackbacked Pied Flycatcher-Shrike (1065), ♂. 6 *Tephrodornis g. felicia*, Nepal Wood Shrike (1067), ♂. 7 *Tephrodornis p. ponderosus*, Indian Wood Shrike (1070), ♂. 8 *Pericrocotus f. speciosus*, North Indian Scarlet Minivet (1060), ♂ and ♀. 9 *Pericrocotus erythropygius* (*albifrons*), Whitebellied Minivet (1096 RE), ♂. 10 *Pericrocotus t. viridis*, Eastern Small Minivet (1093), ♂.

FAIRY BLUEBIRDS, IORAS, ETC.

49

GENERAL HABITS, FOOD, VOICE AND BREEDING. As in *humei* and other races.

MUSEUM DIAGNOSIS. Compared with the nominate subspecies (1098), this race is much yellower on the crown and on the rest of upperparts, more gold on the throat and upper breast. The outermost rectrices often have broad edges of yellow and the black inner rectrix of the male is washed broadly on the distal end with green-yellow. The bill averages larger and the wing longer.

MEASUREMENTS. Wing 4 ♂ 63-65, 3 ♀ 63-65 mm.

COLOURS OF BARE PARTS. As in *tiphia*.

1098. Common Iora. *Aeginthina tiphia tiphia* (Linnaeus)

Molacilla Tiphia Linnaeus, 1758, Syst. Nat., ed. 10, 1: 186

(Benghala = neighbourhood of Calcutta)

Baker, FBI No. 362, Vol. 1: 340

Plate 72, fig. 1

LOCAL NAMES. *Shauberga* or *Shaubeggi* (Hindi); *Fatik-jal* (Bengali); *Bārsāt-sorāi* (Assamese); *Dootisha gurmo gadeba* (Cachari); *Inga-rutina* (Kacha Naga); *Vohjong pong* (Mikir).

SIZE. Sparrow; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Male. A showy black and yellow tit-like arboreal bird with two white bars across the wing.

Female. Yellowish green throughout with greenish brown wings instead of black, also with two white bars.

In non-breeding plumage the male resembles the female, but retains his black tail. See Museum Diagnosis.



× c. 1

STATUS, DISTRIBUTION AND HABITAT. Resident

and common in most of its range subject to erratic movements in the non-breeding season. The Himalayan foothills from Uttar Pradesh east through Nepal (terai, duns and foothills up to c. 2000 metres even in winter; visits the Nepal Valley from mid July to the beginning of September), Sikkim (exceptionally up to c. 1700 m), Bhutan (recorded at Diwangiri = Deothang, c. 800 m and in central Bhutan), West Bengal, East Pakistan and Assam. Affects open forest, forest edges, cultivation, outskirts of villages and scrub-jungle.

Extralimital. Arakan (Burma); the species extends through the Indo-chinese subregion, Sumatra, Java, Bali and Borneo.

GENERAL HABITS AND FOOD. As in *humei* and other races.

VOICE AND CALLS. The call-note is rendered as *chee-chit-chit-chit*; also a sparrow-like call. Song very varied; one is described by Heinrich as composed of two syllables, the first an extraordinarily long, high and thin whistle, the second a sharp accentuated whistle beginning on the same tone as the first and quickly falling to a lower tone. It has been rendered as *we-e-e-tu*. According to Roseveare, it is a three-syllable whistle reminding one of an oriole's *oh, here we are*. See also Display under General Habits of *Ae. t. humei*.

FAIRY BLUEBIRDS, IORAS, ETC.

51

Display. The male fusses around and about his seemingly uninterested mate, stopping still at frequent intervals to fluff out the white rump-feathers, cock his tail, droop his wings and raise his head skywards in a stately posture—a picturesque flaunting of black, white and gold. Each time the head is raised the throat swells and gives vent to a very faint but clear, sweet and musical whistle, or a long-drawn sibilant *chee*. The scene changes suddenly, and in a paroxysm of excitement, he flits from branch to branch to the accompaniment of a loud twittering and fluttering of wings, to spring perpendicularly into the air a metre or two, hovering, fluffing out and parachuting down like a ball of feathers on to some nearby perch. The same spectacular antic is repeated again and again.

FOOD. Insects and larvae; spiders. Among the insects specifically identified in stomach contents are the beetles (Coleoptera) *Myllocerus discolor* and *M. blandus*, *Tanymericus hispidus*, *Scymnus nubilans*, *Rhyssalus germanus*, and the ant *Camponotus compressus* (Formicidae) (Mason & Lefroy, 1912).

VOICE AND CALLS. Has a wide repertoire of sweet clear whistles common to all races but in markedly different dialects, e.g. as between northern and southern birds. The Hindi name *Shaubeggi* is onomatopoeic of one of the commonest calls. Some other familiar ones may be syllabified thus:

1. If you-PLEASE repeated several times (about once per second) alternated by one or two interrogative *SEE me-please?*

2. A mellow whistle *piyou* or *peyou* repeated (about twice in three seconds) 20 times or more, followed by a similar run of softer long-drawn sibilant whistles *whetee-choo*. This kept up almost unbrokenly for 30 minutes or more at a time.

3. A plaintive, querulous *chee-where? chee-where?* and so on, quickly repeated (about twice in three seconds).

4. For long stretches throughout the day, especially in the monsoon and when overcast and drizzling, a loud mellow whistle *My... DADDY* repeated monotonously for over 15 minutes at a stretch, interlarded after every two or three calls with *phero* (by accompanying female?). The pair keeps in touch with each other by mellow whistles and short musical chirrups. See also 1098, and Display under General Habits (above).

BREEDING. Season, May to September, chiefly July and August. Nest, a neat compact cup of fine grasses or fibres, well plastered over with cobwebs, placed in a crotch of twigs at heights from 1 to 9 metres, most often between 2 and 4 metres. The supporting twigs are either worked into the wall of the nest or firmly wound round with cobwebs. Mango, citrus, *Bauhinia* and *Zizyphus* trees are largely favoured. Eggs, almost invariably 3, but sometimes, probably in the case of second laying, 2; pale pinkish white, blotched with purplish brown, with a wide range of variations. Average size of 20 eggs 17.5 × 13.5 mm (Baker). Both sexes partake in building the nest. In one case the nest took five days to complete and there was a pause of a day before the first egg was laid. Eggs laid at intervals of about 24 hours, evidently in the early morning. Incubation starts with the first egg but it is fitful and irregular until the clutch is completed; incubation period about 14 days. Both sexes incubate and tend the young. Only the female was found brooding at night (SA). During the first five days after hatching, the female alone observed to brood the young for about ten minutes

50

IRENIDAE

BREEDING. As in *humei*. Eggs, 2 or 3, exceptionally 4; normally pale pinky white, blotched with purplish brown, but highly variable. For descriptions see Baker, *Nidification*, 1: 318. Average size of 60 eggs 17.6 × 13.9 mm.

MUSEUM DIAGNOSIS. Male. Upperparts mainly black, head and back usually with some yellow, rump greenish yellow; two white wing-bars; underparts yellow. Many breeding males have practically no black on upperparts other than the wing and tail. In winter the male becomes similar to the female but the tail remains black and the underparts are rather brighter.

Female, almost entirely greenish yellow with brown wings; duller and greyer than in *humei*. Also has two wing-bars.

Young (imm.) male. Summer and winter plumage normally alike, a rather dull dark green, the black on the upper plumage in winter being obsolete (Punjab), confined to faint traces of mottling or occasional black feathers (U.P.), or patches (Bengal). Lower plumage duller and greyer in winter and less bright yellow in summer. Female duller and greener than in *Ae. t. humei*.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	62-66	18-19	49-52 mm
♀♀	60-65	18-19	50-59 mm (BB, SDR)

Weight 1 ♂ 12; 1 ♀ 15 g (BB).

COLOURS OF BARE PARTS. Iris pale yellow. Bill bluish slate, black on culmen and whitish on tip of upper mandible. Legs and feet plumbeous; claws bluish slate; soles white (BB). Iris whitish grey, bill slate grey, culmen black; legs slate grey (SDR).

1099. Central Indian Iora. *Aeginthina tiphia humei* Baker

Aeginthina tiphia humei Baker, 1922, Fauna Brit. Ind., Bds. 1: 342 (Raipur, M.P.)

Baker, FBI No. 364, Vol. 1: 342

LOCAL NAMES. *Shauberga* or *Shaubeggi* (Hindi); *Shobinga* (Gujarati); *Cheroka* (Marathi).

SIZE. Sparrow; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As of 1098, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. From Saurashtra, Mount Abu, the plains of Uttar Pradesh and Bihar (where it intergrades with *tiphia*), south to lat. 20°N. and east to northern Orissa and southwestern West Bengal. In cultivated country interspersed with large trees, groves about villages, roadside avenues and wooded compounds in towns as well as light deciduous forest. Where the evergreen and deciduous types of vegetation are intermingled, the Iora invariably keeps to the deciduous facies, in thin jungle and scrub.

GENERAL HABITS. Usually found in pairs, often in the mixed hunting parties, searching for caterpillars and insects among the foliage, hopping from twig to twig and frequently clinging sideways or upside down to peer under the leaves.

52

IRENIDAE

every third time she fed them, her wings outstretched to protect them against the sun. A very large proportion of eggs and chicks suffer destruction from house and jungle crows, crow-pheasants, snakes, monitor and *Calotes* lizards.

MUSEUM DIAGNOSIS. Male in summer with black predominant in the upper plumage and often considerable traces of a yellow collar on the hindneck. Male in winter plumage, and female, a clearer and paler green than *Ae. t. tiphia*.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	61-69	16-20	18-22	44-55 mm
♀♀	62-67	16-19	18-21	46-56 mm (SA, HW)

Weight 4 ♂ 13-17; 8 ♀ 12-15 g (SA).

COLOURS OF BARE PARTS. As in nominate race.

1100. Peninsular Indian Iora. *Aeginthina tiphia deignani* Hall

Aeginthina tiphia deignani Hall, 1957, Ibis, 99: 148 (Yawdwin, Pakokku dist., Central Burma)

Baker, FBI No. 362 (part), Vol. 1: 340

LOCAL NAMES. *Patsu-jitta* (Telugu); *Pachapera*, *Sinna mampala-kūrūi* (Tamil).

SIZE. Sparrow; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As of 1098, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident in the low country and up to about 1000 metres. The Indian Peninsula south of lat. 20°N., excluding southern Kerala. Affects light deciduous forest and semi-cultivation.

Extralimital. Northern and central Burma excluding Arakan.

GENERAL HABITS, FOOD AND VOICE. As in *humei* (1099). Courtship noted to be in general progress about mid December.

BREEDING. Season, overall January to August, chiefly April and May. Nest, a shallow cup, about 6 cm in diameter, built of shreds of bark, so thickly covered externally with cobweb as to appear almost white, and lined with a little grass. Placed from one to nine metres from the ground in bushes or trees, slung in the horizontal fork of an outlying twig or in an upright crotch. Both birds assist in building and incubation; in one case the male did not feed the young himself but handed over the caterpillars which he brought to the hen for distribution. Eggs, 2 or 3, rarely 4, similar to those of other subspecies. Average size of 20 eggs 17.5 × 13.5 mm (Baker). Nest frequently parasitized by the Baybanded Cuckoo (*Cacomantis sonneratii*, 582).

MUSEUM DIAGNOSIS. Head and back of male in non-breeding dress grey-green, intermediate between the pale green washed with white of *humei* and the dark green washed with black of *multicolor*—a greyer green than of nominate *tiphia*. The same differences appear in the green rump and lower back in breeding plumage, and in a lesser degree in the green of the female. Breeding plumage of males always with some black, intermediate between the gold-and-black collared *humei* and the solid black of *multicolor*.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in *humei* (1099).

FAIRY BLUEBIRDS, IORAS, ETC.

53

1101. Ceylon Iora. *Aegithina tiphia multicolor* (Gmelin)*Fringilla multicolor* Gmelin, 1788, Syst. Nat., 1: 924 (Ceylon)*Motacilla zeylonica* Gmelin, 1788, Syst. Nat., 1: 964 (Ceylon)Baker, FBI No. 363, Vol. 1: 342 (= *zeylonica*),

LOCAL NAMES. *Dadi-dee* (Malayalam); *Nambala chittu* (Tamil); *Pattra-jitta* (Telugu); *Ca-kurullā* (= yellow bird), *Panu-kurullā*, *Kirikaye* (Sinhala).

SIZE. Sparrow; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As of 1098, q.v.

STATUS, DISTRIBUTION and HABITAT. A common resident up to c. 900 m, occasionally up to 1500 m or higher. Kerala from southern Malabar district, south of the Palghat Gap (where it intergrades with *deignani*), Rameswaram Island and Ceylon. Affects light deciduous forest, mixed bamboo jungle, mango and cashew gardens around villages and homesteads; prefers the dry zone and avoids evergreen.

GENERAL HABITS. Keeps in pairs, searching assiduously for caterpillars and insects among the leaves of bushes and trees. The flight is a straight flutter from tree to tree. Other habits and display as in *humei*, q.v.

FOOD. Insects, especially caterpillars.

VOICE and CALLS. The birds keep in touch with each other by frequently calling in a variety of sweet-toned whistles which have a rather drowsy quality. The song is a long-drawn crescendo *weee-e-e-e-ee-oo*, the last syllable dropping suddenly; other variations are *wee-wee-to* and *whip-wee-bird-ee* (Henry). See also under 1099.

BREEDING. Season, overall January to August, chiefly April to June. Nesting as in *deignani*. Eggs, 2 rarely 3, matt white with bold streaks and blotches of slate-grey and brown which tend to run longitudinally and to form a zone around the large end. Average size c. 18 × 13 mm.

MUSEUM DIAGNOSIS. Male in summer plumage darker, with the black of the upperparts more extensive and less broken by yellow bases; second wing-bar generally absent. Lower plumage very bright canary yellow. Male in winter plumage a dark and duller green, in some specimens washed with black producing a curious sooty appearance not found in the other Indian races.

Female on the average darker than in other races.

MEASUREMENTS and COLOURS OF BARE PARTS. As in *humei* (1099).

1102. Marshall's Iora. *Aegithina nigrolutea* (Marshall)*Iora nigrolutea* Marshall, 1876, Stray Feathers, 4: 410 (Meerut)*Aegithina nigrolutea sulfurea* Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 9 (Sihor, Saurashtra)

Cl. Hall, B. P., 1957, *Ibis*, 99: 146.

Baker, FBI No. 366, Vol. 1: 344

Plate 72, fig. 3

LOCAL NAMES. Same as for *Ae. t. tiphia*.

SIZE. Sparrow; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Male resembles the Common Iora but has a pure yellow collar in the black-backed breeding dress. Tail in both sexes

FAIRY BLUEBIRDS, IORAS, ETC.

55

Key to the Species

Page

- A Forehead rich yellow-orange.....*C. aurifrons* 55
 B Forehead greenish or yellowish
 1 Abdomen orange.....*C. hardwickii* 59
 2 Abdomen green.....*C. cochinchinensis* 60

CHLOROPSIS AURIFRONS (Temminck)

Key to the Subspecies

- A Chin and throat blue.....*C. a. aurifrons* 55
 B Chin and throat black
 1 Larger, tail ♂ 69-77, ♀ 64-71 mm.....*C. a. frontalis* 57
 2 Smaller, tail ♂ 65-70, ♀ 59-64 mm.....*C. a. insularis* 58

1103. Northern Goldfronted Chloropsis. *Chloropsis aurifrons aurifrons* (Temminck)

Phyllornis aurifrons Temminck, 1829, Pl. Col. d'Ois., livr. 81, pl. 484, fig. 1 (Sumatra, India = Cachar)

Phyllornis hodgsoni Gould, 1861, Bds. Asia, 3(13), pl. 15, text. (Northern India, Himalayas, restricted to Nepal by Deignan, 1946, Smith. Misc. Coll., 106: 3)

Baker, FBI No. 368, Vol. 1: 346

Plate 72, fig. 5

LOCAL NAMES. *Hārēwā* or *Sābē hārēwā* (Hindi, Nepali); *Hārēwā* (Bengali); *Skalem-pho* (Lepcha).

SIZE. Bulbul; length c. 19 cm (7½ in.).

FIELD CHARACTERS. An active leaf-green arboreal bird with orange forehead, blue shoulder-patches and slightly curved black bill; lores, around eye, ear-coverts and lower throat black; chin and cheeks dark blue. Can be distinguished from the very similar *cochinchinensis* by its orange forehead; from *hardwickii* by its green belly, green tail, and black of throat not extending to breast.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to some local movements. Himalayan foothills up to c. 1800 m, from Garhwal and Simla to Nepal and Assam south to Chota Nagpur and the Rajmahal Hills, Bihar, Orissa and East Pakistan. Affects deciduous and evergreen forest in lightly wooded open country and secondary scrub.

Extralimital. The species extends to the Indochinese subregion and Sumatra.

GENERAL HABITS. Entirely arboreal, keeps in pairs or small parties to thick foliage of trees where its plumage blends perfectly with the green leaves, making it difficult to spot. Hunts systematically among the foliage for insects, clinging upside down and in all manner of acrobatic positions, sometimes swinging itself round and round a twig like a trapeze performer. Flight strong and rapid. Is a great bully, adopting aggressive dog-in-the-manger tactics to keep away other birds from its feeding tree.

All chloropses are important 'flower-birds' and responsible for pollinating the blossoms of numerous species of trees and shrubs in their quest for nectar.

54

IRENIDAE

black with broad white tips, instead of black in male and green in female. The green plumage of both sexes is paler and more suffused with white.

STATUS, DISTRIBUTION and HABITAT. Resident. Replaces the Common Iora in West Pakistan and northwestern India, from the N.W.F.P. through West and East Punjab, southern Uttar Pradesh south through western Madhya Pradesh to and including the Satpuras, west to Kutch and Rajasthan. May occur in southeastern Sind. Specimens showing *nigrolutea* characters collected within the range of *Ae. tiphia* may be variants of the latter; such specimens have been obtained from southern Bihar, West Bengal, Khandesh, Tamil Nadu and Mysore. Two adult specimens collected in Gwalior are intermediate between *Ae. t. humei* and *Ae. nigrolutea* and one specimen from Ceylon is intermediate between the latter and *multicolor*. The status of *Ae. nigrolutea* as a distinct species is not settled. 'It is a problem that presents a challenge to geneticists and field workers alike' (Hall, loc. cit. *supra*). But see Voice and Calls. Marshall's Iora affects sparse scrub, thorn jungle and groves of trees.

GENERAL HABITS and FOOD. As in *humei* (1099); the display is also similar.

VOICE and CALLS. Commonly *whetzi whetzi*, quite distinct from those of the Common Iora, though of the same general pattern. The sibilant whistles of the male are more plaintive-sounding, and rather reminiscent of the Quaker Babbler. The harsh alarm-notes recall those of the Wood Shrike, particularly the large *Tephrodornis gutturalis*. 'I found the notes of the two so distinct, in fact, that after having met the Common Iora all through Gujarat, I detected the presence of this species at Deesa at once by ear' (SA).

BREEDING. Season, June to August. Breeding biology as in *Ae. t. humei*. Nest, usually in low shrubs 1-2 metres from the ground. Eggs, 2 or 3, indistinguishable from those of the Common Iora. Average size of 20 eggs 17.5 × 13.5 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. The juvenal plumage is indistinguishable from that of *humei*.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	62-65	14-18	17-19	43-47 mm
♀♀	61-64	14-17	c. 19	45-51 mm (SA)

Weight 8 ♂♂ 11-14; 9 ♀♀ 10-14 g (SA).

COLOURS OF BARE PARTS. Iris dark brown; bill horny plumbeous, the culmen darker; legs and feet light plumbeous (Baker).

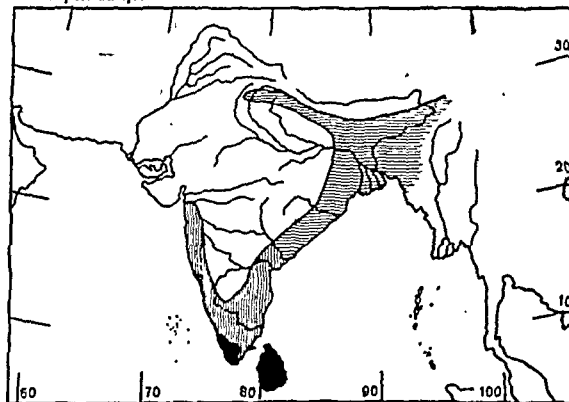
Genus CHLOROPSIS Jardine & Selby

Chloropsis Jardine & Selby, 1827, Ill. Orn., Pt. 1, text to pl. 5. Type, by original designation, *Turdus Cochinchinensis* Gmelin

Arboreal birds, predominantly green. Bill slender and curved, about as long as head, well adapted for nectar eating, notched at tip; nostrils oval; rictal bristles weak; frontal feathers advanced up to the nostrils; wings rounded; tarsi very short.

56

IRENIDAE

Chloropsis aurifrons

Distributional ranges
 ■ *aurifrons* (1103). ■ *frontalis* (1104). ■ *insularis* (1105).

FOOD. Berries, insects including flying ants, spiders, nectar of many flowers (*Erythrina*, *Loranthus*, *Salmalia*, etc.).

VOICE and CALLS. Normal call-note, a musical drongo-like *swich-chick-chick-wee* (accent on first syllable, last much prolonged whistle-like — SA). Also a repeated *tzik* and a *chup-chaw* (Fleming). Is an accomplished mimic; very convincing imitations of various birds' calls are given in quick succession (see also *C. a. frontalis*).

BREEDING. Season, May to August. Nest, a loose cup or shallow saucer of fine twigs, grass, leaves and moss, semi-pensile, attached near the tip of an overhanging branch by shreds of grass and strips of bamboo leaves, lined with rootlets and fine grass-stems; reinforced exteriorly with cobweb. Nests built between upright twigs are similar in construction but often deeper. Favourite site usually high up in a tree, nine to twelve metres from the ground, and on very thin branches; sometimes on smaller saplings and trees. Eggs, 2 or 3, pale cream or buffy cream, freckled or lightly blotched all over with pale reddish, usually more so towards the large end, but not forming rings or caps. Average size of 20 eggs 23.4 × 15.5 mm (Baker).

MUSEUM DIAGNOSIS. Distinguished from other races by its blue chin and throat.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	90-103	24-26	18-20	65-77 mm
♀♀	89-94	24-25	—	65-70 mm (BB, Fleming)

Weight 1 ♂ 35 g (Rensch); 1 ♀ 29 g (BB).

FAIRY BLUEBIRDS, IORAS, ETC.

57

COLOURS OF BARE PARTS. Iris dark brown; bill black; legs greenish slate; feet plumbeous; claws black; soles yellowish white (BB).

1104. **Southern Goldfronted Chloropsis.** *Chloropsis aurifrons frontalis* (Pelzelin)

Phyllornis frontalis Pelzelin, 1856, Sitzungs. math. Acad. Wiss. Wien, 20: 157, pl. 2, fig. 1, ex Natterer MS. (Khelgate, near Goa)

Chloropsis aurifrons davidsoni Baker, 1920, Bull. Brit. Orn. Cl., 41: 8 (Malabar) *nom. nov.* for *Turdus malabaricus* Gmelin, 1788, preoccupied
Baker, FBI No. 369 (part), Vol. 1: 348

LOCAL NAMES. *Chhōta hārīāl* or *hārīāl* (Hindi).

SIZE. Bulbul; length c. 19 cm (7½ in.).

FIELD CHARACTERS. As for *aurifrons* (1103) but chin black.

STATUS, DISTRIBUTION and HABITAT. Resident, common in the western parts of its range, rarer in the east. S. Gujarat and Maharashtra from the Tapi river south through Goa, western Mysore (Malnaad), western Tamil Nadu to the Palghat Gap, and the Eastern Ghats in Tamil Nadu and Andhra Pradesh; from plains level to about 1200 m, in the Nilgiris up to 1800 m. Affects heavy scrub, dense evergreen forest and open deciduous and secondary jungle, and teak plantations. Seems to prefer more thickly wooded country than *cochinchinensis*.

GENERAL HABITS. As in the nominate race, q.v.

FOOD. Insects, spiders, berries and the flower nectar of *Erythrina*, *Loranthus*, *Butea*, *Salmalia*, *Musa*, *Woodfordia*, *Firmiana* and numerous other plants.

VOICE and CALLS. A very loud and voluble rattle. This species is such an accomplished mimic of the calls of other birds that it frequently passes for them and is overlooked. It has been heard imitating to perfection the following species: Tailor Bird, Redwhiskered Bulbul, Black Drongo, Iora, Whitebreasted Kingfisher, Rufousbacked Shrike and Magpie-Robin. The calls are often intriguing since they are produced long after the originals have left the locality on seasonal migration. The different imitations follow one another in quick succession without a break, its own song of several notes being wedged in between the imitations; thus a single chloropsis hidden in a leafy tree will often fool the listener into imagining a whole concert of mixed species within! (SA). Call-note, a shrill whistle.

BREEDING. Season, overall February to August, chiefly June-July. Nest and eggs, as in *aurifrons*.

MUSEUM DIAGNOSIS. Differs from *insularis* by its larger size, and from *aurifrons* by its black chin. As in the nominate race, female very much like male but distinguishable by smaller, duller patch of orange on forehead, smaller blue carpal patch, and slightly smaller size.



x c. 1

FAIRY BLUEBIRDS, IORAS, ETC.

59

1106. **Orangebellied Chloropsis.** *Chloropsis hardwickii hardwickii* Jardine & Selby

Chloropsis hardwickii Jardine & Selby, 1830, Ill. Orn., Add., 2: 1 (Nepal)
Baker, FBI No. 371, Vol. 1: 349

Plate 72, fig. 4

LOCAL NAME. *Dao-gurum ho gatang* (Cachari).

SIZE. Bulbul; length c. 19 cm (7½ in.).

FIELD CHARACTERS. Male. Above, leaf-green with a pale greenish blue shoulder-patch and dark purplish blue wings and tail appearing black at a distance. Below, dull orange belly, blue-black throat and chin and sides of head with a dark blue moustachial streak. The orange belly and blackish tail distinguish it from other chloropses.

Female, almost entirely green, a pale blue shoulder-patch; orange of underparts paler and less extensive, blue moustachial streak. Tail green; no black on throat.

STATUS, DISTRIBUTION and HABITAT. A common resident, subject to altitudinal movements in the Himalayas, from Simla east through Nepal, Sikkim, Bhutan, Assam, Manipur and the hills of East Pakistan; from c. 600 to 2250 m (Nepal) and from 1200 to over 2400 m (Naga Hills), optimum zone around 1200 m. Occupies a higher zone than *aurifrons*; descends lower in the non-breeding season when it is found in the plains of Assam. Affects open scrub, dry- and wet-deciduous and evergreen forest; more partial to the last than other chloropses.

Extralimital. Extends east to northern Thailand and northwestern Indochina. Represented by other races in southern China, Hainan, Malaysia and Sumatra.

GENERAL HABITS. Arboreal. Keeps generally in pairs or in small parties to the foliage canopy, occasionally gathering in larger parties at blossoming trees in company with sibilas, spiderhunters, sunbirds, white-eyes, etc. Inseparable from parasitic *Loranthus*-infested trees. Very acrobatic in its movements as it hops about and clings amongst the clumps to probe into flowers for nectar.

FOOD. Insects, spiders, berries and nectar (*Loranthus*, *Bassia*, etc.).

VOICE and CALLS. A remarkably versatile songster and like its congeners an accomplished mimic. Has perhaps the fullest, longest and sweetest song of the genus. This may be heard the year round but more regularly from March to May and from October to December (Proud). Its vocabulary includes the notes of bulbuls, drongos, tits, and the call of the Crested Serpent Eagle. Some song phrases (noted by Lister):

1. *tshwatshishi-watshishi-watshishi*

2. A soft, tit-like *titi-titi-titi-titi-ti*

3. A low *tp-tp-tp-tp*

4. A loud, rapid *ti-ti-tyi*, the latter note repeated about seven times and followed by a prolonged hoarse, scolding note

5. *piti-piya-piya-piti*

6. *tyacil-tyacil-tya*, repeated.

BREEDING. Season, May to August. Nest, similar to that of the Goldfronted Chloropsis: a cradle of roots and fibres suspended near the end of

58

IRENIDAE

In first-winter plumage both sexes lack the orange forehead, while the black gular patch and the blue moustachial streaks of the adult are replaced by pale green.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	87-101	23-26	18-20	69-77 mm
♀♀	83-95	23-25	18-20	64-71 mm (HW)

Weight 1 ♂ 36 g (Rensch).

COLOURS OF BARE PARTS. As in *insularis*.

1105. **Ceylon Goldfronted Chloropsis.** *Chloropsis aurifrons insularis* Whistler & Kinnear

Chloropsis aurifrons insularis Whistler & Kinnear, 1932, Jour. Bombay nat. Hist. Soc. 35: 752 (Cotta, N.P., Ceylon)
Baker, FBI No. 369 (part), Vol. 1: 348

LOCAL NAMES. *Nil-kurullā*, *Girā-kurullā* (Sinhala); *Pachai kūrūri* (Tamil); *Ilakkili* (Malayalam).

SIZE. Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. As for *aurifrons* but chin black.

STATUS, DISTRIBUTION and HABITAT. Resident. Widely but locally distributed, in moderate numbers, in Kerala south of the Palghat Gap¹ (c. 10° 45' N.), also Palni Hills, and Ceylon throughout the lowlands and lower hills to c. 1200 m. Affects mixed deciduous and evergreen forest; commonest in damper hill districts.

GENERAL HABITS. As in the nominate race, q.v.

FOOD and VOICE. As in *frontalis*.

BREEDING. Season, January-February; in Kerala a bird was observed feeding a full-fledged juvenile on 30 November. Nest, presumably as in the nominate race. Two eggs are described as being pale cream, variously spotted or blotched with pale reddish or red-brown; size c. 21 × 15 mm.

MUSEUM DIAGNOSIS. As *frontalis* but smaller. There is a cline in size from south to north. See also 1104, Museum Diagnosis.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	86-94	22-25	18-20	65-70 mm
♀♀	87-88	22-24	18-20	59-64 mm (HW, SA)

COLOURS OF BARE PARTS. Adult, iris hazel brown. Bill ♂ black, ♀ horny brown; mouth pinkish flesh to slaty pink. Legs and feet grey or plumbeous; claws brown. Juvenile, bill pale horny brown; mouth livid pink; rest as in adult (SA).

¹ Boundary fixed arbitrarily for convenience.

60

IRENIDAE

an overhanging branch 6 to 9 metres above the ground, rarely below 3 m. Eggs, similar to those of *aurifrons*; average size of 22 eggs 22.8 × 15.9 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Species. Juvenile entirely green with little or no orange-yellow on the belly. Postjuvenile moult includes body, lesser, median and inner greater coverts and inner two tertials, but apparently not wings and tail.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	93-100	21-26	19-21	73-79 mm
♀♀	88-94	22-25	18-19	65-72 mm (BB, Fleming, SA, SDR, Stresemann)

Weight ♂♂ 32-40; ♀♀ 25-34 g (SDR).

COLOURS OF BARE PARTS. Iris dark brown; Bill black. Legs bluish grey; feet bluish slaty; claws black; soles white (BB).

CHLOROPSIS COCHINCHINENSIS (Gmelin)

Key to the Subspecies

Outer webs of primaries blue.....*C. c. cochinchinensis*
Outer webs of primaries green.....*C. c. jerdoni*

1107. **Jerdon's Chloropsis.** *Chloropsis cochinchinensis jerdoni* (Blyth)

Phyllornis jerdoni Blyth, 1844, Jour. Asiat. Soc. Bengal, 13: 392 (Central India)
Baker, FBI No. 374, Vol. 1: 352

LOCAL NAMES. *Hārīcā* (Hindi); *Wanna bojanum* (Telugu); *Ilakkili* (Malayalam); *Nil-kurullā*, *Girā-kurullā* (Sinhala).

SIZE. Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. Male, very similar to *aurifrons* but lacks the orange forehead which is yellowish green; black area of chin and throat smaller and not extending behind eye; yellow ring (penumbra) around black throat broader.

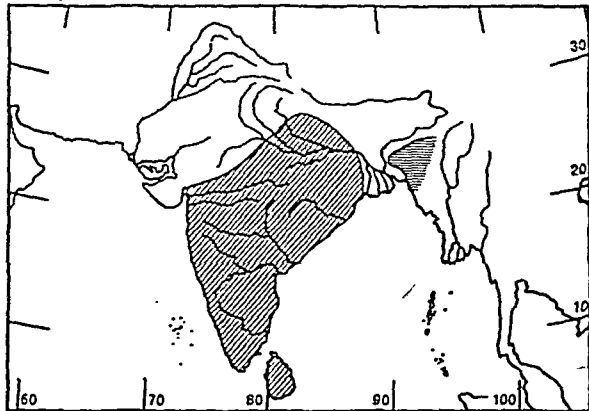
In female, black chin and throat of male replaced by pale bluish green; cheek-stripe bright greenish blue.

STATUS, DISTRIBUTION and HABITAT. Resident, on the whole fairly common, more so in the hills; rather patchily distributed in the plains. From the Gulf of Cambay to central Uttar Pradesh, east to West Bengal, south throughout the Peninsula and Ceylon, normally up to c. 1000 metres (1200 m in the Palnis). Affects secondary scrub jungle, forest edges, groves, and large leafy trees on village outskirts or standing amidst cultivation and grazing land. Prefers somewhat more open and drier country than Goldfronted Chloropsis, but the two species often overlap.

GENERAL HABITS. Arboreal, usually frequenting the foliage canopy, admirably camouflaged among the leaves. Behaviour much as *aurifrons*. Keeps solitary or in pairs; family parties for some time after the young are fledged. Most often seen feeding among *Loranthus* clumps and flowering trees. A pugnacious bird chivvying and driving away other nectar-seekers

FAIRY BLUEBIRDS, IORAS, ETC.

61

Chloropsis cochinchinensis

Distributional ranges

jerdoni (1107).

cochinchinensis (1108).

from its feeding tree even though in a remote part of it. Flight undulating and rapid. For a note on anting, see JBNHS 38: 628-31.

FOOD. Insects such as green tree-crickets, red ants, mantises, caterpillars; berries and wild figs (*Ficus*); nectar of *Loranthus*, *Helicteres*, *Salmaia*, *Erythrina*, coconut and many other flowers.

VOICE AND CALLS. A wide range of harsh as well as lively whistling notes, similar in general pattern to those of *aurifrons* but a few characteristic. Also a very good mimic, imitating to perfection drongos, bulbuls, tailor birds, tree pies, jungle babblers, shrikes, cuckoo-shrikes, etc., even the Shikra and the Striped Squirrel. Its own distinctive notes are occasionally wedged in between the mimicry. These given one after another in quick succession over long periods (once timed 40 minutes — SA).

BREEDING. Season, poorly defined; nests have been found every month, mainly between November and May in the more southern parts of its range (in Ceylon February to May; occasionally October — Phillips); from March to September in the north. *Nest*, a fairly deep cup of fine rootlets, plastered on the outside with cobwebs and vegetable fibres; suspended hammock-wise between leaf-stems or branching end-twigs at the extremity of a bough, usually six to nine metres from the ground. *Eggs*, normally 2, rarely 3, pale creamy or pinkish white sparingly marked with specks, blotches and hair-lines of blackish, purplish and reddish brown, chiefly about the broader end. Average size of 31 eggs 21.1×15.1 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies and Field Characters. Immature birds (both sexes) differ from adult female by absence of yellow wash on forehead,

FAIRY BLUEBIRDS, IORAS, ETC.

63

Genus *IRENA* Horsfield

Irena Horsfield, 1821, Trans. Linn. Soc. London, 13: 153. Type, by original designation, *Coracias puella* Latham

Bill shorter than head, stout, curved, slightly notched at tip; nostrils oval, partly concealed by frontal plumes; rictal bristles well developed. A few hairs (filoplumes) spring from nape. Wing long but rounded, 4th quill (as.) longest. Tarsus short and stout. Upper and under tail-coverts very long.

1109, 1110. Fairy Bluebird. *Irena puella puella* (Latham)¹

Coracias puella Latham, 1790, Index Orn., 1: 171 (India, restricted to Travancore [S. Kerala])

Irena puella sikkimensis Whistler & Kinnear, 1933, Jour. Bombay nat. Hist. Soc., 36: 582 (Sukna, Darjeeling)

Irena puella andamanica Abdulali, 1964, *ibid.*, 61: 415-17 (Long Island, Middle Andamans)

Baker, FBI No. 950, Vol. 3: 1

Plate 72, fig. 14

Cf. Delacour, J., in Peters's Check-list, vol. 9, 1960: 307, footnote.

LOCAL NAMES. *Pena-kara-kürüci* (Telugu); *Lalita* (Malayalam); *Deo gateng* (Cachari).

SIZE. Myna +; length c. 27 cm (11 in.).

FIELD CHARACTERS. Male. Above, brilliant ultramarine blue; below, deep velvety black with blue under tail-coverts.

Female. Dull blue-green with blackish lores.

STATUS, DISTRIBUTION AND HABITAT. Resident subject to seasonal wanderings. Range disjunct — as follows:

- (1) Heavy rainfall area of south-western India from about Ratnagiri district in Maharashtra, south to the southern parts of the Western Ghats in Kerala, from the plains to c. 1800 metres, and the hills of western Tamil Nadu (Nilgiris, Palnis, etc.); on the east it has been reported only from the Chitteri range. Betts records it as a cold-weather visitor to the central plateau of Coorg, arriving in November. There are old records from Mahableshwar, Khandesh and Vidarbha (Berar). Extinct in Ceylon where the last record appears to have been in 1877.

- (2) Southeastern Nepal foothills (Jhapa dist. — Fleming), Sikkim and Bhutan foothills, Jalpaiguri duars, Assam, Manipur and the East Pakistan hills; also Andaman and Nicobar islands.

¹ No. 1110, *I. p. sikkimensis*, is considered a synonym; see Museum Diagnosis.

62

IRENIDAE

and the colours of moustache and throat being indistinct shadows of the respective adults.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	86-96	21-26	18-20	66-81 mm
♀♀	82-88	21-25	18-20	62-72 mm
				(HW, SA)

COLOURS OF BARE PARTS. Iris brown. Bill ♂ black, ♀ horny brown, grey at sides of base of lower mandible; mouth pinkish grey or pinkish slate. Legs and feet slaty grey; claws dusky; soles dirty fleshy white.

1108. Goldmantled *Chloropsis*. *Chloropsis cochinchinensis cochinchinensis* (Gmelin)

Turdus cochinchinensis Gmelin, 1788, Syst. Nat., 1 (2): 825 (Cochin China)
Phyllemis chlorocephalus Walden, 1871, Ann. Mag. Nat. Hist., 7: 241 (Toungoo)
Chloropsis cochinchinensis chlorus Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 10 (Hahim Bazaar, Assam)
 Baker, FBI No. 372, Vol. 1: 350

Plate 72, fig. 6

LOCAL NAME. *Dao-bulip gurrio* (Cachari).

SIZE. Bulbul; length c. 18 cm (7 in.).

FIELD CHARACTERS. As in *jerdoni*; see also 1103.

STATUS, DISTRIBUTION AND HABITAT. Resident, fairly common. Assam hills south of the Brahmaputra, Manipur, and East Pakistan; from just above plains level up to c. 1800 metres. A bird of the damp, hot valleys, replaced higher up by *C. hardwickii*; affects deciduous and evergreen forest (penetrating well into the interior), gardens, kampongs, and groves of trees on village outskirts.

Extralimital. Ranges east through Burma, Thailand and the Indo-chinese countries. Other races in Malaysia and Indonesia.

GENERAL HABITS, FOOD AND VOICE. As in *jerdoni*. Frequently in company of bulbuls and *C. aurifrons*.

BREEDING. Season, April to August (Baker); nest and eggs, as of *jerdoni*. Average size of 16 eggs 22.3×15.5 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies; for detailed description Baker, loc. cit.

MEASUREMENTS

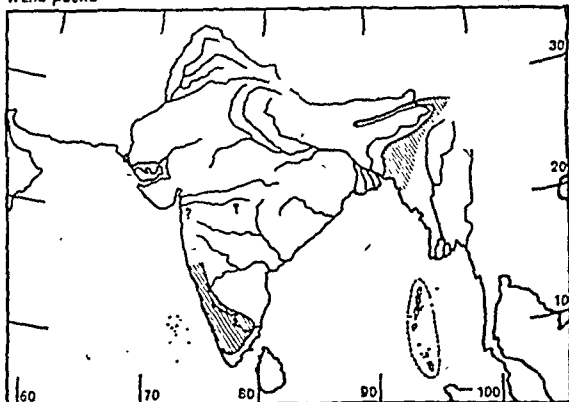
	Wing	Bill (from skull)	Tail
♂♂	84-90	21-22	65-72 mm
♀♀	76-84	20-22	61-68 mm
			(HW)

Tarsus c. 18 mm (Baker).

COLOURS OF BARE PARTS. As in *jerdoni*.

64

IRENIDAE

Irena puella

Disjunct distributional range of *I. p. puella* (1109).

Affects heavy moist-deciduous and evergreen forest, sholas, coffee plantations and deep jungle.

Extralimital. Extends through Burma and the Indochinese subregion. Other subspecies in Malaysia, Sumatra, Borneo, Java and the Philippines.

GENERAL HABITS. In the non-breeding season keeps in small parties of six to eight birds, rarely more, usually to tree-tops but readily descending to bushes where food attracts. Always on the move, hopping from branch to branch and flying from tree to tree, uttering their distinctive call as they go.

FOOD. Fruit, berries and nectar. Especially fond of the various species of figs; probes into the blossoms of *Erythrina* and *Grevillea* for nectar. Insects are also taken.

VOICE AND CALLS. As they dodge about the trees, utter characteristic, liquid, percussive notes variously rendered as *wee-wee*, *be-quick*, *peepit*, *what's it* repeated every few seconds. According to Betts, the male has an explosive, liquid, bubbling whistle of two notes *whit-tu*, *whit-tu* [a different rendering of the above?]; as it calls the tail is jerked up sharply. A sharp *chichichichik* given in flight every few seconds has also been noted.

BREEDING. Season, overall January to June, but most nests have been found from February to April. Unlike most forest birds they do not select

BULBULS

65

open glades or banks of streams but breed in the heart of the thickest and most humid places. *Nest*, described by Betts as very distinctive and unmistakable for that of any other bird: a rough platform of straight dead twigs 16 to 19 cm long and remarkably thick, often at least 5 mm in diameter. On this is spread a layer of green moss and a scanty lining of rootlets and leaf-ribs. It is placed in a fork well within a dense and shady tree, from five metres up; exceptionally in bushes as low as one metre. The hen does all the building, the cock accompanying her, calling loudly. *Eggs*, almost invariably 2, exceptionally 3, olive-grey or greenish white with irregular streaky blotches of brown scattered over the surface, more densely and forming a cap at the large end. Average size of 40 eggs 28.2 × 20.2 mm (Baker). Incubation of eggs (period?) and brooding of young by female alone; feeding by both parents. Young clothed in a thick coat of dark grey-brown fluffy down.

MUSEUM DIAGNOSIS. Specimens from southwest India have a slightly shorter wing (an average of less than 4 mm), but birds from farther east are intermediate. Andaman birds have slightly longer tails (within the range of the species average) and slightly heavier bills; these small differences do not warrant subspecific recognition (*vide* Delacour *in litt.*). There is no difference in plumage.

The juvenal plumage is a dull edition of the female's except that the wings and their coverts have very little of the blue-green wash. First-winter males are indistinguishable from the adult female except for the presence of odd, accidentally moulted, feathers of the adult plumage; postjuvinal moult of body, lesser, median and probably greater coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	125-134	26-30	18-19	99-110 mm
♀♀	118-128	27-30	18-19	95-104 mm
			[South India (HW, SA)]	
12 ♂♂	123-141	26-30	18-19	97-112 mm
6 ♀♀	124-130	29-32	—	92-112 mm
			[Northeast India (HA, HW, SA)]	
3 ♂♂	129-133	25-26	—	106-110 mm
1 ♀	130	25	—	108 mm
			[Andamans (HA)]	

COLOURS OF BARE PARTS. Iris claret. Bill black (♂), brownish black (♀); mouth greyish pink. Legs, feet and claws black.

Family PYCNONOTIDAE: Bulbuls

Cf. Delacour, J., 1943, *Zoologica*, 28 (1): 17-28; Thomson, A. L. (ed.) 1964, *A New Dictionary of Birds*: 110 (Article 'Bulbul').

Key to the Genera

	Page
A Bill finch-like.....	<i>Spizixos</i> 66
B Hairs springing from nape numerous and at least as long as tarsus.....	<i>Criniger</i> 100

BULBULS

67

FOOD. Seeds, fruit and insects.

VOICE AND CALLS. Alarm-note, a strident but not unmelodious *pür-pür-pür-pür-pür-pür*, the last three syllables only added when the bird is very excited; another call is described as *krit-krit-krit*... *tir-tirrr*... *pit* with strong emphasis on the last note (Heinrich). Typical bulbul notes — full, soft and distinct; also has a curious chattering note (Whistler).

BREEDING. Season, April through July. *Nest*, rather shallow, cup-shaped, very distinctive, apparently always made of narrow curly corkscrew-like tendrils of some vine, occasionally with a few fine twigs added, and sometimes lined with scraps of bracken or grass. Built in low bushes preferably in tangles of wild raspberries (*Rubus*); sometimes in small saplings up to three metres. *Eggs*, 2 or 3, rarely 4, dull pink marked with numerous freckles of pinkish red to deep brownish red, often confluent and forming a well-marked cap or ring around the large end. Average size of 100 eggs 25.7 × 17.6 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. Postjuvinal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♀	90-102	16-19	89-99 mm
			(HW, SDR)

Wing 10 ♂♂ 93-99, 10 ♀♀ 90-94 mm (Heinrich).

Tarsus c. 18-19 mm (Baker).

Weight 1 ♂ 44 g (SDR).

COLOURS OF BARE PARTS. Iris reddish brown. Bill yellowish horn above, very pale yellowish green below. Legs and feet brownish flesh (HW).

Genus PYCNONOTUS Boie

Pycnonotus Boie, 1826, Isis, col. 973, Type, by monotypy, *Turdus capensis* Linnaeus *Brachypodius* Blyth, 1845, Jour. Asiat. Soc. Bengal, 14: 576. Type, by original designation, *Lanius melanocephalus* Gmelin

Rubigula Blyth, 1845, Jour. Asiat. Soc. Bengal, 14: 576. Type, by original designation, *Turdus dispar* Horsfield

Microtarsus Eyton, 1839, Proc. Zool. Soc. London: 102. Type, by monotypy, *Microtarsus melanoleucus* Eyton

Elaeoa Gistel, 1848, Naturges. Hohere Schulen: 8. Type, by original designation, *Brachypus plumifer* Gould = *Vanga flaviventris* Tickell

Otocorys Cabanis, 1851, Mus. Hein., 1: 109. Type, by monotypy, *Lanius jocosus* Linnaeus

Molpaster Hume, 1873, Stray Feathers, 1: 378. Type, by original designation, *Haematornis chrysorrhoea* Lafresnaye

Alcedo Blyth, 1843, Jour. Asiat. Soc. Bengal, 12: 930-55. Type, by monotypy, *Trichophorus striatus* Blyth

Xanthicus Oates, 1889, Fauna Brit. Ind., Bds., 1: 274. Type, by monotypy, *Pycnonotus flavescens* Blyth

Kelaartia Jerdon, 1863, Bds. Ind., 2: 86. Type, by monotypy, *Pycnonotus penicillatus* Blyth

Cf. Deignan, H. G., 1948, 1949, Jour. Washington Acad. Sci., 38: 245-8, 279-81; 273-9.

66

PYCNONOTIDAE

Page

C Bill equal to, usually shorter than tarsus. Difference between longest primary and longest secondary less than length of tarsus....	<i>Pycnonotus</i> 67
D Bill longer than tarsus. Difference between longest primary and longest secondary more than length of tarsus.....	<i>Hyppipetes</i> 101

Genus SPIZIXOS Blyth

Spizixos Blyth, 1845, Jour. Asiat. Soc. Bengal, 14: 571. Type, by monotypy, *Spizixos canifrons* Blyth

Differs from other bulbuls by its finch-like bill, otherwise a typical member of the family in its habits, breeding and voice. Crest thick and long but not much pointed; bill short and deep, culmen gently curved throughout; edge of mandibles slightly sinuate and notched near the tips; tail square; tarsus short and weak.

1111. Finchbilled Bulbul. *Spizixos canifrons canifrons* Blyth

Spizixos canifrons Blyth, 1845, Jour. Asiat. Soc. Bengal, 14: 571 (Khasia Hills)

Spizixos canifrons nobilis Koelz, 1952, Jour. Zool. Soc. Indai, 4: 154 (Lushai Hills) Baker, FBI No. 416, Vol. 1: 400

Plate 73, fig. 1

LOCAL NAME. Deo bulip-bulu (Cachari).

SIZE. Redvented Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. A green bulbul with yellowish belly, broad dark terminal band on tail, slaty head and throat with whitish patch on sides of neck, and pointed blackish crest. Sexes alike. The pale yellow thick bill looks whitish in the field and very distinctive.



Young (immature), forehead greenish yellow, crown and crest dark olive; throat and ear-coverts dull yellowish; indications of a dusky moustache; rest as adult but duller with terminal tail-band shadowy. Bill blackish.

STATUS, DISTRIBUTION AND HABITAT. A resident montane species, subject to some seasonal altitudinal movement. Assam hills south of the Brahmaputra, Nagaland, Manipur (and East Pakistan in the Chittagong Hill Tracts?) from c. 1400 to 2500 metres, descending in winter to 900 m. Affects cut-over scrub, semi-cultivation, deciduous and evergreen forest.

Extralimital. Chin Hills and Arakan. The species extends east through northern Burma, Yunnan and northern Thailand to N. Vietnam.

GENERAL HABITS. Found in parties, sometimes large groups of more than 50 individuals. Affects low scrub and abandoned hill-cultivation clearings overgrown with brambles and ringal bamboo; sometimes high trees whence it may be seen 'fly-catching' in the air for insects and returning to the same perch. A typical bulbul in its habits.

PYCNONOTIDAE

68

Bill moderately thick and long for the group; colours and pattern very variable; feathers on the crown erectile and either elongated or normal in length.

Key to the Species

	Page
I Plumage heavily striped.....	<i>P. striatus</i> 92
II Plumage not striped	
A Under tail-coverts red or yellow contrasting with rest of plumage	
a Tail tipped with white	
1 Under tail-coverts red.....	<i>P. cafer</i> 85
2 Under tail-coverts yellow	
Throat black.....	<i>P. leucogenys</i> 81
Throat yellow.....	<i>P. xantholaemus</i> 94
b Tail not tipped with white	
3 A white cheek-patch.....	<i>P. jocosus</i> 75
4 No cheek-patch.....	<i>P. flavescens</i> 96
B Under tail-coverts concolorous with belly	
c Lores and chin white, yellow tuft behind eye.....	<i>P. penicillatus</i> 95
d Front of forehead, and supercilium, white.....	<i>P. luteolus</i> 98
e Tail broadly tipped with yellow.....	<i>P. atriceps</i> 68
f Tail tipped with white.....	<i>P. atriceps</i> (grey phase) 69
g Tail not tipped with yellow or white	
5 Head entirely black.....	<i>P. melanictus</i> 71
6 Head slaty, forehead greenish.....	<i>P. priocephalus</i> 70

PYCNONOTUS ATRICEPS (Temminck)

Key to the Subspecies

Head entirely black, sharply defined.....	<i>P. a. atriceps</i>
Head almost concolorous with back, olive washed with blackish, not sharply defined.....	<i>P. a. fuscoflavescens</i>

1112. Blackheaded Bulbul. *Pycnonotus atriceps atriceps* (Temminck)

Turdus atriceps Temminck, 1822, Pl. col., livr. 25, pl. 147 (Java and Sumatra, restricted to Java by Robinson & Kloss, 1923, Jour. Fed. Malay States Mus., 11: 55)

Br. (achypodius) cinereiventris Blyth, 1845, Jour. Asiat. Soc. Bengal, 14: 576 (Tipperrah) Baker, FBI Nos. 439 and 442, Vol. 1: 423, 426

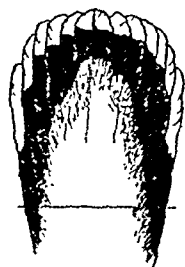
Cf. Ticehurst, C. B., 1939, *Ibis*, 81: 563.

Plate 73, fig. 7

LOCAL NAMES. Deo-bulip-garaju (grey phase), Deo-bulip-garasha (normal phase) (Cachari). The two names mean male and female although the difference is not one of sexes but of colour phases.

SIZE. Redvented Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. Two colour phases. Normal phase. Above, head glossy black; upperparts olive, mottled with black on rump; wings olive



× c. ½
Tail. Dotted line to show much lengthened upper tail-coverts

and black; tail olive with a black subterminal band and a broad yellow terminal band. *Below*, throat and upper breast glossy black; lower breast olive becoming yellow on belly and undertail surface. Uncrested black head, and rounded tail with bright yellow terminal band are leading clues.

In Grey phase all olive or yellow parts replaced by ashy grey; terminal band of tail white. This phase crops up here and there, but rarely (less than 1 per cent). Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, common where it occurs. Assam south of the Brahmaputra (including Nagaland and Manipur) and the eastern and southeastern parts of East Pakistan, in lowlands and foothills up to c. 700 m. Affects deciduous forest, scattered or light jungle and gardens.

Extralimital. Burma and throughout the Indochinese subregion, Malaysia, the Sunda islands, Borneo and Palawan.

GENERAL HABITS. Arboreal, descending to bushes when food attracts; may inhabit thick bushes and undergrowth, and cane brakes in the breeding season. Picks berries while hopping from branch to branch in small or large parties. Sometimes hawks flying insects by aerial sorties from tree-tops. Rather quarrelsome.

FOOD. Mostly berries; also insects (flying ants etc.).

VOICE AND CALLS. Very distinct and unlike those of other bulbuls. Ordinary call-note, a lively, sharp but pleasant single chirp uttered when flying from tree to tree, hopping among the branches or at rest. Song, a melancholy double whistle not unlike that of a sibia (Davison); 'very mournful, like the rain-weather call of the Iora but deeper and softer'—Baker. It is uttered when sitting quietly especially in the morning and evening.

BREEDING. Season, April and May. *Nest*, rather bulky for the size of the bird, well built and compact 'more like a flycatcher's than a bulbul's' (J. C. Hopwood); made of fine stems, twigs, dead leaves and grass, lined with fine grass-stems; placed in upright forks of branches or cane fronds, part of the material being wound around the supporting twigs; always in bushes and nearly always quite low down. *Eggs*, 2 or 3, typical of *Pycnonotus* but having a definite character of their own, pale pink with a violet tinge marked with speckles or small blotches of reddish brown or purple-brown forming a ring or cap at the large end. Average size of 17 eggs 21.1 × 15.9 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies and Field Characters.

Young (immature), head and throat dull brown; base of rump-feathers brown, tail-coverts shorter; rest as in adult but darker and duller. Primary and tail characters present, postjuvinal moult complete. This species is dichromatic, the grey phase lacking carotenoids (see also SF 6: 319).

STATUS, DISTRIBUTION AND HABITAT. Resident; fairly common but rather local. A very limited range in the heavy rainfall area along the southwestern side of India from Belgaum and Goa south through Kerala, and east to the Nilgiris and Palnis (JBNHS 55: 159), western Mysore and Coorg; from the plains to c. 1000 m, rarely to 1800 m; optimum zone between 600 and 900 m. Affects dense evergreen cane-brakes in swampy jungle, and lantana thickets in abandoned forest clearings—a biotope similar to that of Rubythroated Bulbul (1116), but preferentially more humid fancies with denser growth.

GENERAL HABITS. Arboreal, keeping chiefly to the foliage canopy of trees and tall vine-draped shrubs. Met with singly, in pairs or in small parties; commonly consorts at a feeding tree with bulbuls, orioles, barbets, fairy bluebirds and other frugivorous species.

FOOD. Berries and fruits, e.g. *Ficus*, *Lantana*, *Zizyphus oenopia*; also insects.

VOICE AND CALLS. A clear, rather squeaky whistling note *cheek* or *penk*, single or repeated every second or so punctuated from time to time by a wheezy long-drawn *chik* (SA). Fairly noisy.

BREEDING. Season, March to July. *Nest*, a rough, shallow cup of dead grass, bark, bamboo leaves and rootlets, lined with the latter, loosely attached to a branch with cobwebs and placed in low bushes in thick jungle. *Eggs*, usually 1, sometimes 2, quite distinctive though of bulbul type: pale pink faintly tinged with violet, lightly flecked and stippled with pale pinkish red with secondary frecklings of pinkish lavender more numerous at the larger end. Average size of 6 eggs 21.7 × 15.5 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Species. Some individuals have the crown, nape, ear-coverts and throat olive-green as the rest of plumage, instead of slaty as in normal specimens. The upper surface of the tail also has the grey largely replaced by green. This variation does not seem to be a mark of either age or sex but is probably a phase similar to that found in the allied species *P. atriceps* (1112).

Young much as adult; black marks in tail less sharply defined; primary and tail characters present; postjuvinal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	75-79	14-17	70-79 mm
♀♀	75-77	14-16	70-73 mm

(SA, HW)

COLOURS OF BARE PARTS. Iris grey. Bill greenish yellow; mouth pink with brownish patches, or yellow and pink, varying according to age (? or season). Legs and feet pale dusky orange-yellow; claws paler (SA).

PYCNONOTUS MELANICTERUS (Gmelin)

Key to the Subspecies

	Page
A Throat black..... <i>P. m. flaviventris</i>	72
B Throat orange to ruby-red..... <i>P. m. gularis</i>	73
C Throat lemon-yellow..... <i>P. m. ruficollis</i>	74

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	80-86	13-14	c. 13	c. 84 mm (Baker)

COLOURS OF BARE PARTS. Iris pale blue; bill black; legs and feet plumbeous.

1113. Andaman Blackheaded Bulbul. *Pycnonotus atriceps fusciflavescens* (Hume)

Brachypodius fusciflavescens Hume, 1875, Stray Feathers, 1: 297
(Port Mouat and Mount Harriet, Andamans)
Baker, FBI No. 440, Vol. 1: 425

LOCAL NAMES. None recorded.

SIZE. Redwhiskered Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. Above, olive-green, dusky on crown and sides of head, with a few black feathers on rump, and a dark band across tail which is broadly tipped with yellow. Below, chin and upper throat black gradually becoming olive on breast and bright yellow on belly and under tail surface. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, rather rare; South and Middle Andaman islands in light deciduous forest and thick jungle.

GENERAL HABITS AND FOOD. Presumably as in 1112. A quiet and unobtrusive bird. 'Almost always in pairs' (A. L. Butler).

VOICE AND CALLS. Has no song but a characteristic call (Osmaston).

BREEDING. Unrecorded.

MUSEUM DIAGNOSIS. Differs from the Blackheaded Bulbul (1112) in having the whole head dusky olive-green; black tail-band narrower; primaries, except first two, edged olive-green.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1112.

1114. Greyheaded Bulbul. *Pycnonotus priocephalus* (Jerdon)

B. (rachypus) priocephalus Jerdon, 1839, Madras Jour. Lit. Sci., 10: 246
(Peria Pass, Malabar)
Baker, FBI No. 441, Vol. 1: 425
Plate 73, fig. 3

LOCAL NAME. *Prakuruv* (Malayalam).

SIZE. Redvented Bulbul —; length c. 19 cm (7½ in.).

FIELD CHARACTERS. A grey-headed olive-green bulbul curiously reminiscent of a miniature green pigeon, with the rump barred black and yellow. Above, head grey with greenish forehead; back olive-green mottled with brown and grey on rump; upper tail-coverts and centre of tail grey; outer rectrices dark brown tinged with olive, broadly tipped with grey. Below, chin blackish, belly olive-green. Broad square tail characteristic, and light-coloured iris conspicuous. Sexes alike.

1115. Blackcrested Yellow Bulbul. *Pycnonotus melanicterus flaviventris* (Tickell)

Vanga flaviventris Tickell, 1833, Jour. Asiat. Soc. Bengal, 2: 573
(Dampara in Dholbhum)
Baker, FBI No. 413, Vol. 1: 397
Plate 75, fig. 4

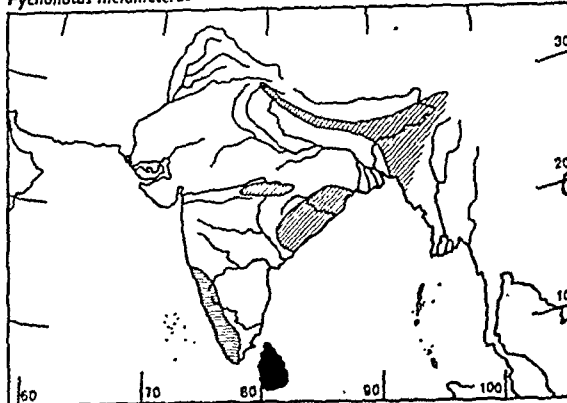
LOCAL NAMES. *Zard bulbul* (Hindi); *Pādhriyā kāngdhāra* (Gorakhpur); *Mendiph-lur* (Lepcha); *Hagrani dao-bulip* (Cachari).

SIZE. Redvented Bulbul ±; length c. 18 cm (7½ in.).

FIELD CHARACTERS. Entire head, throat and crest glossy black; rest of upperparts olive-yellow, tail largely brown. Underparts yellow, darker on breast. Pale yellow eyes conspicuous at short range. Sexes alike. Distinguished from the Blackheaded Bulbul (1112) by its erect pointed crest, and the absence of yellow in tail.

STATUS, DISTRIBUTION AND HABITAT. Fairly common resident along the lower Himalayas from Simla through Nepal, Sikkim, Bhutan, Assam hills, Nagaland, Manipur, and East Pakistan; terai and duars and up to an altitude of c. 1500 m, rarely to 2400 m, extending in the plains to Gonda

Pycnonotus melanicterus



■ *flaviventris* (1115). ■ *gularis* (1116). ■ *melanicterus* (1117).

(U.P.) and Bettiah (N. Bihar); also the forests of Madhya Pradesh (Pachmarhi, Chhindwara and Bastar districts), Orissa and northeastern Andhra Pradesh. Affects forest with plenty of undergrowth, dense secondary jungle, and scrub country about terraced cultivation, orchards and villages.

Extralimital. This subspecies extends to Arakan, northern Burma and western Yunnan; other races throughout the Indochinese subregion, Sumatra, Java and Borneo.

BULBULS

73

GENERAL HABITS. Arboreal, seldom coming near the ground. Usually singly or in pairs, but may consort in numbers in fruit-bearing trees. Like other bulbuls often hawks flying ants in the air from tree-tops.

FOOD. Mainly fruits, also insects. Observed feeding on fruit of *Solanum xanthocarpum* growing along forest path (SA).

VOICE and CALLS. Similar to those of the Rubythroated Bulbul (1116), q.v. Some notes also resemble those of the Black Bulbul (1148). Song rendered as *tree-tree-trippp-weet*, the last three syllables repeated twice or more.

BREEDING. Season, overall March to September, chiefly April to June. *Nest*, a flimsy cup of yellow dead leaves bound with a little cobweb and shreds of bark; a first rough lining of coarse grass stems, fine twigs and rootlets, and a finer lining, in most cases composed only of the finer stems of tan-coloured grass, occasionally of fine moss-roots or other vegetable fibre; placed in a thick bush or sapling 30 to 250 cm from the ground. *Eggs*, 3 or 4, sometimes 2, faint pinkish white covered with numerous freckles of dull lilac-pink, dull reddish or reddish pink with secondary freckles of pale grey, sometimes forming a ring around the large end. Average size of 100 eggs 24.2 × 16.4 mm (Baker). Both birds take part in incubation; period unrecorded.

MUSEUM DIAGNOSIS. Differs from *gularis* and *melaniterus* in having a crest and a black throat.

Young (immature) like adult but head dull black and crest shorter; upperparts greenish olive; underparts much paler yellow; edges to wing and tail less distinct; primary and tail characters present. Postjuvénal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	85-95	14-17	15-17	82-90 mm
♀♀	83-89	14-16	16-17	79-86 mm

(HW, BB, SA, Fleming)

Weight 4 ♂♂ 30-34; 2 ♀♀ 28-31 g (SDR, BB).

COLOURS OF BARE PARTS. Iris pale lemon-yellow. Bill black. Legs and feet dark plumbeous; claws darker; soles yellowish white.

1116. Rubythroated Yellow Bulbul. *Pycnonotus melaniterus gularis* (Gould)

Brachyptus gularis Gould, 1835, Proc. Zool. Soc. London: 186 (Travancore)
Baker, FBI No. 431, Vol. 1: 415
Plate 73, fig. 5

LOCAL NAME. *Mānikāntān* (Malayalam).

SIZE. Redvented Bulbul ±; length c. 18 cm (7½ in.).

FIELD CHARACTERS. An olive-yellow and bright yellow bulbul with black uncrested head, conspicuous whitish eye and ruby-red throat. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident. Goa (?) and western Mysore from Belgaum south through Kerala and adjacent parts of Tamil

BULBULS

75

VOICE and CALLS. 'A plaintive, minor-key whistle on an ascending scale, something like *yer, yer ye or yer yer yer* each syllable higher than the last' (Henry).

BREEDING. Season, ill-defined: February to June; mostly March and April (Phillips) with a second period in August-September (Henry); occasionally in other months. *Nest*, a rather flimsy cup of small twigs, rootlets and especially dead leaves and fern-stalks, lined scantily with fibres; placed in a small lateral fork or in twigs and well concealed among foliage in a low bush in scrub jungle, or a small tree in the outskirts of forest. *Eggs*, normally 2, dull pink, densely speckled and occasionally blotched with light red-brown. Average size of 24 eggs 20.9 × 15.7 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies.

Young (immature), similar to adult but black of head dull and glossless; rectrices narrower and more pointed.

Wing and tail moult in the adults in March and October.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
6 ♂♂	72-77	15-17	15-16	65-69 mm
5 ♀♀	72-74	15-16	15-16	62-65 mm

(HW)

COLOURS OF BARE PARTS. Iris dull red (♂) or dark brown (♀). Bill black. Legs and feet blackish (♂) or deep lead colour (♀).

Pycnonotus jocosus (Linnaeus)

Key to the Subspecies

		Page
A	Rectrices without white tips	
1	Paler, collar broken in centre.....	<i>P. j. abruensis</i> 76
2	Darker, collar complete.....	<i>P. j. fuscicaudatus</i> 77
B	Rectrices with white tips	
3	Upperparts rich ruddy brown	
a	Red ear-tuft and crest shorter, bill heavier.....	<i>P. j. whistleri</i> 80
b	Red ear-tuft and crest longer, bill more slender.....	<i>P. j. eresia</i> 79
4	Upperparts darker, more saturated.....	<i>P. j. monticola</i> 80
5	Upperparts paler.....	<i>P. j. pyrrhotis</i> 75

Cf. Deignan, H. G., 1948, Jour. Washington Acad. Sci., 38: 279-81.

1118. Kumaon Redwhiskered Bulbul. *Pycnonotus jocosus pyrrhotis* (Bonaparte)

Iris pyrrhotis 'Hodgs.' = Bonaparte, 1850, Conspectus Gen. Av., 1: 265 (ex India = Nepal ex Hodgson, 1844)

Otocorptis jocosus provincialis Whistler, 1931, Bull. Brit. Orn. Cl., 52: 40

(Kumaon bhabar)

Baker, FBI No. 410 (part), Vol. 1: 394

LOCAL NAMES. *Kānārā bālbāl*, *Pāhārī bālbāl* (Hindi).

SIZE. Redvented Bulbul ±; length c. 20 cm (8 in.).

PYCNONOTIDAE

74

Nadu. In the lowlands and foothills of the Ghats up to c. 1000 m (1200 m in Coorg dist., rarely higher). Affects edges of evergreen forest, thickets along rivers, mixed bamboo and evergreen, and old forest clearings overgrown with secondary jungle and tangles of *Mimosa*, *Lantana*, etc. Avoids cultivation.

GENERAL HABITS. Arboreal, finding most of its food in the forest canopy. Keeps in pairs during the breeding season, in small parties otherwise. Rather silent and shy and retiring.

FOOD. Berries, figs and insects.

VOICE and CALLS. The birds keep in touch with each other by a low, churring note constantly uttered. Song, a half-dozen tinkling notes recalling the song of *Rhipidura aureola* but of the pattern and richness of the Redwhiskered Bulbul's; closely resembling also song of 1115.

BREEDING. Season, ill-defined: overall January to August, chiefly February to April. *Nest*, a very small cup of yellow dead leaves bound lightly with cobweb and grass stalks with a slight lining of grass, looking like a casual wind-blown accumulation of rubbish (Betts). The choice of yellow leaves as a nest material, as also in the Blackcrested Bulbul, is stressed by Betts. Placed in low bushes between 1 and 3 metres from the ground. *Eggs*, invariably 2, similar to those of *flaviventris*. Average size of 4 eggs 20.9 × 15.2 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies. Young undescribed.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	74-79	15-16	68-74 mm
♀♀	73-79	15-16	67-69 mm

(HW, SA)

Tarsus c. 15 mm (Baker).

COLOURS OF BARE PARTS. Iris creamy white to yellow. Bill brownish black; mouth yellowish pink. Legs, feet and claws brown.

1117. Blackcapped Yellow Bulbul. *Pycnonotus melaniterus melaniterus* (Gmelin)

Muscicapa melanitera Gmelin, 1789, Syst. Nat., 1: 941 (Ceylon)
Baker, FBI No. 429, Vol. 1: 414
Plate 73, fig. 6

LOCAL NAME. *Kāhā kondāyā* (Sinhala).

SIZE. Redvented Bulbul —; length c. 18 cm (7½ in.).

FIELD CHARACTERS. Above, uncrested head black; back, rump and wings olive-green; tail brown tipped white. Below, throat and rest of underparts lemon-yellow with an olive wash on breast. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, Ceylon. Widely distributed except in the arid parts, in moderate numbers up to at least 1200 m. Affects well-wooded areas but prefers forest varied by open country to dense forest.

GENERAL HABITS and FOOD. As in *gularis*.

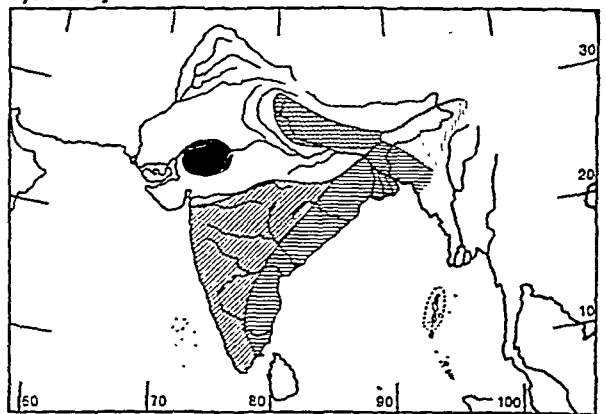
PYCNONOTIDAE

76

FIELD CHARACTERS. As in 1120, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident in the lowlands, from

Pycnonotus jocosus



Distributional ranges

■ *abruensis* (1119). ■ *pyrrhotis* (1118). □ *monticola* (1121a).
■ *eresia* (1121). ■ *fuscicaudatus* (1120). □ *whistleri* (1122).

East Punjab to Uttar Pradesh, the Nepal terai, duns and bhabar, and Bihar; affects scrub jungle, light forest, semi-cultivation and villages.

GENERAL HABITS, FOOD, VOICE and BREEDING. As in 1120.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
3 ♂♂	83-90	19	85-86 mm
3 ♀♀	80-83	19	73-77 mm

(BB)

COLOURS OF BARE PARTS. As in 1120 and other races.

1119. Rajasthan Redwhiskered Bulbul. *Pycnonotus jocosus abruensis* (Whistler)

Otocorptis jocosus abruensis Whistler, 1931, Bull. Brit. Orn. Cl., 52: 40 (Mount Abu)
Baker, FBI No. 411 (part), Vol. 1: 396

LOCAL NAMES. *Kānārā bālbāl*, *Pāhārī bālbāl* (Hindi).

SIZE and FIELD CHARACTERS. As in 1120.

STATUS, DISTRIBUTION and HABITAT. Resident. Central, southern and southeastern Rajasthan, and northern Gujarat. Affects scrub and cultivated areas.

GENERAL HABITS, FOOD, VOICE and BREEDING. As in 1120.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
6 ♂♂	87-91	19	20-21	83-87 mm (HW)

COLOURS OF BARE PARTS. As in 1120 and other races.

1120. Southern Redwhiskered Bulbul. *Pycnonotus jocosus fuscicaudatus* (Gould)

Otocompsa fuscicaudata Gould, 1866 (1865), Proc. Zool. Soc. London, pt. 3: 664 (Southern India and Madras, restricted to the Nilgiri Hills by Whistler & Kinnear, 1932, JBNHS 35: 756)

Baker, FBI No. 411, Vol. 1: 396

LOCAL NAMES. *Pāhāri būlbūl*, *Kāmērā būlbūl* (Hindi); *Sipāhi būlbūl* (Gujarati); *Turaka-pigli-pitta* (Telugu); *Konda-kloti-kūriwi* (Tamil); *Irattattalachi* (Malayalam).

SIZE. Redvented or Whitechecked Bulbul ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. An unmistakable bird, hair-brown above with a pointed black crest (carried erect except when flying), crimson tufts behind the eyes, white underparts with a dark collar, and scarlet under tail-coverts. Young birds lack the red 'whiskers' and have a pale orange-rufous vent. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Common and widespread resident. Western India from the Tapi river and Madhya Pradesh (apparently absent from its northern parts), south to Cape Comorin, including Maharashtra, Mysore, Kerala, western Tamil Nadu and the western half of Andhra Pradesh. Chiefly in the Ghats and associated hills (Nilgiri, Palni, etc.) up to c. 1800 m; rare in the central tableland. Affects open scrub jungle, cultivation and urban gardens; avoids heavy forest but prefers a more humid habitat than either *leucogenys* or *cafer*, often to the exclusion of *cafer* see JBNHS 39: 102.)

GENERAL HABITS. A familiar bird of gardens, often even in the heart of noisy cities. Usually in pairs, occasionally in loose feeding flocks of 30 or more in the non-breeding season, and in association with other bulbuls. Largely sedentary, each pair usually remaining in the neighbourhood of its breeding haunts throughout the year. Feeds mostly on trees and bushes but also descends to the ground, hopping about to pick ants and other insects. At times will make aerial sorties from a bush- or tree-top to capture winged termites and moths. Frequently does damage to ripening fruit in orchards, and is a minor scourge of the kitchen garden and to flower-buds and seedlings. Flight strong and well sustained though slow and jerky in character.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	81-95	17-20	20-23	78-87 mm
♀♀	80-85	18-19	—	77-81 mm (HW, SA)

Weight 20 ♂♂ 25-31 (av. 27.4) g — SA.

COLOURS OF BARE PARTS. Iris hazel-brown to brown. Bill horny black; mouth orange-yellow and pink. Legs, feet and claws horny brown.

1121. Bengal Redwhiskered Bulbul. *Pycnonotus jocosus emeria* (Linnaeus)

Melocitta emeria Linnaeus, 1758, Syst. Nat., 1: 187 (Benghala)

Baker, FBI No. 410 (part), Vol. 1: 394

Plate 72, fig. 7

LOCAL NAMES. *Kāmērā* or *Pāhāri būlbūl* (Hindi); *Sipāhi būlbūl* (Bengal); *Chinā būlbūl* (Calcutta bird market).

SIZE. Redvented Bulbul ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1120, q.v.

STATUS, DISTRIBUTION and HABITAT. Common and widespread resident; from West Bengal southeastwards through East Pakistan to Lower Burma, and southwestwards through Orissa, eastern Andhra Pradesh, eastern Tamil Nadu and Rameswaram Island (absent from Ceylon); in the Eastern Ghats up to c. 1000 m, rarely below 750 m. Affects scrub jungle, forest edges and semi-cultivation.

Extralimital. Ranges through lower Burma, central Tenasserim and southwestern Thailand; other subspecies throughout the Indochinese sub-region, Kwangtung and Kwangsi. Introduced into Mauritius, Florida (*emeria*) [in 1961] and New South Wales (*jocosus*).

GENERAL HABITS, FOOD and VOICE. As in 1120.

BREEDING. Season, early March to late September, chiefly April to June. Breeding biology as in 1120. Eggs, almost invariably 3; may be separated from those of *cafer* by the uniformity of markings, consisting of numerous spots, specks and minute blotches scattered profusely all over as compared with the large, irregular blotches of the other. Average size of 200 eggs (including those of *monticola*) 22.2 × 16.2 mm (Baker). Incubation period c. 12 days.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	80-88	17-19	18-20	75-84 mm
♀♀	78-84	16-19	18-20	72-79 mm (HW)

COLOURS OF BARE PARTS. As in 1120.

A pair will become greatly excited at an intruder near the nest, flitting from branch-to branch with rump-feathers fluffed and 'swearing' angrily till the danger is cleared. Normally unafraid of humans when nesting near habitations. Makes an engaging pet, becoming exceedingly tame and confiding, following its master about and flying long distances to him when called.

Display. *Courtship*. Male postures before his mate, flattening himself on the perch, lowering his head in a continuous bow, spreading his tail, drooping his open wings loosely at the sides, and gently fluttering or quivering them to the accompaniment of subdued croaks. Female seemingly quite indifferent to these advances, but cooperative in copulation when he thus hops on to her back.

Distraction. Female (?) feigns injury to draw away intruder from nest-young, dragging herself on her belly on ground with outspread beating wings, screaming piteously the while; the effect greatly heightened by her mate flitting about her concernedly with noisy agitated chattering.

FOOD. Fruits, berries (especially *Lantana*), figs, flower-buds, nectar, insects and spiders. Nest-young fed mostly with soft-bodied insects and caterpillars; with drupes and berries as they grow older.

VOICE and CALLS. A noisy species with a variety of cheery notes, rather more musical than those of *cafer*. One song is a rollicking phrase sounding like the rice must be finished off uttered particularly while displaying. Agitated sad-sounding swearing notes, a harsh *leeeee*, often uttered for considerable periods towards sunset when preparing to roost. One of its commonest calls is a lively *pettigrew* or *kick-pettigrew*, or *Pleased-to-meet-you* (accent on meet).

BREEDING. Season, ill-defined: chiefly March to July in the north, December to June in the south with a second period in September after the monsoon, but odd nests may be found in any month; two or three broods are reared. Nest, a shallow, fairly neat cup of twigs and dead leaves bound with cobwebs especially around the rim; lining nearly always of roots and grass, occasionally hair. A great variety of sites is chosen, even a thatched roof or a wall; most usually placed in a low bush or creeper often growing on a latticed veranda, seldom more than 3 metres from the ground, sometimes under 15 cm; well concealed when in thickets of *Lantana* or other scrub, but frequently very conspicuous when in garden bushes. Position of nest usually betrayed by the peculiar fussy last-minute departure of incubating bird. Both sexes share in construction of nest, rearing of young and presumably also in incubation. Three or four days are required for building; there is usually a pause of a day, or two, before the first egg is laid; these are laid at intervals of about 24 hours, and in the early morning. Incubation sometimes starts with the first egg, but nest is left unattended through long periods of the day and during night until full clutch has been laid. Incubation period, 12 to 14 days. Eggs, 3, less commonly 2, pinkish, heavily freckled and mottled uniformly all over with small purple, red or reddish brown spots; very variable. Average size of 100 eggs 24.4 × 16.1 mm (Baker). Eggs and nestlings suffer very heavy predation principally by cats, crows, crow-pheasants and *Calotes* lizards.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

1121a. Assam Redwhiskered Bulbul. *Pycnonotus jocosus monticola* (McClelland)

Ixos monticola McClelland, 1840, Proc. Zool. Soc. London, pt. 7: 160 ('Kasia mountains, Assam')

Baker, FBI No. 410 (part), Vol. 1: 394

LOCAL NAMES. *Dao-bulip-gajao-bi* (Cachari); *Innu-bulib-gaherba* (Kacha Naga); *Kenda* (Sylhet); *Khoining* (Manipur, all bulbuls); *Dukshoh* (Dafila); *Prajo* (Naga); *Jango* (Mishmi); *Jadbo* (Abor).

SIZE. Redvented Bulbul ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1120, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. Bengal duars (Jalpaiguri district), Bhutan foothills east through Assam and the NEFA foothills up to 1100 m. Affects scrub jungle and clearings near villages.

Extralimital. Extends to northern Burma, the Shan States, Yunnan and Indochina (Deignan).

GENERAL HABITS, FOOD and VOICE. As in 1120. Flocks of over 100 were seen associated with *P. cafer* (Mishmi Hills. SA & SDR). Very abundant also in NEFA.

BREEDING. Season, March to July, chiefly May and June. Nest, as in 1120. Eggs, 3, rarely 4; for description and size see under *emeria*.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS. Wing ♂♂ 84-95, ♀♀ 80-91 mm.

Weight 4 ♂♂ 30-42; 4 ♀♀ 30-36 g (SDR, BB).

COLOURS OF BARE PARTS. As in 1120.

1122. Andaman Redwhiskered Bulbul. *Pycnonotus jocosus whistleri* Deignan

Pycnonotus jocosus whistleri Deignan, 1948, Jour. Washington Acad. Sci., 38: 280 (Cinque I., Andaman Is.)

Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Smaller than myna; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1120, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident in South and Middle Andaman islands. Introduced into the Nicobars from Port Blair; now found on Trinkat and Camorta, probably also Nancowry. Affects open country and towns.

GENERAL HABITS. Those of the species. 'Especially common at Port Blair where it frequently enters the houses taking the place of the common sparrow' (Osaston, 1906, JBNHS 17: 156).

BREEDING. Season, March to May. Nesting as in 1120. Eggs, 2 or 3, like those of *emeria*.

MUSEUM DIAGNOSIS. See Key to the Subspecies; barely distinguishable from *emeria* of Orissa but ear-tuft and crest shorter, bill heavier.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1120.

BULBULS

81

PYCNONOTUS LEUCOGENYS (Gray)

Key to the Subspecies

A Crest lacking, top of head black.....	<i>P. l. leucotis</i>	81
B Crest present		
1 Crest moderate, brownish black; back dull olive-brown....	<i>P. l. humii</i>	83
2 Crest long, brown; back greenish olive-brown.....	<i>P. l. leucogenys</i>	83

1123. White-eared Bulbul. *Pycnonotus leucogenys leucotis* (Gould)

Ius leucotis Gould, 1836, Proc. Zool. Soc. London: 6 (Karachi, Sind)
Baker, FBI No. 406, Vol. 1: 390
Plate 72, fig. 11

LOCAL NAMES. *Kūshāndra* (Punjab); *Bhooroo* (Sind); *Jogido* (Kutch); *Kānārī būlbūl* (Gujarati).

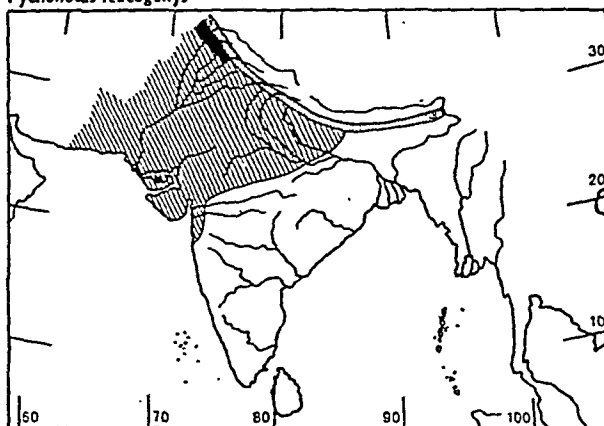
SIZE. Redvented Bulbul \pm ; length c. 20 cm (8 in.).

FIELD CHARACTERS. A grey-brown bird with crestless black head, black throat and a large white cheek-patch; under tail-coverts yellow, tail dark



brown tipped white. Distinguished from the Redvented Bulbul by the white cheek-patches, white underparts and yellow vent. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common and widespread resident, subject to some local movements. West Pakistan in Baluchistan (Makran coast and inland up to 1800 m in the hills), Sind and West Punjab where

Pycnonotus leucogenys

Distributional range

■ *humii* (1124). □ *leucogenys* (1125). ▨ *leucotis* (1123).

it intergrades with *humii*, east to Rajasthan, East Punjab, Uttar Pradesh and northern Madhya Pradesh, south to Gujarat (including Kutch and Saurashtra), and northern Maharashtra (Bombay) where it has apparently spread in the last 40 years. Affects semi-desert tracts, scrub, urban gardens, cultivated areas and coastal mangroves. Spreads with the extension of gardens and groves; when found side by side with the Redvented Bulbul its preference for semi-desert facies is noticeable; closely associated with *Capparis* and *Salvadora*.

EXTRALIMITAL. Southern Afghanistan and southern Iran; the species ranges to Iraq and Saudi Arabia.

GENERAL HABITS. As in *leucogenys* (1125).

FOOD. Berries (especially *Capparis* and *Salvadora*), caterpillars, ants and other insects; flower-nectar.

VOICE AND CALLS. As in *leucogenys*.

BREEDING. Season, March to September; may be influenced by rainfall and consequent supply of food. Nesting, as in *leucogenys*. Eggs, normally 3, sometimes 2 or 4, not so well and darkly marked as those of the White-checked Bulbul (1125). Average size of 100 eggs 21.6 × 15 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies; differs from *leucogenys* also by the lack of superciliary streak, greyish brown (c. earth-brown) back, large white cheek-patch and deeper chrome-yellow under tail-coverts; complete postnuptial moult c. September.



× c. 1

BULBULS

83

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	81-91	15-18	21-22	66-84 mm
♀♀	80-88	14-16	20-23	73-80 mm

(SA, Koelz)

Weight 10 ♂♀ 18-28 (av. 23) g — SA.

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet bluish grey.

1124. Hume's White-eared Bulbul. *Pycnonotus leucogenys humii* (Oates)

Molpastes humii Oates, 1889, Fauna Brit. Ind., Bds. 1: 274 (Jalalpoor, Punjab)
Baker, FBI No. 407, Vol. 1: 391

LOCAL NAME. *Kūshāndra* (Punjab).

SIZE. Redvented Bulbul \pm ; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1125 but crest shorter.



× c. 1

STATUS, DISTRIBUTION AND HABITAT. Common resident subject to local movements. Eastern Afghanistan (Jalalabad), the Peshawar Valley, West Punjab to Rawalpindi and Jhelum, south to the Mianwali district and the southern foot of the Salt Range. Affects scrub jungle and gardens, absent only from the barest tracts.

GENERAL HABITS, FOOD AND VOICE. As in 1125.

BREEDING. Season, April to August. Nesting as in 1125. Eggs, normally 3, sometimes 2 or 4, similar to those of *leucogenys*.

MUSEUM DIAGNOSIS. See Key to the Subspecies; very variable as it is an intermediate population showing all intergrading forms between *leucogenys* and *leucotis*. Cf. Ripley, S. D., *Postilla*, No. 35, 1958.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in *leucogenys*.

1125. Whitechecked Bulbul. *Pycnonotus leucogenys leucogenys* (Gray)

Brachypus leucogenys Gray, 1835, in Hardwicke's Ill. Zool. 2, pl. 35, fig. 3 (Himalaya and in Kashmir, vide Blyth, 1845, Jour. Asiat. Soc. Bengal, 14: 567, restricted to Kashmir by Vaurie, 1958, Amer. Mus. Novit., No. 1869: 19)

Molpastes leucogenys fuscus Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 11 (Laghman, Afghanistan)

Baker, FBI No. 405, Vol. 1: 389

Plate 72, fig. 12

LOCAL NAMES. *Bil-bi-chūr* (Kashmir); *Pāinjā* (Chamba); *Mangli-kur* or *Manjli-ph-kur* (Lepcha); *Jurūi* (Nepali, all bulbuls); *Kudghare*, *Pahāri būlbūl* (Bengal).

SIZE. Redvented Bulbul \pm ; length c. 20 cm (8 in.).

84

PYCNONOTIDAE

FIELD CHARACTERS. A sprightly earth-brown bulbul with a forwardly curving pointed crest, short thin superciliary stripe, white cheek-patches, black throat, yellow under tail-coverts and white tail-tip. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common resident subject to some local movements. The Himalayan foothills from Chitral (reaching northeast Afghanistan in the Kunar river valley) to Kashmir, East Punjab hills, Himachal Pradesh, Uttar Pradesh hills, Nepal (entering the Langtang Valley up to 2400 m), Sikkim, Bhutan and NEFA as far as the Dihang river; from c. 300 m commonly up to c. 2100 m, occasionally 2400 m in the western, drier part of its range [west of central Nepal where it has been recorded at 2400 m in December (Fleming)]; there appears to be some upward movement after the breeding season; not found above 1800 m east of Nepal where it is restricted to the drier valleys. Affects open scrub jungle and hillsides dotted with wild raspberry and *Berberis* bushes, secondary growth, hedgerows, cultivation and environs of towns and villages.

GENERAL HABITS. Usually in pairs or small parties, occasionally in large flocks in winter. A very familiar bird in Kashmir where it enters houses, house-boats and verandas, even stealing scraps from the table. Particularly tame and confiding in winter when scarcity of natural food increases its dependence on man. Crest always jauntily curved forward over the beak; tail and wings incessantly flicked as it moves restlessly about; continually bows and postures on top of bushes, uttering its cheerful rollicking notes. Often descends to the ground for food, sometimes catches insects on the wing. Display similar to that of *P. jocosus* and *P. cafer*, qq.v.; for more details see *Pavo* 2: 26-36.

FOOD. Fruit, berries — *Berberis*, *Rubus*, *Lantana*, *Zizyphus* and 'boquain' or Neem (*Melia*) are amongst the most favoured. Nectar, seeds and insects (ants, grubs, beetles) also taken. Is apt to do some damage in gardens to buds, fruit and green peas.

VOICE AND CALLS. Similar in pattern and variations to the Redvented and Redwhiskered bulbuls'. Song, three or four melodious phrases in an endless variety of combinations; two phrases commonly heard are *tea for two* and *take me with you* (B. T. Phillips). Agonistic notes: *pit-pit*, *pit-lo* and chattering *pit-pit-it-it-it* or *pititititit* (Short). Some notes confusable at a distance with those of the bee-eater *Mercops apiaster*.

BREEDING. Season, March to June; a few nests are found as late as August; at least two broods are reared. Nest, a cup of grass-stems and fibres lined with rootlets and finer grasses of the same colour; variable in bulk and depth; placed in low bushes from 30 cm to about 3 metres from the ground, sometimes in low branches of trees, pollarded willows, garden creepers, or tucked into the thatch of a dwelling, often inside a room; on the whole well concealed but sometimes with no attempt at concealment. Eggs, usually 3, sometimes 2 and often 4, occasionally 5 (Bates), pinkish white, thickly speckled, streaked or blotched with various shades of red, with tiny spots and clouds of underlying pale inky purple. Average size of 33 eggs 22.8 × 16.7 mm (Osmaston). Laid at 24-hour intervals; incubation period c. 12 days.

MUSEUM DIAGNOSIS. See Key to the Subspecies. For description of hybrids *leucogenys* × *cafer* see the latter species (1126, Museum Diagnosis).

BULBULS

85

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	85-94	19-21	c. 22	81-90 mm
♀♀	82-86	18-19	—	80-86 mm

(BB, Schäfer, SA)

Weight 5 ♂ 34-38 g (SA).

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs, feet and claws black; soles grey to white (BB).

PYCNONOTUS CAFER (Linnaeus)

Key to the Subspecies

	Page
I Black of crown sharply defined and not extending to the hindneck	
1 Back dark brown, feathers with narrow pale edges... <i>P. c. haemorrhousus</i>	89
2 Back darker, more blackish on nape... <i>P. c. cafer</i>	87
3 Darker than preceding, less white on abdomen... <i>P. c. uetmorii</i>	90
4 Back paler brown, feathers with broad pale edges... <i>P. c. humayuni</i>	86
II Black of crown extending into hindneck and back and not sharply defined from brown of latter	
5 Black extending far on to back and breast	
a Feathers of back with broad pale edges... <i>P. c. stanfordi</i>	91
b Feathers of back with narrow pale edges... <i>P. c. bengalensis</i>	90
6 Black extending only to hindneck and shading into brown on breast	
..... <i>P. c. intermedius</i>	85

1126. Punjab Redvented Bulbul. *Pycnonotus cafer intermedius* Blyth*Pycnonotus intermedius* Blyth, 1846, Jour. Asiat. Soc. Bengal, 15: 50

(Upper Provinces = Murree)

Baker, FBI No. 404, Vol. 1: 389

LOCAL NAME. *Kālā painju* (Chamba).

SIZE. Myna —; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1128, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The submontane region from N.W.F.P., southern Kashmir, Himachal Pradesh and northern Uttar Pradesh as far as Kumaon, from the plains to c. 1500 m, occasionally higher. Intergrades with *humayuni* along the Salt Range foothills, and with *bengalensis* in Kumaon. Affects cultivation, open bush-clad hillsides, wooded ravines and cut-over scrub.GENERAL HABITS, FOOD AND VOICE. As in *cafer* (1128).BREEDING. Season, overall March to July, mainly May and June. Nesting as in *cafer*. Eggs, 3 or 4, rarely 5, similar to those of *cafer*. Average size of 40 eggs 22.2 × 16.3 mm (Baker).MUSEUM DIAGNOSIS. See Key to the Subspecies. *P. leucogenys* and *P. cafer* often hybridize in the wild; the hybrid is rather lighter in colour than *cafer*, abdomen dirty white and flanks grey; ear-coverts a pale washed-out brown; under tail-coverts yellowish orange shading into washed crimson at the tips. In Kohat it is

BULBULS

87

Madhya Pradesh and south to a line running from Jagdalpur (southeast M.P.) to Bombay; intergrades with *intermedius* and *bengalensis* in the north and *cafer* in the south. Affects cultivation, gardens, thorn, acacia and *Lantana* scrub, and lightly wooded areas.GENERAL HABITS, FOOD AND VOICE. As in *cafer* (1128).BREEDING. Season, overall February to October, mostly during the monsoon. Nest, as in *cafer*. Eggs, 3 or 4, occasionally 2, similar to those of *cafer*. Average size of 60 eggs 21.9 × 16.2 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	92-101	19-21	22-25	79-95 mm
♀♀	87-95	17-19	21-23	78-89 mm

(HW)

Weight 3 ♂ 36-41; 1 ♀ 29 g (BB). 10 ♂ 26-38 (av. 32) g — SA.

COLOURS OF BARE PARTS. As in *cafer*.1128. Redvented Bulbul. *Pycnonotus cafer cafer* (Linnaeus)*Turdus cafer* Linnaeus, 1766, Syst. Nat., ed. 12, 1: 295 (Cape of Good Hope = Pondicherry fide Stresemann, 1952, Ibis 94: 515, 520)*H. (aematornis) puillius* Blyth, 1841, Jour. Asiat. Soc. Bengal 10: 841 (Chingleput, Madras)*Pycnonotus cafer vicinus* Ripley, 1946, Spolia Zeylanica 24: 283 (Mysore) Baker, FBI No. 400 (part), Vol. 1: 385

Plate 72, fig. 9

LOCAL NAMES. *Būlbūl*, *Gūldūm* (Hindi); *Pigli-pitta* (Telugu); *Konda-lati*, *Konda-kūru* (Tamil); *Nāitu būlbūl* (Malayalam).

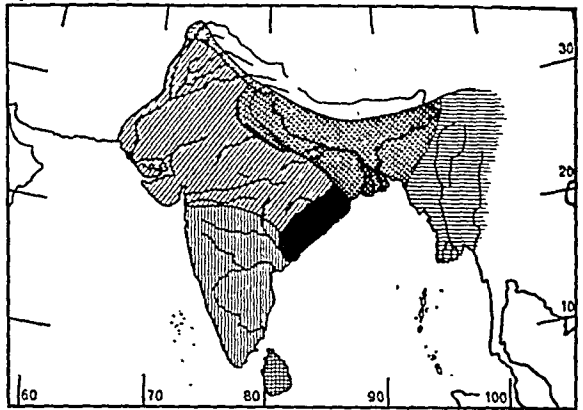
SIZE. Myna —; length c. 20 cm (8 in.).

FIELD CHARACTERS. A perky earth-brown bird with slightly tufted black head, black throat and scale-like markings on back and breast. White rump, scarlet vent and white-tipped blackish tail, particularly conspicuous in flight. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The southern Indian peninsula north to the Godavari river in the east and to c. 18°N. lat. in Maharashtra in the west; plains and hills normally up to c. 1500 m, following human settlements and cultivation. Affects light scrub, gardens, secondary jungle and light deciduous forest. Almost entirely restricted to deciduous biotope; where evergreen and deciduous patches occur, it is confined to the latter while the former are occupied by *P. jocosus*.GENERAL HABITS. On the whole very similar to those of Redwhiskered Bulbul (1120), q.v. A sprightly and rather noisy, familiar bird, usually seen in pairs, but often in small parties in the non-breeding season, and large congregations at fruiting *Ficus* trees or in *Lantana* patches. Arboreal but occasionally descends to the ground to pick up black ants and winged termites emerging from their underground retreats, or launches out for flying insects from a bush-top, springing up a metre or two vertically and tumbling back to the perch. Flight quick and strong though seldom sustained for any distance.

PYCNONOTIDAE

86

Pycnonotus cafer

Distributional ranges

<i>intermedius</i> (1126)	<i>humayuni</i> (1127)	<i>cafer</i> (1128)
<i>haemorrhousus</i> (1129)	<i>uetmorii</i> (1130)	<i>bengalensis</i> (1131)
<i>stanfordi</i> (1132)		

known as *Neemchi* (half-breed). For details on hybridization, see *Ibis*, 101: 177-82, 1959.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	100-110	19-22	23-26	93-103 mm
♀♀	90-102	18-20	22-25	84-96 mm

(HW)

COLOURS OF BARE PARTS. As in *bengalensis*.1127. Central Indian Redvented Bulbul. *Pycnonotus cafer humayuni* Deignan*Pycnonotus cafer humayuni* Deignan, 1951, Auk 68: 110 (Deesa)*Molpastes haemorrhous pallidus* Baker, 1917, Bull. Brit. Orn. Cl. 38: 15 (Deesa), nec *Pycnonotus layardi pallidus* (Roberts), 1912 Baker, FBI No. 399, Vol. 1: 385LOCAL NAMES. *Būlbūl*, *Kālā būlbūl*, *Būlbūli* (Hindi); *Thār būlbūl*, *Tonki būlbūl*, *Gūldūm* (Urdu); *Bhūlbhūl* (Kutch); *Pettrōyō* (Bhil).

SIZE. Myna —; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1128, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. From the Indus Valley and West Punjab east to and along the Jumna river to eastern

PYCNONOTIDAE

88

Display. The male spreads out his wings above his head and slowly flutters them up, and down while the tail is spread out and at the same time depressed (Dharmakumarsinhji). When challenging a rival, utters defiant calls, drops bunch of crimson under tail-coverts to stand out laterally, pointing down and backward. Both combatants assume agonistic postures before coming to grips. See also 1120 and 1129 (General Habits), and *Pavo* 2: 26-36.FOOD. Fruits and berries (of *Loranthus*, *Lantana*, *Zizyphus*, *Ficus*, *Santalum*, *Salvadora* and others), flower nectar (of *Erythrina*, *Capparis*, *Salmalia*, *Woodfordia*, *Loranthus*, etc.). May be locally destructive in gardens to fruit, flowers or peas, but is an efficient pollinating and seed-disseminating agent. Also feeds largely on insects including many major pests (caterpillars, moths, ants, termites, etc.) and defoliators, thus further redeeming the damage. For some specific insect items see under 1131. Has been frequently observed bibbing toddy from pots hung for its collection on coconut palms. Among food brought to the nestlings, a young lizard (*Calotes versicolor*) 9 cm long has been recorded, which caused the death of a 5-6 day old chick attempting to swallow it (Richards, JBNHS 25: 503).VOICE AND CALLS. Similar to Whitecheeked Bulbul's. Cheery call-notes *peep-peep-peep* may be rendered as *Be care-ful* (accent on last syllable) or *Be quick-quick*; alarm-note a loud, sharp *peep*. Agonistic notes: *Peep-a*, *peep-a-lo* and slow *peet-wit-wit-wit-wit* or rapid *pitititit* chattering notes. 'Peep' notes perhaps longer and less sharp than Whitecheeked Bulbul's (Short). Usually amongst the first to give the alert on the appearance of a marauding hawk or cat, its agitated 'ware hawk' calls being well understood by all other birds. Distinct 'dialects' are discernible, e.g. between northern and southern birds. See also 1129 (Voice and Calls).BREEDING. Season, overall February to November; chiefly during the monsoon. Nest, a cup of rootlets, fine twigs and midribs of dead leaves neatly woven, bound on the outside with cobweb and lined with grass and hair; similar to that of *P. jocosus*, but can be recognized with a little practice. Placed in shrubs, hedges, stunted date-palms, on slender branches of trees, at the end of a pollarded branch, or sometimes inside buildings, normally at heights between one and nine metres, most often under 3, exceptionally up to 12 metres; usually higher than that of *P. jocosus*. Eggs, 2 or 3, pinkish white, more or less profusely blotched with purplish brown or claret. Average size of 100 eggs, 21.1 × 15.5 mm (Baker). Eggs laid in the morning at about 24-hour intervals. Incubation starts with first egg, thus accounting for disparity between sizes of nestlings. Incubation period c. 14 days. Normally male shares in building, incubation and tending the young. Two or three broods commonly reared. For further details on breeding, see *Pavo* 1: 19-31, 1963.MUSEUM DIAGNOSIS. See Key to the Subspecies; differs from *haemorrhousus* in being paler and less blackish on the nape and upperparts; nape-feather edgings more whitish, less fuscous; grey feathers anterior to the white rump less smoky. Differs from *humayuni* in being darker with narrower greyish white fringes to the feathers, slightly smaller; *uetmorii* (= *saturatus*) is even darker, with less white on abdomen. All subspecies merge into one another gradually and specimens are often difficult to assign unless in freshly moulted comparable series.

There is a complete autumn moult; spring moult includes central tail-feathers, tertials, head and neck, but appears to be very irregular so that the plumage usually

BULBULS

89

has a very patchy appearance as the older feathers quickly fade to a dull brown whilst their pale edges wear down. Postjuvenile moult includes wings and tail but is similarly patchy and irregular.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	90-99	19-21	21-23	74-89 mm
♀♀	85-98	19-21	19-22	74-83 mm (HW, SA)

Weight 10 ♂♂ 28-40 (av. 31.1) g — SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill black; mouth, a mixture of grey, yellow and pink. Legs and feet brownish black.

MISCELLANEOUS. Before the law prohibiting animal fights came into force, these bulbuls were trained for fighting in some provinces. They were fed a special diet to produce extra courage and pugnacity. The two adversaries were placed facing each other on T-shaped perches, at a distance calculated to allow the most powerful blows. The birds were tethered by a cord fastened to a soft string round the body [pili or 'braces'], 'this fact transforming the fight to a duel "to the finish"'. In the meantime the spectators placed heavy bets' (G. Babault). Notwithstanding the ban, bulbul fighting still continues as a popular rural sport at fairs and on high days and holidays in some parts of the country. Considerable sums change hands over the mains, and champion birds fetch high prices.

1129. Ceylon Redvented Bulbul. *Pycnonotus cafer haemorrhousus* (Gmelin)

Muscicapa haemorrhousa Gmelin, 1789, Syst. Nat., 1, pt. 2: 941 (Ceylon)

Baker, FBI No. 398, Vol. 1: 383

LOCAL NAMES. *Kondē kūrūlla* (= top-knot bird), *Kondaya* (Sinhala); *Kondē kūrūri* (Tamil).

SIZE. Myra —; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1128, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. Ceylon, in the low country and hills up to at least 1800 m, in all zones except heavy forest.

GENERAL HABITS. As in *cafer* (1128).

Display: 'the male fluffs out his plumage and spreads the vermilion under tail-coverts laterally; the female reacts by depressing her crest, lowering head, wings and tail and performing curious side-to-side motions with her beak while she utters inane chirps and quivers her wings' (Henry).

FOOD. As in *cafer*.

VOICE and CALLS. As in *cafer*. Henry describes the notes as suggesting the words *ginger beer* and *sweet potatoes*; scolding-note, a loud indignant chatter; alarm-note, a loud shriek; a sweet low sub-song is commonly uttered during the afternoon.

BREEDING. Season, throughout the year but chiefly March and May and again in August-September. Breeding biology as in *cafer*. Eggs 2 or 3, similar to those of *cafer*; for detailed descriptions of eggs and nesting see W. W. A. Phillips, *Ceylon Jour. of Sci.*, 21: 243-6. According to this author (loc. cit.), birds from the cooler zone in the hills would appear to lay three eggs more often than two, the opposite being true for the lowlands birds;

BULBULS

91

SIZE. Myra —; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in *cafer* (1128).

STATUS, DISTRIBUTION and HABITAT. Common resident; from Kumaon and the plains of Uttar Pradesh east through Nepal, Sikkim, Bhutan, Bihar, West Bengal, East Pakistan, Assam and NEFA. Intergrades with *intermedius* in Kumaon, *humayuni* in southern U.P., *wetmorei* in northern Orissa and *stanfordi* in the hills of extreme eastern Assam. Generally reaches an altitude of c. 1800 m. Affects cultivation, gardens, scrub, secondary growth and forest edges.

Extralimital. Introduced into the Fiji Islands.

GENERAL HABITS, FOOD and VOICE. As in *cafer*. Among the stomach contents analysed at Pusa (Bihar) the following insects have been identified: beetles *Myloccerus* (chiefly species *blandus*, *discolor* and *maculosus*), ants *Camponotus compressus*, and other Coleoptera and Hymenoptera (Mason & Lefroy, 1912).

BREEDING. Season, April to August. Nesting as in *cafer*. Eggs, usually 3, similar to those of the nominate race but often more richly coloured. Average size of 100 eggs 22.9 × 16.9 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	96-107	21-23	24-25	90-103 mm
♀♀	89-102	19-22	24-25	85-95 mm

(Rand & Fleming, BB, HW, SA)

Weight 2 ♂♂ 44, 45; 2 ♀♀ 41, 42 g (BB).

COLOURS OF BARE PARTS. Iris dark brown. Legs, feet and claws very dark horny to black; soles white.

1132. Burmese Redvented Bulbul. *Pycnonotus cafer stanfordi* Deignan

Pycnonotus cafer stanfordi Deignan, 1949, Jour. Washington Acad. Sci., 39: 277

(Taro or Dalu, upper Chindwin Dist., Burma)

Pycnonotus burmanicus Sharpe, 1881, Cat. Bds. Brit. Mus., 6: 125 ('Burmese countries, ranging from Cachar into Pegu' = Composite and hybrid population from north-east Burma, vide Deignan, 1949, op. cit.)

Baker, FBI No. 400, Vol. 1: 385

LOCAL NAMES. None recorded in the territory.

SIZE. Myra —; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in *cafer* (1128).

STATUS, DISTRIBUTION and HABITAT. Resident in extreme eastern NEFA and Assam, grading into *bengalensis* in the Mishmi Hills (SDR), Patkai Range, eastern Manipur and Chittagong. Affects same biotope as *bengalensis*.

Extralimital. Northern Burma south to Rangoon and western Yunnan. Replaced in China and the Indochinese subregion by the closely related *P. curvicastris*.

90

PYCNONOTIDAE

a parallel is found on the subcontinent where birds from the Himalayas lay larger clutches than those from the south.

MUSEUM DIAGNOSIS. See Key to the Subspecies and under 1128.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
7 ♂♂	93-94	20-21	21-22	77-80 mm
2 ♀♀	91	20	21, 22	74, 76 mm (HW)

COLOURS OF BARE PARTS. As in *cafer*.

1130. Orissa Redvented Bulbul. *Pycnonotus cafer wetmorei* Deignan

Pycnonotus cafer wetmorei nom. nov. Deignan, 1960, in Peters, J. L., Check-list of Birds of the World, Vol. 9: 236

Molpastes cafer saturatus Whistler & Kinnear, 1932, Jour. Bombay nat. Hist. Soc., 35: 754 (Anantagiri, Vishakhapatnam Dist.). Not *Stelgidocichla latirostris saturata* Mearns, 1914

Baker, FBI Nos. 398 and 403 (part), Vol. 1: 383, 387

LOCAL NAMES. None recorded.

SIZE. Myra —; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1128, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. Orissa and northeastern Andhra Pradesh south to the Godavari river. Affects cultivation, scrub, gardens and villages.

GENERAL HABITS, FOOD and VOICE. As in *cafer* (1128).

BREEDING. Season, April to July and probably later. Nest and eggs as in *cafer*.

MUSEUM DIAGNOSIS. See Key to the Subspecies; a race intermediate between *bengalensis*, *humayuni* and *cafer*.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂♂	89-99	18-19	21-22	79-89 mm
3 ♀♀	84-93	17-18	22	75-83 mm (HW)

COLOURS OF BARE PARTS. As in *cafer*.

1131. Bengal Redvented Bulbul. *Pycnonotus cafer bengalensis* Blyth

Pycnonotus bengalensis Blyth, 1845, Jour. Asiat. Soc. Bengal, 14: 566 (Bengal)

Ixos pygmaeus 'Hodgs.' = Bonaparte, 1850, Consp. Gen. Av., 1: 265

(ex Him. Assam, Bengal)

Pycnonotus cafer primarasi Deignan, 1949, Jour. Washington Acad. Sci., 39: 278

(Surma Tea Estate, Sylhet)¹

Molpastes cafer aser Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 11

(Mawphlang, Khasi Hills)

Baker, FBI No. 403, Vol. 1: 387

Plate 72, fig. 10

LOCAL NAMES. *Kālā būlbūl* (Bengal); *Maneleph-pha* (Lepcha); *Paklom* (Bhutan);

Nieli betom (Dafia); *Būlbūl sōrai* (Assam); *Deo bulip* (Cachari); *Inrai bulip* (Naga).

¹ Series of specimens from Assam, Bengal, and Nepal show too much variation in the car-covers to support this proposed form.

92

PYCNONOTIDAE

GENERAL HABITS, FOOD and VOICE. As in *cafer*.

BREEDING. Season, April to August. Nesting as in *cafer*. Eggs, as in *cafer* but often more richly coloured. Average size of 200 eggs 22.6 × 16.2 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS and COLOURS OF BARE PARTS. As in *bengalensis*.

Weight 1 ♂ 47 g (SDR).

PYCNONOTUS STRIATUS (Blyth)

Key to the Subspecies

Blackish shading on breast-feathers heavier and carried farther down on abdomen..... *P. s. arctus*
Blackish shading on breast-feathers lighter and not carried as far down on abdomen..... *P. s. striatus*

1133. Striated Green Bulbul. *Pycnonotus striatus striatus* (Blyth)

Trichophorus striatus Blyth, 1842, Jour. Asiat. Soc. Bengal, 11: 184 (Darjeeling)

Baker, FBI No. 397, Vol. 1: 379

Plate 73, fig. 2

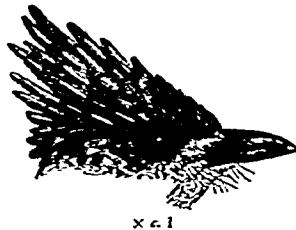
LOCAL NAMES. *Semin-plek-pha* (Lepcha); *Chichiem* (Bhutan).

SIZE. Redvented Bulbul ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. A crested olive-green bulbul with yellow-streaked underparts. Above, olive-green with fine white streaks; an upstanding brownish olive crest; wings and tail largely olive and brown, the latter yellowish on the underside and tipped with pale yellow on outer rectrices; lores yellow, a pale yellow rim around the eye. Below, throat yellow with dark stipples; breast dark grey becoming olive on belly, heavily striped with pale yellow; under tail-coverts yellow. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident with some downward movement in the cold season; fairly common but locally distributed, from central Nepal (Chandragiri and Godavari) east to Sikkim, Bhutan, NEFA as far as the Abor Hills, and Assam in the Khasi, Cachar and Manipur hills, from c. 1200 to 2400 m (recorded at 3000 m in the Chumbi Valley), moving down to the foothills in winter. Affects evergreen jungle, oak and rhododendron forest; prefers tree jungle and bushes, but not too dense or too high.

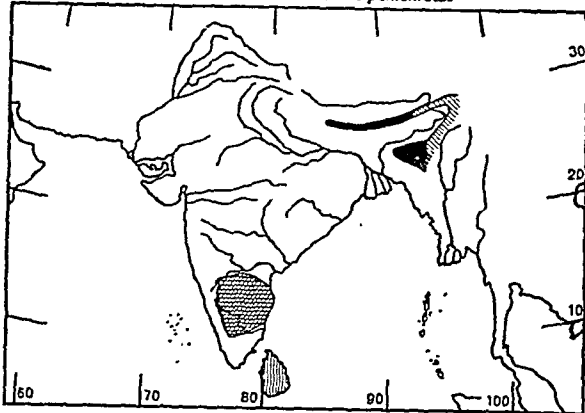
Extralimital. Ranges into western Burma; the species is found in the hills of the Indochinese subregion.



BULBULS

93

Pycnonotus striatus, *P. xantholaemus* and *P. penicillatus*



Distributional ranges
■ *P. s. striatus* (1133). ▨ *P. s. arctus* (1134).
▩ *P. xantholaemus* (1135). ▤ *P. penicillatus* (1136).

GENERAL HABITS. Found in flocks of 6–15 in non-breeding season, on fruit-bearing forest trees and shrubs, the birds ‘flowing’ from one to another in loose follow-my-leader style.

FOOD. Chiefly berries, but also insects which are sometimes taken on the wing.

VOICE AND CALLS. Typical bulbul call-notes but easily distinguished from those of *P. jocosus* or *P. cafer*. ‘Calls: *tyi-wut* rather sharp and given continually; a loud *pyik . . . pyik*. Song: a party often keeps up a continual series of full, clear, pleasant warbling notes, rather disjointed but even so of the warbling type’ (Lister). Other notes rendered as ‘loud, mellow *chee-tu*, sometimes *chee-whittu* or *chee-tu-ti-ti-ti-twee-oo* quite distinctive from any other bulbul’ (Desirée Proud). ‘Short song of characteristic bulbul pattern, a musical *chikoo* (*chick-koo*) followed by *weeweeeweeewee* like nut-hatch’s but richer’ (SA). Also a chattering as of Black Bulbul.

BREEDING. Little known. *Season*, May and June. *Nest*, a fairly compact cup of twigs, fern roots and weed stems, lined with very fine shreds of grass. Concealed rather low down in bushes or bamboo clumps. *Eggs*, 3, very pale cream faintly suffused with brown at the large end, marked with rather bold blot and small blotches of dark reddish brown and deep purple, scattered over the whole surface but more numerous and forming a ring at the large end; secondary markings of grey and neutral tint of similar character and distribution. Average size of 12 eggs 22.05 × 16.3 mm (Baker).

MUSEUM DIAGNOSIS. See diagnosis under *P. s. arctus*.

BULBULS

95

STATUS, DISTRIBUTION AND HABITAT. Resident, uncommon and patchily distributed. Orissa (?), southern Andhra Pradesh, Tamil Nadu, Mysore in the dry Chitaldrug and Bangalore districts. One old record in Kerala (Anamalai Hills) — Wm. Davison, 1886, *Ibis*: 146; from c. 600 to 1200 m. Affects sparse thorn scrub jungle interspersed with some large trees among broken stony hillocks. (See map, p. 93.)

GENERAL HABITS. Little known. Very skulking, shy and restless; keeps in pairs ‘to the upper parts of trees’ (Roscoe Allen, JBNHS 18: 905). Often associated with Redvented Bulbuls.

FOOD. Berries (stomachs examined contained drupes of *Phyllanthus* and *Santalum*). Also insects.

VOICE AND CALLS. ‘Its percussive notes when taking to wing are unmistakably like those of *P. luteolus* but higher pitched and somewhat softer; some of its other calls resemble those of the Redvented Bulbul with which it is commonly found in association’ (SA). ‘A very pleasing note, louder and mellower than that of any other bulbul’ (R. Allen).

BREEDING. *Season*, May to July. *Nest*, a shallow cup of coarse twigs bound together with cobwebs and lined with fine fibres. Of the few nests known, one was placed in a dwarf date palm (*Phoenix humilis*), another on the ground among dead leaves on a sloping hillside between two overarching boulders. *Eggs*, 2 or 3, white, blotched and marked with purple and brick red, the markings forming a ring around the large end. Size c. 21 × 17 mm.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂	89–92	17	20	85–86 mm
2 ♀♀	87	17	—	85–86 mm
				(SA, HW)

COLOURS OF BARE PARTS. Iris brown or orange-brown. Bill, legs and feet black.

1136. Yellow-eared Bulbul. *Pycnonotus penicillatus* Blyth

Pycnonotus penicillatus Blyth, 1851, Jour. Asiat. Soc. Bengal 20: 178 (Ceylon)

Baker, FBI No. 443, Vol. 1: 426

Plate 73, fig. 10

LOCAL NAMES. *Gala-gudawō*, *Kāhā kondāyā* (Sinhala).

SIZE. Redvented Bulbul ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. Above, forehead and crown brown, a white line extending from nostril to over the eye, a yellow tuft projecting behind the eye; cheeks brown and grey with a yellow spot; rest of upperparts olive-green. Below, yellow except white chin. The yellow tufts behind the eyes make it unmistakable. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Species peculiar to Ceylon. Resident, common in the higher central hills, above 900 metres. Affects jungle, wooded ravines and well-wooded gardens. (See map, p. 93.)



× c. 1

94

PYCNONOTIDAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	102–114	20–24	21–25	98–106 mm
♀♀	98–107	19–22	21–25	97–103 mm
			(BB, SDR, SA, Fleming)	

Weight 4 ♂♂ 47–60; 6 ♀♀ 45–59 g (BB, SA).

COLOURS OF BARE PARTS. Iris deep red-brown. Bill black. Legs and feet greenish brown or plumbeous brown.

1134. Mishmi Striated Green Bulbul. *Pycnonotus striatus arctus* Ripley

Pycnonotus striatus arctus Ripley, 1948, Proc. Biol. Soc. Washington, 61: 101

(Dreyi, Mishmi Hills)

Baker, FBI No. 397 (part), Vol. 1: 379

LOCAL NAMES. None recorded.

SIZE. Redvented Bulbul ±; length 20 cm (8 in.).

FIELD CHARACTERS. As in *striatus* (1133).

STATUS, DISTRIBUTION AND HABITAT. Resident. NEFA and eastern Assam in the Mishmi, Patkai and Naga hills and extralimally in the adjacent areas of northern Burma, from 1500 to 2400 m, in deciduous and evergreen forest.

GENERAL HABITS, FOOD AND VOICE. As in *striatus*.

BREEDING. Unrecorded; presumably as in 1133.

MUSEUM DIAGNOSIS. Differs from the nominate race by having darker more pronounced tips to the feathers of the crown as well as darker shading on the webs of crest-feathers. White shaft-streaks on crown and back tend to be slightly narrower and margined on the back with darker olive-green. Blackish shading on tail more intense and heavier. Blackish shading on breast heavier and carried farther down on the abdomen. Bill tends to be larger.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	105–118	18–21	c. 20	— mm
♀♀	105–114	18–20	—	c. 96 mm
				(SDR)

Weight 4 ♂♂ 52–58; 1 ♀ 53 g (SDR).

COLOURS OF BARE PARTS. As in *striatus*.

1135. Yellowthroated Bulbul. *Pycnonotus xantholaemus* (Jerdon)

Brachypus xantholaemus Jerdon, 1844, Madras Jour. Lit. Sci., 13: 122

(Eastern Ghats west of Nellore)

Baker, FBI No. 430, Vol. 1: 415

Plate 73, fig. 8

LOCAL NAME. *Kondapoda pigli* (Telugu).

SIZE. Redvented Bulbul ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. A plain uncrested grey and yellow bulbul with bright yellow crown, chin and throat. Thighs and under tail-coverts yellow; wings and tail brown, the latter tipped with pale yellow. Sexes alike.

96

PYCNONOTIDAE

GENERAL HABITS. Arboreal; keeps to lower trees and undergrowth, usually in pairs, sometimes in small flocks.

FOOD. Berries and insects.

VOICE AND CALLS. Alarm, a low *err-err*; call, a loud but sweet-toned whistle *wheet wit wit*, usually uttered in flight (Henry).

BREEDING. *Season*, end of February to beginning of May and again from late July to early November; presumably double-brooded. *Nest*, more substantial than that of other Ceylon bulbuls; made largely of moss with some leaf-matter, bits of dead grass and plant stems, and rootlets, lined with fine fern and rootlets, midribs of decayed leaves or fern stems, usually either black or reddish brown. Exterior size, c. 12 cm in diameter by c. 7.5 cm in height; diameter of cup c. 6 cm, depth c. 4 cm; favoured sites are upright forks, collections of twigs or pollarded branches, three to four metres from the ground, among the denser foliage towards the top of tall shrubs or bushy saplings in or on the outskirts of dense forest; sometimes placed in bushes as low as one metre. *Eggs*, invariably 2, white with moderate-sized blotches, spots and specks of purple-brown and secondary markings of the same character, of deep inky grey, usually forming a zone around the large end (Phillips). Average size of 40 eggs 23.4 × 16.7 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
6 ♂♂	81–87	17–19	21–22	78–81 mm
6 ♀♀	76–81	17–19	21–22	72–78 mm
				(HW)

Weight 2 ♀♀ 36, 37 g (SDR).

COLOURS OF BARE PARTS. Iris red. Bill black. Legs blackish blue.

1137. Blyth's Bulbul. *Pycnonotus flavescens flavescens* Blyth

Pycnonotus flavescens Blyth, 1845, Jour. Asiat. Soc. Bengal 14: 568 (Arakan)

Xanthinus flavescens fugens Koelz, 1952, Jour. Zool. Soc. India 4: 40 (Karong, Manipur)

Baker, FBI No. 408, Vol. 1: 392

Plate 73, fig. 9

LOCAL NAME. *Das bulip-gurmo* (Cachari).

SIZE. Redvented Bulbul ±; length c. 20 cm (8 in.).

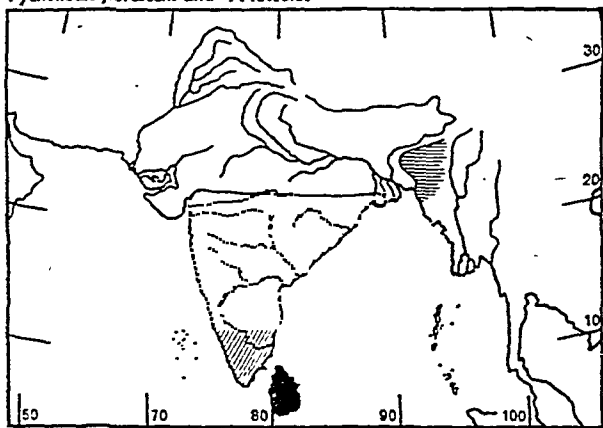
FIELD CHARACTERS. A rather nondescript olive bulbul with bright yellow under tail-coverts, greyish brown head with white lores and short supercilium, the latter characters diagnostic. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident; rather scarce but widely scattered; locally not uncommon. The hills of Arakan south of the Brahmaputra, Nagaland, Manipur and East Pakistan in the Chittagong Hill Tracts. Breeds between c. 900 and 2100 metres, descending to 450 m in the cold weather. Affects tree-forest with ample undergrowth, scrub jungle, thick regrowth on abandoned cultivation, dense bushes in pastures and cut-over scrub; inhabits much the same biotope as *P. melanicterus* (1115).

Extralimital. Western Burma; the species ranges east to central Vietnam; also Borneo.

BULBULS

97

Pycnonotus florescens and *P. luteolus*

Distributional ranges

▨ *P. f. florescens* (1137) ▤ *P. l. luteolus* (1138). ■ *P. l. insulæ* (1139).

GENERAL HABITS. Rather shy; keeps to high trees or tall bushes, hunting about inside cover. Assembles in flocks of up to 30 individuals in cold weather.

FOOD. Berries and insects.

VOICE and CALLS. On the whole rather silent except when quarreling. Song, sweet, typical bulbul, of two bold notes followed by a short trilling run; alarm, a harsh churring note like a laughing thrush's (SDR).

BREEDING. *Season.* April to July. *Nest,* a shallow cup of fern-roots, tendrils, twigs and dead leaves, strengthened here and there with cobweb, and lined with flowering ends of grasses. Placed in upright forks or between two or more vertical twigs, generally low down in bushes, rarely as high as three metres. The bird sneaks very quickly off the nest when disturbed and does not remain in the vicinity. *Eggs,* 2 or 3, one as often as the other, rarely 4, of *Pycnonotus* type: pale cream, with the whole surface minutely and profusely speckled with primary markings of light reddish, and numerous secondary freckles of light grey. On the whole they have a strong tint of violet or lilac characteristic of the species. Average size of 150 eggs, 22.1 × 16.4 mm (Baker). Both birds take part in incubation.

MUSEUM DIAGNOSIS. See Key to the Species.

Young (immature) like adult but upperparts rustier, under tail-coverts paler. Primary and tail characters present; postjuvinal moult complete.

MEASUREMENTS. Wing ♂♂ 85-89, ♀♀ 82-87 mm (Heinrich).

COLOURS OF BARE PARTS. Iris brown to red-brown. Bill black. Legs and feet dark reddish brown to black.

BULBULS

99

MUSEUM DIAGNOSIS. See Key to the Species. Has 3 or 4 long filoplumes growing from nape.

Young (immature), similar to adult but upper plumage slightly duller and browner with less olive-green tinge; supercilium less distinct; ear-coverts uniform olive-brown; chin tinged with yellow, breast dull brown similar to upperparts; rectrices narrower and more pointed. Postjuvinal moult includes whole body plumage, all remiges except the three outer primaries and their coverts and one or two of the longest inner secondaries, and central pair or two or three pairs of rectrices, but not rest of tail.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	82-93	18-20	22-24	75-86 mm
♀♀	86-90	18-20	20-24	74-82 mm
				(HW, SA)

Weight 10 ♂♂ 28-43 (av. 34.7) g—SA.

COLOURS OF BARE PARTS. Iris reddish brown to blood red. Bill black; mouth yellowish pink, pinkish grey or bright yellow. Legs and feet dark plumbeous or slaty black (SA).

1139. Ceylon Whitebrowed Bulbul. *Pycnonotus luteolus insulæ* Whistler & Kinnear

Pycnonotus luteolus insulæ Whistler & Kinnear, 1932, Jour. Bombay nat. Hist. Soc. 35: 759 (Tellula, Ceylon)

Baker, FBI No. 433 (part), Vol. 1: 417

LOCAL NAMES. *Gala-gudurā* (Sinhala); *Kākā kullā* (Tamil).

SIZE. Redvented Bulbul ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1138, q.v.

STATUS, DISTRIBUTION and HABITAT. Race peculiar to Ceylon. Common resident in the entire low country, and hills up to c. 1000 m, (see map, p. 97). Affects scrub jungle particularly *Lantana*, bush country, glades and clearings, and along roads and stream-beds in forest areas, especially in the Dry zone; one of the commonest and most widely distributed birds in the Island.

GENERAL HABITS, FOOD and VOICE. As in 1138.

BREEDING. *Season,* overall December to June, mainly March to May and in December; an occasional nest may be found during other months. *Nest,* a shallow cup, similar to that of the Redvented Bulbul, but generally slightly larger; made of fine plant-, flower- or creeper stalks, grass-stems and rootlets, loosely and irregularly put together, scantily lined with fine grass, or occasionally with rootlets or wing fern-stalks, quite red in colour; sometimes flimsy with the contents visible through the bottom. More or less suspended in a small fork, or placed among a few twigs or in an upright crotch and frequently bound to the supports with cobweb; sited in low bushes, usually between one and two metres from the ground. *Eggs,* normally 2, very similar to those of the Redvented Bulbul; coloration and size as in 1138.

98

PYCNONOTIDAE

PYCNONOTUS LUTEOLUS (Lesson)

Key to the Subspecies

Larger and slightly paler, wing ♂♀ c. 82-93 mm... *P. l. luteolus*
Smaller and slightly darker, wing ♂♀ c. 78-88 mm... *P. l. insulæ*

1138. Whitebrowed Bulbul. *Pycnonotus luteolus luteolus* (Lesson)

Haematomis luteolus Lesson, 1841, Rev. Zool.: 354 (Bombay)

Baker, FBI No. 433 (part), Vol. 1: 417

Plate 73, fig. 13

LOCAL NAMES. *Khar būlūl* (Marathi); *Peda figli* (Telugu); *Manjat kondai kūraṇi* (Tamil).

SIZE. Redvented Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. A sober-coloured uncrested olive bulbul with pale underparts and conspicuous white forehead and supercilium. Sexes alike. A slight tuft noticeable when bird calling.

STATUS, DISTRIBUTION and HABITAT. Resident, commoner in the eastern side of the Peninsula than in the west where it is more local. Peninsular India roughly south of 23°N. lat.—south of a line from Ahmedabad (Gujarat) through southern Madhya Pradesh to Midnapur (West Bengal)—easternmost record c. Hooghly river east of Burdwan (Law, JBNHS 38: 620-1). In the Eastern Ghats up to c. 1200 m, but does not ascend the heavy-rainfall hills of Kerala and the Western Ghats. Affects dry, open scrub country, grazing grounds with scattered *Lantana* brakes, gardens, and euphorbia thickets near villages; avoids moist forest as well as extensive cultivation. Replaces the Yellowbrowed Bulbul (1143-4) in dry scrub jungle. (See map, p. 97.)

GENERAL HABITS. Mostly in pairs; very shy and skulking, more often heard than seen as it seems to prefer dense thickets.

FOOD. Fruits and berries (*Zizyphus*, *Lantana*, *Mimusops*, *Streblus* and various figs) and flower-nectar (*Erythrina*, *Salmalia*, etc.); also spiders and insects.

VOICE and CALLS. Very noisy. Song distinctive—a loud, explosive burst of pleasant, lively rattling (whistled) notes, frequently uttered from within dense shrubbery. Subsong recorded in sultry weather in April, May and November—a quiet warble, mimicking songs of chloropsis, drongo, and other species (Neelakantan, JBNHS 52: 616). Alarm-note a subdued throaty *churr* or *hrr-hrr*.

BREEDING. *Season,* overall January to November, mainly April to August, less well-defined and earlier in the south; probably double-brooded. *Nest,* like that of *P. jocosus* but more loosely built; composed mostly of twigs bound together and fastened to supporting twigs with some cobweb; hair, rootlets or other materials also used; sometimes scantily lined with fine grass. Placed in thick bushes, as a rule under 1.5 m, rarely as high as 4 m above the ground. *Eggs,* invariably 2, similar to those of *P. jocosus*: reddish white, thickly speckled and blotched with reddish brown, sometimes coalescing into a zone at the large end. Average size of 60 eggs 22.9 × 15.8 mm (Baker).

100

PYCNONOTIDAE

MUSEUM DIAGNOSIS. Slightly darker and smaller than *luteolus*; but see remarks by H. Whistler in *Spolia Zeylanica* 23, pts 3 and 4, p. 142.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	84-88	19-20	20-22	73-81 mm
♀♀	78-85	18-20	20-22	70-75 mm
				(HW)

Weight 1 ♂ 34 g (SDR).

COLOURS OF BARE PARTS. As in 1138.

Genus CRINIGER Temminck

Criniger Temminck, 1821, Pl. Col. d'Ois., livr. 15. Type, by monotypy, *Criniger barbatus* Temminck

Distinguished from all other bulbuls by the presence of a long pointed crest and very long hairs or filoplumes springing from the nape and hindneck. Bill strong, about half the length of the head, culmen curved throughout. Wing blunt, tail short and rounded, rufous in the Indian species. Tarsus short but very strong. Plumage very soft. Female smaller than male.

1140. Whitethroated Bulbul. *Criniger flaveolus flaveolus* (Gould)

Trichophorus flaveolus Gould, 1836, Proc. Zool. Soc. London: 6 (Nepal, ride Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 10)

Criniger flaveolus viridulus Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 10 (Sangau, Lushai Hills)

Criniger flaveolus caeruleus Koelz, 1954, ibid. No. 1: 10 (Kohima, Naga Hills)

Baker, FBI No. 380, Vol. 1: 363

Plate 73, fig. 16

LOCAL NAMES. *Kusup-enchip-pha* (Lepcha); *Das-bulip-garmo-didi* (Cachar).

SIZE. Myna ±; length c. 23 cm (9 in.).

FIELD CHARACTERS. A large crested bulbul. Above, olive-green with rufous-brown wings and tail. Loes and sides of head grey; a whitish supercilium, but not always conspicuous. Below, lemon-yellow with white chin and throat. Sexes alike. Perches with tail well fanned out.

STATUS, DISTRIBUTION and HABITAT. Resident subject to vertical movements; common except in the westernmost part of its range. Central Nepal east through Sikkim, Bhutan, NEFA, Assam south to Tripura, the hills of East Pakistan, Nagaland, Manipur, south to the Chin Hills in Burma. Breeds

¹ Baker and Syme both list Garhwal as the westernmost point of the range. The authority for this record is unknown; the species has not been recorded west of central Nepal.

BULBULS

101

at moderate elevations, up to 1800 m, optimum zone 600 to 1200 m, descending to the foothills, terai, duns and the plains of Assam in the cold weather. Entirely restricted to evergreen facies; affects shrubby undergrowth in heavy forest, and secondary jungle.

Extralimital. Extends to Arakan, central and northeastern Burma. *C. f. burmanicus* is found in southeastern Burma and western Thailand. A member of the *pallidus-bres-ochraceus* species-group.

GENERAL HABITS. A gregarious bulbul, more like a laughing thrush in habits. Creeps and clambers about bushes in chattering parties of 6 to 15, the individuals 'flowing' one after another from patch to patch of dense jungle; flight strong and direct. Feeds in bushes and tree canopy, but usually keeps within about three metres of the ground.

FOOD. Berries and wild figs; also insects, at times taken on the wing.

VOICE AND CALLS. A noisy species. Has loud, harsh, nasal frog-like croaks *kak-kak* or *chake chake* (SA); loud and clear *teek, da-té-ek, da-té-ek* (Fleming); other calls have been described as sharp, whip-like notes, or loud, sweet notes.

BREEDING. Season, overall April to July, chiefly May and June. Nest, a heavily-built cup of dead leaves, fine roots and bamboo leaves fastened together with a few hair-like roots and stems of weeds and lined with dark fern-roots; the weed-stems are cleverly wound round the supporting twigs in and out of the other materials. Placed among masses of weeds, brambles and similar cover in a small bush or tangle of vines, usually within one metre from the ground (exceptionally higher) often close to a stream. Eggs, 3 or 4, rosy pink or carmine-pink, marked with broad scrawls, small and large irregular blotches of deep purple-red or reddish black, with similar secondary markings of brick-red, and faint spots of lavender and violet; markings occasionally form caps or rings at the broad end; among the most beautiful of all bulbul eggs. Average size of 60 eggs 26.9 × 18.6 mm. Incubation takes 13 days; both birds take part in incubation and perhaps construction of nest (Baker). Baker remarks that nestlings are apparently left untouched by leeches, however numerous.

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters.

Young (immature), upperparts and head brown; upper tail-coverts and wings more rufescent; underparts suffused with brown; under tail-coverts fulvous. Primary and tail characters present; postjuvinal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	101-107	20-25	19-24	92-102 mm
♀♀	98-105	20-23	25 (1)	88-93 mm
			(BB, SA, SDR)	

Weight 10 ♂♂ 38-54 (av. 48.3); 4 ♀♀ 38-48 g—BB, SA.

COLOURS OF BARE PARTS. Iris brown. Bill whitish grey to greyish slate. Legs yellowish white (one) to fleshy brown, yellowish brown or greyish brown (SA, SDR).

Genus *HYPSIPETES* Vigors

Hypsipetes Vigors, 1831, Proc. Zool. Soc. London: 43. Type, by monotypy,

Hypsipetes Psaroides Vigors

BULBULS

103

BREEDING. Season, the few nests known have been taken in May. Nest, a compact cup of the type of *Pycnonotus cafer* (1128) but more bulky; chief materials are long tough strips of bark and many fine elastic twigs, some dead leaves attached to the exterior; the whole fastened together and to the supports by cobwebs and lined with black fern-roots, long reddish fibres or tendrils. Placed in horizontal or vertical forks in bushes at about 1.5 m from the ground, with no attempt at concealment. Eggs, 3, like small eggs of *Pycnonotus cafer*. Size of three eggs, 23.1 × 16.3, 22.2 × 16.5 and 22.4 × 16.2 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters; for details of plumage, Baker loc. cit.

Young (immature), more rusty on upperparts and on edges of wing and coverts; under tail-coverts paler. Primary and tail characters present; postjuvinal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	78-85	18-20	16-17	71-77 mm
				(HW)

COLOURS OF BARE PARTS. Iris brown. Bill horn-brown, dark above, pale below. Legs and feet brownish flesh (HW).

1142. Nicobar Bulbul. *Hypsipetes nicobariensis* Moore

Hypsipetes nicobariensis Moore, in Horsfield & Moore, 1854, Cat. Bds. Mus. E.I.

Co. 1: 257 (Nicobars)

Baker, FBI No. 423, Vol. 1: 408

Plate 73, fig. 14

LOCAL NAMES. None recorded.

SIZE. Redwhiskered Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. Above, uncrested head, nape, wings and tail dark brown, back olive; below, throat and breast whitish grey faintly streaked with yellow; belly and under tail-coverts pale yellow, the latter with brown centres. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Nicobar Islands except Car Nicobar. Apparently restricted to Central Nicobars (Abdulali, JBNHS 64: 182). Affects forest and gardens.

GENERAL HABITS. Found singly, in pairs or small parties, sometimes congregating in assemblies of 50 or more in some large feeding tree, where they make a great chattering and uproar.

FOOD. Unrecorded; doubtless as in other bulbuls.

VOICE AND CALLS. 'Chattering notes very similar to the other *Hypsipetes*' [Davison, SF 2: 224, presumably meaning Black Bulbul (1148-9) q.v.].

BREEDING. Very young birds have been collected in February (Davison). Nesting unrecorded.

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters.

PYCNONOTIDAE

102

Microscelis Gray, 1840, List Gen. Bds.: 28. Type, by subsequent designation, *Hypsipetes amaurolis* (Temminck)

Iole Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 286. Type, by monotypy,

Iole olivacea Blyth = *I. viridescens* Blyth

Bill slender, about as long as the head, culmen carinated. Tarsus very short. Feathers of crown often pointed and lengthened. Colour more uniform than in *Pycnonotus*.

Key to the Species

		Page
A	Colour of back ashy grey	
1	A black cap, no yellow on wing..... <i>H. madagascariensis</i>	109
2	No black cap, a large yellow patch on wing..... <i>H. flaralus</i>	108
B	Colour of back olive-green	
3	Throat heavily striped..... <i>H. maclellandi</i>	107
4	Throat not striped	
a	Underparts bright yellow..... <i>H. indicus</i>	104
b	Underparts not bright yellow	
i	Under tail-coverts very pale yellow, concolorous with belly....	
	.....<i>H. nicobariensis</i>	103
ii	Under tail-coverts tawny, not concolorous with belly.....	
	.....<i>H. viridescens</i>	102

1141. Olive Bulbul. *Hypsipetes viridescens cacharensis* (Deignan)

Microscelis viridescens cacharensis Deignan, 1948, Proc. Biol. Soc. Washington 61: 3

('Chutla Bhil', Surma Valley and Hill Division, Cachar)

Baker, FBI No. 420, Vol. 1: 406 (= *Iole olivacea viridescens*)

Plate 73, fig. 12

LOCAL NAME. *Dao-bulip-gurmo* (Cachar).

SIZE. Redvented Bulbul ±; length c. 19 cm (7½ in.).

FIELD CHARACTERS. A plain-coloured crestless bulbul. Above, olive, with rufous-brown tail; below, greyish yellow: brighter on belly, tawny on under tail-coverts. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Uncommon resident. Manipur, Assam in Khasi Hills and Cachar, East Pakistan in Sylhet south to Chittagong district; from the plains to c. 900 m. Affects well-wooded ravines, dense and humid evergreen forest and regrowth on abandoned cultivation.

Extralimital. The species ranges through Burma to the Shan States, central Tenasserim and southwestern Thailand. A member of the *pinguis-charlottae* species-group.

GENERAL HABITS. A bird of the canopy especially where trees are festooned with climbers. Usually singly or in pairs and small parties; sometimes large flocks of over a hundred individuals. Tends to be shy and is difficult to see.

FOOD. Berries; doubtless also insects.

VOICE AND CALLS. A nasal or creaking, constantly repeated *chuaa* or *jer-wee*, characteristic and arresting (Smythies). Also a soft whistling note resembling that of *Pycnonotus finlaysoni* of Burma (HW).

PYCNONOTIDAE

104

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
8 ♂♂	97-102	23-25	21	83-87 mm
4 ♀♀	92-100	24	21	80-84 mm
				(Desfayes)

COLOURS OF BARE PARTS. Iris brown. Bill deep brown, lower mandible and edge of upper dull yellow. Legs and feet dark greenish brown or greenish plumbeous (Hume).

HYPSIPETES INDICUS (Jerdon)

Key to the Subspecies

		Page
A	Duller and paler yellow..... <i>H. i. ictericus</i>	101
B	Richer in colour, especially on sides of head..... <i>H. i. indicus</i>	10
C	More greenish on upperparts; yellow of underparts tinged with green	
	.....<i>H. i. gulgulini</i>	10

1143. North Sahyadri Yellowbrowed Bulbul. *Hypsipetes indicus ictericus* (Strickland)

Criniger ictericus Strickland, 1844, Ann. Mag. Nat. Hist. 13: 411

(East Indies = Mahabaleshwar)

Baker, FBI No. 419 (part), Vol. 1: 405

LOCAL NAMES. None recorded.

SIZE. Redvented Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1144, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. Western Ghats from the Poona and Satara districts (Khandala, Mahabaleshwar, etc.) south to Belgaum and Goa, from c. 600 to 1900 m, optimum zone around 1000 metres. Affects secondary jungle, undergrowth of evergreen, edges of thicker jungle, and occasionally gardens.

GENERAL HABITS, FOOD AND VOICE. As in 1144.

BREEDING. Similar to that of the nominate subspecies.

MUSEUM DIAGNOSIS. Differs from *indicus* in having the upperparts more greyish green, the underparts duller, paler yellow.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	90-97	18-21	76-87 mm
♀♀	88-91	18-20	75-83 mm
			(SDR, Koels)

Weight 33 ♂♂ 27-34 (av. 30.6) g—SA.

COLOURS OF BARE PARTS. As in 1144.

BULBULS

109

foothills from between Simla and Mussooree east through Nepal, Sikkim, Bhutan, NEFA, the hills of Assam and East Pakistan, Nagaland and Manipur. From c. 700 to c. 1600 m, descending to foothills and sparingly penetrating the plains in the cold weather. Keeps to deep or secondary forest, occasionally entering tea plantations; in winter frequents fairly open country, roadsides and edges of forest and cultivation.

Extralimital. Extends to northeastern and southwestern Burma. The species ranges to Fukien, Kwangtung, the Indochinese subregion, Sumatra and Borneo.

GENERAL HABITS. A forest bulbul. Arboreal and sociable, and very like Black Bulbul (1148-9) in behaviour. Keeps in noisy flocks in winter, which break up into pairs in the breeding season. Frequents bushes as well as high trees, sometimes launching short aerial sallies after insects.

FOOD. Berries, flower-nectar, and insects.

VOICE AND CALLS. A flute-like note and a pleasant jerky song that may be heard all the year. A soft musical *daddy, leave-it*; sometimes *daddy* repeated 3 or 4 times followed by a single concluding *leave-it* (SA). Many calls very similar to the Black Bulbul's, q.v.

BREEDING. *Season*, May and June. *Nest*, a rather deep cup of grass stems, dead leaves and fine twigs. Placed in bushes, usually within two metres of the ground (Assam, Baker) or up to twelve metres on large trees (Kumaon, Whyzner). *Eggs*, 2 or 3, rarely 4, very pale creamy covered with numerous speckles of light brick-red. Average size of 100 eggs 24.3×17.3 mm (Baker). Male shares incubation and probably also construction. Incubation period 13 or 14 days.

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters.

Young (immature), like adult but upperparts browner; outer webs of secondaries paler yellow; cheeks not so black. Primary and tail characters present; postjuvinal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	94-105	20-22	17-19	85-95 mm
♀♀	89-98	20-22	17-19	81-90 mm (BB, SA)

Weight ♂♂ 29-38; ♀♀ 29-32 g (SDR, SA).

COLOURS OF BARE PARTS. Iris brownish red. Bill black. Legs and feet dark brown; soles white (BB).

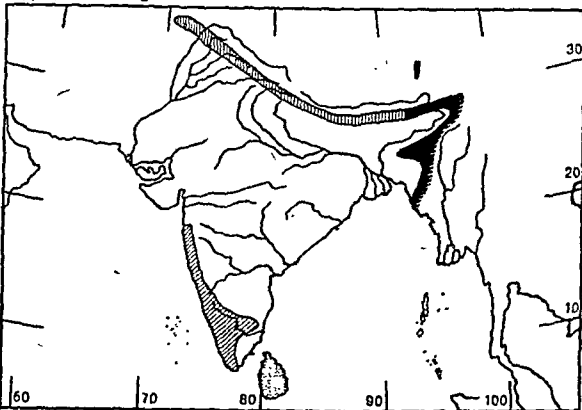
HYPsipetes madagascariensis (P. L. S. Müller)

Key to the Subspecies

	Page
1 A black streak behind and under the ear-coverts	
a Paler grey above and below..... <i>H. m. psaroides</i>	110
b Darker bluish grey above and below..... <i>H. m. nigrescens</i>	114
2 No black streak behind and under the ear-coverts	
c Bill smaller (c. 25-29 mm)..... <i>H. m. ganesa</i>	112
d Bill larger (c. 27-32 mm)..... <i>H. m. humii</i>	113

BULBULS

111

Hypsipetes madagascariensis

Distributional ranges

- psaroides* (1148).
 nigrescens (1151).
 ganesa (1149).
 humii (1150).

individuals, invading tree-tops in boisterous bands, seldom ever descending to undergrowth. Often perches on highest tips of trees, launching short aerial sallies after insects. Does not remain long on one tree, the birds of a party flying from one tree to another in loose, irregular order. Flight strong and swift.

Display, the male flutters from one tree to the next, his body held stiff and slightly bowed while uttering a rather melodious, excited *pip-per-tree*.

FOOD. Mainly fruits and berries (*Melia*, *Viburnum*, mulberries, etc.). Also insects. Visits flowers of *Erythrina*, *Salmalia*, rhododendron, etc. for nectar and insects.

VOICE AND CALLS. Song, a long series of monosyllables of varying tone and pitch, punctuated at frequent intervals by a single, high, bell-like note; call, a loud, rapid *wurkyu* repeated several times (Lister). See also Display above. Also a large variety of squeaky notes as the birds chase each other; a frequent call is a long drawn-out *weenh* likened to the squeal of a distressed pig; other notes described as *whew whe* or *whew whe* similar to the creaking of a gate-hinge, usually preceded by a drongo-like *squeaky-squeak*; another note, rarely heard, sounds like *geagluck* (Magrath).

BREEDING. *Season*, from the latter half of April to September, chiefly May, June and early July. *Nest*, a neat but flimsy cup of grasses, dead leaves, moss, bark fibres or lichen strengthened by cobweb, lined with rootlets, fine grass, bark-shavings or pine needles. Placed in the fork of a horizontal branch usually between seven and ten metres up, sometimes as low as two

110

PYCNONOTIDAE

1148. Himalayan Black Bulbul. *Hypsipetes madagascariensis psaroides* Vigors

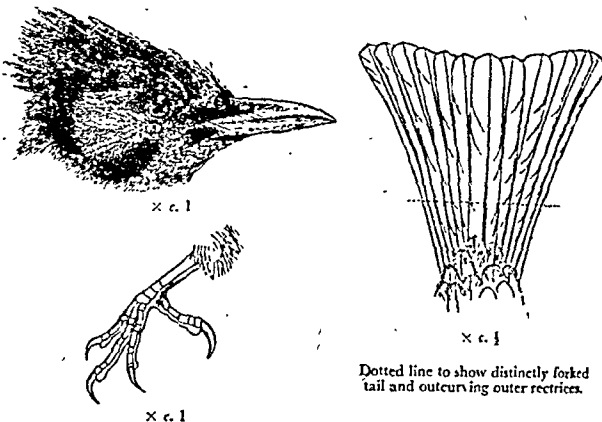
Hypsipetes Psaroides Vigors, 1831, Proc. Zool. Soc. London: 43 (Himalayan Mountains = Simla)
Baker, FBI No. 386, Vol. 1: 369
Plate 72, fig. 13

LOCAL NAMES. *Wān būlbūl*, *Kruhū būlbūl* (Kashmir); *Bān būlā* (Mussooree); *Darkal* (Chamba); *Phaki-pho* (Lepcha); *Kāki* (Paharia).

SIZE. Redvented Bulbul ±; length c. 23 cm (9 in.).

FIELD CHARACTERS. A slate-grey bird with black crest, slightly forked tail and bright red bill, legs and feet. Sexes alike.

Young (immature), no crest; throat, lower breast and belly white, rest grey; bill and feet brown.



STATUS, DISTRIBUTION AND HABITAT. Common resident subject to vertical movements; summer visitor only to the higher parts of its range. The Himalayas from the Kunar Valley (Afghanistan) and Chitral (N.W.F.P.) east through Kashmir south of the main range, Himachal Pradesh, northern Uttar Pradesh, Nepal, Sikkim, Bhutan and NEFA to the Dafia Hills where it intergrades with *nigrescens*. Breeds between 1000 and 2400 m in the western part of its range and up to c. 3000 m in the east; optimum zone 1800 to 2100 m. Descends in winter, reaching the foothills in the west and commonly entering the plains in the east. Recorded at 3000 m in Sikkim in winter. Has straggled to Kohat, Ambala and Lahore. Affects tall forest, in particular of oak, pine and rhododendron; also enters gardens.

GENERAL HABITS. Arboreal, very noisy. In the non-breeding season, keeps in parties of six to ten, but sometimes numbering up to a hundred

112

PYCNONOTIDAE

metres or as high as fifteen metres. *Eggs*, normally 3, sometimes 2, exceptionally 4, very faint pink covered all over with small primary blotches of deep red-brown, chocolate-brown or purple-brown with similar secondary small blotches of lavender and inky grey. Average size of 52 eggs 26.2×19.1 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies.

Young (immature). No crest; crown dark grey, rest of upperparts grey with a brownish cast. Below, throat, lower breast and belly white, rest grey; pale fulvous edges to wings and coverts. Primary and tail characters present; postjuvinal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	116-130	26-29	20-22	102-116 mm
♀♀	111-124	26-28	20-21	93-111 mm

(BB, Schäfer, Fleming, SDR, SA)

Weight 10 ♂♂ 44-60; 6 ♀♀ 48-61 g (SA, BB, RAP).

COLOURS OF BARE PARTS. Iris dark brown. Bill coral-red. Legs pale orange, feet deep [scarlet-] orange; claws pale brown; soles white to pale orange (BB).

1149. South Indian Black Bulbul. *Hypsipetes madagascariensis ganesa* Sykes

Hypsipetes Ganesa Sykes, 1832, Proc. Zool. Soc. London: 86 (Ghauts, Dukhun)
Baker, FBI No. 389, Vol. 1: 372

LOCAL NAMES. *Asmū-būlbūl* (Kerala); *Karuppu kondai kūrūri* (Tamil).

SIZE. Redvented Bulbul ±; length c. 23 cm (9 in.).

FIELD CHARACTERS. As in 1148, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident but prone to local movements in the non-breeding season; locally abundant. Western Ghats from Matheran (near Bombay) in Maharashtra, south through western Mysore, the hills of Kerala and western Tamil Nadu and the Shevaroy Hills (Tamil Nadu). An old record from Berar is possibly erroneous. In the hills from c. 1000 m to the top, reaching the foothills in the cold weather. Affects evergreen forest, especially sholas, and eucalyptus or other shade-trees in tea, coffee and cardamom estates.

GENERAL HABITS. As in *psaroides*. A common member of mixed hunting parties of *Zosterops*, *Sitta*, *Garrulax*, *Muscicapa*, etc. each species keeping to its particular stratum.

FOOD. Mostly fruits and berries (*Zizyphus*, *Eugenia*, *Vaccinium*, etc.). Visits flowers of *Erythrina*, *Loranthus*, etc. and introduced *Grevillea* and *Eucalyptus* for nectar and insects.

VOICE AND CALLS. Loud screechy whistles as in *psaroides*. One call often heard is rendered as *chirp, chee-chee-chee* (Nichols).

BREEDING. *Season*, March to June. At least two broods. *Nest*, as of *psaroides*. *Eggs*, almost invariably 2, rarely 3, white speckled with red-brown or purple-brown spots; blotched eggs are exceptional as are those with pinkish ground colour. Average size of 45 eggs 26.6×19.6 mm (Baker).

BULBULS

113

MUSEUM DIAGNOSIS. Differs from *psaroides* in being darker, having less white on belly, no grey spot over lores, no black streak around ear-coverts; black crown does not contrast so much with rest of plumage; tail hardly forked.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	112-124	26-29	16-18	98-105 mm
♀♀	107-123	24-28	16-17	92-104 mm
				(HW, SA)

Weight 25 ♂ ♀ 35-49 (av. 42.9) g — SA.

COLOURS OF BARE PARTS. Adult, iris orange-brown. Bill bright deep orange; mouth orange and pink. Legs and feet yellowish orange; claws brown. Young, iris olive-brown. Bill brown, paler at tip; gape yellow; mouth yellowish pink. Legs and feet yellowish brown; claws brown.

1150. Ceylon Black Bulbul. *Hyphantornis madagascariensis humii* (Whistler & Kinnear)

Microscelis psaroides humii Whistler & Kinnear, 1932, Jour. Bombay nat. Hist. Soc. 35: 754 (Ceylon).

Baker, FBI No. 389 (part), Vol. 1: 372

LOCAL NAMES. *Kala kondaya* (Sinhala); *Karuppa kond-kuruti* (Tamil).

SIZE. Redvented Bulbul \pm ; length 23 cm (9 in.).

FIELD CHARACTERS. As in 1148, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Ceylon, in the low-country Wet zone and hills up to at least 1600 m; local and uncommon in the Dry zone. Affects tall forest but often visits the neighbouring low-country Dry zone and the highest hills when berries and fruits are ripening.

GENERAL HABITS. As in *psaroides* (1148).

FOOD. As in *ganeesa* (1149).

VOICE AND CALLS. Some notes are rendered as *squeek squeek squeedlet-ee* or *cheek, creeeter* and a scolding, cat-like *meete* (Henry). Others as in 1148 and 1149.

BREEDING. Season, March to May and July to September, a break occurring during the southwest monsoon. The great majority breed during the spring; it would appear, therefore, that some birds are double-brooded in the spring while others await the autumn before rearing their second broods (Phillips). Nest and eggs, as in *ganeesa*; clutch size, 2.

MUSEUM DIAGNOSIS. Differs from *ganeesa* in having a larger and heavier bill.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	118-128	27-32	18-19	98-104 mm
2 ♀♀	116, 117	27, 28	18	94, 100 mm
				(HW)

COLOURS OF BARE PARTS. Iris reddish brown (once orange). Bill red or orange-red. Legs orange or dull orange-yellow (SDR).

BABBLERS

115

Key to the Species

		Page
A	Underparts including throat uniform cinnamon.....	<i>P. fuscocapillum</i> 122
B	Throat whitish	
1	Breast not striped, throat speckled.....	<i>P. albiventris</i> 124
2	Breast striped	
a	Crown concolorous with back.....	<i>P. palustre</i> 121
b	Crown not concolorous with back.....	<i>P. ruficeps</i> 115

PELLORNEUM RUFICEPS Swainson

Key to the Subspecies

A	Mantle not streaked		
a	Crown rufous.....	<i>P. r. ruficeps</i>	117
b	Crown dark chestnut.....	<i>P. r. olivaceum</i>	119
B	Mantle streaked		
c	Less olive, more rufous.....	<i>P. r. mandellii</i>	116
d	Rufous of crown richer, back more rufescent.....	<i>P. r. ripleyi</i>	120
e	Rufous of crown and brown of back with a greyish cast. <i>P. r. punctatum</i>		115
f	Rufous of crown and brown of back paler.....	<i>P. r. chameleum</i>	119
g	Rufous of crown and brown of back darker.....	<i>P. r. pectorale</i>	120
h	Crown chestnut, back deep brown, streaks on mantle obsolete.....	<i>P. r. rocale</i>	121

Cf. Deignan, H. G., 1947, Smith. Misc. Coll. 107: 1-20.

1152. Western Spotted Babbler. *Pellorneum ruficeps punctatum* (Gould)

Cinclidia punctata Gould, 1838, Proc. Zool. Soc. London: 137

(Himalayas = Kalka, Baghat, Simla, restricted by Deignan, op. cit.)

Pellorneum ruficeps jonesi Baker, 1920, Bull. Brit. Orn. Cl. 41: 9

(Kalka, Baghat, Simla)

Baker, FBI No. 244, Vol. 1: 241

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1154, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident; locally distributed. The Himalayan foothills from Kangra to Garhwal; from c. 300 to 1200 m. Affects heavy cut-over scrub, wooded ravines and nullahs, deciduous or evergreen jungle and tea-gardens.

GENERAL HABITS AND FOOD. As in 1154.

VOICE AND CALLS. A sweet song of four or five notes repeated two or three times, each repetition a little lower than the preceding (Osmaston). See also 1154.

BREEDING. Season, overall March to July, chiefly April to June. Nest, as in *ruficeps*. Eggs, 2 to 4, white, tinged with pale green or cream, blotched and speckled with red-brown and inky purple. Average size of 10 eggs 21.4 × 16.2 mm (Baker).

114

TIMALIINAE

1151. Assam Black Bulbul. *Hyphantornis madagascariensis nigrescens* Baker

Hyphantornis psaroides nigrescens Baker, 1917, Bull. Brit. Orn. Cl. 38: 15

(Upper Chindwin)

Baker, FBI No. 387, Vol. 1: 371

LOCAL NAME. *Deo-bulip gashim* (Cachari).

SIZE AND FIELD CHARACTERS. As in *psaroides* (1148).

STATUS, DISTRIBUTION AND HABITAT. Common resident subject to local movements in the non-breeding season. NEFA, east of the Dafa Hills where it intergrades with *psaroides*, and the hills of Assam, Nagaland, Manipur and East Pakistan; from c. 700 to at least 2400 m, reaching the foothills and plains in winter. Affects tall forest.

Extralimital. Extends to western Burma; the species ranges north and east to Szechuan, Chekiang, Formosa and the mountainous areas of the Indochinese subregion; also Madagascar, Aldabra and the Comoro Is.

GENERAL HABITS, FOOD AND VOICE. As in *psaroides*.

BREEDING. As in *psaroides*. Eggs, usually 3, often 2, occasionally 4, similar to those of *psaroides*. Average size of 64 eggs 27.1 × 19.9 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies. Differs from *psaroides* in being darker bluish grey both above and below, and having no grey patch above lores or behind eye; streak around ear-coverts present but less distinct; no contrast between crown and mantle.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1148.

Weight ♂ ♀ 53-64 g (SDR).

Family MUSCICAPIDAE

See Thomson, A. L. (ed.), 1964, article 'Muscicapidae', *A New Dictionary of Birds*, London & New York.

Key to the Subfamilies

A	Juvenal plumage spotted		
1	Bill slender and fairly strong.....	Turdinae	Vol. 8
2	Bill broad and flat.....	Muscicapinae	Vol. 7
B	Juvenal plumage unspotted		
3	Bill small, slender; legs short and weak.....	Sylviinae	Vol. 8
4	Bill very variable; legs and feet strong.....	Timaliinae	p. 114

Subfamily TIMALIINAE: Babbler

For description see Van Tyne, J. & Berger, A. J., 1959: 517 (Family Timaliidae). Cf. Delacour, J., 1946, L'Oiseau 16: 7-36.

Genus PELLORNEUM Swainson

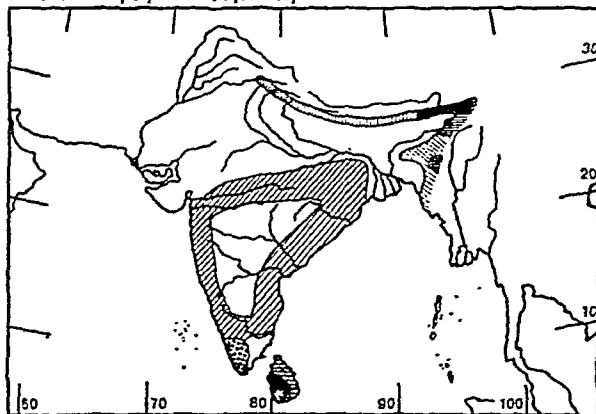
Pellorneum Swainson, 1832, Fauna Boreali-Americana: 487. Type, by original designation, *Pellorneum ruficeps* Swainson

Terrestrial birds of thick brushwood. Tail shorter than wing (except in *P. palustre*) but equal to or longer than twice length of tarsus. Bill about equal to or a little more than three-quarters the length of head, straight and notched at the tip. Nostrils not overhung by hairs; rictal bristles very short.

116

TIMALIINAE

Pellorneum ruficeps and *P. fuscocapillum*



Distributional ranges

	<i>P. r. punctatum</i> (1152)		<i>P. r. mandellii</i> (1153)		<i>P. r. pectorale</i> (1157)
	<i>P. r. ripleyi</i> (1158)		<i>P. r. chameleum</i> (1156)		<i>P. r. rocale</i> (1159)
	<i>P. r. ruficeps</i> (1154)		<i>P. r. olivaceum</i> (1155)		<i>P. f. fuscocapillum</i> (1161)
	<i>P. f. scottellum</i> (1163)		<i>P. f. babaulti</i> (1162)		

MUSEUM DIAGNOSIS. Differs from the nominate subspecies in being darker and more richly coloured; crown dark chestnut instead of rufous. From *mandellii* differs in having the upperparts, edges of wings and tail more olive, less rufous-brown.

MEASUREMENTS. As in *mandellii* (1153).

COLOURS OF BARE PARTS. Iris red-brown. Bill brown, dusky yellow at base of lower mandible. Legs and feet fleshy.

1153. Mandelli's or Sikkim Spotted Babbler. *Pellorneum ruficeps mandellii* Blanford

Pellorneum Mandellii Blanford, 1871, Proc. Asiat. Soc. Bengal, No. 9: 216 (Sikkim)

Baker, FBI No. 243, Vol. 1: 240

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in *ruficeps* (1154).

STATUS, DISTRIBUTION AND HABITAT. Common resident. The Himalayan foothills, from western Nepal through Sikkim, Bhutan and NEFA, east to the Subansiri river; from plains level up to c. 1800 m. Does not appear to move much with the seasons (Biswas); recorded in winter at 1700 m. Affects heavy brush, secondary growth, bamboo jungle and wooded ravines.

BABBLERS

117

GENERAL HABITS, FOOD AND VOICE. As in *ruficeps* (1154), but calls and song clearly distinguishable in dialect.

BREEDING. Season, March to July, chiefly April to June. Nest, as in *ruficeps*. Eggs, 3 or 4, very exceptionally 5, white, sometimes tinged with buff, marked with red-brown, brown, purplish brown or blackish brown specks and small blotches scattered profusely over the whole surface, usually more at the large end. Average size of 200 eggs 22.4 × 16.3 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *ruficeps* in having the neck and back of head streaked with black and buff; crown brighter, near chestnut, ear-coverts darker; breast and belly suffused with ochraceous; spots on underparts darker, not so broad; upperparts, edge of wings and tail more rufous-brown. Differs from *punctatum* in having the upperparts, edges of wings and tail less olive, more rufous-brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	63-75	18-21	27-28	70-77 mm
♀♀	66-72	18-20	27-28	62-70 mm
				(BB, SA)

Weight 3 ♂♂ 24-28; 2 ♀♀ 28, 29 g (SA, BB).

COLOURS OF BARE PARTS. Iris crimson to deep crimson (reddish brown in juvenile). Bill: upper mandible dark brown; lower mandible light yellow on posterior half, bluish white on the anterior half, with dusky tip. Legs, feet, claws and soles fleshy (BB).

1154. Peninsular Spotted Babbler. *Pellorneum ruficeps ruficeps* Swainson

Pellorneum ruficeps Swainson, 1832, Fauna Boreali-Americana: 487

(India = Coonoor, Nilgiris, restricted by Deignan, op. cit.)

Baker, FBI No. 240, Vol. 1: 238

Plate 75, fig. 20

LOCAL NAMES. *Saruhanu kūrūvi* (Tamil); *Adavi lika jittu* (Telugu).

SIZE. Bulbul —; length c. 15 cm (6 in.).

FIELD CHARACTERS. A small terrestrial babbler. Above, brown with a darker chestnut-brown cap, a light superciliary stripe extending well behind the eye; ear-coverts brown. Below, throat white, rest of underparts buff, boldly streaked and spotted with dark brown. Legs pale fleshy. Sexes alike. A passable miniature of the European Song Thrush (*Turdus ericetorum*).

STATUS, DISTRIBUTION AND HABITAT. Common resident. The hills of the Indian peninsula (Satpuras, hill tracts of Bihar and Orissa, Western and Eastern Ghats and their associated ranges, from the Narbada river and the Rajmahal Hills (west central Bihar) south to the Palghat Gap and the Chitteri Hills; from sea level to c. 1350 m. Not recorded from the Deccan plateau. Affects scrub, bamboo groves, sholas, thickets in ravines and along watercourses.

GENERAL HABITS. In pairs or small parties in dense thickets, undergrowth and bamboo in well-wooded areas. Feeds on the ground like Jungle Babbler, rummaging among dead leaves. Progresses by long thrush-like hops

BABBLERS

119

1155. Kerala Spotted Babbler. *Pellorneum ruficeps olivaceum* Jerdon

Pellorneum olivaceum Jerdon, 1839, Madras Jour. Lit. Sci. 10: 255

(Trichur, Cochin State, restricted by Deignan, op. cit.)

Pellorneum ruficeps granti Harington, 1913, Bull. Brit. Orn. Cl. 33: 81

(Mynall, Travancore)

Baker, FBI No. 242, Vol. 1: 240

LOCAL NAME. *Ganarūj* (Malayalam).

SIZE. Bulbul —; length c. 16 cm (6½ in.).

FIELD CHARACTERS. As in *ruficeps* (1154). See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, generally distributed. The low country and hills of Kerala and presumably also of adjoining western Tamil Nadu (Palnis etc.), north to the Palghat Gap; from near sea level to 1800 m. Affects evergreen sholas, steep hillsides along nullahs, dry ravines and watercourses littered with rotting bamboo and brushwood and overgrown with thickets of *Acacia*, *Zizyphus*, etc.

GENERAL HABITS, FOOD AND VOICE. As in *ruficeps*.

BREEDING. Season, November to May. Nest and eggs, as in 1154. Average size of 7 eggs 21.9 × 16.3 mm (Baker).

MUSEUM DIAGNOSIS. Like *ruficeps* but darker and more richly coloured. Crown and nape dark chestnut; upperparts, edges of wings and tail darker olive-brown; spotting on lower parts heavier and darker brown; darker on flanks and sides of head.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
4 ♂♂	73-76	19-20	28-29	66-73 mm
				(HW, SA)

COLOURS OF BARE PARTS. Iris hazel-brown (immature) to reddish brown. Bill: upper mandible brown, lower mandible paler; mouth in breeding ♂ brownish pink, immature yellowish flesh. Legs and feet brownish flesh, claws dusky.

1156. Assam Spotted Babbler. *Pellorneum ruficeps chamelum* Deignan

Pellorneum ruficeps chamelum Deignan, 1947, Smith. Misc. Coll. 107: 6

(Gunjong, Cachar)

Not in Baker, FBI

LOCAL NAME. *Dao-prii-pit* (Cachar).

SIZE. Bulbul —; length c. 16 cm (6½ in.).

FIELD CHARACTERS. As in *ruficeps*, but upper back streaked. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Assam in the Garo and Khasi Hills, Nagaland, and the hills of East Pakistan south to the Chittagong district; from the foothills to 1450 m. Affects evergreen or deciduous dense forest, bamboo and secondary growth.

Extralimital. The species ranges throughout the Indochinese subregion.

GENERAL HABITS, FOOD AND VOICE. As in 1154.

BREEDING. As in 1153.

118

TIMALIINAE

or by running like quail. Usually very quiet and retiring, and easily overlooked.

FOOD. Insects.

VOICE AND CALLS. Three or four, mellow plaintive whistling notes in an ascending scale, not unlike Iora's, variously transcribed as *he'll beat* or *he'll beat you, I'm right here, pret-by-sweet*, etc. — the first syllable short, the second low and emphasized — repeated with persistence and monotony at intervals of five seconds or so for up to 15 minutes at a stretch, especially in the mornings and evenings. Uttered from a branch inside a dense thicket; on an observer's approach, the calls suddenly cease, the bird quietly drops into the undergrowth and disappears, to start calling again fifty yards away. Song, a percussive loud and pretty phrase of several rich and spirited whistling notes up and down the scale, often sustained practically without intermission for well over a minute, and soon repeated. It is heard mostly in the early morning and late afternoon; chiefly in the breeding season but sporadic bursts may be given at all times of the year. Alarm-notes, a harsh *chr-r, chr-r* or *kraa, kraa* while the bird is slinking away. Pairs and parties keep in touch by a musical subdued contact-note *weet*. Also some chattering notes uttered when working through bushes.

BREEDING. Season, mainly during the monsoon: February to April in the south, April to June in Madhya Pradesh extending to September in the Western Ghats. Nest, a flimsy ball of dead leaves or grass about the size of a large melon, usually scantily lined with grass or fine stems of maidenhair fern; entrance on the side, always looking downhill. Placed on the ground, in drifts of dry leaves at the foot of bushes, preferably on a slope. Eggs, 2 or 3 in the south, usually 3 in the north, white, marked with numerous specks, spots and blotches of brown as a rule denser at the large end. Average size of 21 eggs 21.6 × 16.2 mm (Baker). Parents approach and leave the nest by running through the undergrowth like a mouse. Young leave the nest on the 12th or 13th day after hatching.

MUSEUM DIAGNOSIS. For differences between the nominate race and *punctatum*; *mandellii* and *olivaceum* see under those subspecies (1152, 1153, 1155).

Young (immature), upperparts similar to adult but paler, no olive, less contrast between crown and back; all but primary coverts washed with fulvous on edges; underparts dull white, washed with dull ashy fulvous on the sides, no lanceolate spots; under tail-coverts dull ashy fulvous. No white tips to tail. Primary and tail characters present.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	68-78	17-20	25-30	61-73 mm
♀♀	66-73	16-20	25-27	57-69 mm
				(HW, SA, Koelz)

Weight 15 ♂♂ 21-30 (av. 26) g — SA.

COLOURS OF BARE PARTS. Iris orange-brown. Bill brown, fleshy below; mouth pale brownish and lemon-yellow. Legs and feet yellowish flesh.

120

TIMALIINAE

MUSEUM DIAGNOSIS. Similar to *mandellii* in having sharply defined blackish brown centres to the feathers of the uppermost back, but differing in having the rufous of forehead, crown and nape, and the brown of the remaining upperparts paler and greyer.

MEASUREMENTS. As in 1153.

Weight ♂ 31; ♀ 26-28 g (SDR).

COLOURS OF BARE PARTS. ♂ upper mandible black, lower basally yellow, distally grey; ♀ upper mandible basally black, distally greyish brown, lower basally yellow, distally grey (SDR).

1157. Mishmi Spotted Babbler. *Pellorneum ruficeps pectorale* Godwin-Austen

Pellorneum pectorale Godwin-Austen, 1877, Jour. Asiat. Soc. Bengal 46: 41

(Sadiya, Assam)

Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 16 cm (6½ in.).

FIELD CHARACTERS. As in 1154 but upper back streaked. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident in NEFA in the Mishmi Hills and the Sadiya Frontier Tract, probably extending west to the Subansiri river. Affects clearings in dense evergreen or deciduous forest.

GENERAL HABITS, FOOD, VOICE AND BREEDING. As in *mandellii* (1153), Q.V.

MUSEUM DIAGNOSIS. Differs from *mandellii* in having the rufous of forehead, crown and nape much deeper in tone (rufous-chestnut); brown of the remaining upperparts darker; underparts more heavily washed with a richer buff. Differs from *chamelum* by its more saturate coloration above and below.

Young, edges of wings and tail more rusty; no white tip to tail; underparts fulvous white with dusky shadows on breast.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	70-76	18-20	67-74 mm
♀♀	66-71	17-19	62-68 mm
			(SDR, SA)

COLOURS OF BARE PARTS. Iris brown or red-brown. Bill: upper mandible brown, lower yellow at base, pale brown at tip. Legs and feet fleshy.

1158. Lakhimpur Spotted Babbler. *Pellorneum ruficeps ripleyi* Deignan

Pellorneum ruficeps ripleyi Deignan, 1947, Smith. Misc. Coll. 107: 7

(Margherita, Assam)

Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE AND FIELD CHARACTERS. As in 1154 but upper back streaked. See Museum Diagnosis.

BABBLERS

121

STATUS, DISTRIBUTION and HABITAT. Resident. Northeastern Assam in the Lakhimpur district south of Brahmaputra river. Same habitat as adjacent subspecies.

GENERAL HABITS, FOOD, VOICE and BREEDING. As in 1154, q.v.

MUSEUM DIAGNOSIS. Differs from *mandellii* (1153) in having the rufous of the forehead, crown and nape slightly richer in tone; brown of remaining upperparts more strongly rufescent; underparts more heavily washed with a richer buff.

MEASUREMENTS and COLOURS of BARE PARTS. As in *pectoreale* (1157).

1159. Manipur Spotted Babbler. *Pellorneum ruficeps vocale* Deignan

Pellorneum ruficeps vocale Deignan, 1951, Postilla, Yale Peabody Mus., No. 7: 2 (Kanglatongbi, Manipur)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE and FIELD CHARACTERS. As in 1154 but upper back streaked. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident. Valley of central Manipur. Same habitat as *chamelum*.

GENERAL HABITS, FOOD, VOICE and BREEDING. As in *mandellii*.

MUSEUM DIAGNOSIS. Underparts like *chamelum* but differs in having the forehead, crown and nape chestnut rather than rufous; blackish brown centres to the feathers of the uppermost back obsolescent (*contra* sharply defined); brown of remaining upperparts deeper in tone.

MEASUREMENTS and COLOURS of BARE PARTS. As in *pectoreale* (1157).

1160. Marsh Spotted Babbler. *Pellorneum palustre* Gould

Pellorneum palustre Gould, 1872, Bds. Asia 3: pl. 65, pt. 24 (Cachar, Assam)
Baker, FBI No. 246, Vol. 1: 242
Plate 75, fig. 19

LOCAL NAME. *Dao-priti-pit kashiba* (Cachar).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Upperparts and tail olive-brown; lores whitish; sides of neck, flanks and a band across the breast ochraceous, more or less streaked with brown; chin white; throat and upper breast white streaked with brown; centre of belly white, sides olive-brown; under tail-coverts ochraceous. Sexes alike.

Distinguished from *P. ruficeps* by its uniformly coloured upperparts, and from *P. albiventris* by its heavily striped throat.

STATUS, DISTRIBUTION and HABITAT. An endemic species. Resident, locally common. NEFA from the Miri Hills to the Mishmi Hills and Sadiya, Assam in the plains of the Brahmaputra, the plains and upland grass hills of Cachar and Khasi Hills, and East Pakistan in Sylhet and the Chittagong region; from the plains to 800 m. Affects great tracts of reeds and coarse high grass alongside swamps and rivers, elephant-grass and also bushes and low tree-jungle on marshy ground.

BABBLERS

123

VOICE and CALLS. Very similar to those of the Spotted Babbler. A monotonously repeated, clear whistle rendered as *prii-tee dear* or *to meet you*, the middle note pitched higher. Song, uttered during the breeding season, a quaint little lilting song, whistling up and down the scale. Both call and song are easily imitated, thus the calling bird may be deceived within view. Alarm-note, a sharp *wit* or rapid *quit-it-it*; scolding note a low *chr chr chr*.

BREEDING. Season, February to April and September to December; chiefly March-April. *Nest*, a ball of dead leaves loosely put together, with a large entrance at one side, sometimes taking up almost the whole of the side; lined with a few semi-decayed leaves and fine leaf- or fern-stalks neatly pressed around the inside. Usually placed on the ground among a litter of fallen leaves in which it blends perfectly, more generally at the foot of a large tree or cardamom clump, occasionally under a tea bush, or in a decayed hollow in a tree near the ground; once in a crevice in a bank, about one metre from the ground. The site is almost always in heavy forest. *Eggs*, generally 2, sometimes 3, white or nearly so, exceptionally tinged with buff or greyish green, profusely speckled or with small blotches of brown, red-brown, purplish brown or blackish brown, slightly more numerous at the large end, sometimes forming a ring or cap (Phillips). Average size of ten eggs 22.2 × 16.2 mm (Baker). The bird sits very closely and the majority of nests are found as it flies out suddenly at one's feet. Male shares in incubation.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂	73-75	18-19	27-28	66-69 mm
3 ♀♀	67-70	17-18	25-26	57-60 mm (HW)

Weight 1 ♂ 30 g (SDR).

COLOURS of BARE PARTS. Iris red. Bill: upper mandible brown, lower pink. Legs and feet pinkish brown.

1162. Pale Brown capped Babbler. *Pellorneum fuscicapillum babaulti* (Wells)

Scotocichla fuscicapilla babaulti Wells, 1919, Bull. Brit. Orn. Cl. 39: 69 (Trincomalee, Ceylon)
Baker, FBI No. 250, Vol. 1: 245

LOCAL NAMES. As in 1160.

SIZE. Bulbul —; length c. 16 cm (6½ in.).

FIELD CHARACTERS. As in 1160.

STATUS, DISTRIBUTION and HABITAT. Common resident. Ceylon, in the low-country Dry zone. (See map, p. 116.) Affects scrub and undergrowth.

GENERAL HABITS, FOOD and VOICE. As in 1160.

BREEDING. Season, March and December. *Nest* and *eggs*, as in 1160.

MUSEUM DIAGNOSIS. Differs from the nominate race (1161) in its paler coloration throughout. Crown and nape chocolate-brown instead of blackish; remainder of

122

TIMALIINAE

GENERAL HABITS. A great skulker, easily overlooked, though call-notes are constantly uttered. Difficult to observe; when flushed, flits in a rather lopsided manner from one patch of grass to another.

FOOD. Insects.

VOICE and CALLS. A loud double chirp *chi-chew* 'reverse of that of *Chrysomma altirostre*' (1234) (Stevens) heard in the same facies.

BREEDING. Season, during monsoon from the end of May onward. *Nest*, like that of the Spotted Babbler, a ball of grass lined with finer grass or a few rootlets, placed on the ground among grasses and roots, always more or less covered by the matted roots or fallen debris. *Eggs*, like small replicas of *P. ruficeps*. Average of 14 eggs 20.6 × 15.7 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	62-68	c. 15	c. 26	64-69 mm (Baker)

COLOURS of BARE PARTS. Iris brown. Bill: upper mandible deep brown, lower pale brown. Legs and feet fleshy brown (Hume), pale horny blue (Stevens).

PELLORNEUM FUSCOCAPILLUM (Blyth)

Key to the Subspecies

	Page
A Crown fulvous with chocolate-brown tips..... <i>P. f. babaulti</i>	123
B Crown chocolate-brown	
a Darker..... <i>P. f. scortillum</i>	124
b Paler..... <i>P. f. fuscicapillum</i>	122

1161. Brown capped Babbler. *Pellorneum fuscicapillum fuscicapillum* (Blyth)

Dryococcyphus fuscocapillus Blyth, 1849, Jour. Asiat. Soc. Bengal 18: 815 (Colombo, Ceylon)
Baker, FBI No. 249, Vol. 1: 245
Plate 75, fig. 16

LOCAL NAMES. *Parandel-kurulla*, *Redi diang* ('give me cloth', onomatopoeic. Sinhala).

SIZE. Bulbul —; length 16 cm (6½ in.).

FIELD CHARACTERS. Above, brown with a darker brown cap. Below, and sides of head cinnamon; tail brown narrowly tipped with buff. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Common resident. Ceylon, from the foothills to 1650 m, from the northern Dry zone in the west to the southwest Wet zone and east through the hills. (See map, p. 116.) Affects dense forest.

GENERAL HABITS. Very similar to those of the Spotted Babbler, as are also its nesting habits and voice. Found in pairs, spending most of the time on the ground, turning over dead leaves in search of insects. Very shy but may easily be discovered by its calls (q.v.) or by the rustling of dead leaves.

FOOD. Insects.

124

TIMALIINAE

upperparts olive-brown instead of chocolate-brown. Sides of head and whole lower plumage warm brownish buff instead of chestnut-buff.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂	65-77	17-18	26	58-69 mm
1 ♀	70	18	25	59 mm (HW, SDR)

COLOURS of BARE PARTS. Iris red-brown. Bill brown, pinkish at tip. Legs pinkish, feet more whitish.

1163. Dusky Brown capped Babbler. *Pellorneum fuscicapillum scortillum* Ripley

Pellorneum fuscocapillum scortillum Ripley, 1946, Spolia Zeylanica 24: 226 (Rakwana, Ceylon)
Not in Baker, FBI

LOCAL NAMES. As in 1161.

SIZE. Bulbul —; length c. 16 cm. (6½ in.).

FIELD CHARACTERS. As in 1161.

STATUS, DISTRIBUTION and HABITAT. Common resident. Ceylon, in the low-country Wet zone and the southwest foot of the hills. Affects thick secondary scrub 'in forest of the wettest areas (around the Sinharadja Forest)'—Phillips. (See map, p. 116.)

GENERAL HABITS, FOOD and VOICE. As in 1161.

BREEDING. Season, February, *Nest* and *eggs*, as in 1161.

MUSEUM DIAGNOSIS. Differs from *fuscicapillum* in being darker, more saturated on the lower parts and with a tendency to be darker on the upperparts. Differs from *babaulti* in being darker and smaller.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
2 ♂♂	67, 72	17	25	59, 63 mm
1 ♀	68	16	25	55 mm (SDR)

Bill (from skull) 4 ♂♂ 18-20; 1 ♀ 18 mm (DeSuyres).

COLOURS of BARE PARTS. As in 1161.

PELLORNEUM ALBIVENTRE (Godwin-Austen)

Key to the Subspecies

Darker; white on belly more extensive..... <i>P. a. ignotum</i>
Paler; white on belly mostly washed with rusty..... <i>P. a. albiventris</i>
Cf. Ripley, S. D., 1949, <i>Ibis</i> 91: 414-21.
Ripley, S. D., & Hall, B. P., 1954, <i>Ibis</i> 96: 486-7.

BABBLERS

125

1164. Assam Brown Babbler. *Pellorneum albiventris albiventris* (Godwin-Austen)*Neornis albiventris* Godwin-Austen, 1876, Jour. Asiat. Soc. Bengal 45: 199 (Manipur Valley)*Turdinus nagaensis* Godwin-Austen, 1877, Ann. Mag. Nat. Hist., Ser. 4, 20: 519 (Naga Hills)

Baker, FBI No. 247 (part), Vol. 1: 243

Plate 75, fig. 15

LOCAL NAME. 'Dao-chih' (Cachari).

SIZE. Sparrow \pm ; length c. 15 cm (6 in.).

FIELD CHARACTERS. A small brown short-tailed babbler with whitish, faintly spotted throat, whitish belly with a rusty wash on breast and flanks. Sexes alike. See also Key to the Species.

The very similar Tickell's Babbler (1166) has a creamy buff unspotted throat concolorous with rest of underparts. Abbott's Babbler (1167) is also similar but larger, with an unspotted greyish white throat.

STATUS, DISTRIBUTION AND HABITAT. Resident subject to short vertical movements, locally common, more so in the higher parts of its zone. The foothills of Bhutan (Deothang) and NEFA, in the North Lakhimpur district, the hills of Assam from Margherita to Cachar, Nagaland, Manipur, and East Pakistan south to the Chittagong Hill Tracts. Affects scrub growth in low-lying forest land (winter), bamboo jungle and heavy cut-over scrub, from 500 to 1500 m, reaching the plains in winter.

EXTRALIMITAL. Extends to western Burma (Chin Hills and Mt Victoria). The species ranges east to Vietnam.

GENERAL HABITS. Little known. A great skulker; very shy and retiring. Found in pairs near the ground in thick tangles of secondary or bamboo growth; avoids dense shady forest.

FOOD. Insects.

VOICE AND CALLS. A sharp *chick*, some soft low chuckling notes, and a low clear whistle. Alarm, a low rippling note.BREEDING. Season, May to July. Nest, a globular structure, sometimes only partially domed or even just a deep cup, made of grass and bamboo leaves and lined with grass; placed in bamboo clumps, bushes overgrown with creepers or occasionally in clumps of grass or weeds, between 60 and 120 cm from the ground, seldom higher or lower. Eggs, 3 or 4, rarely 5, pale cream to warm brick-colour profusely covered by speckles and tiny blotches of brick-red. Average size of 200 eggs 20 \times 15.1 mm (Baker). Nests sometimes brood-parasitized by Hawk-Cuckoo, *Cuculus sparverioides* (Baker, JBNHS 17: 363).MUSEUM DIAGNOSIS. Differs from *ignotum* (1165) in being paler, more rufous above; throat faintly spotted, white area of belly more restricted and, except for centre, washed with tawny-olive. Young birds have the edges of secondaries and greater wing-coverts more distinctly reddish brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
σ^7	58-60	14-15	22	47-59 mm
q^7	53-58	14-15	—	40-56 mm

(Kinnear, SDR)

BABBLERS

127

FIELD CHARACTERS. A small, long-legged, short-tailed, mostly terrestrial babbler. Above, olive-brown; below, buffish white. Sexes alike. Abbott's Babbler (1167) is larger and has a greyish white throat. For distinction between this and *Pellorneum* babblers, see under Brown Babbler (1164).

STATUS, DISTRIBUTION AND HABITAT. Resident subject to vertical movements, locally common. NEFA from the Daffa Hills to the Mishmi Hills; Assam from the Garo Hills to Margherita and East Pakistan in the northeastern and Chittagong hill tracts; presumably also the Naga Hills and Manipur. From the plains to 2100 m, optimum zone 1000-1400 m; reaches the plains in winter. Affects heavy cut-over scrub, bamboo thickets near streams, open or deep forest and practically any suitable cover.

EXTRALIMITAL. Extends to northwestern Burma. The species is found throughout the Indochinese subregion and Sumatra.

GENERAL HABITS. Found in pairs skulking in dense undergrowth. Feeds on the ground; when disturbed hops to the nearest cover and flies only with reluctance.

FOOD. Insects.

VOICE AND CALLS. A sharp *tsip* (Stevens); alarm-notes, a soft rippling *chir-chir* (Baker). Call-notes, a loud *pit-you* . . . *pit-you* uttered fairly rapidly (Smythies).BREEDING. Season, March to June. Nest, a domed or semi-domed structure, much like that of *Pellorneum* species but more compact, tidy and well-built; materials are fine bamboo leaves and grass; lining scanty, of a few fine grasses. Placed on the ground or in bushes or bamboo clumps near the ground preferably in open glades by streams. Eggs, 3 or 4, of the *Pellorneum* type: pale olive-grey densely covered with freckles or small blotches of reddish brown or olive-brown. Average size of 60 eggs 19.9 \times 15.7 mm (Baker).MUSEUM DIAGNOSIS. See Key to the Species. Differs from *Pellorneum albiventris* by its buffish white underparts and unspotted throat.

MEASUREMENTS

 σ^7 q^7 Wing 64-67; tail 50-55 mm (Baker).1 σ^7 Wing 62; bill (culmen) 16; tail 51 mm (SDR).

COLOURS OF BARE PARTS. Iris reddish brown. Bill: upper mandible dark brown. Legs brownish grey.

1167. Abbott's Babbler. *Trichastoma abbotti abbotti* (Blyth)*Malacocincla Abbotti* Blyth, 1845, Jour. Asiat. Soc. Bengal 14: 601

(Ramree Island, Arakan)

Malacocincla abbotti amabilis Koelz, 1952, Jour. Zool. Soc. India 4: 39

(Nichuguard, Naga Hills)

Baker, FBI No. 267, Vol. 1: 260

Plate 75, fig. 18

LOCAL NAMES. None recorded.

TIMALIINAE

126

Weight 2 σ^7 21, 22 g (SDR).

COLOURS OF BARE PARTS. Iris reddish brown. Bill: upper mandible black, brown or pale bluish horny; lower mandible blue-grey. Legs brownish flesh.

1165. Mishmi Brown Babbler. *Pellorneum albiventris ignotum* Hume*Pellorneum ignotum* Hume, 1877, Stray Feathers 5: 334 (Sadiya, N.E. Assam)

Baker FBI No. 247 (part), Vol. 1: 243

LOCAL NAMES. None recorded.

SIZE. Sparrow \pm ; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1164, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to short vertical movements. Mishmi Hills and Sadiya. Affects bamboo jungle and secondary growth.

GENERAL HABITS, FOOD AND VOICE. As in 1164. Easily mistaken for Spotted Babbler (1153) when flitting for cover, but its short wren-like tail is diagnostic.

BREEDING. As in 1164.

MUSEUM DIAGNOSIS. Differs from *albiventris* in being darker on the upperparts; below mostly white, the throat mostly unspotted, a faint indication of greyish brown pectoral band; extensive area of white on belly.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
5 σ^7	58-60	15	22	43-49 mm
4 q^7	54-57	—	—	41-45 mm

(SDR)

COLOURS OF BARE PARTS. As in 1164.

Genus TRICHASTOMA Blyth

Trichastoma Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 795. Type, by original designation, *Tr. (ichastoma) rostratum* Blyth*Malacocincla* Blyth, 1845, Jour. Asiat. Soc. Bengal 14: 600. Type, by monotypy, *Malacocincla Abbotti* BlythVery similar to *Pellorneum*, *T. tickelli* being intermediate, but bill more compressed laterally and rictal bristles well developed.

Key to the Species

Larger; throat greyish white *T. abbotti*
Smaller; throat creamy buff *T. tickelli*1166. Tickell's Babbler. *Trichastoma tickelli assamensis* (Sharpe)*Drymocaplius assamensis* Sharpe, 1883, Cat. Bds. Brit. Mus. 7: 557 (Dhollah, Assam)

Baker, FBI No. 253, Vol. 1: 248

Plate 75, fig. 17

LOCAL NAME. 'Dao-busha' (Cachari).

SIZE. Sparrow; length c. 15 cm (6 in.).

TIMALIINAE

128

SIZE. Bulbul —; length c. 15 cm (6 in.).



FIELD CHARACTERS. A brown, short-tailed terrestrial babbler. Above, olive-brown. Below, throat greyish white; centre of belly whitish, washed on breast and flanks with olive; under tail-coverts bright ochraceous. Sexes alike. Voice (q.v.) is distinctive. Tickell's Babbler (1166) is smaller and has a buffish white throat.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. The Himalayan foothills from the terai of eastern Nepal and Sikkim east through the Bhutan foothills and NEFA to the Mishmi Hills, northern West Bengal, East Pakistan in the northeastern and Chittagong hill tracts; Assam, Nagaland and Manipur. In densely wooded valleys, ravines and broken land at the base of the hills and up to 600 m. Affects tangled thickets in wet deep jungle and original forest, especially edges of forest along the banks of streams; appears to have a predilection for the vicinity of palm-ferns.

EXTRALIMITAL. Southern Burma and central and southern Thailand. Other subspecies in the Indochinese countries, Malaysia, Sumatra and Borneo.

GENERAL HABITS. Behaves much like the Spotted Babbler. Solitary or in pairs in brushwood near the ground, and in the same limited area day after day.

FOOD. Insects.

VOICE AND CALLS. A loud distinctive call of three notes dropping in pitch on the middle note, or sometimes four notes, the first low, the other three higher and on the same pitch (Smythies). According to Fleming, this call is a duet, the male leading off with *poor'ol bear* followed by the female *dear dear*; the phrase sometimes becomes *poor'ol dear bear dear*.BREEDING. Season, chiefly April and May, extending into July. Nest, a bulky cup of dead-leaves, bracken fronds, weed-stems, a little moss and grass with a good lining of rather coarse red roots, averaging 12 to 15 cm in diameter. Placed near the ground in bushes, briars, weeds or in dwarf palm-trees at the base of the frond. Eggs, 3 to 5, bright salmon colour marked with a few bold blotches and a few short twisted lines of deep red; underlying spots of lavender. Average size of 20 eggs 21.8 \times 16.2 mm (Baker). When disturbed, the birds slip quietly over the edge of the nest but then proceed for a few yards with rather a fussy flight before reaching the ground, when they soon get out of sight with long hops. Nests sometimes parasitized by Violet Cuckoo, *Chalciter xanthorhynchus* (Baker, JBNHS 17: 755).

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
σ^7 q^7	74-80	20-21	25-26	47-52 mm

(SDR, Baker)

Weight 5 σ^7 26-32.5; 2 q^7 26.5, 27g (BB).

COLOURS OF BARE PARTS. Iris reddish brown. Bill: upper mandible black, lower grey. Legs brownish flesh.

BABLERS

129

Genus POMATORHINUS Horsfield

Pomatorhinus Horsfield, 1821, Trans. Linn. Soc. London 13: 164. Type, by monotypy, *Pomatorhinus montanus* Horsfield

Principal distinguishing feature is the long, slender bill, as long as or longer than the head, curved downwards, always compressed. Nostrils bare. Feathers of forehead short and rounded. Tail longer than wing, much graduated, the outer rectrices not exceeding three-quarters the length of the central pair. Noisy sociable birds. All species lay white, unspotted eggs; nest on or near the ground.

Key to the Species

	Page
A A white supercilium	
1 Throat and breast ferruginous or ochraceous..... <i>P. ferruginosus</i>	145
2 Throat white or whitish	
a Bill less than 25 mm..... <i>P. ruficollis</i>	138
b Bill more than 25 mm	
i Crown mostly slate-grey..... <i>P. schisticeps</i>	129
ii Crown tawny olive..... <i>P. ochraceiceps</i>	147
B No white supercilium	
3 Flanks ferruginous..... <i>P. erythrogenys</i>	141
4 Flanks slate-grey..... <i>P. hypoleucos</i>	144

POMATORHINUS SCHISTICEPS Hodgson

Key to the Subspecies

A Sides of neck chestnut	
1 Ear-coverts black..... <i>P. s. salimalii</i>	132
2 Ear-coverts slate-grey	
a Paler; rufous hind-collar more marked..... <i>P. s. cryptanthus</i>	133
b Darker; rufous hind-collar barely indicated	
i Wing over 100 mm..... <i>P. s. schisticeps</i>	131
ii Wing under 100 mm..... <i>P. s. leucogaster</i>	130
B Sides of neck not chestnut	
3 Flanks and under tail-coverts rufescent olive-brown; no black edging to plastron	
c Above bright ferruginous..... <i>P. s. melanurus</i>	137
d Above olive-brown..... <i>P. s. holdsworthi</i>	136
4 Flanks and under tail-coverts a cold grey-brown	
e No black edging to plastron	
iii General colour olive-brown..... <i>P. s. maderaspatensis</i>	136
iv General colour grey..... <i>P. s. obscurus</i>	133
f A black edging to plastron	
v General colour olive-brown..... <i>P. s. travancorensis</i>	135
vi Intermediate between iv and v..... <i>P. s. horsfieldii</i>	134

BABLERS

131

MUSEUM DIAGNOSIS. Like *schisticeps* (1169) but smaller and rather more olive-grey on upperparts and edges of wing, and slightly paler chestnut sides to neck and body. Not a very distinct form.

MEASUREMENTS

♂ ♀ Wing 85-95 mm, generally c. 90-91 mm (Baker).

COLOURS OF BARE PARTS. As in 1169.

1169. East Himalayan Slatyheaded Scimitar Babbler. *Pomatorhinus schisticeps schisticeps* Hodgson

Pomatorhinus schisticeps Hodgson, 1836, Asiat. Res. 19: 181 (Nepal)

Pomatorhinus assamensis Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 451

(Assam, restricted to the Khasi Hills by Ripley, Synopsis: 349)

Baker, FBI No. 199, Vol. 1: 206

Plate 74, fig. 18

LOCAL NAMES. *Pabdoa* (Bengali); *Phoyum-pho*, *Pharreeum-pho* (Lepcha); *Bhiakuroh* (Parbutia); *Dao-buku-galao* (Cachari).

SIZE. Between bulbul and myna; length 22 cm (8½ in.).



x c. 1

P. ruficollis is smaller and the white below is restricted to throat. *P. erythrogenys* has no supercilium. *P. ochraceiceps* lacks any chestnut on the sides and has an orange bill. *P. hypoleucos* has slate-grey flanks and much longer bill and legs. *P. ferruginosus* has a coral-red bill.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. The Himalayan foothills from Kumaon through Nepal, Sikkim, Bhutan and NEFA to the Dihang river; northern West Bengal (sparingly in the plains), the Brahmaputra Valley (except for the range of *cryptanthus*), the hills of East Pakistan, Assam, Nagaland and Manipur; from the edge of the plains to 1500 m. Recorded in winter at 2000 m in Sikkim (Meinertzhagen) and above 2000 m in Nepal (Smythies). Affects heavy secondary growth, scrub jungle, undergrowth in forest, and mixed bamboo forest.

Extralimital. Northwestern Burma (Upper Chindwin district). The species, including *montanus*, is found throughout the Indochinese subregion, the Sunda Islands and Borneo.

GENERAL HABITS. Shy, secretive and a great skulker. In pairs during the breeding season, otherwise in small parties often in company with *Garrulax ruficollis* or *Gampsiornis rufulus*. Keeps to dense bushes rummaging for food among the mulch on the ground or hopping among the undergrowth, at times ascending trees.

FOOD. Insects, small seeds and berries.

130

TIMALIINAE

1168. West Himalayan Slatyheaded Scimitar Babbler. *Pomatorhinus schisticeps leucogaster* Gould

Pomatorhinus leucogaster Gould, 1838, Proc. Zool. Soc. London: 137 (Himalayas = Simla)

Pomatorhinus pinicilli Sharpe, 1883, Cat. Bds. Brit. Mus. 7: 413 (NW. Himalayas) Baker, FBI No. 202, Vol. 1: 208 (= *pinicilli*)

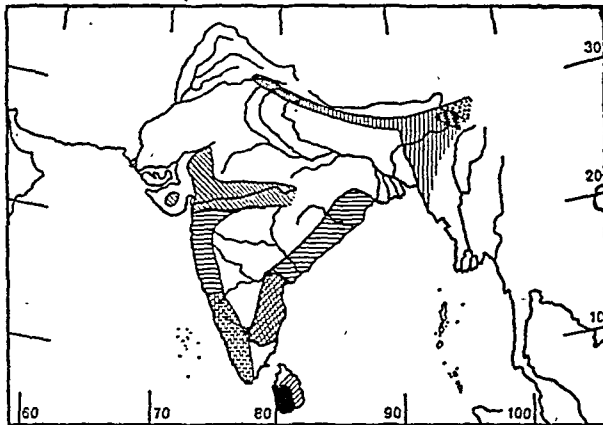
LOCAL NAMES. None recorded.

SIZE. Between bulbul and myna; length c. 22 cm (8½ in.).

FIELD CHARACTERS. As in 1169, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, fairly common. Western Himalayas from Kangra to Garhwal, from the foothills to c. 1500 m. Affects

Pomatorhinus schisticeps



Distributional ranges			
	<i>leucogaster</i> (1168).		<i>schisticeps</i> (1169).
	<i>salimalii</i> (1170).		<i>cryptanthus</i> (1171).
	<i>obscurus</i> (1172).		<i>horsfieldii</i> (1173).
	<i>travancorensis</i> (1174).		<i>maderaspatensis</i> (1175).
	<i>holdsworthi</i> (1176).		<i>melanurus</i> (1177).

thick jungle, well-wooded ravines, bamboo thickets and heavy patches of scrub. No seasonal movements.

GENERAL HABITS, FOOD and VOICE. As in 1169.

BREEDING. Season, March to August. Nest, domed, made of grass bents, dead leaves and tendrils, lined with fine rootlets, usually placed on a sloping bank among herbage. Eggs, 3 or 4, white. Average size of 12 eggs, 25.4 x 19.5 mm (Baker).

132

TIMALIINAE

VOICE and CALLS. Very similar to those of *horsfieldii* (1173) of the Western Ghats, q.v. When undisturbed and moving about in quest of food, the birds keep in touch by constant mellow, gurgling, flute-like calls and other mewing and churring notes. Ordinary call-note, a double whistle *tjoo-tjoo* or *gouk-gouk*; alarm, some very loud and shrill calls like *krry-krry-krrö-krrö-krrö* (Heinrich). Song, a series of short low whistled notes preceded by a single higher note *tji-u-u-u-u* or *woot-a-ah-hoot*. The male is easily attracted by an imitation of its song.

BREEDING. Season, from the end of March to June. Nest, domed, egg-shaped, with the entrance at the smaller end, usually lying on its side, less often standing on its broader end. Saucer-shaped nests have been reported but are exceptional. Usual materials are bamboo leaves and grass blades, but sometimes others are used such as rootlets, tendrils, strips of bark or bracken leaves, very loosely interlaced, the nest hardly bearing removal or handling. Lining is of rootlets and finer grass blades. Location varies but most often the nest is placed low down in bamboo clumps or thick bushes up to about one metre, occasionally in a clump of grass or in a bank at the foot of a tree. Eggs, 3 or 4, rarely 5, white. Average of 100 eggs 26.6 x 19.2 mm (Baker). The birds sit fairly close and when disturbed tumble out of their nest to the ground, seek refuge in undergrowth, proceeding by long hops, and within a few moments uttering their low *hoot-hoot*. Both sexes take part in building and in incubation. Making of nest averages a good ten days; incubation period undetermined.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

Young, a dull edition of the adult; slightly browner above and all colours and demarcations less pronounced. Biswas describes a young bird as being reddish olive on upper side; rufous on forehead, rusty on breast and flanks. Primary and tail characters present. Postjuvinal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	98-107	31-32	37	104-115 mm
♀ ♀	93-100	31-32	—	106-110 mm
				(BB, SA, Fleming)

Weight 1 ♂ 40 g (SA).

COLOURS OF BARE PARTS. Iris yellow. Bill yellow, black at base of upper mandible; gape of juvenile bright yellow. Legs and feet plumbeous (HW); ♂ greyish brown, ♀ bluish slate (SDR).

1170. Mishmi Slatyheaded Scimitar Babbler. *Pomatorhinus schisticeps salimalii* Ripley

Pomatorhinus montanus salimalii Ripley, 1948, Proc. Biol. Soc. Washington 61: 101 (Terai, Mishmi Hills, NE. Assam)

Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Between bulbul and myna; length c. 22 cm (8½ in.).

FIELD CHARACTERS. As in 1169, q.v. See Museum Diagnosis.

BABBLERS

133

STATUS, DISTRIBUTION AND HABITAT. Resident. Mishmi Hills, NEFA. Affects thick underbrush in evergreen forest.

GENERAL HABITS, FOOD AND VOICE. As in 1169.

BREEDING. As in 1169.

MUSEUM DIAGNOSIS. Compared to *schisticeps* has a darker, more blackish cap and black ear-coverts. Overall darker rufescent with darker wing-coverts and edges of wing-feathers than *cryptanthus*.

MEASUREMENTS

2 ♂♂ Wing 94, 97; bill (from skull) 31, 33; tail 95, 99 mm (SDR).

COLOURS OF BARE PARTS. Iris pale red. Bill: upper mandible yellow, black at base; lower yellow. Legs brown, feet grey.

1171. Lakhimpur Slatyheaded Scimitar Babbler. *Pomatorhinus schisticeps cryptanthus* Hartert

Pomatorhinus schisticeps cryptanthus Hartert, 1915, Bull. Brit. Orn. Cl. 36: 35 (Margherita, Assam)

Baker, FBI No. 200, Vol. 1: 207

LOCAL NAMES. None recorded.

SIZE. Between bulbul and myna; length c. 22 cm (8½ in.).

FIELD CHARACTERS. As in 1169, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, plentiful in the foothills, sparingly in the plains. North Lakhimpur Division of Assam, from Dibrugarh to Margherita. Affects bamboo jungle, dense scrub and evergreen forest.

GENERAL HABITS, FOOD AND VOICE. As in 1169.

BREEDING. As in 1169.

MUSEUM DIAGNOSIS. Like *schisticeps* but rufous hind-collar more marked. For distinction from *salimalii* see 1170.

MEASUREMENTS. As in *schisticeps*.

COLOURS OF BARE PARTS. Iris orange-yellow. Legs dark slate.

1172. Mount Abu Scimitar Babbler. *Pomatorhinus schisticeps obscurus* Hume

Pomatorhinus obscurus Hume, 1872, Stray Feathers 1: 7 (Mount Abu)

Baker, FBI No. 207, Vol. 1: 211

LOCAL NAMES. None recorded.

SIZE. Between bulbul and myna; length c. 22 cm (8½ in.).

FIELD CHARACTERS. As in 1174, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. South-western Rajasthan (Mount Abu and adjacent parts of Aravalli Range), northern Gujarat (including Saurashtra in the Gir forest — Dharmakumar-sinhji, JBNHS 48: 188), intergrading with *horsfieldii* south to the Tapi river; Madhya Pradesh in the Vindhya and Satpura ranges east to Balaghat, but eastern limit needs re-determining. Confined to the hills. Affects bamboo groves, thorn jungle, deciduous and semi-evergreen forest.

GENERAL HABITS, FOOD AND VOICE. As in 1169.

BABBLERS

135

COLOURS OF BARE PARTS. Adult. Iris reddish brown. Bill orange with variable amount of dark brown at base of upper mandible; mouth pink. Legs and feet dusky plumbeous; soles lemon-yellow. Young. Lower mandible and tip of upper mandible pinkish flesh; base of upper mandible horny; gape pinkish flesh. Legs and feet plumbeous.

1174. Kerala Scimitar Babbler. *Pomatorhinus schisticeps travancorensis* Harington

Pomatorhinus horsfieldii travancorensis Harington, 1914, Jour. Bombay nat. Hist. Soc.

23: 333 (Peermell (= Peerned), Travancore)

Baker, FBI No. 208, Vol. 1: 211

LOCAL NAME. *Cholakkutuan* (Malayalam).

SIZE. Between bulbul and myna; length c. 22 cm (8½ in.).

FIELD CHARACTERS. A dark olive-brown and white babbler of the undergrowth with conspicuous white supercilium, white throat, breast and centre of belly, and a long, curved yellow bill. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The Western Ghats and associated hills of southwest India from Goa and northern Mysore (where it intergrades with *horsfieldii*) south through western Mysore, Kerala and western Tamil Nadu. From almost sea level to the highest elevations (up to 2400 m in the Nilgiris). Affects evergreen and deciduous forest, patches of *Strobilanthes*, thorn and *Lantana* scrub, bamboo jungle and cardamom sholas.

GENERAL HABITS. Very elusive. Found in pairs during the breeding season, otherwise in small parties of four to ten, either by themselves or in association with mixed hunting parties. Rummages under dense undergrowth in search of insects, flicking aside or turning over dead leaves or digging vigorously in the mulch with the long bill; also hops along moss-covered branches or up the trunks of trees in this quest, diving into the undergrowth when alarmed.

FOOD. Largely insects, grubs, spiders; also berries and flower-nectar.

VOICE AND CALLS. Very similar to those of the Himalayan races (see 1169). Members of a flock or pairs keep in touch by mellow bubbling or gurgling calls and duets: a musical flute-like *woot-ho-ho-ho* (*oo-pū-pū* or *oo-pū-pū-pū*) (male) immediately followed by the subdued reply of the female *kūkū* or *krokānt*, so promptly that it sounds like the ending of the same phrase. Alarm, a sharp *kir-r-r-r*.

BREEDING. Season, overall October to May, chiefly November to March. Nest, like that of the nominate race (q.v.): a loosely built ball of dead leaves, occasionally of moss, about 17 cm in diameter, lined with fine grasses or rootlets. Placed on the ground, on a sloping bank or under a bush; occasionally off the ground in a bush. Eggs, 3 or 2, white. Average size of 20 eggs 25.6 × 18.8 mm (Baker). Both sexes share in building, incubation (?) and tending the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. Like *horsfieldii* but upperparts a richer olive-brown; head darker than the back; plastron edged by a broad black band (v. narrow and blackish brown in *horsfieldii*); bill shorter.

134

TIMALIINAE

BREEDING. Season, April to June. Nest and eggs, as in 1174.

MUSEUM DIAGNOSIS. Like *horsfieldii* (1173) but everywhere paler, more smoky grey; no black band separating white of breast from upper plumage. Bill longer and larger.

Young, like that of *horsfieldii* but reflects the racial differences.

MEASUREMENTS

7 ♂♂ Bill (from skull) 32-35 mm (HW); other measurements as in *horsfieldii*.

COLOURS OF BARE PARTS. Iris dark red. Bill dirty yellow, blackish on the ridge at base of upper mandible. Legs and feet dark greenish plumbeous.

1173. Deccan Scimitar Babbler. *Pomatorhinus schisticeps horsfieldii* Sykes

Pomatorhinus horsfieldii Sykes, 1832, Proc. Zool. Soc. London: 89

(Mahabaleshwar, Western Ghats)

Baker, FBI No. 206, Vol. 1: 210

Plate 74, Fig. 19

LOCAL NAMES. None recorded.

SIZE. Between bulbul and myna; length c. 22 cm (8½ in.).

FIELD CHARACTERS. As in 1174, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. Southern Gujarat from the Tapi river south through Maharashtra in the Western Ghats complex to Goa and northern Mysore (Londa) (intergrades with *obscurus* in the north and *travancorensis* in the south); eastern Orissa hills from about Hindol (c. 21°N. lat.) south through the Eastern Ghats complex to the Krishna river in eastern Andhra Pradesh where it intergrades with *maderaspatensis*. From the foothills to c. 1000 m. Affects bamboo patches, thorn scrub, dense bush jungle, deciduous and evergreen forest.

GENERAL HABITS, FOOD AND VOICE. As in 1174. A mellow fluty *oō-pū-pū-pū* or *oō-pū-pū-pū-pū*.

BREEDING. Season, February to May. Nest and eggs, as in 1174. Average size of 24 eggs 25.7 × 19.4 mm (Baker).

MUSEUM DIAGNOSIS. Less grey than *obscurus*, less richly coloured than *travancorensis* and intermediate between the two; back dark earthy brown; dark edge of plastron blackish brown.

Young (immature), crown uniform dark olive-brown without the black lateral streaks; upperparts more golden olive-brown, especially on wings and coverts; white feathers of lower throat with faint black tips; black edging to plastron replaced by bright ferruginous and continuing behind as a diffused nuchal collar; remainder of lower plumage washed and mottled with rufous. This plumage, in a more accentuated form, resembles that of adults of the Himalayan races of *P. schisticeps*.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	91-100	29-35	31-35	95-102 mm
♀♀	89-98	29-35	31-33	92-108 mm (SA, HW)

Weight 12 ♂♂ 33-53 (av. 43) g — SA.

136

TIMALIINAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	90-104	27-38	33-35	94-107 mm
♀♀	85-98	28-33	33 (2)	93-100 mm (SA, HW)

COLOURS OF BARE PARTS. Iris reddish brown. Bill yellow, basal half of culmen including nostrils horny brown; mouth pinkish flesh. Legs and feet slaty or greyish brown; claws horny brown.

1175. Tamil Nadu Scimitar Babbler. *Pomatorhinus schisticeps maderaspatensis* Whistler

Pomatorhinus horsfieldii maderaspatensis Whistler, 1936, Jour. Bombay nat. Hist. Soc.

38: 699 (Kurumbapattī, Salem District, Madras)

Not in Baker, FBI

LOCAL NAMES. *Nāndla pitta*, *Dasari pitta* (Telugu).

SIZE. Between bulbul and myna; length c. 22 cm (8½ in.).

FIELD CHARACTERS. As in 1174, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The southern Eastern Ghats and associated hills in Andhra and Tamil Nadu, from the Krishna river south to the Cauvery river; from the foothills to the highest elevations. In same biotope as *travancorensis*.

GENERAL HABITS, FOOD AND VOICE. As in 1174.

BREEDING. As in 1174.

MUSEUM DIAGNOSIS. Like *horsfieldii* but lacks the black edge to the white plastron.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	89-100	29-33	31-35	94-103 mm
♀♀	90-98	30-33	31-34	91-98 mm (SA)

Weight 7 ♂♂ (June-Aug.) 43-50 (av. 47.8) g — SA.

COLOURS OF BARE PARTS. Iris reddish brown. Bill orange-yellow, a variable area of dark brown at base of culmen; mouth pink. Legs and feet dusky plumbeous; soles lemon-yellow.

1176. Common Ceylon Scimitar Babbler. *Pomatorhinus schisticeps holdsworthi* Whistler

Pomatorhinus horsfieldii holdsworthi Whistler, 1942, Bull. Brit. Orn. Cl. 62: 51-2

(Ohiya, Ceylon)

Not in Baker, FBI

LOCAL NAME. *Parandē-korallā* (Sinhala).

SIZE. Between bulbul and myna; length c. 22 cm (8½ in.).

FIELD CHARACTERS. As in 1174, q.v. See Museum Diagnosis.

BABBLERS

137

STATUS, DISTRIBUTION and HABITAT. Common resident. Ceylon in the eastern hills and low-country Dry zone, from the plains to 1800 m. Affects deciduous and evergreen forest and well-wooded gardens.

GENERAL HABITS and FOOD. As in 1174.

VOICE and CALLS. A variety of chirps and rattles uttered while feeding or when suspicious; other notes are *pop pop-prrr* and a deep guttural *wooh wooh*. Pairs sing in duets; sonorous and pleasant notes *paup-a-paup* (male) answered by a quiet *ka-free* (female) (Henry).

BREEDING. Season, November to June, chiefly February to April. Nest, an untidy, rather deep, generally semi-domed cup of decaying leaves or dead grass, mixed with plant stems, rootlets or strips of bark. In some nests the dome is well made, in others almost lacking; a scanty lining of rootlets, grass or dead leaves. Placed almost on the ground at the base of cardamom plants or other low vegetation, or among dead leaves at the foot of a bank, occasionally in crevices and hollows in trunks of trees or in bushes, 30 to 60 cm above the ground, exceptionally up to 180 cm (once). Eggs, 3 sometimes 2, white. Average size of 32 eggs, 25.1 × 18.6 mm (Baker).

MUSEUM DIAGNOSIS. Like *melanurus* (1177) but upperparts, flanks and wings olivaceous brown instead of rufous olive-brown; crown and tail nearly black. Differs from the south Indian races in having the flanks, vent and under tail-coverts olive-brown instead of grey-brown. Also lacks the black edging to the plastron like *maderaspatensis*. Complete moult takes place between the end of June and the beginning of December.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	87-94	26-29	30-33	85-90 mm
♀♀	82-88	27-29	30-32	82-86 mm (HW)

COLOURS OF BARE PARTS. Iris reddish brown; orbital region dull blue. Bill yellow, blackish at base of upper mandible. Legs and feet plumbeous grey.

1177. Southern Ceylon Scimitar Babbler. *Pomatorhinus schisticeps melanurus* Blyth

Pomatorhinus melanurus Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 481

[Uragaha (restricted by Whistler), Ceylon]

Baker, FBI No. 209, Vol. 1: 212

LOCAL NAME. *Parandel-kurullā* (Sinhala).

SIZE. Between bulbul and myna; length c. 22 cm (8½ in.).

FIELD CHARACTERS. As in 1174, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Common resident. Ceylon, in the low-country Wet zone and western hill zone from the hills east of Matale south through the Peak range to the Sinharadja Forest area, west to Uragaha and east to Ratnapura. From the plains to c. 2000 m. Affects moist-deciduous and evergreen forest.

GENERAL HABITS and FOOD. As in 1174.

BABBLERS

139

shy; when disturbed, flies up into thicker cover, soon descending to the ground again to resume activities. Often flutters up into a larger bush and stands flitting its tail, or gradually hopping further up towards the top of the bush and then flying down into lower bushes again. Flight rather heavy and ungainly.

FOOD. Insects and grubs.

VOICE and CALLS. Has the same range of harsh churring notes and pleasant flute-like calls as other scimitar babblers. When questing for mate which has become separated, utters a double-noted call very reminiscent of the Redvented Bulbul, but louder and with a thrush-like clearness, repeated persistently every few seconds while hopping around, in obvious expectancy of an answer (SA). Another call rendered as *pra—pre-deeved* (Fleming). For description of song, see 1179.

BREEDING. Season, April to June. Nest and eggs, as in *bakeri* (1180).

MUSEUM DIAGNOSIS. The nominate subspecies differs from *godwini* (1179) in being less richly coloured above and with a more rusty tinge below. Tarsus and hindclaw shorter.

Young (immature), like adult but upperparts, tail, edges of wings and streaks of underparts more rufous, less olive. Primary and tail characters present; postjuvinal moult complete. Subadult more rusty above than adult.

NOTE: This species is much subject to foxing; old skins become very rufous and look more distinct from fresh skins than from other races (Whistler).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Hindclaw	Tail
♂♀	76-83	22-23	31-34	11-12	80-87 mm (Kinnear)
♂♂	74-83	23-25	—	—	84-86 mm
♀♀	73-84	23-24	—	—	80-91 mm (BB, Fleming)

COLOURS OF BARE PARTS. Iris ♂ pale red to crimson, ♀ reddish brown to pale brown; eyelids plumbeous. Bill: upper mandible black with yellow tip, lower yellow or yellowish white. Legs brown, feet slate; soles dull yellow.

1179. Sikkim Rufousnecked Scimitar Babbler. *Pomatorhinus ruficollis godwini* Kinnear

Pomatorhinus ruficollis godwini Kinnear, 1944, Ibis 86: 79

(Chungkar, Trashigong-Duwengiri Road, SE. Bhutan, 6000 ft)

Not in Baker, FBI

LOCAL NAME. *Bhiakwuh* (Parbatiya).

SIZE. Bulbul ±; length c. 19 cm (7½ in.).

FIELD CHARACTERS. As in 1178, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Common resident, with some downwards movement in winter. Eastern Nepal from the Arun-Kosi east through Sikkim, Bhutan, south Tibet and NEFA to the Dafa Hills (and presumably farther east though records are lacking). Of the scimitar babblers, this species occupies the highest zone — from 1500 to 3000 m,

138

TIMALIINAE

VOICE and CALLS. As in 1176.

BREEDING. As in 1176.

MUSEUM DIAGNOSIS. Differs from the south Indian races in having the flanks, vent and under tail-coverts rufous olive-brown instead of grey-brown. Also lacks the black edging to plastron like *maderaspatensis*. Differs from *holdsworthi* in having the upperparts, flanks and wings rufous olive-brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
4 ♂♂	88-90	28	31-33	84-89 mm
1 ♀	86	28	31	84 mm (HW)

COLOURS OF BARE PARTS. As in *holdsworthi*.

POMATORHINUS RUFICOLLIS Hodgson

Key to the Subspecies

	Page
A Upperparts olive-brown.....	<i>P. r. bakeri</i> 140
B Upperparts ruddy brown	
1 More richly coloured.....	<i>P. r. godwini</i> 139
2 Less richly coloured, more rusty tinge below.....	<i>P. r. ruficollis</i> 138

1178. Nepal Rufousnecked Scimitar Babbler. *Pomatorhinus ruficollis ruficollis* Hodgson

Pomatorhinus ruficollis Hodgson, 1836, Asiat. Res. 19: 182

(Nepal, restricted to Kathmandu Valley by Ripley, Synopsis)

Baker, FBI No. 214, Vol. 1: 216

Plate 74, fig. 16

LOCAL NAMES. None recorded.

SIZE. Bulbul ±; length c. 19 cm (7½ in.).

FIELD CHARACTERS. Above, olive-brown; a conspicuous white supercilium from bill to nape; a black band from lores to ear-coverts; a rufous-chestnut patch on sides of neck. Below, throat white, rest of underparts rusty brown, the breast streaked with white. Bill shorter, less curved than in other scimitar babblers. Sexes alike. For distinction from other scimitar babblers, see 1169.

STATUS, DISTRIBUTION and HABITAT. Resident, with some downwards movement in winter; locally common. The Himalayas from Kumaon (Almora and Lohaghat) east through western and central Nepal to the Arun-Kosi; from 1400 to 3300 m, descending in winter as low as 800 m. Affects thick forest, or open forest with dense undergrowth and scrub on hillsides.

GENERAL HABITS. In pairs during the breeding season, otherwise in small parties of a half-dozen individuals, sometimes in company with other babblers, working over areas of twenty or thirty metres across, usually foraging on the ground where they noisily throw up dead leaves while looking for food. Occasionally clings upside down, like a woodpecker or nuthatch, on the underside of a moss-covered branch in the quest. Very

TIMALIINAE

140

optimum zone c. 1800-2400 m. Descends in winter to 700 m, but has also been recorded as high as 3000 m at this season. Affects thick forest, scrub-covered hillsides, rhododendron shrubs and bracken at the higher altitudes, tea-gardens and edges of jungle near them.

GENERAL HABITS and FOOD. As in 1178.

VOICE and CALLS. Frequently indulge in what seems to be calling and answering each other, several individuals joining in. Call a soft, musical, double- or triple-noted *off'n on* or *off-an-on* (accent on *off*) reminiscent of call of Redvented Bulbul (*Pycnonotus cafer* — 1128), invariably followed by female's prompt squeak in response (SA). Song varied but with one or two phrases forming the basis of the theme: *poiki-wurki poiki-wurki* (rising) or *pruruti-witeu-witeu* (falling), these notes with variations often combined into phrases of fair length (Lister). A common call [same as first?] consists of three whistled notes, the first being accented, the second on the same tone, the third about three tones lower; when heard at a short distance, reminds one of some cuckoo's call (Heinrich).

BREEDING. Season, April to June. Nest and eggs, as in 1180. Average size of 13 eggs 24 × 17.9 mm (Baker).

MUSEUM DIAGNOSIS. More richly coloured than *ruficollis*; rusty tinge below much reduced. Tarsus (?) and hindclaw longer.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Hindclaw	Tail
♂♂	78-86	22-26	30-34	12-14	81-95 mm
♀♀	76-86	22-24	30-37	12-15	80-92 mm (Kinnear, SA)

Weight 8 ♂♂ 30-39 (av. 33.1); 5 ♀♀ 26-35 (av. 30.2) g — SA.

COLOURS OF BARE PARTS. Iris reddish brown. Bill yellow, basal two-thirds of upper mandible black. Legs and feet brownish plumbeous.

1180. Cachar Rufousnecked Scimitar Babbler. *Pomatorhinus ruficollis bakeri* Harrington

Pomatorhinus ruficollis bakeri Harrington, 1914, Jour. Bombay nat. Hist. Soc. 23: 336 (Shillong, Khasia Hills)

Pomatorhinus ruficollis rector Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 4 (Blue Mountain, Lushai Hills, Assam)

Baker, FBI No. 215, Vol. 1: 217

LOCAL NAME. *Moh-mera* (Angami Naga).

SIZE. Bulbul ±; length 19 cm (7½ in.).

FIELD CHARACTERS. As in 1178, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. The hills of Assam, Nagaland, Manipur and East Pakistan, from 900 to 1500 m. Affects evergreen forest with dense undergrowth, open bamboo jungle, scrub-covered hillsides and thickets in scrub pastures.

Extremities. Extends to southwest Burma (on Mt Victoria mostly between 2000 and 3000 m). The species ranges east to North Vietnam, Hainan, Formosa and north to Hupeh.

BABBLERS

141

GENERAL HABITS, FOOD and VOICE. As in 1178.

BREEDING. Season, April to July. Nest, domed, made of bamboo leaves, each layer at right angle to the next, some fern leaves and grass, sometimes strengthened with a few roots or weed-stems, but usually without binding and easily falling to pieces when moved; lined with rootlets. Most nests are placed on sloping ground, sometimes low down in bushes, rarely above one metre. Humid tree-forest with a good deal of undergrowth is preferred as a site. Eggs, 3 to 5, generally 4, white. Average size of 50 eggs 23.4×17.4 mm (Baker). Birds sit close and when disturbed leap away into cover, generally remaining in the vicinity, every now and then giving an impatient hoot-hoot or chuckle.

MUSEUM DIAGNOSIS. Differs from *godwini* in being paler and olive-brown above rather than rufous-brown; below more fulvous.

MEASUREMENTS

Wing 10 ♂♂ 77-84; 9 ♀♀ 75-79 mm (Heinrich).

Weight 2 ♂♂ 31, 32; 2 ♀♀ 27, 29 g (SDR).

COLOURS OF BARE PARTS. Iris dull maroon. Bill pale yellow, dusky to about the nostrils. Legs and feet pale grey-flesh (HW).

POMATORHINUS ERYTHROGENYS Vigors

Key to the Subspecies

	Page
A Flanks olivaceous..... <i>P. e. maclellandi</i>	143
B Flanks rusty	
1 Throat white..... <i>P. e. erythrogenys</i>	141
2 Throat greyish..... <i>P. e. haringtoni</i>	143

1181, 1182. West Himalayan Rustycheeked Scimitar Babbler.

Pomatorhinus erythrogenys erythrogenys Vigors

Pomatorhinus erythrogenys Vigors, 1832, Proc. Zool. Soc. London: 172

(Himalayas = Simla-Almora area)

Pomatorhinus ferrugilatus Hodgson, 1836, Asiat. Res. 19: 180 (Nepal)*

Baker, FBI No. 219, Vol. 1: 220

Plate 74, fig. 20

LOCAL NAMES. *Bān-bākra* (Mussooree); *Khokiya bhekura* (Nepal).

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. Above, olive-brown; below, lores, sides of head, neck, flanks, thighs and under tail-coverts rusty; rest of underparts mostly white. Long curved bill and light-coloured iris. Sexes alike. For distinction from other scimitar babblers, see 1169.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The western Himalayas from the Jhelum valley (Murree) east to west Nepal, intergrading extensively in central Nepal with *haringtoni*; from 450 to 2200 m,

* Most of Nepal is occupied by a variable, intergrading population; it appears unnecessary to uphold the name *ferrugilatus* (1182). See Biswas, 1962, JBNHS 59: 202-3; and Fleming & T aylor, 1964, Fieldiana 35: 528-9.

BABBLERS

143

1183. Sikkim Rustycheeked Scimitar Babbler. *Pomatorhinus**erythrogenys haringtoni* Baker

Pomatorhinus haringtoni Baker, 1914, Bull. Brit. Orn. Cl. 33: 123 (Darjeeling)

Baker, FBI No. 220, Vol. 1: 220

LOCAL NAMES. *Tongo-hut-pho* (Lepcha); *Khokiya bhekura* (Nepal).

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. As in 1181, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. East Nepal (intergrading extensively in central Nepal with *erythrogenys*), Sikkim, northern West Bengal duars, and Bhutan; from the foothills to c. 2100 m. Affects dense scrub on the edge of forest and about abandoned cultivation, ravines and scrub-covered hillsides.

GENERAL HABITS and FOOD. As in 1181.

VOICE and CALLS. See 1181 and 1184.

BREEDING. Season, April to June. Nest and eggs, as in 1181.

MUSEUM DIAGNOSIS. Like *erythrogenys* but darker olive above; ferruginous parts darker, nearer chestnut; throat, chin and upper breast dusky grey with whitish

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	92-99	34-39	36-40	91-103 mm
♀♀	88, 93	34, 35	35, 36	96 (1) mm (SA)

Weight 8 ♂♂ 62-70; 3 ♀♀ 59-61 g (SA, BB).

COLOURS OF BARE PARTS. Iris creamy or greyish white. Bill brownish flesh, dark brown for about half basal portion. Legs and feet brownish flesh; claws pale horny. Not different from other races.

1184. Assam Rustycheeked Scimitar Babbler. *Pomatorhinus**erythrogenys maclellandi* Godwin-Austen

Pomatorhinus maclellandi Godwin-Austen, 1873, Jour. Asiat. Soc. Bengal 39: 103, pl. 2 (Khasia Hills)

Pomatorhinus erythrogenys erythrotis Koelz, 1952, Jour. Zool. Soc. India 4: 38

(Karong, Manipur)

Baker, FBI No. 221, Vol. 1: 221

LOCAL NAME. *Dao-gurru bukū* (Cachari).

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. As in 1181, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. NEFA and the hills of Assam, Nagaland, Manipur and East Pakistan; from 750 to 1800 m and probably higher in NEFA and in the Naga Hills. On Mt Victoria (Burma) it is found between 1400 and 2400 m, exceptionally up to 2600 m. Affects dry or moist forest, scrub jungle, secondary growth in clearings or abandoned cultivation.

Extralimital. Extends to western Burma. The species ranges north to Shensi and east to North Vietnam and Formosa.

142

TIMALIINAE

occasionally higher (up to 2700 m above Chakrata). Inhabits thick scrub at the edge of forest and bramble thickets, dense overgrown nullahs and bush-clad grassy hillsides. Avoids heavy forest.

GENERAL HABITS. Spends most of its time on the ground among fallen leaves but at times will ascend trees with thrush-like hops. Mostly in pairs in summer, in parties of half a dozen in winter. When perched on a branch, the head and curved bill are held up while the tail droops down and jerks when the head is moved from side to side.

FOOD. Insects, larvae, chrysalises, seeds and berries.

VOICE and CALLS. Sing in duets. The male with neck upstretched utters a loud melodious whistle *cue-pee* or *Q-P* (accent on first syllable) and is promptly answered by the female invariably in close attendance, with *kip* or *quip*. The female's response follows so immediately that the three syllables sound as a single call coming from the same bird thus, *q-p . . quip*, *q-p . . quip*, and so on (SA); also rendered as *took-took-teek*. This duetting continues during the year except at nesting time when the female often fails to respond. See also 1184. Alarm-note, a gurgling *quwik* answered by the female's *chur*; also a variety of loud harsh quick-repeated chattering *che-che-che* notes like a jay's (*Garrulus*) when agitated.

BREEDING. Season, from mid March to June. Nest, domed or sometimes cup-shaped when well protected by thick foliage or projecting rock. Made of grass, dead fern or bamboo leaves sparingly lined with fibres. Placed on sloping ground in an earth pocket or under the shelter of a bush, rock or tussock of grass, looking very like a natural accumulation of rubbish. Breeds much more in the open than is usual with other scimitar babblers. Eggs, normally 3, white. Average size of 30 eggs 27.9×20.3 mm (Baker). Both sexes take part in nest-building, incubation and feeding the young. Incubation period undetermined.

In a pair observed, copulation followed invitation by the ♀ raising open and vibrating her wings, one at a time, uttering a soft *chut-uk*, *chut-uk*, *chut-uk*, etc. and lowering the forepart of her body whereupon the male hopped onto her back. The act, with the same preliminaries, was repeated after c. 10 minutes, both birds collecting nest material in the interval (SA).

MUSEUM DIAGNOSIS. Differs from *haringtoni* in being paler above and having the throat white. Nepal birds are intermediate and highly variable.

Young (immature), like adult but all rusty parts paler. Upperparts, edges of wings and coverts have a rusty wash. Primary and tail characters present; postjuvinal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	95-101	36-39	36-38	96-108 mm
♀♀	90-96	35-39	—	96-99 mm

(Rand & Fleming, SDR, BB)

COLOURS OF BARE PARTS. Iris greyish white. Bill greyish or pale horny brown, ivory white at base of lower mandible. Legs and feet fleshy brown.

144

TIMALIINAE

GENERAL HABITS and FOOD. As in 1181.

VOICE and CALLS. The song is a two-syllabled rather deep and strong whistle, the first note being about four tones higher than the second (Heinrich), also answered without interruption by the female's third note *quip*. See 1181. The bird often sings for long periods of time from the crown of a tall tree, so well hidden however that it is almost impossible to discover.

BREEDING. Season, April to June. Nest, as in 1181. Eggs, 3 or 4, white. Average of 40 eggs 26.5×19.3 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *haringtoni* in having the flanks olivaceous instead of rufous, and the breast streaked with dark ashy brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	86-96	34-37	36-40	91-101 mm
♀♀	83-88	—	—	—

(SA, Heinrich)

Weight 7 ♂♂ 57-70; 3 ♀♀ 47-61 g (SDR, SA).

COLOURS OF BARE PARTS. Iris yellowish cream, creamy white or pale straw; orbital skin dark purplish blue; upper mandible greyish brown, blackish or dark brown at base, lower greyish or whitish brown, base yellow; legs and feet brown to greyish brown (SDR). Not different from other races.

1185. Large Scimitar Babbler. *Pomatorhinus hypoleucos hypoleucos* (Blyth)

Orthorhinus hypoleucos Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 371 (Arakan)

Baker, FBI No. 224, Vol. 1: 222

Plate 74, fig. 15

LOCAL NAME. *Dao-hoot* (Cachari).

SIZE. Myna ±; length c. 28 cm (11 in.).

FIELD CHARACTERS. A large, strong-footed babbler with a long and stout curved bill. Above, olive-brown, wings and tail brown; a rusty line from eye to nape. Below, throat, breast and belly white, flanks slaty, streaked with white on sides of breast. Sexes alike. For distinction from other scimitar babblers see 1169.



STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. NEFA in the Daffa and Miri Hills, the head of Assam valley, Assam, Nagaland (?), Manipur (?) and the hills of East Pakistan south and east of the Brahmaputra; in the foothills up to 1200 m, and adjacent plains. Keeps to the densest bamboo, scrub or cane jungle, reeds and elephant-grass; sometimes in heavy undergrowth in forest.

BABBLERS

145

Extralimital. Western and northern Burma. The species ranges east to Vietnam and Hainan.

GENERAL HABITS. Keeps much more to the ground than any other scimitar babbler, hopping about in a very ungainly manner. Does not fly into trees unless pressed very closely. Usually keeps in pairs, occasionally in small parties; very skulking and more often heard than seen.

FOOD. Insects, snails.

VOICE and CALLS. A short chuckling note when feeding and undisturbed. Alarm, a loud and full *hoot-hoot-hoot*.

BREEDING. Season, January to April. *Nest*, a big semi-domed structure usually made of bamboo leaves, sometimes mixed with grass or other materials, more or less scantily lined with rootlets, measuring about 35 by 25 cm. Placed on the ground in tangles of cane-brake, bamboo or scrub, looking like a mass of wind-blown bamboo leaves. When disturbed, the bird leaves the nest by huge hops. *Eggs*, 2 or 3, white. Average size of 12 eggs 30.1 × 21.7 mm (Baker).

MUSEUM DIAGNOSIS. Bill heavier, less laterally compressed, and less curved than in other scimitar babblers. See Key to the Species and Field Characters; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	105-112	c. 40	c. 38	110-120 mm (Baker)
		(from skull)		
1 ♂	103	45	41	91 (worn) mm
1 ♀	102	41	41	90 " mm (Desfayes)

COLOURS OF BARE PARTS. Iris brown to deep red-brown; naked patch behind eye dull livid or bluish flesh-colour. Bill pale horny with a yellow, grey or green tinge in it. Legs and feet pale plumbeous or slaty grey (Baker).

POMATORHINUS FERRUGINOSUS Blyth

Key to the Subspecies

	Page
A Crown black; breast ferruginous..... <i>P. f. ferruginosus</i>	145
B Crown olive-brown; breast ochraceous	
a Crown slightly darker than back..... <i>P. f. formosus</i>	146
b Crown concolorous with back..... <i>P. f. phayrei</i>	147

1186. Sikkim Coralbilled Scimitar Babbler. *Pomatorhinus ferruginosus ferruginosus* Blyth

Pomatorhinus ferruginosus Blyth, 1845, Jour. Asiat. Soc. Bengal 14: 597 (Darjeeling)
Baker, FBI No. 210, Vol. 1: 175
Plate 74, fig. 13

LOCAL NAMES. *Te churi*, *Pee-gongor* (Dafila); *Bhotet* (Bhutia); *Piong-kohut*, *Pomlong-kut* (Lepcha).

SIZE. Between bulbul and myna; length c. 22 cm (9 in.).

BABBLERS

147

VOICE and CALLS. Very similar to those of *schisticeps*. A number of musical flute calls — *oo-pū-pū* or *oo-pū-pū-pū*; alarm-note, a low, grating *churr*. Like other scimitar babblers, has a curious habit of calling until one is almost upon it and then quietly, without noise or exposure, disappearing, only to call again some fifty metres farther on.

BREEDING. Season, end of April to July. *Nest*, more or less oval, placed on its side, the entrance generally at the small end, measuring about 20 by 10 or 15 cm made of bamboo leaves criss-crossed in layers, grass, vegetable fibres or bracken fronds held together by tendrils and weed-stems. The lining is of fibrous strips, rootlets or fine grass. Placed on the ground or low down in scrubby bushes, tangled grass or bamboo clumps; sometimes as high as a couple of metres in bushes or saplings. *Eggs*, 3 or 4, sometimes 5, white. Average size of 50 eggs 27.1 × 19.3 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies. Similar to *phayrei* but colour denser; crown olive-brown, darker than back; lores white not rusty; a distinct black line above supercilium; colour of underparts richer.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1186.

1188. Mizo Coralbilled Scimitar Babbler. *Pomatorhinus ferruginosus phayrei* Blyth

P. (pomatorhinus) phayrei Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 452 (Arracan)
Baker, FBI No. 211 (part), Vol. 1: 214

LOCAL NAMES. None recorded.

SIZE. Between bulbul and myna; length c. 22 cm (9 in.).

FIELD CHARACTERS. As in 1187.

STATUS, DISTRIBUTION and HABITAT. Resident. Assam in the Mizo (Lushai) Hills, from 900 m up to at least 1500 m. Affects dense forest, bamboo jungle and thick secondary growth.

Extralimital. Chin Hills and Arakan Yomas. The species ranges east through Burma, northwestern Thailand, northern Laos to North Vietnam.

GENERAL HABITS, FOOD and VOICE. As in 1187.

BREEDING. As in 1187.

MUSEUM DIAGNOSIS. See 1187, and Key to the Subspecies.

POMATORHINUS OCHRACEIPEX Walden

Key to the Subspecies

Underparts paler, more whitish..... <i>P. o. stenorhynchus</i>
Underparts darker, more ochraceous..... <i>P. o. austeni</i>

Cl. Ripley, S.D., 1948, JENHS 48: 24.

1189. Mishmi Longbilled Scimitar Babbler. *Pomatorhinus ochraceiceps stenorhynchus* Godwin-Austen

Pomatorhinus stenorhynchus Godwin-Austen, 1877, Jour. Asiat. Soc. Bengal 46: 43
(Near Sadiya, Assam)

Baker, FBI No. 217, Vol. 1: 219 (= *austeni*)

Plate 74, fig. 17

LOCAL NAMES. None recorded.

146

TIMALIINAE

FIELD CHARACTERS. *Above*, back and tail olive-brown, top of head black; a conspicuous white supercilium, a broad black band from lores to ear-coverts. *Below*, chin and malar stripe white, throat and breast ferruginous; rest of underparts olive-brown. Sexes alike.

The coral-red bill distinguishes it from all scimitar babblers except *P. ochraceiceps* which has a more slender and curved orange bill, and buffy underparts.

STATUS, DISTRIBUTION and HABITAT. Resident, rather scarce in the western part of its range, commoner in the east. East Nepal (there are no post-Hodgsonian records), Sikkim, Bhutan and NEFA east to the Dihang river. Normally from c. 1200 to 3800 m, the latter altitude even in winter; also recorded from the duars and at 600 m in the Abor Hills. Affects dense shrubbery and ringal bamboo jungle.

GENERAL HABITS, FOOD and VOICE. As in *formosus* (1187).

BREEDING. Season, late April to end of June. *Nest*, as in 1187. *Eggs*, 3 to 5, white. Average size of 20 eggs 25.6 × 18.8 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *formosus* and *phayrei* in having a black cap and ferruginous (not ochraceous) breast.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	87-95	27-28	29-30	99-110 mm (Baker, SA)

Weight 1 ♀ 40 g (SA).

COLOURS OF BARE PARTS. Iris yellow or golden yellow. Bill deep coral-red. Legs and feet light yellowish brown, sometimes with a greenish or leaden tint.

1187. Assam Coralbilled Scimitar Babbler. *Pomatorhinus ferruginosus formosus* Koelz

Pomatorhinus ferruginosus formosus Koelz, 1952, Jour. Zool. Soc. India 4: 39

(Tura Mountain, Garo Hills)

Baker, FBI No. 211 (part), Vol. 1: 214

Plate 74, fig. 12

LOCAL NAMES. *Dao-buku-gajao* (Cachari); *Inui-gogo* (Kacha Naga).

SIZE. Between bulbul and myna; length c. 22 cm (9 in.).

FIELD CHARACTERS. As in 1186 but crown more or less concolorous with back, not black; breast much lighter in colour, ochraceous not ferruginous.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. The hills of Assam south of Brahmaputra river, Nagaland, south to and including Manipur. From c. 900 to 1500 m; up to 2400 m in the Naga Hills. Affects thick forest and dense undergrowth, especially along streams, bamboo jungle and outskirts of forest.

GENERAL HABITS. Very elusive and easily overlooked. Found in pairs or small parties, rummaging on the ground among fallen leaves, slinking about in rat-like manner, moving from cover to cover in big hops, only taking to wing when forced to do so. Flies much like a laughing thrush with alternate sailings and flappings. Very inquisitive and may be attracted by any novel sight or sound.

FOOD. Insects and larvae.

TIMALIINAE

148

SIZE. Bulbul +; length c. 23 cm (9 in.).

FIELD CHARACTERS. As in 1190. See Museum Diagnosis.



× c. 1

STATUS, DISTRIBUTION and HABITAT. Common resident. Mishmi Hills, NEFA, and north Burma, above 1500 m but apparently descending to the foothills in winter. Affects dense forest and bamboo jungle.

Extralimital. Upper Chindwin and Myitkyina areas, Burma. The species ranges east to Vietnam.

GENERAL HABITS, FOOD and VOICE. As in 1190.

BREEDING. As in 1190.

MUSEUM DIAGNOSIS. Differs from *austeni* (1190) in being paler, more whitish on breast and centre of abdomen.

MEASUREMENTS

	Wing	Bill (from skull)
2 ♂♂	90, 94	34, 38 mm
8 ♀♀	85-94	32-38 mm (SDR)

2 ♂♂ tarsus 27, 28; tail 106, 110 mm (SA).

COLOURS OF BARE PARTS. Iris brownish grey ['bisquit colour' SA]. Bill orange; nares brown. Legs and feet yellowish brown, greenish brown or olive (SDR).

1190. Manipur Longbilled Scimitar Babbler. *Pomatorhinus ochraceiceps austeni* Hume

Pomatorhinus austeni Hume, 1881, Stray Feathers 10: 152 (E. Manipur)
Baker, FBI No. 217 and 218, Vol. 1: 218-19

LOCAL NAME. *Inui-gu* (Kacha Naga).

SIZE. Bulbul +; length c. 23 cm (9 in.).

FIELD CHARACTERS. A very slim, long-tailed babbler with a long, deeply curved orange bill. *Above*, back olive, wings and tail brown; crown and nape tawny-olive; a conspicuous white supercilium; black lores and dark ear-coverts. *Below*, chin and throat white, breast and belly creamy white washed with buff. Very similar to *P. ferruginosus* which has darker, rusty underparts and a shorter, less curved coral-red bill. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident. Assam in the Cachar Hills and from Margherita south through Nagaland and Manipur; between 1500 and 2400 m, probably reaching the foothills in winter. Affects dense undergrowth in evergreen or mixed forest and bamboo jungle.

GENERAL HABITS. Keeps in pairs or in parties of half-dozen individuals, in brushwood and lower branches of trees, among bushes in fairly open rocky ground as well as denser scrub; feeds on the ground but also probes into flowers of forest trees for nectar.

FOOD. Mainly insects; also nectar.

BABBLERS

149

VOICE and CALLS. A single musical call-note unlike that of any other scimitar babbler (Smythies) but recognizable as of the genus. Also described are a soft full hoot-hoot and a pleasant whistling chuckle.

BREEDING. Season, May to July. *Nest*, an oval ball of broad grass-blades, bamboo leaves and a few other dead leaves loosely put together and lined with finer materials and rootlets. Placed on the ground, nearly covered by fallen leaves, or low down in undergrowth or creepers. *Eggs*, 3 to 5, white. Average size of 30 eggs 25.2 × 18.3 mm (Baker).

MUSEUM DIAGNOSIS. See 1189, and Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂ ♀	84-92	31-36	— mm (SDR)
3 ♀ ♀	92	36-37	104-107 mm (Mayr)

Weight 1 ♀ 34 g (SDR).

COLOURS OF BARE PARTS. Iris dull pinkish cream. Bill orange-coral. Feet dull greenish brown (SDR).

Genus *XIPHIRHYNCHUS* Blyth

Xiphirhynchus Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 175. Type, by monotypy,

Xiphirhynchus superciliosus Blyth. (Not *Xiphirhynchus* Swainson, 1827)

Xiphirhynchus Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 929-47. Type, by monotypy,

Xiphirhynchus superciliosus Blyth

Only differs from *Pomatorhinus* by its extremely long, slenderer and more curved bill.

XIPHIRHYNCHUS SUPERCILIARIS Blyth

Key to the Subspecies

Crown dark slaty	<i>X. s. intextus</i>
Crown paler	<i>X. s. superciliosus</i>

1191. Slenderbilled Scimitar Babbler. *Xiphirhynchus superciliosus* Blyth

Xiphirhynchus superciliosus Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 176 (Darjeeling) Baker, FBI No. 226 (part). Vol. 1: 224

Plate 74, fig. 14

LOCAL NAME. Karriak-tamuep (Lepcha).

SIZE. Bulbul; length c. 20 cm (8 in.) including bill.

FIELD CHARACTERS. The disproportionately long, slender, curved bill makes this species unmistakable. *Above*, head slaty, a long white supercilium; bill black. Back rufous-brown, wings and tail dark brown. *Below*, throat ashy, lightly streaked with white; rest of underparts cinnamon. Sexes alike.

BABBLERS

151

1192. Assam Slenderbilled Scimitar Babbler. *Xiphirhynchus superciliosus intextus* Ripley

Xiphirhynchus superciliosus intextus Ripley, 1948, Proc. Biol. Soc. Washington 61: 105 (Dreyi, Mishmi Hills, NE. Assam)

Xiphirhynchus superciliosus argutellus Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 4 (Blue Mountain, Lushai Hills) Baker, FBI No. 226 (part), Vol. 1: 224

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 20 cm (8 in.) including bill.

FIELD CHARACTERS. As in 1191, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements. NEFA in the Mishmi Hills, Assam in the Khasi, Cachar and Mizo (Lushai) hills, Nagaland, Manipur and East Pakistan in the northeastern and Chittagong hill tracts. Breeds up to 2700 m, descends to the foothills in winter. Affects thick secondary scrub, stunted oak forest with heavy undergrowth, oak and rhododendron forest, and bamboo thickets.

Extralimital. Probably extends to the neighbouring hills of western Burma. Other subspecies are found in Yunnan and North Vietnam.

GENERAL HABITS, FOOD and VOICE. As in 1191.

BREEDING. As in 1191.

MUSEUM DIAGNOSIS. Differs from the nominate race in having a darker, slaty ad.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	72-77	55-60	c. 30	c. 90 mm (Baker)
1 ♀ (type)	77	55	29	84 mm (SDR)

COLOURS OF BARE PARTS. Iris red. Bill black. Legs slaty brown; feet bluish grey; toes yellow (SDR).

Genus *RIMATOR* Blyth

Rimator Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 154. Type, by monotypy, *Rimator malacoptilus* Blyth

Remarkable for its long bill and very short tail. Bill equal to, or longer than head, slightly curved; rictal bristles short. Legs and feet strong. Plumage very lax.

1193. Longbilled Wren-Babbler. *Rimator malacoptilus* Blyth

Rimator malacoptilus Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 154 (Darjeeling) *Rimator malacoptilus amadoni* Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 5 (Mawphlang, Khasia Hills) Baker, FBI No. 262, Vol. 1: 255

Plate 75, fig. 9

LOCAL NAMES. Karriak-tangbrek-pho (Lepcha); Das-moja-baks-galao (Cachari).

SIZE. Sparrow ±; length c. 12 cm (5 in.).

150

TIMALIINAE



x c. 1

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements, locally common. East Nepal (apparently confined to the Mai Valley), Sikkim, Bhutan and probably NEFA east to the range of *intextus*. A babbler of high altitude, breeding between 2100 and 3400 m, mostly 2400-3300 m, descending in winter to between 2000 and 600 m; it is not known whether it withdraws entirely from the summer zone. Affects thick ringal bamboo growth, bushes on steep grassy hillsides, and bramble thickets.

GENERAL HABITS. A shy and restless babbler going about in pairs or small noisy parties in follow-my-leader style, sometimes in association with other babblers. Hunts on the ground progressing by long rat-like hops, or in undergrowth, commonly mounting up into leafless *Salmalia* and other flowering trees for nectar. 'If one mounds a bush and then hops down and climbs another all the party are sure, one by one, to do just the same' (Baker).

FOOD. Beetles, ants and other insects, larvae; also berries and nectar.

VOICE and CALLS. A 3-noted rather interrogative rippling whistle and a single mellow high-pitched hoot (SA). Song, a soft hoot consisting of seven or eight notes uttered rapidly on the same tone, after the manner of *Stachyris chrysaea* (Smythies), this probably being the same as the 'pleasing ripple of whistling notes' described by Kinnear. Alarm, a harsh swearing or chattering note, not unlike a similar call uttered by *Pomatorhinus ruficollis* (Smythies). Very noisy.

BREEDING. Season, April to July. *Nest*, a large, globular structure of dry bamboo leaves and green grass, intermingled and lined with fine roots and fibres. Usually placed on, or almost on the ground. *Eggs*, 3 to 5, white. Average size of 30 eggs 23.7 × 17.8 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *intextus* in having a paler, grey crown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	74-83	43-57	28-35	82-92 mm (Kinnear, Deshayes, SA)

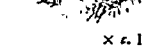
Weight 2 ♂♂ 27, 27; 1 ♀ 30 g (SA).

COLOURS OF BARE PARTS. Iris pale grey (Ludlow), stone-yellow (Stevens). Bill black, tip of lower mandible paler. Legs and feet plumbeous.

152.

TIMALIINAE

FIELD CHARACTERS. A brown, stub-tailed, fluffy-plumaged babbler with a long slightly curved bill. *Above*, dark rufescent brown with buff shaft-streaks. *Below*, chin white, throat, breast and abdomen pale rufescent brown with whitish shaft-streaks. *Sides* of body plain rufescent brown; under tail-coverts ferruginous. Sexes alike.



x c. 1

STATUS, DISTRIBUTION and HABITAT. Scarce resident, probably subject to some vertical movements. Sikkim, Bhutan, NEFA (Miri Hills), Assam (Khasi, Cachar and Mizo hills), Manipur and, presumably, Nagaland; from 900 to 2700 m. Affects forest undergrowth and dense scrub in steep, broken country.

Extralimital. Extends to northeastern Burma. Disjunct populations in N. Vietnam and western Sumatra.

GENERAL HABITS. A great skulker; though fearless and allowing a very close approach, it excels in keeping unseen and it is extremely difficult to follow its movements for more than a brief instant. Chiefly terrestrial; hops about the ground in low shrubs in the manner of *Procygna*, rummaging among fallen leaves and mulch, possibly probing into the ground as the bills of some birds collected were caked with mud. Keeps in pairs. Flight weak; when disturbed flies only a few yards.

FOOD. Insects.

VOICE and CALLS. Said to have a 'sweet chirping whistle'.

BREEDING. Season, May and June. *Nest*, a globular structure of leaves, grass, roots, bracken fronds and other dark materials, rather loosely and clumsily put together and held by roots and weed-stems. Lining is of dry dead leaves. Placed on the ground, generally among a mass of fallen dead leaves, often at the foot of some large tree. *Eggs*, normally 4, unmistakable for those of any other species except some types of *Alcippe* eggs: white with a faint tinge of lilac, marked with blotches of deep red-brown or purple-brown with short, irregular lines and smears of the same colour. The secondary markings of lilac-grey are often more numerous than the primary markings and give the eggs a pronounced lilac tint. Average size of 30 eggs 21.2 × 15.5 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	57-60	22-24	23-24	25-31 mm (Baker, SA)

Weight 4 ♂♂ 18-21 g (SA).

COLOURS OF BARE PARTS. Iris light red-brown. Bill: upper mandible dark horny, blackish at base, paler at tip; gape and edge of lower mandible blackish, remainder pale horny. Legs and feet pale livid fleshy, tinted with brown; soles and claws very pale.

Genus *NEPOTHERA* G. R. Gray

Nepothera G. R. Gray, 1842, Appendix List Gen. Eds.: 8. Type, by original designation, *Myiophila epilepidota* Temminck. [*Nepothera* Macklot, 1830, *Nepothera* Boie,

BABBLERS

153

1832, *Nepothera* S. Müller, 1835, *Nepothera* G. R. Gray, 1840, are all *nomen nuda*.]
Turdinus Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 382. Type, by monotypy,
Malacoptera macrodactylum Strickland
Turdinus Hume, 1878, Stray Feathers 6: 235. Type, by monotypy, *Procygna*
roberti Godwin-Austen & Walden
Cyrtophila Oates, 1883, Handb. Bds. Brit. Burma 1: 61. Type, by monotypy,
Turdinus crispifrons Blyth

Wren-like, mostly terrestrial birds with tail much shorter than wing. Plumage soft, lax, squamated on upperparts. Bill slender, straight; nostrils exposed.

Key to the Species

Tail more than half the length of wing.....*N. brevicaudata*
 Tail less than half the length of wing.....*N. epilepidota*

1194. Streaked Wren-Babbler. *Nepothera brevicaudata striata* (Blyth)

Turdinus striatus Blyth, 1870, Jour. Asiat. Soc. Bengal 39: 269 (Khasia Hills)
Nepothera brevicaudata naphae Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1:
 5 (Sangau, Lushai Hills)
 Baker, FBI No. 256, Vol. 1: 251
 Plate 75, fig. 12

LOCAL NAME. *Das-puffi* (Cachari).

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. A small, short-tailed, wren-like babbler. Above, brown, the feathers margined with brown, producing a scaly appearance. Rump-feathers very thick and fluffy. Tail and wings brown, the greater and median coverts and secondaries tipped with buff in some individuals (young birds?). Below, throat grey-brown streaked with white. Centre of abdomen whitish, flanks, vent and under tail-coverts ochraceous. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident. Assam in the Garo, Khasi and Cachar hills, Lakhimpur district south of the Brahmaputra (north to Sadiya and Dening), Manipur and, presumably, Nagaland. From c. 700 to 2100 m with probably some downward movement in the cold weather, the lowest records being winter data. Affects damp and shady hill forest broken up by rocky ravines and steep slopes.

EXTRALIMITAL. Southwestern Burma. The species ranges east to Vietnam and south through the Malay Peninsula.

GENERAL HABITS. A most secretive bird, quiet and retiring rather than skulking, haunting deep forest on broken ground, apparently not scrub jungle or secondary growth as many babblers do. Runs in and out of great moss-covered boulders, very active and quick on its legs but loath to fly, scurrying away through the undergrowth rather than seeking safety by flight. Generally keeps in pairs.

FOOD. Insects.

VOICE and CALLS. Alarm, a loud *tsik* (SDR) and some chattering and churring notes. Also a mournful single *piou* (Smythies).

BREEDING. Season, May to July. Nest, domed or nearly so, made of dead leaves and grass, semi-decayed bracken and fern fronds, a little moss and grass bound together with fine roots, lined with dry dead leaves. Most of the materials are in a rotten condition. The position is upright, the

154

TIMALIINAE

entrance near the top. External measurements are roughly 17 × 11 cm, the cavity being about 7 cm in diameter. Nearly always placed on the ground, generally between boulders, but sometimes in a hollow in the face of a pile of boulders, or wedged in among the roots of a tree, or on a mossy bank with no other protection than ferns and weeds growing about it. It is well hidden in a damp situation, often so wet the outside is quite sodden. Eggs, 3 or 4, white with numerous freckles of pinkish red, denser and forming little caps at the large end. Average size of 30 eggs 21.3 × 16 mm (Baker). Both birds take part in incubation. When disturbed they slip quietly off the nest but keep close by, the two birds running about within a few metres, uttering low scolding notes.

MUSEUM DIAGNOSIS. See Key to the Species. Distinguished from species *epilepidota* also by its ochraceous flanks (not brown), the greyish brown throat streaked with white (v. white streaked with dark brown), and the lack of a supercilium.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	56-61	c. 16	c. 24	c. 44-46 mm (Baker)

COLOURS OF BARE PARTS. Iris brown. Bill dark brownish horn. Legs and feet brownish flesh.

NAPOTHERA EPILEPIDOTA (Temminck)

Key to the Subspecies

Darker and browner above; no rufous on breast and flanks...
*N. e. guttaticollis*
 Paler above; breast and flanks rufous-brown.....*N. e. roberti*

1195. Austen's Small Wren-Babbler. *Nepothera epilepidota roberti* (Godwin-Austen & Walden)

Procygna roberti Godwin-Austen & Walden, 1875, Ibis: 252 (Chakha, Manipur)
 Baker, FBI No. 258, Vol. 1: 253
 Plate 75, fig. 11

LOCAL NAMES. *Das-majo gashim*, *Das-puffi kashiba* (Cachari).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. A small, short-tailed, wren-like babbler. Above, dark brown with a scaly appearance; wing-coverts and secondaries tipped with light spots; a light supercilium from lores to nape. Below, throat white streaked with dark brown. Centre of breast and belly whitish buff, flanks and vent brown. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common, subject to vertical movements. Assam in the Cachar Hills, Nagaland and Manipur. Breeds from c. 1000 to 1800 m; reaches the plains in winter. Affects dense, dark forest wherever there are openings for streams or natural small glades; specially affects places strewn with mossy boulders, fallen trees covered with ferns and orchids, old stumps, etc.

GENERAL HABITS. Very tame. Keeps in pairs, hopping among the fallen leaves, turning them over for insects, creeping about in bracken and scrub like a true babbler, or dodging about boulders like a wren. Very reluctant to fly.

BABBLERS

155

FOOD. Insects.

VOICE and CALLS. Alarm-note, a rather shrill *chir-r-r*; song, a pleasant but low set of whistling notes (Baker).

BREEDING. Season, April to June. Nest, domed or deep cup-shaped, generally the former, made of the same semi-decayed materials used by *N. brevicaudata* from whose the nest only differs in its smaller size. Usually wedged among boulders. Eggs, usually 4, rarely 5 or 3, similar to those of *brevicaudata* but smaller. Average size of 44 eggs 19.3 × 14.8 mm (Baker).

MUSEUM DIAGNOSIS. Distinguished from species *brevicaudata* by presence of supercilium, brown flanks and white chin and throat with three black-dotted lines down to breast. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	50-55	12-13	c. 18	c. 18 mm (Baker)

COLOURS OF BARE PARTS. Iris red. Bill: upper mandible dark plumbeous; tip and lower mandible paler. Legs and feet fleshy brown; claws paler (Baker).

1196. Grant's Wren-Babbler. *Nepothera epilepidota guttaticollis* (Ogilvie-Grant)

Turdinus guttaticollis Ogilvie-Grant, 1895, Ibis: 432 (Miri Hills, Assam)
 Baker, FBI No. 259, Vol. 1: 254

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1195.

STATUS, DISTRIBUTION and HABITAT. Scarce resident. From eastern Bhutan to the Mishmi Hills and the Patkai Range; from the foothills to c. 1500 m. Same biotope as 1195.

EXTRALIMITAL. Upper Chindwin, Burma. The species extends to Vietnam, Hainan, the Malay peninsula, Sumatra, Java and Borneo.

GENERAL HABITS, FOOD and VOICE. As in 1195.

BREEDING. Season, March and April. Nest and eggs, as in 1195. Average size of 45 eggs 19.4 × 14.8 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *roberti* (1195) in being darker and browner above. No rufous on breast and flanks.

MEASUREMENTS. As in 1195.

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible dark horn colour, lower paler. Legs and feet horny brown.

Genus PROEYGA Hodgson

Microtus Gould, 1837, Icones Av., pl. 5. Type, by monotypy, *Microtus squarata* Gould. *Nomen oblitum*!

Procygna Hodgson, 1844, Zool. Misc.: 82. Type, by subsequent designation (Zimmer & Vaurie, 1954, Bull. Brit. Orn. Cl. 74: 41), *Tesia albiventer* Hodgson

Genus characterized by an extremely short tail of six soft feathers, completely concealed by long, ample rump-feathers. Other characters as in *Speleornis* (p. 159).

¹This name has been placed on the Official Index of Rejected Names (Opinion 695).

156

TIMALIINAE

Key to the Species

		Page
Tarsus over 21 mm.....	<i>P. albiventer</i>	156
Tarsus under 21 mm.....	<i>P. pusilla</i>	158

PROEYGA ALBIVENTER (Hodgson)

Key to the Subspecies

More olive above.....*P. a. pallidior*
 Browner, less olive above.....*P. a. albiventer*

1197. Western Scalybreasted Wren-Babbler. *Procygna albiventer pallidior* Kinnear

Procygna albiventer pallidior Kinnear, 1924, Bull. Brit. Orn. Cl. 45: 10
 (Dharmasala, Punjab, 4000 ft)
 Baker, FBI No. 471 (part), Vol. 1: 458

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1198, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements, common. The western Himalayas from Duala Dhar east to central Nepal where it intergrades with *albiventer*. Breeds between 2400 and 3600 m and probably higher; descends in winter to c. 1000 m. In summer affects dense undergrowth and moss-covered boulders in birch or fir forest, especially near streams; in winter it is found in small nullahs with plenty of exposed rocks and stones but keeping to thick bracken and evergreen undergrowth in damp and secluded situations.

GENERAL HABITS, FOOD and VOICE. As in 1198.

BREEDING. Season, April to June. Nest and eggs, as in 1198. Average size of 15 eggs 21.5 × 15.6 mm (Baker).

MUSEUM DIAGNOSIS. Like *albiventer* but upperparts more olive and underparts paler in the fulvous form.

MEASUREMENTS. As in 1198.

COLOURS OF BARE PARTS. Iris brown. Bill blackish brown, base of lower mandible whitish. Legs and feet pale brown.

1198. Eastern Scalybreasted Wren-Babbler. *Procygna albiventer albiventer* (Hodgson)

Tesia albiventer Hodgson, Feb. 1837, Jour. Asiat. Soc. Bengal 6: 102 [Nepal, restricted by Ripley (Synopsis: 357) to Ilam dist., eastern Nepal, re-restricted to Chandragiri above Thankot by Birwas (JBNS 59: 204-5)]

Microtus squarata Gould, Aug. 1837, Icones Av., pl. 5 (Cachar)

Procygna albiventer regala Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1:
 11 (Kohima, Naga Hills)

Baker, FBI No. 471 (part), Vol. 1: 458

Plate 75, fig. 5

LOCAL NAMES. *Marelak-bong* (Lepcha); *Imri-ba gadeta* (Kacha Naga).

SIZE. Sparrow —; length c. 10 cm (4 in.).
FIELD CHARACTERS. A plump, tail-less, squamated little wren. Dimorphic, in two colour phases; sexes alike in both.
White phase: *Above*, olive-brown with a slightly scaly appearance. *Below*, throat nearly white; breast and belly white, each feather with a dark centre and a narrow dark margin producing a very scaly effect. Flanks scaly olive-brown.
Fulvous phase: *Above*, olive-brown with a fulvous drop on each feather. *Below*, as in white phase but white replaced by fulvous. Intermediates occur, though uncommonly. Distinguished from *pusilla* (1199) only by slightly larger size.

STATUS, DISTRIBUTION AND HABITAT. Resident subject to vertical movements, common in the Himalayas, rather scarce in Assam. From central Nepal where it intergrades with *pallidior*, east through Sikkim, Bhutan (and probably NEFA since Ludlow found it common in the Tsangpo bend at 2000 m); also Assam in the Khasi and Cachar hills, Dibrugarh, and Nagaland. In the Himalayas, breeds mostly between 2700 and 3900 m, in a higher zone than *P. pusilla*, yet overlapping its upper limit. Descends in winter mostly below 2700 m and as low as 600 m (seen at 2850 m in southeast Tibet); in Assam it breeds from c. 1000 to at least 1800 m, and in the Naga Hills from 2100 to 2700 m. Affects wet ravines, thick forest with plenty of undergrowth, particularly in the neighbourhood of streams, waist-high growth of ferns, *Strobilanthes* and nettles; also cardamom plantations in winter.

EXTRALIMITAL. Extends to southwestern Szechuan, Yunnan and N. Vietnam.
GENERAL HABITS. Terrestrial; solitary in winter, in pairs during the breeding season. Creeps about in dense, tangled undergrowth, nervously flicking its wings like a *Phylloscopus*, searching for insects among the mulch, roots, fern-stems and moss-covered fallen logs. A great skulker, very difficult to observe, but also very inquisitive.

FOOD. Insects. Seeds also recorded (Stanford).
VOICE AND CALLS. Its presence in dense growth is given away by its loud, squeaky long-drawn double-noted *seck . . . sik* like an unrolled 'patla' (Indian swing bed) swinging back and forth (SA); also likened to 'nothing so realistic as an ill-mannered person loudly sucking his teeth' (Ludlow). These notes are markedly ventriloquial, the *seck* seeming to come from an entirely different direction to the *sik* that follows a half-second later. Alarm-note, a shrill, piercing whistle and a scolding, chattering *tsik, tsik* indistinguishable from that of the Brown Wren-Babbler and reminiscent also of the Nepal Wren, *Troglodytes* (SA), each time jerking its short wings. The song is short and trilling like the first part of the song of the Whitebreasted Shortwing (Heinrich); also said to remind one of *Troglodytes* (Baker).
BREEDING. Season, April to June. Nest, globular, made of green moss and rootlets, very similar to that of *Troglodytes* and, like it, placed in moss-covered banks, under a moss-clad rock or among moss growing on the trunks of large trees. Eggs, 3 to 5, white, longish ovals; apparently sometimes with a few reddish brown specks (Jones, JBNHS 47: 228). Average size of 54 eggs 19.1 x 14.1 mm (Baker). Both sexes take part in, at least, incubation. Period undetermined.

VOICE AND CALLS. Very like 1198. Utters a sharp single *tsik* every half-second or so, alternately higher and lower with a semitone difference; this note is given more frequently and over longer periods than in the case of *albiventer*. Alarm-note, a sharp, explosive, scolding *chiruk, chiruk*. Song, 'a slow, drawn-out *se-e-e-s-a-u*, each syllable a second in length, followed by a two-second interval' (Fleming).
BREEDING. Season, April to July. Nest, a little ball of moss and rootlets usually built in the moss hanging down tree-trunks or vertical rocks in shady forest, usually at a height of one to two metres from the ground, more rarely up to six metres. Eggs, as a rule apparently 4 in Assam and 3 in the Himalayas, white. Average size of 25 eggs from Sikkim 18.3 x 13.8 mm, and of 50 eggs from Assam 17.1 x 13.1 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *albiventer* only in being smaller; has the same colour dimorphism.
Young, like adult but lacks all fulvous spots on upperparts, median and greater coverts. Underparts uniform dark brown, greyish brown on throat. Postjuvinal moult of body feathers and wing-coverts.
MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	48-53	12-14	18-20 (SA, BB, Kinnear)	12-15 mm

No significant difference of size in the sexes.
Weight 8 ♂ ♀ 11-14 (av. 12) g—SA.
COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible blackish, lower greyish brown. Legs and feet pale brown.

Genus SPELAEORNIS David & Oustalet

Spelaeornis David & Oustalet, 1877, Oiseaux de la Chine: 228. Type, by subsequent designation, *Phoenyga troglodytoides* Verreaux
Elachura Oates, 1889, Fauna Brit. India, Bds. 1: 339. Type, by original designation, *Troglodytes punctatus* Blyth
Cf. Ripley, S. D., 1950, *Auk* 67: 390-91; 1952, JBNHS 50: 492-4; 1954, *Postilla*, Yale Peabody Mus., No. 20: 1-4.
Tail short and rounded, of 10 rectrices. Plumage soft and full. Bill straight and thin. Tarsus long and strong.

Key to the Species		Page
A	Tail barred	
1	Throat white.....	<i>S. troglodytoides</i> 165
2	Throat cinnamon, speckled with white.....	<i>S. formosus</i> 166
B	Tail not barred	
3	Throat white, finely speckled.....	<i>S. chocolatinus</i> 163
4	Throat buff, unspotted.....	<i>S. longicaudatus</i> 162
5	Throat ferruginous or chestnut	
a	Chestnut restricted to throat.....	<i>S. badeigularis</i> 161
b	Ferruginous extending to breast and flanks.....	<i>S. caudatus</i> 160

MUSEUM DIAGNOSIS. Upperparts browner than *pallidior*; underparts of the fulvous form darker.
Young. Upperparts warm rufous-brown without marks; underparts greyish olive in the white phase, golden brown in the fulvous phase. Postjuvinal moult of body, wing-coverts and ? wings.

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	57-65	13-15	23-25 (SA, BB, HW, Kinnear)	17-23 mm

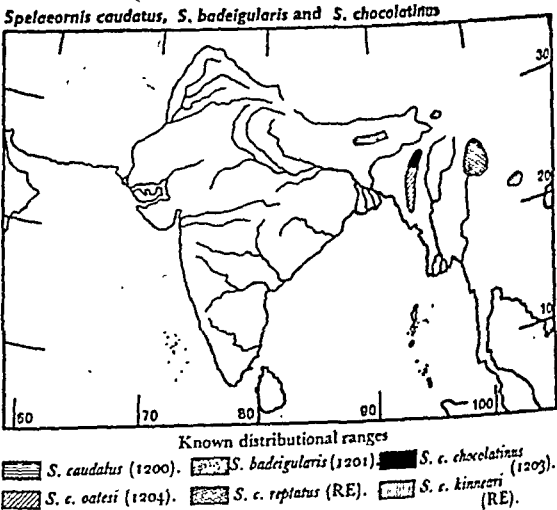
No significant difference of size in the sexes.
Weight 4 ♂ 21-23; 1 ♀ 20 g (SDR, SA). 10 ♂ ♀ 17-24 (av. 20.9) g—SA, BB.
COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible horny brown, lower brownish flesh excepting tip which is horny brown. Legs, feet and claws horny brown or brownish flesh.

1199. Brown Wren-Babbler. *Phoenyga pusilla pusilla* Hodgson
Phoenyga pusillus Hodgson, 1845, Proc. Zool. Soc. London, pt. 13: 25 (Nepal)
Phoenyga pusilla pygmaea Koelz, 1952, Jour. Zool. Soc. India 4: 40 (Karong, Manipur)
Baker, FBI No. 472, Vol. 1: 459
Plate 75, fig. 3

LOCAL NAME. *Inrui-ba gadeba* (Kacha Naga).
SIZE. Sparrow —; length c. 9 cm (3½ in.).
FIELD CHARACTERS. An exact miniature of the Scalybreasted Wren-Babbler (1198, q.v.) with the same colour dimorphism.
STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, common. From central Nepal east through Sikkim, northern West Bengal, Bhutan, NEFA, Assam in the Khasi and Cachar hills, Nagaland, and East Pakistan in the Chittagong Hill Tracts. In the Himalayas breeds in a lower zone than 1198, mostly between 1500 and 3000 m (optimum 2100-2500 m), overlapping the lower range of *albiventer* at its upper limit; in Assam it breeds from c. 1000 m up. Descends in winter to the foothills and extends into the plains; it has however been recorded as high as 3500 m in the cold season. Inhabits the same biotope as *albiventer*: wet evergreen forest with mossy boulders, fallen logs and decaying vegetation and ground nettles — particularly in the vicinity of streams.
EXTRALIMITAL. Ranges east to North Vietnam and Fukien. Other subspecies in Formosa, Central Vietnam, Malay Peninsula, Sunda Islands.
GENERAL HABITS. Similar to those of the Scalybreasted Wren-Babbler (1198). Terrestrial, solitary in winter, skulking, restless and inquisitive; has a maddening habit of appearing almost under one's feet, then dashing into dense cover, seldom flying more than a metre or two. Scuttles away mouse-like, through the tangled undergrowth when pressed, hopping from stem to stem but so lightly that hardly a leaf stirs to betray its progress. Has the same restless acrobatic habits as *Tesia*. Flicks its wings frequently and nervously like a leaf-warbler.
FOOD. Insects.

1200. Tailed Wren-Babbler. *Spelaeornis caudatus* (Blyth)
Tesia caudata Blyth, 1845, Jour. Asiat. Soc. Bengal 14: 588 (Darjeeling)
Baker, FBI No. 470, Vol. 1: 456
Plate 75, fig. 4

LOCAL NAMES. None recorded.
SIZE. Sparrow —; length c. 9 cm (4 in.).
FIELD CHARACTERS. *Above*, dark brown with a scaly appearance. *Below*, throat, breast and flanks ferruginous, spotted with black on latter two. Belly slaty, spotted with white. Sexes alike. Distinguished from other wrens by its ferruginous throat.
STATUS, DISTRIBUTION AND HABITAT. An endemic species. Scarce, resident. East Nepal (Ilam district), Sikkim, Darjeeling district, Bhutan. Appears



to breed above 2400 m. Recorded in winter at 3100 and 1800 m. Affects damp undergrowth in thick forest.
GENERAL HABITS. Typically wren-like. Terrestrial, solitary, restless, very elusive and silent.
FOOD. Insects.
VOICE AND CALLS. Has a higher-pitched *tsit* than either *Tesia* or *P. albiventer* (Fleming). Alarm-note, a low quiet *birrk birrk birrk* uttered for rather lengthy periods when disturbed (Ludlow). Song unrecorded.
BREEDING. Little known; published records not entirely reliable. Nest, described as egg-shaped, made of leaves, fine twigs, bracken and grass,

BABBLERS

161

lined with vegetable down or other matter looking like papier-mâché of earthy brown colour (Masson). Other nests are described as a dense mass of moss, cup-shaped and placed about the roots of trees or in a hole in fallen logs (Hodgson). Eggs, 3 or 4, like those of *S. longicaudatus*. Average size of 14 eggs (whether of this species?) 18.1 × 14.1 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Species.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	46-47	11	—	32 mm
♀♀	45-49	11-12	18	27-35 mm
			(SDR, Ludlow)	

Weight 1 ♂ 12; 1 ♀ 10 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill blackish. Legs and feet brown.

1201. Mishmi Wren-Babbler. *Spelaornis badrigularis* Ripley

Spelaornis badrigularis Ripley, 1948, Proc. Biol. Soc. Washington 61: 103

(Dreyi, Mishmi Hills, N.E. Assam)¹

Not in Baker, FBI

Plate 75, fig. 8

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (4 in.).

FIELD CHARACTERS. Above, dark brown with a scaly appearance. Below, chin whitish, throat chestnut finely streaked; breast, belly and flanks olive-brown conspicuously spotted with white. Distinguished from *caudatus* in having the chestnut restricted to the throat. (For colour plate see JBNHS 48: 1.)

STATUS, DISTRIBUTION AND HABITAT. Known only from the type: Dreyi, Mishmi Hills (NEFA), c. 1600 m, (see map, p. 160). Affects subtropical wet forest (in winter).

GENERAL HABITS. Presumably those of *caudatus*. Shy and skulking.

FOOD. Insects.

VOICE AND CALLS. Unrecorded.

BREEDING. Unrecorded.

MUSEUM DIAGNOSIS. Above, bistre (sooty brown), each feather with a dark area in the centre bordering the shaft approaching clove-brown in tone; tail seal-brown. Wing-feathers chocolate on the outer, seal-brown on the inner webs. Below, throat chestnut, each feather with a narrow sepia-coloured centre. Breast-feathers bistre with a black terminal and a white subterminal bar. Feathers of abdomen more greyish than breast, white subterminal bars enlarged, black terminal bars much

¹ A re-examination of the unique type of *Spelaornis badrigularis* and comparison with freshly collected *Spelaornis caudatus* from Bhutan confirms the separation of *badrigularis* as a species. The differences still appear strongly marked. The white chin, the dark chestnut feathers with darker-streaked centres of the throat and upper breast, and the extensive area all over the lower breast, abdomen, flanks and vent of the subterminal white-tipped bistre feathers, give an entirely different appearance to this bird. The upperparts are on the other hand roughly similar.

An added point of difference which I (SDR) had not noted in my original description is the stouter tarsus of *badrigularis*. The type measures 20 mm in tarsal length but also appears thicker and stronger. Three specimens of *caudatus* measure 17-18 mm, a small difference on paper, but appearing significant when these tiny birds are in the hand.

BABBLERS

163

of moss and ferns. Eggs, normally 4, white, rarely with a faint tinge of cream or pink, marked with spots or small blotches of reddish pink to reddish brown, usually scattered over the whole surface, sometimes forming a zone at the large end. Average size of 50 eggs 18.4 × 19.4 mm (all notes on breeding by Baker).

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters.

Young, like adult but uniform rufous-brown above; the ferruginous feathers of the breast with paler streaks.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	49-60	c. 12	19-20	45-48 mm
			(Baker)	

COLOURS OF BARE PARTS. Iris red (adult), brown (young). Bill dark brown to blackish. Legs and feet light brown.

SPELAORNIS CHOCOLATINUS (Godwin-Austen & Walden)

Key to the Subspecies

Sides of neck and body brown, less rufous.....*S. c. chokolatinus*

Sides of neck and body more rufous-brown.....*S. c. oateri*

1203. Streaked Longtailed Wren-Babbler. *Spelaornis chokolatinus*

chokolatinus (Godwin-Austen & Walden)

Procygna chokolatinus Godwin-Austen & Walden, 1875, Ibis: 252 (Kedimai, Manipur)

Elachura haplota Baker, 1892, Ibis: 62 (Hangrum, N. Cachar)

Spelaornis chokolatinus nagaensis Ripley, 1951, Postilla, Yale Peabody Mus., No. 6:

4 (Mount Japvo, Naga Hills)

Baker, FBI Nos. 463 and 465, Vol. 1: 450 and 453

Plate 75, fig. 7

LOCAL NAME. *Tinglin-nā-gadeba* (Kacha Naga).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Male. Above, dark brown with a scaly appearance. Below, chin white, throat white finely speckled, the white extending to centre of belly. Sides of neck and flanks olive-brown washed with ochraceous and spotted with white and dark brown.

Female similar to male but more rufescent above and below.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. Assam in north Cachar (Barail Range) east to the Naga Hills and south to Kedimai in Manipur, (see map, p. 160). From 1200 m (winter) to at least 2400 m (summer); vertical movements if any, unknown. Affects deep evergreen forest with undergrowth of bracken, ferns or *Strobilanthus*, on steep hillsides broken with rocks and huge boulders covered with rich vegetation and green moss.

GENERAL HABITS. Resemble those of *Procygna purilla* (1199). Very active and restless, quick on legs but slow and feeble in flight. Not so exclusively a ground bird as *P. albicenter*, being often seen hopping here and there one or two feet above the ground.

FOOD. Ants, small beetles and other insects.

162

TIMALIINAE

reduced. Along the shaft of breast-feathers runs a narrow white stripe margined on the external side of the web with black.

MEASUREMENTS

1 ♀ (type) Wing 48; bill 11; tarsus 20; tail 31 mm.

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs brown.

1202. Longtailed Wren-Babbler. *Spelaornis longicaudatus* (Moore)

Procygna longicaudata Moore, 1854, in Horsfield & Moore, Cat. Birds Mus. E.

I. Co. 1: 398 (Afghanistan ~~error~~ = Khasi Hills, Assam)

Baker, FBI No. 464, Vol. 1: 452

Plate 75, fig. 13

LOCAL NAME. *Tinglin-rui* (Kacha Naga).

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. Above, brown with a scaly appearance, paler than in other wren-babblers; a very small pale streak above the eye, and ear-coverts grey-brown. Below, ochraceous-buff with a whitish chin and white centre of belly. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. An endemic species. Scarce resident, more abundant in the Khasi Hills, Assam in the Khasi and Cachar hills, and Manipur, from c. 1000 to 2000 m.¹ Affects deep evergreen forest mainly of oak and rhododendron with ample undergrowth, keeping to ravines or steep hillsides with rock and boulder outcrops covered with moss, ferns and orchids.

GENERAL HABITS. Terrestrial, solitary or in pairs. Creeps and climbs about boulders in typical wren fashion. Very reluctant to fly; when disturbed seeks safety by scurrying away on foot or dodging into crevices and holes between boulders.

FOOD. Insects.

VOICE AND CALLS. On the whole very silent; has a loud, clear whistle much like that of *Procygna* and a soft, chirring alarm-note given for some minutes after being disturbed (Baker). Song unrecorded.

BREEDING. Season, April to June. Nest, domed or egg-shaped, occasionally a very deep cup when shelter is afforded by natural protection. The outer part is made almost entirely of dead leaves, rather loosely put together and mixed with a few roots and scraps of grass; these materials are dark in colour, decayed and almost soaked through. Inside is built a compact structure of rootlets, leaves and grass; finally comes the lining which distinguishes the nest at a glance from all others: a texture of soft fibrous material, skeleton leaves or other vegetable matter about 3 to 6 mm thick, having the aspect of papier-mâché covering the bottom and the greater part of the sides. This layer is apparently placed in position when in the form of pulp which hardens and makes a damp-proof lining. The nest is placed on the ground or among boulders in luxuriant undergrowth

¹ R. L. Fleming reports a specimen collected in eastern Nepal in March, JBNHS 65: 331.

164

TIMALIINAE

VOICE AND CALLS. A loud, melodic, explosive whistle *wheww* (SDR) [needs confirming]; alarm-note, a constantly uttered soft *chir* (Baker). For renderings of song see 1204.

BREEDING. Season, the only nest ever found was in May (Baker). Nest, a deep cup with the back wall much prolonged though not enough to form a roof, measuring about 8 cm across; diameter of cup 5 cm, depth 3 cm. The greater part of material consisted of skeleton leaves bound together with dark, coarse fern roots, a few bents and some fine elastic twigs; the inner part was compactly lined with skeleton leaves alone. (This nest may not be typical; see 1204, Breeding.) It was built under a big fallen log, on a pile of dead leaves, broken twigs and branches. Eggs, 3, white with very pale reddish marks especially near the broad end. Measurements: 17 × 13.2, 17.2 × 13, 17.4 × 13.1 mm (Baker). See also 1204, Breeding.

MUSEUM DIAGNOSIS. See Key to the Species. Differs from *oateri* (1204) in being more greyish brown about the head, the spots and terminal edgings on the feathers of the lower parts being strikingly different, much finer and more delicate in pattern and form.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂♂	48-52	13-14	18	40-44 mm
1 ♀	48	13	—	41 mm
Weight 5 ♂♂ 10-14; 1 ♀ 14 g.				(SDR)

COLOURS OF BARE PARTS. Iris light red. Bill dark brown, paler on tip; gape black, mouth bluish fleshy. Legs and feet fleshy.

1204. Chin Hills Longtailed Wren-Babbler. *Spelaornis chokolatinus*

oateri (Rippon)

Uracible oateri Rippon, 1904, Bull. Brit. Orn. Cl. 14: 83 (Mount Victoria)

Baker, FBI No. 469, Vol. 1: 455

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1203.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. Assam in the Mizo (Lushai) Hills, from 1300 m up (1400 to 2800 m on Mount Victoria, optimum zone 2000-2500 m). (See map, p. 160.) Affects thick low, often thorny bushes and dwarf bamboo, especially at the edge of evergreen forest and in clearings.

Extralimital. The Chin Hills of Burma; the species is found in northeastern Burma and southwestern Szechuan, with an isolated population in north-western Vietnam.

GENERAL HABITS AND FOOD. As in 1203.

VOICE AND CALLS. Song, a loud warbling strophe of mostly three, often two syllables repeated quickly many times: *tiki-tiki* or just *tiki* with accent on the last note. Also a quick and sharp *tiki-tiki-tiki-tiki* (Heinrich).

BABBLERS

163

It has also been described as a rattling song of four or five notes similar to that of *Troglodytes*. While singing, the bird puffs out the head- and breast-feathers and jerks itself up and down in a remarkable way. Other call-notes as in 1203.

BREEDING. Starts, April to June. Nest, domed, oval-shaped, composed of an outer layer of dead leaves, coarse grass etc., and an inner layer of grass stems, fibres and a little moss and a peculiar waterproof lining about 3 mm thick of a papier-mâché-like substance, apparently made of vegetable stuff worked into a pulp and spread over the interior. Size of nest: exterior height c. 15 cm, width 10 to 12 cm; entrance near the top, about 5 by 4 cm; interior dimensions c. 5 cm each way; depth of cup from entrance c. 2.5 cm. Placed on the ground under dense undergrowth or among dead leaves between standing stems. Eggs, normally 3, white with a tinge of pink, speckled with reddish and faint purple. Average size of 20 eggs, 18.1 × 14.6 mm (Baker).

MUSEUM DIAGNOSIS. Much like the nominate race (1203) above, but chin, throat, middle of breast and belly white with black tips; sides of neck and of body brown, less rufous, with dark tips and subterminal white streaks.

MEASUREMENTS

Wing 10 ♂ 47-52; 5 ♀ 47-52 mm (Heinrich).

COLOURS OF BARE PARTS. As in 1203.

1205. Spotted Longtailed Wren-Babbler. *Spelaeornis troglodytrides* *sherriffi* Kinnear

Spelaeornis sherriffi Kinnear, 1934, Bull. Brit. Orn. Cl. 54: 107 (Donga La, between Lingtee and Trashi Yangtse, East Bhutan, 10,500 ft)

Not in Baker, FBI

Plate 75, fig. 10

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Adult. Above, umber-brown spotted with black and white; tail and wings narrowly barred. A white mark behind the eyes very conspicuous. Below, throat and breast white, this colour extending on to the belly; sides of neck and flanks tawny olive. Sexes alike.

Young, much darker than adult, blackish brown above, back barred as wings and tail, not speckled; throat whitish, breast and belly buff.

STATUS, DISTRIBUTION and HABITAT. Rare resident. Within our limits only recorded from eastern Bhutan (Ludlow) between 3000 and 3300 m in summer. Affects undergrowth and bamboo in wet temperate forest.

Extremities. The species ranges from northeastern Burma through Szechuan to Shensi.

GENERAL HABITS. More arboreal than most wren-babblers; clammers about on bamboo stems and mossy tree-trunks though not to any great height from the ground. Tame and rather less restless in its movements.

FOOD. Insects.

VOICE and CALLS. A low song of four or five notes. Call, a subdued deep. Alarm, a faint chirp (Stanford).

BREEDING. Unknown.

BABBLERS

167

Genus SPHENOCICHLA Godwin-Austen & Walden

Sphenocichla Godwin-Austen & Walden, 1875, Ibis: 250. Type, by monotypy,

Sphenocichla roberti Godwin-Austen & Walden

Stout and rather squat birds of heavy build and large, powerful legs and feet. Bill conical, sharp-pointed, about the length of the head or a little shorter. No ritual bristles. Wing short and rounded. Tail of twelve feathers, greatly graduated. One species.

SPHENOCICHLA HUMERI (Mandelli)

Key to the Subspecies

Feathers of throat and breast black with pale shafts... *S. h. hueri*
Feathers of throat and breast ashy brown with black margins and white submargins... *S. h. roberti*

1207. Sikkim Wedgebilled Wren. *Sphenocichla hueri hueri* (Mandelli)

Heteropogon hueri Mandelli, 1873, Stray Feathers 1: 415 (Sikkim)

Baker, FBI No. 473, Vol. 1: 461

Plate 75, fig. 14

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. A stout, heavy-looking bird with powerful legs and feet, and a pointed, conical bill. Above, very dark brown, crown and upper back mottled with golden brown and with fine white shaft-streaks especially conspicuous on forehead; lower back, tail and wings finely barred. A conspicuous pale stripe behind the eye breaking up into spots on the sides of neck. Below, throat and breast dark brown with fine shaft-streaks; centre of belly pale grey; posterior flanks and

x c. 1

lower belly mottled with golden brown. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Very rare resident. Sikkim (not recorded since 1875), NEFA in the Aka Hills, Balipara Frontier Tract (a winter record at 1200 m) and the Mahuni Hills (not recorded since 1879). Probably breeds at high altitudes, moving down in winter. Biotope undescribed (but see 1205).

GENERAL HABITS, FOOD and VOICES. As in 1203.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	70-74	22-24	26-27	64-71 mm (Baker)
		(from skull)		
1 ♂	72	25	25	66 mm (Dodd)

TIMALIINAE

165

MUSEUM DIAGNOSIS. See Key to the Species; for details of plumage (and coloured plate) Ludlow & Kinnear, Ibis 1937: 252.

MEASUREMENTS

Wing 3 ♂ 47-51; 2 ♀ 47 mm (Kinnear).

COLOURS OF BARE PARTS. Iris red-brown. Bill: upper mandible horny black, lower pale fleshy. Legs and feet horny brown.

1206. Spotted Short-tailed Wren-Babbler. *Spelaeornis formosus* (Walden)

Troglodytes formosus Walden, 1874, Ibis: 91 (Darjeeling)

Baker, FBI No. 462, Vol. 1: 449

Plate 75, fig. 6

LOCAL NAME. Mandi-pho (Lepcha).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Above, head, back and wing-coverts olive-brown speckled with white; rump, wings and tail chestnut brown barred with black. Below, cinnamon, densely spotted with white on throat and breast, speckled with black on belly. Sexes alike.



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STATUS, DISTRIBUTION and HABITAT. Rare resident, subject to vertical movements. Sikkim, Darjeeling, Bhutan and NEFA east to at least the Dafia Hills, also Assam in the Khasi and Mizo hills, Nagaland, Manipur (Koels collection) and East Pakistan in the northeastern hill tracts. Affects dark rhododendron forest with thick fern ground-cover, mossy rocks and decaying trunks of fallen trees, and brushwood, at high altitude (a March record at 2300 m in Sikkim). Obtained in winter at 1200 m (Dafia Hills and Bhutan) in long grass and scrub.

Extremities. Western Burma (Mount Victoria), southeastern Yunnan and northwestern Fukien. Monotypic.

GENERAL HABITS. Little known. Much as in other wren-babblers.

FOOD. Insects.

VOICE and CALLS. A note resembling that of *P. frontalis* but sharper (Ludlow); a squeaky *seck*... *sick* almost identical with that of *P. alticola* (SA).

BREEDING. Not authentically recorded. Four fully fledged young collected in Khasi Hills on 10 May (Koels). Nests reported to belong to this species were described as deep semi-domed cups of leaves, dead grass, roots, etc., densely lined with feathers and placed on the ground on a bank, half hidden in fallen rubbish or well concealed by undergrowth (Mason in FBI). The 3 or 4 eggs are white with a few reddish brown specks. Size, c. 16.5 × 12.5 mm.

MUSEUM DIAGNOSIS. See Key to the Species.

Young (immature). Similar to adult but much darker, almost blackish brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
1 ♂	46	14	18	30 mm
1 ♀	45	14	18	25 mm

COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet horn brown.

TIMALIINAE

163

COLOURS OF BARE PARTS. Iris dark brown. Bill slate, darker on culmen. Legs and feet dark brown.

1208. Cachar Wedgebilled Wren. *Sphenocichla hueri roberti* Godwin-Austen & Walden

Sphenocichla roberti Godwin-Austen & Walden, 1875, Ibis: 251

(Hemes Peak, North Cachar hills)

Baker, FBI No. 474, Vol. 1: 461

LOCAL NAME. *Tingli-mi-gada* (= 'bird which runs up trees' — Kacha Naga).

SIZE. Bulbul —; length c. 17 cm (7 in.).

FIELD CHARACTERS. As in 1207, but throat, breast and upper belly ashy brown edged with black and inside this evenly bordered with white.

STATUS, DISTRIBUTION and HABITAT. Rare resident. Nagaland, Manipur, and Assam in the Cachar Hills and in the Margherita area, from 1500 to 2300 m and probably higher, descending to 900 m in winter. Affects evergreen forest with large trees, and bamboo on the edge of dense jungle.

Extremities. Northern Burma.

GENERAL HABITS. Little known. Goes about in parties of 10 and 15 affecting secondary jungle by preference (Hume). More a tree creeper than a wren in its habits. A very active climber about the rough bark of bigger trees, though not on the higher branches; also hunts in undergrowth as other babblers do. Flies well with a quick flight from tree to tree or bush to bush, but seems to prefer legs to wings as means of progression.

FOOD. Insects, mostly wood-lice and small boring beetles.

VOICE and CALLS. Unrecorded.

BREEDING. Starts, May and June. The only nest described was a pad of moss on top of a mass of fine grasses and a few tendrils with no other lining than the soft moss. It was wedged behind a long hanging slip of bark on a very high tree, about six metres from the ground. It contained four eggs which measured 20.7 × 17 to 22.3 × 17.4 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	71-74	25	26-27	58-64 mm (Baker)

COLOURS OF BARE PARTS. Iris rich brown or dark crimson. Bill pale bluish slaty, base of maxilla and culmen darker. Legs dark brown, claws and soles pale slaty.

Genus STACHYRIS Hodgson

Stachyris Hodgson, in Elyth, 1844, Jour. Asiat. Soc. Bengal 13: 378. Type, by original designation, *Stachyris nipalensis* Hodgson

Stachyridopsis Sharpe, 1883, Cat. Bds. Brit. Mus. 7: 596-7. Type, by original designation, *Stachyris nipalensis* Elyth

Thirapetia Oates, 1883, Fauna Brit. Ind., Bds. 1: 155. Type, by original designation, *Thirapetia patens* Elyth

Characterized by an operculum covering the nostrils. Plumage variable; bill stout to thin.

BABBLERS

169

Key to the Species

		Page
I	Tail narrowly barred..... <i>S. oglei</i>	177
II	Tail not barred	
A	Underparts bright yellow..... <i>S. chrysaea</i>	172
B	Underparts not bright yellow	
1	Crown striped blackish and white..... <i>S. nigriceps</i>	174
2	Crown not striped with white	
a	Chin black..... <i>S. pyrrhops</i>	171
b	Chin not black, crown rufous	
i	Chin white..... <i>S. rufifrons</i>	169
ii	Chin yellowish..... <i>S. ruficeps</i>	170

1209. Assam Redfronted Babbler. *Stachyris rufifrons ambigua* (Harington)

Stachyridopsis rufifrons ambigua Harington, 1915, JBNHS 23: 631
(Gunjong, north Cachar)
Baker, FBI No. 280, Vol. 1: 270
Plate 74, fig. 1

LOCAL NAME. Deo-fer-ge-joo (Cachar).

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. Very similar to *S. ruficeps* (1210). Distinguished from it by white chin, ochraceous throat and whitish belly (v. all pale yellow in *ruficeps*). Flanks and lower belly washed with ochraceous. Black streaks on chin and throat hardly discernible in the field. Rufous of crown not sharply defined from rest of upper plumage which is olive-brown tinged with rufous. A pale grey supercilium. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. The foothills of Sikkim, Bhutan, NEFA to the head of Assam Valley, sparingly in the plains, Assam, Nagaland, Manipur and East Pakistan in the north-eastern and Chittagong hill tracts; from the edge of the plains up to c. 900 m. Also the northern Eastern Ghats (Sankrametta) between 1000 and 1200 m. Occupies a lower zone than *S. ruficeps*. Affects dense undergrowth, thick forest in ravines, jungle with grass in open forest, light deciduous or semi-evergreen forest, and bamboo or scrub jungle.

EXTRALIMITAL. The species ranges east to N. Vietnam and Laos and south through the Malay peninsula, Sumatra and Borneo.

GENERAL HABITS. In pairs during the breeding season, otherwise in small restless foraging parties often in mixed company with other babblers, creeping through undergrowth and also the crowns of bamboo clumps and medium-sized trees. Often catches insects on the wing.

FOOD. Insects; occasionally berries.

VOICE AND CALLS. Mellow musical iora-like 4-noted whistles, *whi-whi-whi-whi*, and conversational chittering as in 1210 (SA). The song consists of six to seven notes on a monotone with a pause after the first note and the rest uttered rapidly (Smythies).

BREEDING. Season, April to July. Nest, domed or sometimes semi-domed or deep cup-shaped, made chiefly of bamboo leaves, occasionally of grasses

BABBLERS

171

GENERAL HABITS. In pairs in the breeding season, otherwise in small foraging parties often in mixed company of other small babblers etc. keeping to low undergrowth. Actions rather tit-like.

FOOD. Insects; occasionally berries.

VOICE AND CALLS. A low conversational chittering reminiscent of *Dumetia hyperythra* as the birds move about; also a low soft 4-noted whistle indistinguishable from that of 1209 (SA). Song, very similar to that of *S. chrysaea* but a tone lower and without pause between the first and the following notes (Heinrich).

BREEDING. Season, April to July. Nest, either domed or deep cup-shaped, made chiefly of bamboo leaves with grassy fibres and other dead leaves, lined with very fine grass stems. On the whole better made and more compact than that of *S. chrysaea*. Placed in low bushes or bamboo clumps within one metre from the ground, sometimes on the ground. Eggs, normally 4, white, marked with small spots and blotches of brown or reddish brown, generally more numerous at the large end. Average size of 50 eggs 15.8 × 12.6 mm (Baker). Occasionally brood-parasitized by *Cuculus poliocephalus* (Baker, JBNHS 17: 685).

MUSEUM DIAGNOSIS. See Field Characters; for details of plumage Baker, loc. cit. Young, like adult rather less olive above; crown paler; faint rufous edges to wing. Primary and tail characters present; postjuvénal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	53-58	15-16	17-20	50-52 mm
1 ♀	54	—	—	—

(SDR, SA, Baker)

Weight 3 ♂♂ 10-12; 1 ♀ 10 g (SDR, SA). 16 ♂♀ (Oct.-Nov.) 8-12 (av. 10.2) g — SA.

COLOURS OF BARE PARTS. Iris red. Bill: upper mandible blackish or brownish, lower basally purple, distally grey, or, pearly horn to pinkish horn. Legs and feet brownish green, brownish yellow, greenish brown or yellowish grey (SDR).

1211. Blackchinned Babbler. *Stachyris pyrrhops* Blyth

Stachyris pyrrhops Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 379 (Nepal)
Stachyris pyrrhops ochreps Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 6
(Kotla, Kangra Dist., Punjab)
Baker, FBI No. 281, Vol. 1: 271
Plate 74, fig. 2

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length 10 cm (4 in.).

FIELD CHARACTERS. Above, olive-brown with a dull tawny olive head; lores black. Below, chin black, sides of head and breast ochraceous, belly buff, flanks tinged with olivaceous. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The Himalayas from Murree east to central Nepal. From 750 to 2400 m at all seasons, optimum breeding zone 1500-2000 m; occasionally descends in winter to 300 m. Affects light forest, scrub jungle, bamboo, small nullahs and hedgerows.

170

TIMALIINAE

alone, lined with rootlets. Placed upright between supporting twigs or on a bed of rubbish and leaves inside a clump of bamboo, usually within one metre from the ground, sometimes up to two metres, more rarely on the ground on banks. Deserted clearings are favourite nesting places. Eggs, 3 to 5, normally 4, undistinguishable from those of *S. ruficeps*. Average size of 100 eggs 16.1 × 12.4 mm (Baker). Both sexes take part in incubation. Period undetermined. Occasionally brood-parasitized by *Cuculus sparveroides* and *C. fugax* (Baker, JBNHS 17: 368, 686).

MUSEUM DIAGNOSIS. See Field Characters; for details of plumage Baker, loc. cit. Specimens fox and fade rapidly so that old material in collections is valueless for comparison.

Young, like adult but edges of wings and tail more rusty; black shafts on throat barely visible; rufous cap less pronounced; underparts paler. Primary and tail characters present; postjuvénal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	50-56	13-15	17-22	43-51 mm (HW, SA)

Weight 2 ♂♂ 10, 10; 1 ♀ 9 g (SA).

COLOURS OF BARE PARTS. Iris brown to red. Bill dark grey or slaty blue. Legs and feet greenish yellow.

1210. Redheaded Babbler. *Stachyris ruficeps ruficeps* Blyth

Stachyris ruficeps Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 452 (Darjeeling)
Stachyris ruficeps ruficeps Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 6
(Kohima, Naga Hills)
Baker, FBI No. 277, Vol. 1: 268
Plate 74, fig. 5

LOCAL NAME. Syak-birang-pho (Lepcha).

SIZE. Sparrow —; length 12 cm (4½ in.).

FIELD CHARACTERS. Above, crown rufous-brown sharply defined from greyish olive back. Lores and orbital area pale yellowish. Below, chin and throat pale yellow finely streaked with black. Rest of underparts pale yellow tinged with olivaceous on flanks and lower belly. Sexes alike. For distinction from *S. rufifrons*, see 1209.

STATUS, DISTRIBUTION AND HABITAT. Common resident. From central Nepal (Sheopuri ridge, Smythies JBNHS 49: 514) east to the Mishmi Hills, the hills of Assam, Nagaland and Manipur; also Orissa (Simlipal Hills, Salim Ali, BNHS coll.). From c. 1000 to 2700 m (in winter to 600 m), optimum zone 1500-2400 m. Occupies a higher zone than *rufifrons* though overlapping at the lower altitudes. Affects thick secondary growth of bushes in clearings, heavy evergreen forest, bamboo jungle, nearly always in dense undergrowth.

EXTRALIMITAL. Northwestern Burma. The species ranges north to Szechuan, east to Anhwei, Formosa, south to Hainan and south-central Vietnam.

¹ Ripley's records from the Mishmi Hills (JBNHS 48: 25) pertain to *S. r. ruficeps*, not *rufifrons*.

172

TIMALIINAE

GENERAL HABITS. In the non-breeding season associates in small flocks of 8 to 10 birds occasionally with the mixed itinerant foraging parties, feeding mostly on the ground turning over fallen leaves in search of insects, or hopping about in the undergrowth, paying special attention to dead leaves. Rarely ascends trees as high as three or four metres. The birds pair off in March.

FOOD. Insects; occasionally berries.

VOICE AND CALLS. A soft chir. Alarm, a slow *pee-re-re*; some song phrases include *phir-dee-dee*, *chur-de-du* (Fleming). Song aptly likened to the ringing of a tiny bell (Proud); reminiscent also of an iora's calls — a soft mellow whistling *wit-wit-wit-wit* etc. repeated quickly 7 or 8 times (SA). Song period in Nepal end February till October (Proud).

BREEDING. Season, April to July. Nest, domed — a ball of grass or dead leaves loosely put together, lined with fibres or pine needles. Usually placed low down in scrub, occasionally as high as 1.5 m. Eggs, 3 or 4, white, lightly speckled and spotted, chiefly at the larger end with pinkish red or brick-red. Unmarked eggs are rare. Average size of 32 eggs 16.5 × 13 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	52-56	15-16	c. 18	48-52 mm
♀♀	50-54	15-16	—	45-51 mm (BB, Rand & Fleming)

Weight 5 ♂♂ c. 10-11.5; 4 ♀♀ c. 8-11 g (Dieselhorst).

COLOURS OF BARE PARTS. Iris ♂ crimson, ♀ red. Bill dark brown, lower mandible flesh-coloured. Legs, feet and claws pale brownish flesh.

STACHYRIS CHRYSAEA Blyth

Key to the Subspecies

Back yellowish olive, underparts bright chrome-yellow.....	.....<i>S. c. chrysaea</i>
Back greyish olive, underparts dull orange-yellow.....	.....<i>S. c. binghami</i>

1212. Nepal Goldenheaded Babbler. *Stachyris chrysaea chrysaea* Blyth

Stachyris chrysaea Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 379 (Nepal)
Stachyris chrysaea chrysaea Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 5
(Karong, Manipur)
Baker, FBI No. 273, Vol. 1: 265
Plate 74, fig. 3

LOCAL NAMES. Syak-birang-pho (Lepcha); Pre-lin-ne or Pre-ma-ra (Mishmi).

SIZE. Sparrow —; length 10 cm (4 in.).

FIELD CHARACTERS. Above, forehead, crown and nape golden yellow, the last two streaked with black; lores and a short moustachial stripe black. Back and ear-coverts yellowish olive. Below, bright yellow. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. From west central Nepal (Pokhara, Proud, JBNHS 53: 58, the only post-Hodgsonian record) east through Sikkim, Bhutan, NEFA to the Mishmi Hills, the hills of Assam south to the range of *binghami*, Nagaland and Manipur.

In the Himalayas from 1200 to 2600 m, optimum zone 1500-2000 m; in Assam from 900 to 1800 m, and in Lakhimpur down to 300 m. Affects dense bushes, bamboo and seedling undergrowth and *Rubus* thickets in humid secondary jungle and evergreen forest, deserted cultivation and clearings.

Extralimital. Northern Burma to western Yunnan. The species ranges east to Vietnam and south to the Malay peninsula and western Sumatra.

GENERAL HABITS. An active and restless species found in mixed parties of babblers, flycatchers, and warblers, slipping through bamboo and undergrowth, as well as up in the foliage canopy of trees though seldom ascending very high; clinging to sprigs and peering under leaves in search of insects like a tit. The flocks work feverishly, and sweep on rapidly from tree to tree. Shy but very inquisitive, hopping ceaselessly in tangled undergrowth around 'frozen' observer with the restlessness of a flycatcher, tail cocked and wings drooping at the sides.

FOOD. Insects; occasionally berries.

VOICE AND CALLS. Members of a party keep up a constant, soft, low twittering which rises to shriller and louder notes — *chirik-chirik*, etc. if the birds become agitated or suspicious. The song consists of seven or eight notes on the same tone *pee pi-pi-pi-pi-pi* very like the song of *S. ruficeps* (1210) but with a noticeable pause after the first note; another song consists of three sibilant notes rising in pitch *tzu-tzu-tzu*, somewhat like the song of Franklin's Wren-Warbler (*Smythies*).

BREEDING. *Season*, April to July. *Nest*, normally domed, made of bamboo leaves with an inner cup or lining of rootlets, measuring about 10 to 15 cm in height by 7 to 10 cm in width. Placed in bamboo clumps about 30 to 60 cm from the ground, often buried in fallen leaves, or on the ground, well screened by sheltering bushes and weeds, almost always on a bank. *Eggs*, 4, white, rarely spotted with reddish brown. Average size of 70 eggs 15.4 × 12.2 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies; for details of plumage, Baker, loc. cit.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	47-56	13-14	17-19	40-50 mm (SDR, SA)

Weight 7 ♂ 6-10; 1 ♀ 7 g (SDR, SA, BB).

COLOURS OF BARE PARTS. Iris light brown. Bill dark slaty horn above, paler below. Legs and feet pale yellowish brown to greenish brown.

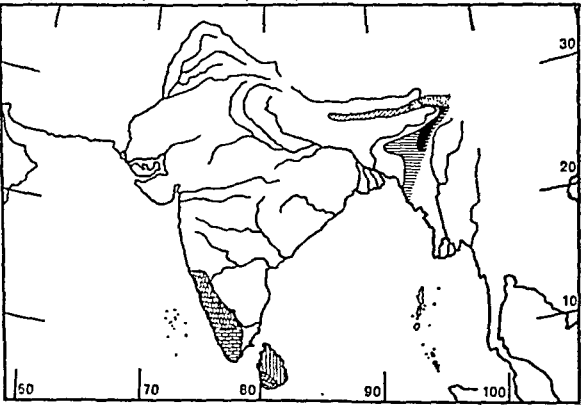
1213. Chin Hills Goldenheaded Babbler. *Stachyris chrysaea binghami* Rippon

Stachyris binghami Rippon, 1904, Bull. Brit. Orn. Cl. 14: 84
(Mount Victoria, Chin Hills)

Stachyris chrysaea crocina Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 6
(Sangau, Lushai Hills)
Baker, FBI No. 274, Vol. 1: 266

LOCAL NAMES. None recorded.

Rhopocichla atriceps and *Stachyris nigriceps*



R. a. atriceps (1224). *R. a. bourdilloni* (1225). *R. a. siccalus* (1226).
R. a. nigricans (1227). *S. n. nigriceps* (1214). *S. n. coei* (1215).
S. n. coltarti (1217). *S. n. spadix* (1216).

VOICE AND CALLS. Alarm, an explosive *chhrri* repeated several times; call-note, a repeated, loud, insistent *tuwe-twa* (rising-low) (Lister). Song, a peculiar single note followed by a trill which sounds like a small bell rung faster and faster, then stopping abruptly (Proud). A low, sweet, rather mournful whistle (SA).

BREEDING. *Season*, chiefly April to July. *Nest*, domed, outwardly made of bamboo leaves very loosely put together, interiorly built of rootlets, moss, a few dead leaves and fern fronds, lined with finer moss and fern roots. Nearly always placed on the ground, generally on a bank and well concealed in shrubs, grass or fallen debris; rarely in a bamboo clump or a bush up to 60 cm. *Eggs*, 4, rarely 5 or 3, white. Average size of 50 eggs 18.8 × 14.4 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *coei* in being paler and having the throat feathers edged with white.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	52-62	17-19	21-22	50-56 mm
♀ ♀	56-63	17-18	21-22	47-51 mm

(BB, SDR, SA, Rand & Fleming)

Weight 10 ♂ 14-17; 7 ♀ 10-17 g (GD, BB).

COLOURS OF BARE PARTS. Iris pinkish biscuit colour, orange-brown or reddish brown. Bill: upper mandible horny brown, lower pale flesh, darker in summer.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1212.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Assam in the Mizo Hills south to the hills of East Pakistan, from 1200 m up. Habitat as in 1212.

Extralimital. The Chin Hills and Arakan in Burma.

GENERAL HABITS, FOOD AND VOICE. As in 1212.

BREEDING. As in 1212.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1212.

STACHYRIS NIGRICEPS Blyth

Key to the Subspecies

	Page
A Throat feathers edged with white..... <i>S. n. nigriceps</i>	174
B Throat feathers not edged with white	
a Ear-coverts rufous-brown..... <i>S. n. coltarti</i>	177
b Ear-coverts brown	
1 Darker; ear-coverts seal-brown..... <i>S. n. coei</i>	176
2 Paler; ear-coverts burnt umber..... <i>S. n. spadix</i>	176

1214. Blackthroated Babbler. *Stachyris nigriceps nigriceps* Blyth

Stachyris nigriceps Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 378 (Nepal)
Baker, FBI No. 270, Vol. 1: 264
Plate 74, fig. 9

LOCAL NAMES. *Moostay* (Paharia); *Sangriam-pho* (Lepcha).

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. *Above*, crown blackish striped with white; a black supercilium extending to nape; rest of upperparts olive-brown. *Below*, chin and throat slate-grey bordered by white malar stripes; rest of underparts fulvous tinged with olivaceous on flanks and lower belly. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common resident. From central Nepal east through Sikkim, Bhutan and NEFA to the Miri Hills where it intergrades with *coei*. From c. 760 to 1800 m, breeding mostly above 1000 m in the western parts of its range, but descending to the edge of the plains farther east. Affects secondary scrub and bamboo jungle in light or dense forest.

GENERAL HABITS. Keeps in parties of 5 to 20, commonly in association with other species of small babblers. Very active, incessantly on the move. When one bird flies to another thicker, the rest promptly follow in twos and threes. Frequents the lower growth. Pairs form in late March.

FOOD. Almost entirely insects; berries and nectar also taken.

Legs and feet olive-yellow (SA). *Or*: Iris dull brownish white or dull whitish yellow. Upper mandible dark brown to black, lower whitish to fleshy white. Legs dull yellow to dull greenish yellow (SDR).

1215. Mishmi Blackthroated Babbler. *Stachyris nigriceps coei* Ripley

Stachyris nigriceps coei Ripley, 1952, Postilla, Yale Peabody Mus., No. 14: 2
(Dreyi, Mishmi Hills)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. As in 1214.

STATUS, DISTRIBUTION AND HABITAT. Resident. NEFA in the Mishmi Hills, from the edge of the plains to 1800 m. Affects undergrowth in wet evergreen forest.

GENERAL HABITS, FOOD AND VOICE. As in 1214, q.v.

BREEDING. As in 1214.

MUSEUM DIAGNOSIS. Intermediate between *nigriceps* and *spadix*. Differs from the former in being darker and having an unstreaked throat; from *spadix* in being darker with a more blackish throat and dark seal-brown ear-coverts; from *coltarti* in having dark brown rather than rufous-brown ear-coverts, and by being a purer less rufescent brown below.

MEASUREMENTS. As in 1214.

COLOURS OF BARE PARTS. Iris brown. Upper mandible black, lower greyish horn. Legs dull greenish yellow.

1216. Assam Blackthroated Babbler. *Stachyris nigriceps spadix* Ripley

Stachyris nigriceps spadix Ripley, 1948, Bull. Brit. Orn. Cl. 68: 89
(Laisung, north Cachar)

Stachyris nigriceps rarida Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 5
(Sangau, Lushai Hills)
Baker, FBI No. 271 (part), Vol. 1: 265

LOCAL NAME. *Dao-riaphong* (Cachari).

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. As in 1214.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Assam in the Garo, Khasi, Cachar and Mizo (Lushai) hills, and East Pakistan in the northeastern hills and the Chittagong region, from the edge of the plains to 1800 m. Affects undergrowth in evergreen forest.

Extralimital. Southern Burma south and east to northern Tenasserim; northwestern Thailand. The species ranges east to Vietnam and south to the Malay peninsula, Sumatra and Borneo.

GENERAL HABITS, FOOD AND VOICE. As in 1214.

BREEDING. *Season*, March to August. *Nest* and *eggs*, as in 1214. Average size of 200 eggs 19.1 × 14.7 mm (Baker). Female does most of the building; both birds incubate; incubation period about twelve days.

BABLERS 177

MUSEUM DIAGNOSIS. Differs from *cori* in being paler and having a more slate-grey throat.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in *nigricaps*.

1217. Nagaland Blackthroated Babbler. *Stachyris nigricaps colarti* Harington

Stachyris nigricaps colarti Harington, 1913, Bull. Brit. Orn. Cl. 33: 61 (Margherita, Assam)

Baker, FBI No. 271 (part), Vol. 1: 265

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. As in 1214.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Northeast Assam in the Margherita area, and Nagaland, from the edge of the plains to 1800 m. Affects bamboo and undergrowth in wet evergreen forest and thick scrub jungle.

Extralimital. Northern Burma.

GENERAL HABITS, FOOD AND VOICE. As in 1214.

BREEDING. As in 1214.

MUSEUM DIAGNOSIS. Differs from *spedix* in having the ear-coverts rufous-brown rather than brown; from *cori* by the same character and also by being a more rufescent brown below.

MEASUREMENTS. As in 1214.

Weight 3 ♂♂ 16–17 g (SDR).

COLOURS OF BARE PARTS. As in 1215.

1218. Austen's Spotted Babbler. *Stachyris oglei* (Godwin-Austen)

Actinura oglei Godwin-Austen, 1877, Jour. Asiat. Soc. Bengal 46: 42 (Sadiya, Assam)

Baker, FBI No. 268, Vol. 1: 262

Plate 74, fig. 8

LOCAL NAME. *Chum-pitti* (Trans-Dikku Naga).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. Above, crown and nape rich golden brown, back duller. Wings and tail narrowly barred. A conspicuous white supercilium from lores to nape, breaking up into spots on the sides of neck and bordered above by a black line from forehead to nape; ear-coverts black. Below, throat white, breast slate-grey; rest of underparts umber-brown. Sexes alike.

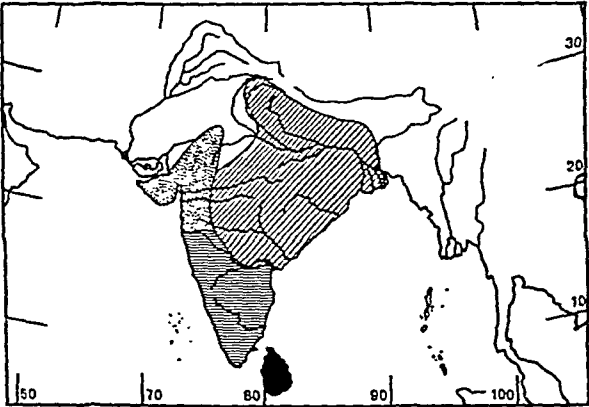
STATUS, DISTRIBUTION AND HABITAT. Rare resident with a very restricted range. Evidently confined to northeastern Assam in the Patkai Range near Margherita and the hills north of Sadiya. Nests were brought in from an altitude of 1800 m or higher. Appears to inhabit moist dense scrub in rocky ravines.

GENERAL HABITS. Very little known. According to native collectors, keeps much to the heaviest undergrowth, is silent, skulking and does not go about in flocks.

BABLERS 179

STATUS, DISTRIBUTION AND HABITAT. Common resident. Southern Rajasthan (Sambhar and Mount Abu), Saurashtra peninsula, eastern Gujarat,

Dumetia hyperythra



westernmost Satpuras, and the Western Ghats south to Poona (where it intergrades with *albogularis*) and east to about Kannad in Marathwada, c. 20°N., 75°E. Affects well-wooded country and scrub.

GENERAL HABITS, FOOD, VOICE AND CALLS. As in 1221, q.v.

BREEDING. Season, from the latter part of June when the rains have well set in, till September. Nest and eggs, as in 1221.

MUSEUM DIAGNOSIS. Differs from *albogularis* in having the whole crown chestnut and the underparts paler.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1221.

1221. Whitethroated Babbler. *Dumetia hyperythra albogularis* (Blyth)

M. (alabaricus) (?) *albogularis* Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 453 (southern India, restricted to Mysore by Baker, 1921, Handlist: 24)

Baker, FBI No. 230, Vol. 1: 229

LOCAL NAMES. *Stah dzwi* (Hindi); *Pandi-jitta* ('pig-bird' — Telugu); *Chima chilappan* (Malayalam).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. Above, olive-brown with a reddish brown cap. Below, throat white, rest of underparts ochraceous. Sexes alike.

178 TIMALIINAE

FOOD. Insects.

VOICE AND CALLS. Unrecorded.

BREEDING. Season, April to June. Nest (not seen *in situ* by any ornithologist), a large, globular structure made of bamboo leaves mixed with roots, twigs, dead leaves and a little moss. Said by the native collectors to be placed on the ground, under bushes in rocky ravines. Eggs, about 4, white. Average size of 15 eggs 22.8 × 17.1 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

	Wing	Bill (from feathers)	Tarsus	Tail (Baker)
♂ ♀	68–76	c. 17	c. 27	c. 53 mm
		(from skull)		(Baker)
1 ♀	63	20	26	53 mm
				(SDR)

COLOURS OF BARE PARTS. Iris crimson. Bill dark horny, paler below. Legs and feet brown (Coltart).

Genus DUMETIA Blyth

Dumetia Blyth, 1849, Cat. Bds. Mus. Asiat. Soc.: 140, 185. Type, by subsequent designation (G. R. Gray, 1855, Cat. Gen. Subgen. Bds. Brit. Mus.: 45), *Timalia hyperythra* Franklin

Similar to *Timalia*, also with stiff shafts to feathers of forehead and crown but bill slenderer and smaller.

DUMETIA HYPERYTHRA (Franklin)

Key to the Subspecies

	Page
A Throat concolorous with rest of underparts..... <i>D. h. hyperythra</i>	181
B Throat white	
1 Reddish-brown of head brighter and extending to crown..... <i>D. h. abuenis</i>	178
2 Reddish brown duller and more or less restricted to forehead	
a Darker below, bill more slender..... <i>D. h. albogularis</i>	179
b Paler below, bill heavier..... <i>D. h. philippii</i>	182

1219, 1220. Mount Abu Whitethroated Babbler. *Dumetia hyperythra abuenis* Harington

Dumetia albogularis abuenis Harington, 1915, Jour. Bombay nat. Hist. Soc. 23: 429 (Mount Abu)

Dumetia hyperythra nawarroi Abdulali, 1959, Jour. Bombay nat. Hist. Soc. 56: 333 (Khandala, Poona District, Western Ghats)

Baker, FBI No. 231, Vol. 1: 230

Plate 74, fig. 7

LOCAL NAME. *Karamadi laltido* (Gujarati).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As of 1221. See Museum Diagnosis.

180 TIMALIINAE

STATUS, DISTRIBUTION AND HABITAT. Common resident. Southern India south of the Krishna river and Mahabaleswar; intergrades with *hyperythra* in the Nallamalai range, with *abuenis* in the Poona district and with *philippii* in southern Kerala. From near sea level generally up to c. 1200 m (up to 1800 m in the Cardamom Hills). Affects grassland and scrub, bamboo clumps, deciduous scrub jungle and forest; avoids evergreen.

GENERAL HABITS. Keeps in loose flocks of five to twelve birds hopping about restlessly among tall grass, undergrowth or on the ground rummaging quietly among the dead leaves, flicking them aside or peering under them for lurking insects. Great skulkers, scattering and diving into thick cover on the least alarm, the flock soon re-uniting through the agitated cheeps and chittering of the members. Closely resembles *Stachyris* in behaviour, habits and appearance.

FOOD. Mainly insects. Flower-nectar (e.g. *Erythrina*, *Salmaal*) is also taken.

VOICE AND CALLS. Members of a flock maintain contact with one another by means of rather feeble but sharp cheeping notes *sweech-sweech* (reminiscent of a sunbird — *Nectarinia*) varied occasionally by a harsher twittering, especially when alarmed (SA). Also 'a soft *tack-tack* like two pebbles tapped together, and a clear whistling song of seven notes' (Nichols). This song described as 'pleasant, the first half very like a Redwinged Bush Lark's and the latter part resembling the canary-like notes of the sunbird, the two running into each other without a break' (Lowther).

BREEDING. Season, not well defined, mostly during the monsoon (June to October). Nest, a neat ball-shaped structure about 15 cm in diameter, made of coarse grasses and bamboo leaves, lined with finer grasses, with the entrance on the side. One nest was reportedly made of curly paper shavings used in packing bottles. Usually placed in some thorny bush overgrown with monsoon creepers within two metres from the ground, most often near, or on the ground in clumps of grass. Eggs, 3 or 4, white, spotted and blotched with reddish brown. Average size of 50 eggs 17.4 × 14.1 mm (Baker). Brood-parasitized by the Baybanded Cuckoo (582).

MUSEUM DIAGNOSIS. Differs from the nominate subspecies (1222) in having a white throat; from *abuenis* in having the reddish brown restricted to forehead; *philippii* is paler and has a heavier bill. Prenuptial moult takes place in January and February.

Young, has the whole upper plumage a brighter, more rufous brown, without reddish brown on forehead or crown; lower plumage duller, more fulvous brown, with mere traces of white on the chin, throat and central abdomen. Postjuvinal moult complete.

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	53–65	14–15	18–20	59–69 mm
♀ ♀	52–58	14–15	18–21	55–69 mm
				(HW, SA, Koelz)

Weight 10 ♂ ♀ 10–15 (av. 12.9) g — SA.

BABLERS 181

COLOURS OF BARE PARTS. Iris creamy white. Bill pale horny brown, paler on lower mandible; mouth pale yellowish flesh to pink, apparently varying with age. Legs and feet yellowish flesh, dusker on anterior tarsus; claws brown.

1222. Rufousbellied Babbler. *Dumetia hyperythra hyperythra* (Franklin)

Timalia hyperythra Franklin, 1831, Proc. Zool. Soc. London: 118
(Ganges near Benares)
Baker, FBI No. 229, Vol. 1: 228
Plate 74, fig. 6

LOCAL NAMES. None recorded.
SIZE. Sparrow —; length c. 13 cm (5 in.).
FIELD CHARACTERS. As in 1221, but underparts entirely clay-coloured; no white.

STATUS, DISTRIBUTION and HABITAT. Common resident, but unevenly distributed. From Simla along the Himalayan foothills through Uttar Pradesh, Nepal terai to Darjeeling duars, West Bengal and East Pakistan west of the Brahmaputra, south to the Krishna river and west approximately to a line Hyderabad-Jalna-Mhow-Jhansi. Intergrades with *albugularis* in the Nallamalai range and with *abensis* in the Jalna area. In the plains and hills up to c. 900 m. Affects tall grass and thorn scrub jungle.

GENERAL HABITS, FOOD and VOICE. As in 1221.

BREEDING. Season, March to mid September (monsoon). Nest, of two types, either an oval ball of dead bamboo leaves lying on its side, with the entrance at the end or, more commonly, a ball of coarse grass with the entrance about half-way up the side, without lining or with a slight one of fine fern stems or grasses. Usually placed near the ground among grass and weeds surrounding a small bush, exceptionally in a bush up to about 1.5 m. May be situated on the outskirts of jungle or a little way inside, but most often alongside some path. Eggs, usually 4, sometimes 3, white with reddish brown spots and blotches. Average size of 50 eggs 17.3 x 13.8 mm (Baker).

MUSEUM DIAGNOSIS. Distinguished from other subspecies by its uniformly clay-coloured underparts (no white on throat or abdomen). Postnuptial moult complete in October and November. A partial prenuptial moult in April and May, confined to head, neck and breast.

Young, differs from adult in lacking the reddish brown tinge of the forehead. Colour of underparts duller and paler. May also be recognized by the broad, soft round-tipped first primary and soft narrow tail-feathers. Postjuvinal moult complete and remarkable for the sudden casting of rectrices.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	53-58	13-14	19-21	57-64 mm
♀♀	52-55	13-14	19-20	58-63 mm (HW, SA)

COLOURS OF BARE PARTS. Iris hazel brown or yellowish red. Bill pale brown; mouth pale fleshy pink. Legs and feet light brown or pale yellowish.

BABLERS 183

1224. Blackheaded Babbler. *Rhopocichla atriceps atriceps* (Jerdon)

Brachypteryx atriceps Jerdon, 1839, Madras Jour. Lit. Sci. 10: 250
(Trichoor = Wynad vide Whistler, 1935, JBNHS 38: 82)
Baker, FBI No. 294, Vol. 1: 281
Plate 74, fig. 10

LOCAL NAME. *Poti chilappan* (Malayalam).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. Above, head blackish brown, looking black at a distance, sharply defined from the rest of upper plumage which is olive-brown (bistre). Eyes pale yellow. Below, whitish, lower belly olive-brown. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Common resident. The Western Ghats from Belgaum south to the Palghat Gap, and east to Shimoga and the Biligitirangan Hills (Mysore). From the lowlands to 1800 m, optimum elevation 600 to 1200 m (see map, p. 175). Essentially a bird of evergreen biotope. Affects sholas, thickets near streams, dense and marshy jungle, reed-beds, bamboo jungle, cardamom cultivation; particularly fond of cane brakes in dank ravines.

GENERAL HABITS. Moves about the undergrowth, much in the manner of *Dumetia*, in parties of up to a dozen birds or more, often with other babblers. Seldom ascends more than a metre or two above the ground, but when having ventured too far up, has a habit of dropping perpendicularly like a falling leaf into the thickets below on the slightest alarm.

FOOD. Insects.

VOICE and CALLS. Utters sundry squeaks and a harsh, rather subdued *chur-r chur-r*, like an *iora*'s, when a flock is working through undergrowth. Alarm, a rattling *chur-r*. Song, if any, not recorded.

BREEDING. Season, ill-defined, practically the whole year, but there appear to be two main periods, before and after the monsoon (Betts); main season seems to be March to July. Nest, a rough ball of dead bamboo or grass blades lined with black rootlets and grass, well hidden in thick shrubs, usually within one metre from the ground. This species builds 'cock nests', very loosely and untidily made balls of bamboo leaves, unlined and usually in full view; they are not used for breeding though the birds, at times up to four individuals, roost in them. Wherever the species occurs, one finds many of these nests at all times of the year, often two or three, sometimes more, close together, thus leading some observers to believe that the species may be 'semi-colonial' in its breeding habits. Eggs, normally 2, white, speckled or spotted with brownish red, slightly more so at the larger end. Average size of 24 eggs 19.3 x 13.8 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *bourdilloni* in having the crown blackish brown instead of sooty brown.

MEASUREMENTS and COLOURS OF BARE PARTS. As in *bourdilloni*.

1225. Kerala Blackheaded Babbler. *Rhopocichla atriceps bourdilloni* (Hume)

Alcippe bourdilloni Hume, 1876, Stray Feathers 4: 485 (Mynall, Travancore)
Baker, FBI No. 295, Vol. 1: 282

LOCAL NAME. *Poti chilappan* (Malayalam).

SIZE. Sparrow —; length c. 13 cm (5 in.).

182 TIMALIINAE

1223. Ceylon Whitethroated Babbler. *Dumetia hyperythra phillypsii* Whistler

Dumetia hyperythra phillypsii Whistler, 1941, Ibis: 319
(Kumbalgamuwa, Ceylon, 3000 ft)
Not in Baker, FBI

LOCAL NAMES. *Balechia*, *Parandel-kurullā* (Sinhala).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1221. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, well distributed and moderately plentiful. Ceylon in the low country and hills up to 1500 m or higher in some districts. Affects scrub and high grasslands in both the Wet and Dry zones.

GENERAL HABITS, FOOD and VOICE. As in 1221.

BREEDING. Season, ill-defined; in the hills, mostly March to May and again in August and September, but nests have been found in every month except November and December. In the low-country Wet zone, chiefly January and February and also in September. In the Dry zone, in the south as well as in the north, the season starts with the November rains and may continue well into June, though the majority of nests are found during December, January and February. Appears to have two broods. Nest, as in 1221. Eggs, generally 3, occasionally 2, rarely 4, white, spotted and blotched with reddish brown, c. 18 x 14 mm.

MUSEUM DIAGNOSIS. Differs from *albugularis* (1221) in being paler rufous below, with the white of the central abdomen more extensive. Bill larger and heavier.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	54-59	14-15	19-20	54-63 mm
♀♀	54-59	c. 14	19-20	55-61 mm (HW)

Weight 1 ♂ 14 g (SDR).

COLOURS OF BARE PARTS. As in 1222.

GENUS RHOPOCICHLA Oates

Rhopocichla Oates, 1889, Fauna Brit. India, Bds. 1: 159. Type, by original designation, *Brachypteryx atriceps* Jerdon

Differs from *Alcippe* in having the nostrils roundish, exposed, and pierced in the anterior part of the membrane, and the tail shorter than the wing. Eggs of the two genera also different.

RHOPOCICHLA ATRICEPS (Jerdon)

Key to the Subspecies

		Page
A	Entire crown very dark brown	
1	Crown blackish brown, almost black..... <i>R. a. atriceps</i>	183
2	Crown sooty brown..... <i>R. a. bourdilloni</i>	183
B	Dark brown restricted to forehead	
3	Upperparts olivaceous-fulvous..... <i>R. a. siccatus</i>	184
4	Upperparts a more saturated rusty fulvous..... <i>R. a. nigrifrons</i>	185

184 TIMALIINAE

FIELD CHARACTERS. As in 1224. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Common resident. The hills of Kerala and western Tamil Nadu south of the Palghat Gap; from the lowlands to c. 1800 m, (see map, p. 175). Habitat as in 1224.

GENERAL HABITS, FOOD and VOICE. As in 1224, q.v.

BREEDING. As in 1224. Average size of 24 eggs 19.1 x 14.1 mm (Baker).

MUSEUM DIAGNOSIS. Intermediate between *atriceps* and *nigrifrons*. Differs from *atriceps* in having the crown, nape, lores and cheeks sooty brown instead of very dark blackish brown, and the underparts from lower breast to under tail-coverts ferruginous. Adult and juvenal plumages agree in being brown-headed, but there is a certain amount of individual variation.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	55-61	14-16	—	46-52 mm
♀♀	54-58	14-16	21-22	43-48 mm (SA, HW, Koels)

COLOURS OF BARE PARTS. Iris lemon-yellow or pale yellow. Bill: upper mandible dark horny brown; commissure and lower mandible pale greyish flesh; adult mouth pale pinkish flesh, young mouth and gape yellow. Legs and feet pinkish grey; claws dusky.

1226. Ceylon Dry Zone Blackheaded Babbler. *Rhopocichla atriceps siccatus* Whistler

Rhopocichla atriceps siccatus Whistler, 1941, Bull. Brit. Orn. Cl. 62: 37
(Kalawewa, N.C.P., Ceylon)
Baker, FBI No. 296 (part), Vol. 1: 282
Plate 74, fig. 11

LOCAL NAMES. *Parandel-kurullā*, *Battichecha* (Sinhala).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1224, but blackish restricted to forehead and ear-coverts.

STATUS, DISTRIBUTION and HABITAT. Common resident. Ceylon in the low-country Dry zone and Hill zone up to over 2100 m, (see map, p. 175). Affects undergrowth in forest, scrub and bamboo.

GENERAL HABITS, FOOD and VOICE. As in 1224, q.v.

BREEDING. Season, breeds the year round but chiefly from February to the end of May and during October and November. Nest and eggs, as in 1224.

MUSEUM DIAGNOSIS. Similar to *nigrifrons* (1227) but fulvous-brown of upperparts, wings and tail olivaceous-fulvous instead of a more saturated rusty fulvous; brown of lower flanks, vent and under tail-coverts olivaceous-brown v. earth-brown.

Young. Similar to adult but black of sides of head less sharply defined; edges of wings, tail and wing-coverts more rusty.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	55-60	14-16	21-23	43-50 mm
♀♀	54-60	14-15	21-23	42-48 mm (HW, SDR)

Weight 1 ♀ 16 g (SDR).

BABBLERS

185

COLOURS OF BARE PARTS. Iris yellow or yellowish. Upper mandible brownish horn, lower whitish horn. Legs pearly pink or flesh-coloured.

1227. **Ceylon Wet Zone Blackheaded Babbler.** *Rhopocichla atriceps nigrifrons* (Blyth)

Alcippe nigrifrons Blyth, 1849, Jour. Asiat. Soc. Bengal 18: 815 (Uragaha, S.P., Ceylon)

Baker, FBI No. 296 (part), Vol. 1: 282

LOCAL NAMES. *Perendel-kurullā*, *Batticheha* (Sinhala).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1224, but blackish restricted to forehead and ear-coverts.

STATUS, DISTRIBUTION and HABITAT. Common resident. Ceylon in the low-country Wet zone and the hills of the southwest (see map, p. 175). Affects scrub and evergreen forest.

GENERAL HABITS, FOOD and VOICE. As in 1224, q.v.

BREEDING. Season, nests have been found in every month except December and January, but main periods are April and May, and October and November. Nest, as in 1224. As many as four or five birds have been observed working on the same nest used as roosting-shelter. After a nest has been used for rearing young, it may be used long afterwards as a family roost. Eggs, almost invariably 2, similar to those of 1224. Average size of 30 eggs 19.6 × 13.7 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *sicatus* in being a much richer, warmer brown on back, wings and tail.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂	59-60	15	22-23	44-48 mm
2 ♀♀	56, 58	15	22, 23	44 mm (HW)

Weight 1 ♂ 17; 1 ♀ 16 g (SDR).

COLOURS OF BARE PARTS. As in 1226.

Genus MACRONOUS Jardine & Selby

Macronous Jardine & Selby, 1835, Ill. Orn., text to pl. 150. Type, by monotypy, *Macronous pilorus* Jardine & Selby

Mixornis Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 749, footnote. Type, by original designation, *Iora chloris* Hodgson MS = *Timalia chloris* Blyth

Differs from other slender-billed Timaliinae in having the nostrils oval, exposed and not covered by a scale or membrane.

1228. **Yellowbreasted Babbler.** *Macronous gularis rubricapilla* (Tickell)

Motacilla rubricapilla Tickell, 1833, Jour. Asiat. Soc. Bengal 2: 576 (Borabhum)

Macronus [sic] *gularis mayri* Koelz, 1951, Jour. Zool. Soc. India 3: 27 (Sukna, Darjeeling District, Bengal)

Macronus [sic] *gularis assamicus* Koelz, 1951, Jour. Zool. Soc. India 3: 27 (Tura, Garo Hills, Assam)

Baker, FBI No. 283, Vol. 1: 273

Plate 74, fig. 4

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 11 cm (4 in.).

BABBLERS

187

FOOD. Insects.

VOICE and CALLS. A rich, mellow, rather metallic *kew-kew-kew-kew-kew* repeated monotonously for minutes, with short breaks between the runs — rather like one of the Tailor Bird's calls but even more surprisingly loud for the size of the bird; occasionally varied by a harsh *chichoo* or *chrr-chichoo* (SA). Birds of a feeding party keep up a soft, conversational *pick pick* etc. Alarm, a sharp *chr-r-r*. Apparently also has a song, but this has not been intelligibly described.

BREEDING. Season, April to July, chiefly May and June. Nest, globular, varying in size from 10 to 20 cm in diameter, made of bamboo leaves, broad grass blades or palm strands, lined with fine grass and fine fibrous rootlets. Placed fairly low down in bushes or bamboo clumps, looking very much like a wind-blown cluster of bamboo leaves. Eggs, 3 or 4, occasionally 5, white, marked with very small blotches and specks of reddish brown, generally forming a ring at the large end. Average size of 120 eggs 16.6 × 12.6 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	55-63	14-16	17-19	47-57 mm
♀♀	52-61	14-16	18-19	46-55 mm

(BB, HW, SA, Rand & Fleming)

Weight 5 ♂♂ 10-14; 4 ♀♀ 10-12 g (SA, GD, BB).

COLOURS OF BARE PARTS. Iris whitish yellow. Bill slate. Legs pale brown.

Genus TIMALIA Horsfield

Timalia Horsfield, 1821, Trans. Linn. Soc. London 13: 150, pl. 1. Type, by monotypy, *Timalia pileata* Horsfield

Characterized by the peculiar rigid shafts of the feathers of forehead and crown and by its deep black bill. Tail longer than wing, much graduated.

1229. **Redcapped Babbler.** *Timalia pileata bengalensis* Godwin-Austen

Timalia bengalensis Godwin-Austen, 1872, Jour. Asiat. Soc. Bengal 41: 143 (Khasi Hills)

Timalia pileata erudicola Koelz, 1952, Jour. Zool. Soc. India 4: 153 (Karong, Manipur)

Baker, FBI No. 227, Vol. 1: 226

Plate 79, fig. 1

LOCAL NAMES. *Vengrazi* (Mikir); *Deo-maogasha gashim* (Cachari); *Ingto* (Kacha Naga).

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Above, forehead white continued as a streak over the eye; crown chestnut; lores and stout bill black; ear-coverts white; sides of neck slate grey. Back olive-brown, slightly streaked on upper back; tail

186

TIMALIINAE

FIELD CHARACTERS.

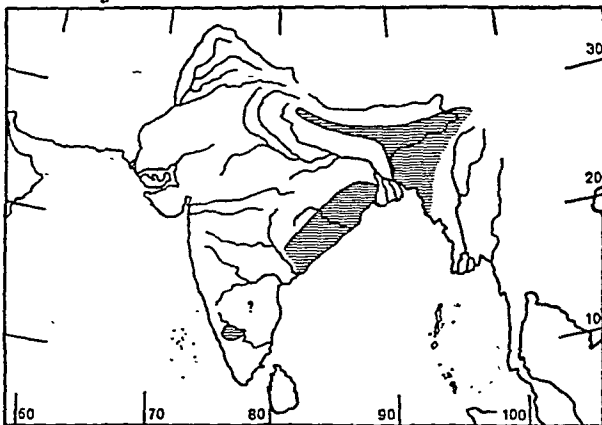
Above, greyish olive with tawny olive cap and wings. Lores and supercilium pale yellow. Below, chin, throat and breast pale yellow with dark streaks. Belly pale yellow; sides of body olive-buff. Sexes alike.



× c. 1

STATUS, DISTRIBUTION and HABITAT. Common resident. From western Nepal in the bhabar, duns and terai east through Darjeeling and Sikkim duars and Bhutan foothills; the plains and base of hills in Assam, Nagaland, Manipur, East Pakistan, West Bengal, southeast Bihar (Chota Nagpur), Orissa, southeast Madhya Pradesh (Bastar district),

Macronous gularis



Distributional range of *M. g. rubricapilla* (1228).

northeast Andhra Pradesh (Vishakhapatnam Ghats) and south Mysore (Mysore District); usually below 600 m (up to 900 m in the Peninsula). Affects both light and dense forest among bushes and undergrowth, bamboo jungle, long grass and brushwood.

Extralimital. Numerous subspecies throughout the Indochinese countries, Malaysia, Sumatra, Java, Borneo, Palawan, and neighbouring islands.

GENERAL HABITS. A low-elevation babbler; one of the noisiest of the tribe, thus unlikely to be overlooked wherever occurring. Keeps in parties up to a dozen or more — singly or pairs during breeding season — often in mixed company. Hunts in the foliage canopy or up amongst bamboos, the flocks quickly moving on, or 'flowing' from tree to tree. Actions and behaviour rather tit-like — similar to *Alcippe*, *Minla* and other small babblers: clinging to leaves upside down and sideways and scanning the undersurface for insects. Occasionally feeds on the ground.

188

TIMALIINAE

brown, narrowly barred, graduated. Below, chin and throat white, the latter with fine black streaks; belly buff, flanks olive-brown. Sexes alike.



× c. 1

STATUS, DISTRIBUTION and HABITAT. Common resident. From the western Nepal terai east to Gorakhpur (east U.P.), the plains of Darjeeling and Jalpaiguri districts (duars), the foothills of Sikkim and Bhutan, the flood plains of the Brahmaputra, West Bengal (Calcutta), East Pakistan, Assam, Nagaland and Manipur. From the lowlands to about

900 m, in the Khasi Hills on the grass-covered plateaux up to c. 1200 m. Affects low-lying swampy areas — tall grass, reed-beds, brushwood and scrub jungle, often along streams and roads.

Extralimital. Northwestern Burma and northern Arakan. The species extends north and east to Kweichow, Kwangsi and Vietnam; nominate race in Java.

GENERAL HABITS. Keeps in pairs during the breeding season, otherwise in small parties of up to 6 or 8 birds. Hunts in the lower cover working from stem to stem, picking insects off the twigs and leaves, threading its way through the tangles of tall grass and bushes, seldom exposing itself to view.

FOOD. Insects.

VOICE and CALLS. Ordinary call-note, a quiet *tit, tit* (Fleming). Alarm-notes harsh and rasping, very similar to the *korchuck* of the Great Reed Warbler (Bates); also a (conversational?) rolling *prrew* (SA). Song, a curious combination of a flute-like trill and a whistle, of about half a dozen notes, descending in pitch, distinctive and unlike any other bird-call. Another call commonly uttered as the bird climbs about in cover resembles *chee-aye*, *chit*, *chit*, *chit*, *chit*, or sometimes *scree* . . . *chit*, *chit*, *chit*; also one consisting of five or six notes harsh and rising in pitch (Smythies).

BREEDING. Season, March to October. Nest, a roughly made ball of coarse grass or strips of bamboo leaves with occasionally a few leaves or rootlets, and scantily lined with finer grass; the whole nest looks like an accumulation of rubbish. The entrance is large in proportion to the size of the nest (c. 5 cm); one nest is described (Roseveare) as cup-shaped. Placed low down in a bush or on the ground under the shelter of a bush or tussock of grass. Eggs, 3 to 5, white, marked with small blotches of dark umber-brown and a few secondary ones of dark inky grey, more numerous at the large end. Average size of 50 eggs 19 × 14.5 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. Colour of cap varies from chestnut to almost brick-red or maroon.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	58-62	18-19	23-24	65-71 mm
♀♀	56-60	15-17	c. 22	c. 65 mm (BB, SDR, SA)

Weight 1 ♂ 17; 1 ♀ 15 g (SDR).

BABLERS 189

COLOURS OF BARE PARTS. Iris reddish brown. Bill black; mouth black. Legs and feet dark brown; soles yellowish.

Genus *CHRYSSOMMA* Blyth

Chryssomma Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 181. Type, by original designation, *Timalia hypoleuca* Franklin = *C. sinense hypoleucum* (Franklin)

Bill short, deep, without a notch; nostrils oval and exposed. Tail graduated, the outer rectrices about half the length of the central ones.

Key to the Species

Bill black.....	<i>C. sinense</i>	189
Bill yellowish brown.....	<i>C. altirostre</i>	192

CHRYSSOMMA SINENSE (Gmelin)

Key to the Subspecies

A Nostrils black, bill stouter.....	<i>C. s. natalis</i>	192
B Nostrils yellow		
a Paler and greyer.....	<i>C. s. hypoleucum</i>	189
b Darker and browner.....	<i>C. s. sinense</i>	190

1230. Western Yellow-eyed Babbler. *Chryssomma sinense hypoleucum* (Franklin)

Timalia hypoleuca Franklin, 1831, Proc. Zool. Soc. London: 118 (between Calcutta and Banaras = U.P., restricted by Ticehurst, 1922, Ibis: 543)

Chryssomma sinensis saurashtrense Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 4 (Sasan, Saurashtra)
Baker, FBI No. 234 (part), Vol. 1: 233

LOCAL NAMES. *Bārā-pōdnā*, *Bārā-piddā*, *Gōtah* (Hindi).

SIZE. Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. As in 1231.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common; absent from pure desert. West Pakistan and northwest India from Kohat and the Indus Valley, east to northern and eastern Uttar Pradesh, northwestern Madhya Pradesh and extreme northeastern Maharashtra. Intergrades with *sinense* in northern U.P. (Dehra Dun); eastern U.P. (Gorakhpur), western M.P. (Sagar, Sehore, Indore) and Khandesh (Nasik, Igatpur). In the plains and at the base of hills up to 1200 m. Affects scrub, thorn jungle, tamarisks, brushwood by streams, scrub-covered eroded ravines, edges of cultivation, reed-beds, bamboo, cane fields and tall coarse grass.

GENERAL HABITS, FOOD AND VOICE. As in 1231, q.v.

BREEDING. Season, June (rarely April) to September (monsoon). Nest and eggs, as in 1231. Average size of 46 eggs 19.1 × 14.5 mm (Baker). MUSEUM DIAGNOSIS. See Key to the Subspecies. Postnuptial moult takes place in October-November.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	61-71	14-15	22-27	80-104 mm
♀♀	61-67	13-16	25-27	84-94 mm (HW, SA)

BABLERS 191

and Jalpaiguri districts, Bhutan foothills and Brahmaputra valley. Usually under 1000 m in the hills. Affects scrub, bush-clad grassy hillsides, secondary growth, tall grass and bushes, sugarcane fields, hedges and bamboo.

Extralimital. Extends east to Vietnam and through south China to Kwangtung.

GENERAL HABITS. After the breeding season keeps in small parties of five to fifteen individuals often in association with the various species of *Prinia* (wren-warblers) which share its habitat, working through thick cover, clinging to twigs or reed-stems sideways or upside down in the manner of tits. Very elusive. Clambers up to exposed tops of reeds now and again for a few seconds to utter its cheeping notes, and dives into the thicket again to resume hunting. Flight feeble, jerky and undulating.

FOOD. Caterpillars, grasshoppers and other insects and spiders; berries (*lantana*, *Salvadora persica*, etc.); also nectar (*Erythrina*, *Salmalia*, etc.).

VOICE AND CALLS. Normal call-note a loud, clear, somewhat plaintive *cheep-cheep-cheep*. Alarm, *churr*. Song, in breeding season a sweet, powerful whistling phrase resembling *twee-twee-la-whit-chu* with accent on the penultimate *whit*, and also a loud *cheep-cheep-cheep cheep-cheep*, about two notes per second, alternating with a low *kru-kru-kru* (Smythies). The song is delivered from the top of a bush or the extremity of some tall grass-stem. Males continue to sing even in heavy postnuptial moult.

BREEDING. Season, from June (occasionally April and May) to November, chiefly July and August (monsoon). Nest, a beautiful cone-shaped, deep cup of coarse grasses and blades lined with finer material, sparsely to copiously cemented on the outside with cobwebs. Hung hammockwise between upright stems of grasses or monsoon plants, or wedged into some crotch of a bush 50 to 150 cm from the ground. The supporting stems are incorporated into the wall of the nest which is sometimes carefully concealed, at others very conspicuous. Eggs, 3 to 5, usually 4, pinkish white, thickly marked all over with chestnut-red; for descriptive details, see Baker, *Nidification*, Vol. 1: 197. Average size of 100 eggs 17.9 × 14.9 mm (Baker). Both sexes incubate and feed the young, which leave the nest 12 or 13 days after hatching. Period of incubation undetermined. When approached, the parents slip off the nest and skulk away through cover before taking flight. A bird near the nest has been described to 'feign in a most realistic manner to be wounded, swaying with wings and tail outspread on a twig, as if about to topple over and fall at any moment' (HW).

MUSEUM DIAGNOSIS. See Key to the Subspecies.

Young, very similar to adult but wings are a paler chestnut. Postjuvinal moult complete.

MEASUREMENTS

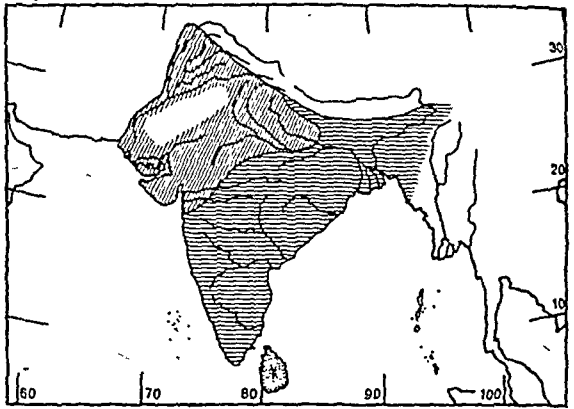
	Wing	Bill (from skull)	Tarsus	Tail
♂♂	62-70	14-15	22-27	73-102 mm
♀♀	62-70	13-16	25-27	78-100 mm (HW, SA)

Weight 15 ♂♂ ♀♀ 15-21 (av. 18.3) g — SA.

COLOURS OF BARE PARTS. Iris yellowish to orange-yellow; eye-rim orange. Bill black; mouth apparently differs seasonally, black in the breeding season, otherwise orange-brown.

190 TIMALIINAE

Chryssomma sinense



Distributional ranges

hypoleucum (1230). *sinense* (1231). *natalis* (1232).

Weight 10 ♂♀ 12-20 (av. 16.1) g (SA).

COLOURS OF BARE PARTS. As in 1231.

1231. Yellow-eyed Babbler. *Chryssomma sinense sinense* (Gmelin)

Parus sinensis Gmelin, 1789, Syst. Nat. 1: 1012 (China)

Pycnorhis sinensis saturator Ticehurst, 1922, Bull. Brit. Orn. Cl. 42: 57 (Bhutan Duars)

Chryssomma sinensis nagaense Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 4 (Karong, Manipur)

Baker, FBI No. 234, Vol. 1: 233

Plate 79, fig. 2

LOCAL NAMES. *Gulāb-chāshm*, *Būlāl-chāshm* (Hindi); *Yerra kali-jitta* (Telugu).

SIZE. Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. Above, rufescent brown, wings cinnamon. Lores and a short supercilium white; eye yellow, conspicuous orange-yellow eye-rim. Bill black. Below, white, washed with buff on lower belly. Tail long and graduated. Sexes alike.



× c. 1

STATUS, DISTRIBUTION AND HABITAT. Resident, widely distributed. India south and east of a line Nasik-Indore-Sagar-Gorakhpur, south to the Nilgiris and the Cauvery river, east through East Pakistan, Assam, Nagaland and Manipur, and north along the terai from western Nepal through the plains and duars of Darjeeling

192 TIMALIINAE

Nestling. Iris greenish brown. Bill pale horny brown; gape lemon-yellow; mouth bright chrome-yellow or orange, with two black spots on posterior fork of tongue. Legs and feet pinkish flesh.

1232. Ceylon Yellow-eyed Babbler. *Chryssomma sinense natalis* (Legge)

Pycnorhis natalis Legge, 1879, Ann. Mag. Nat. Hist. ser. 3: 169 (Ceylon)

Baker, FBI No. 236, Vol. 1: 235

LOCAL NAME. *Hambu-kurullā* (Sinhala).

SIZE. Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. As in 1231.

STATUS, DISTRIBUTION AND HABITAT. Resident; widely distributed but nowhere common. Ceylon, in all zones up to nearly 1800 m. Affects scrub, high grass, 'patanas', low grassy jungle, swamps and fernlands.

GENERAL HABITS. As in 1231, q.v.

FOOD. Mainly insects; also berries (*Lantana* etc.) and flower-nectar.

VOICE AND CALLS. Song of male, a briskly whistled phrase rendered as *cutykra-weeko wiwiwiwiwi*; a loud call *preepreep lowhikihiki* (Henry). Other notes as in 1231.

BREEDING. Season, ill-defined: November to May, chiefly February to May; nests also recorded in July. Nest, as in 1231. Eggs, usually 3, sometimes 4, similar to those of *sinense*. Average size of 16 eggs 17 × 13.8 mm (Baker).

MUSEUM DIAGNOSIS. Bill stouter than in the continental races; nostrils black. Upperparts slightly more saturated, with little difference between crown and mantle.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂♂	63-69	14-15	25-26	70-86 mm
3 ♀♀	63-69	14	24-25	72-79 mm (HW, SDR)

COLOURS OF BARE PARTS. As in 1231.

CHRYSSOMMA ALTIROSTRE Jerdon

Key to the Subspecies

Throat whitish.....*C. a. scindicum*
Throat grey.....*C. a. griseigularis*

1233. Sind Babbler. *Chryssomma altirostre scindicum* (Harington)

Pycnorhis altirostris scindicus Harington, 1918, Jour. Bombay nat. Hist. Soc. 23: 424 (Sukkur, Sind)

Baker, FBI No. 239, Vol. 1: 237

Plate 79, fig. 3

LOCAL NAME. *Mullala* (? Urdu).

SIZE. Bulbul —; length c. 17 cm (6½ in.).

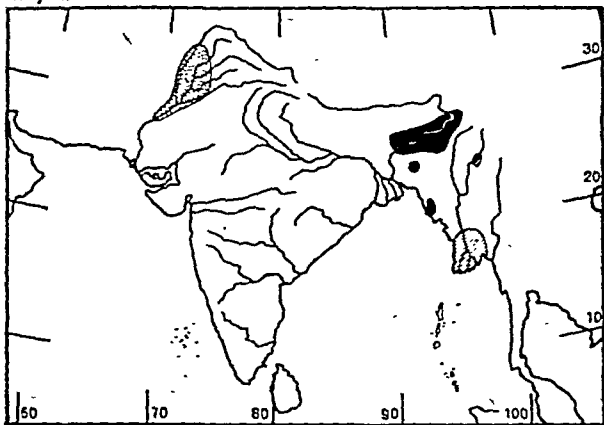
FIELD CHARACTERS. Above, fulvous. Below, chin and throat white; breast and remainder of lower plumage ochraceous. Tail long and graduated.

BABBLERS

193

Distinguished from the Yellow-eyed Babbler by the following: eye brown, bill yellowish brown; no white supercilium; forehead black with ashy margins. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, very local; range disjunct from that of *griseigularis*. West Pakistan in the plains of the Indus, near

Chrysomma altirostre

Distributional ranges

■ *scindicum* (1233). ▨ *griseigularis* (1234). ▩ *altirostre* (RE).

Mianwali, Muzaffargarh, Jampur and Sukkur. Appears to be confined to the 'khan' grass jungle (*Saccharum arundinaceum*).

GENERAL HABITS. Found in parties of six to twelve or more in the non-breeding season. 'To suit it there must be a regular "sea" of khan, preferably not less than six feet (180 cm) high. If the grass is eaten down by cattle or grows in separate clumps one is not likely to come across it' (H. W. Waite).

BREEDING. Only a single nest (with 2 eggs) known from Sukkur dist., Sind — *vide* Holmes & Wright (JBNHS 66: 20). No details. See 1234.

MUSEUM DIAGNOSIS. Differs from *griseigularis* in having a white chin and throat (v. grey), and the remainder of lower parts ochraceous.

MEASUREMENTS. (Type, probably an immature)

	Wing	Bill	Tarsus
♂	65	13	24 mm (HW)

COLOURS OF BARE PARTS. Unrecorded.

194

TIMALIINAE

1234. Hume's Babbler. *Chrysomma altirostre griseigularis* (Hume)

Pyctorhis griseigularis Hume, 1877, Stray Feathers 5: 116 (Assam)
Baker, FBI No. 238, Vol. 1: 236

LOCAL NAME. *Tiri-sorāi* (Assam).

SIZE. Bulbul —; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Above, dark ferruginous brown, paler on rump; a hoary grey supercilium. Below, chin and throat ashy grey, remainder brownish buff. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. From the Bhutan and north Bengal duars east in the plains of the Brahmaputra to the Naga Hills, the plains of Cachar and East Pakistan in the Surma Valley, the Haor Basin and the Chittagong region. Affects the great expanses of ekra or elephant grass, reeds and vegetation along rivers.

Extralimital. Northeastern Burma (Kachin State). The race of the Irrawaddy plains, south-central Burma, may be extinct (Deignan in Peters's Check-list).

GENERAL HABITS. Keeps in pairs or small parties according to the season, skulking in long grass or reeds, constantly flitting from one reed to another.

FOOD. Grasshoppers and other insects; also small seeds.

VOICE and CALLS. 'A sweet little song of half a dozen notes uttered from the top of a tall reed' (Baker). Call described by Stevens as resembling the syllables *cheu, chi, chi* repeated several times, and to be the reverse of the *chi-cheu* call of Marsh Spotted Babbler (1160) inhabiting the same facies.

BREEDING. Season, mainly June and July (monsoon). Nest, a neat, deep cup of tightly drawn grass, plastered with cobwebs and lined with fine fibres. Most nests are built on a single stout stem at the junction of leaf-blades or sometimes embracing several thinner stems. Eggs, average size of fourteen 18.1 × 14.6 mm. 'All my nests have contained two or three eggs only, but one would imagine four or five to be the full clutch' (Baker). They are of the same types as those of the Yellow-eyed Babbler, pale or bright pink with blotches or smears of reddish brown or light red; their similarity to those of the genus *Alcippe* is striking.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
o? (type)	65	13	24	82 mm (HW)
1 ♂	64	13	25	91 mm (Desfayes)

COLOURS OF BARE PARTS. Iris brown or golden brown; eye-rim yellowish green. Bill pale horny. Legs pale fleshy or orange-brown; feet darker.

¹ The low-lying country northeast of the central region of East Pakistan dotted with perennially flooded depressions known as *haors*, adjacent to the Surma Valley.

BABBLERS

195

Genus PANURUS Koch

Panurus Koch, 1816, Syst. baier. Zool.: 201. Type, by monotypy, *Parus biarmicus* Linnaeus

Bill short, culmen rounded with uncinat tip. Nostrils mostly covered by bristly plumules. Rictal bristles soft and short. Tail long and strongly graduated, the outermost rectrices scarcely half as long as median pair. Under tail-coverts very long, equal to outermost rectrices.

1235. Bearded Tit-Babbler or Reedling. *Panurus biarmicus russicus* (Brehm)

Mystecinus Russicus Brehm, 1831, Handb. Naturg. Vög. Deutschland: 472 (Russia)
Not in Baker, FBI
Plate 96, fig. 15

LOCAL NAMES. None recorded.

SIZE. Sparrow, with long tail; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult). Distinguished at once by the striking head pattern. Above, head lavender grey with broad, tapering black moustachial stripe. Bill yellow. Back, rump and tail mostly cinnamon-buff. Closed wings banded lengthwise with whitish (outer border), rufous, blackish and pale buff (scapulars and inner border). Below, chin and throat white, breast and belly tinged with pink; flanks tawny; under tail-coverts black. Tail long and graduated, the shorter rectrices tipped or edged with white.

Female (adult). Duller; head concolorous with back, moustachial stripe lacking; under tail-coverts buff, not black.

STATUS, DISTRIBUTION and HABITAT. Accidental winter visitor. One record: a flock of eight to twelve birds near Attock, West Pakistan (Whistler, JBNHS 32: 217). Affects reed-beds; the flock observed near Attock was in dense *sarpat* grass (*Saccharum* sp.) and tamarisk scrub.

Extralimital. Middle Eurasia from western Europe to Manchuria and Japan. The nominate race is restricted to western Europe.

GENERAL HABITS. Gregarious outside the breeding season, in flocks up to forty or fifty. Moves up and down reeds with jerky action assuming a variety of acrobatic postures, or creeps among vegetation at their base.

FOOD. Insects. In winter chiefly seeds of reeds.

VOICE and CALLS. A distinctive, ringing, vibrant 'ping ping' and more distinctive 'tic'. Parties keep up a twitter mingled with a more plaintive *tee*. Notes of alarm or anxiety described as a scolding, guttural *pu-kut*, a plaintive *ee-er, ee-er*, and churring *chirr-ir-irrrrr* (Witherby, 1938, 1: 275).

BREEDING. Not recorded in our limits, *Seeser*, elsewhere, April to July. Nest, built low down among reeds, made of reed-blades lined with the flowering tops of reeds.

MUSEUM DIAGNOSIS. See Field Characters. For details of plumages and structure (also bionomics) of nominate race, see Witherby, 1938, 1: 274-7.

196

TIMALIINAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	58-65	c. 10	c. 21	83-99 mm
♀ ♀	53-62	c. 10	c. 21	83-92 mm

(Wing and tail by Dementiev)

COLOURS OF BARE PARTS (of nominate race). Iris pale buff. Bill, ♂ deep straw-colour; ♀, upper mandible and base and cutting edges of lower mandible greenish horn; rest of lower mandible yellow. Legs and feet black (Witherby).

Genus CONOSTOMA Hodgson

Conostoma Hodgson, 1841, Jour. Asiat. Soc. Bengal 10: 856-7. Type, by original designation, *Conostoma aemodius* Hodgson

Size large. Bill longer, less deep than in *Paradoxornis*, cutting edges gently curved, not sinuous. Nostrils entirely covered by stiff feathers. Tail longer than wing, not strongly graduated. Legs, feet and hindclaw very strong.

1236. Great Parrotbill. *Conostoma aemodius* Hodgson

Conostoma aemodius Hodgson, 1841, Jour. Asiat. Soc. Bengal 10: 857 (Nepal)
Baker, FBI No. 89, Vol. 1: 104
Plate 79, fig. 15

LOCAL NAMES. *Tūli* (Paharia); *Lho-ranio-pho* (Lepcha).

SIZE. Myna; length 28 cm (11 in.).

FIELD CHARACTERS. A large grey-brown bird resembling a laughing thrush with an upright carriage and a stout, orange-yellow bill. A d u l t.

Above, forehead whitish, lores and supercilium brown. Back olive-brown. Below, entirely mouse-grey. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, sparingly distributed. The Himalayas from central Nepal through Sikkim, Bhutan, and presumably NEFA; from 2700 to 3600 m at all seasons, perhaps down to 2100 m in winter. There are no records of it descending to 4000 ft (c. 1200 m) as stated in the FBI. Affects ringal bamboo and rhododendron bushes.

Extralimital. Extends to southeastern Tibet, northern Burma, north-western Yunnan and southwestern Szechuan.

GENERAL HABITS. In pairs or small parties, often associated with various species of laughing thrushes. Keeps very much to bamboo jungle, hopping about with a rather upright carriage. Resembles somewhat the laughing thrushes in habits, but instead of hopping up the branches, usually moves about two metres or so off the ground and parallel with the forest floor. Also feeds a good deal on the ground, even in snow, venturing a little way into the open for the purpose. Though large and clumsy, it is skillful at keeping out of sight but at the same time intensely curious, readily allowing itself to be called up.



FOOD. Green bamboo shoots, crab-apple seeds, wild raspberries and insects.

VOICE and CALLS. Very noisy with much churring and chattering like a *Turdoides*; also a characteristic note, very harsh *kratchah*, *kratch kratchah* (Proud). A fourfold grating croak and a clear musical *wheou wheou* (Stanford).

BREEDING. Little known. *Season*, May to July. *Nest*, a very regular hemisphere, both inside and outside, compactly built of dry coarse grass and strips of bamboo leaves and thickly lined with very fine green grass-stems. Exterior diameter c. 15 cm, height c. 8 cm, diameter of cup c. 11 cm, depth c. 5 cm. Placed in clumps of bamboo. *Eggs*, the two nests known contained 2 and 3 eggs, dull white, sparsely blotched, streaked and smudged with pale yellowish brown, with pale secondary inky purple spots and smudges about the large end, or white with a few specks and tiny blotches of reddish, fairly numerous at the larger end. Size of two eggs 27·8 × 20·4 and 28·1 × 20·8 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters; for details of plumage Baker, loc. cit. Young (immature). Like adult, but upperparts and edges to wing more rufescent. Tail-feathers narrower and more pointed.

	MEASUREMENTS			
	Wing	Bill (from skull)	Tarsus	Tail
Yunnan				
2 ♂♂	120, 132	24	39, 40	129, 140 mm
6 ♀♀	130-132	23-25	40-42 (one 44)	134-155 mm
Sikkim				(Desfaves)
4 (o?)	120-128	23	40	122-130 mm (Stevens, Mayr)

COLOURS OF BARE PARTS. Iris pale yellow or pale orange-yellow. Bill orange-yellow at base, yellow at tip of upper and base of lower mandible. Legs very dull plumbeous green (Stanford).

Genus **PARADOXORNIS** Gould
Paradoxornis Gould, 1836, Proc. Zool. Soc. London: 17. Type, by monotypy, *Paradoxornis flavirostris* Gould
Suthora Hodgson, 1837, Ind. Rev. 2 (1): 32. Type, by monotypy, *Suthora nipalensis* Hodgson
Ptiliiparus Hellmayr, 1903, Das Tierreich, lief. 18: 163. New name for *Scæothynchus* Oates, 1889. Type, by original designation, *Paradoxornis ruficeps* Blyth
Neosuthora Hellmayr, 1911, Genera Avium (Wytmsman), pl. 18: 74. Type, by original designation, *Suthora davidiana* Sclater

Characterized by the very deep and short bill with more or less sinuous cutting edges, used for tearing up bamboo stems. Plumage very soft and lax.

Key to the Species		Page
A Large size, total length over 13 cm		
1 Entire plumage grey and olive.....	<i>P. unicolor</i>	198
2 Crown ashy, forehead black.....	<i>P. gularis</i>	209

BABLERS 197

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters. Young very similar to adult.

	MEASUREMENTS			
	Wing	Bill (from skull)	Tarsus	Tail
♂♂	85-92	16	c. 31	99-107 mm
♀	88	—	—	— mm (Stevens, SDR, Desfaves)

Weight 1 ♂ 32, 1 o? (Sept.) 36 g — SDR.
COLOURS OF BARE PARTS. Iris olive-yellow. Bill very dirty horny green (in January birds dull yellow, yellow-brown at base of lower mandible). Legs and feet dark leaden-brown (Stanford).
Female: Iris iron-grey. Bill cornelian yellow. Feet greenish lead colour (Meinertzhagen).

PARADOXORNIS FULVIFRONS (Hodgson)
Key to the Subspecies
Paler above; fulvous of underparts not extending below breast.....*P. f. chayulensis*
Darker above; fulvous of underparts darker and extending to upper abdomen.....*P. f. fulvifrons*

1238. Fulvousfronted Parrotbill. *Paradoxornis fulvifrons fulvifrons* (Hodgson)
T.(emnoris) fulvifrons Hodgson, 1845, Proc. Zool. Soc. London: 31 (Nepal)
Baker, FBI No. 100, Vol. 1: 113
Plate 96, fig. 24

LOCAL NAMES. None recorded.
SIZE. Sparrow —; length c. 12 cm (4½ in.).
FIELD CHARACTERS. A small bird recognized by its general fulvous colour and very short globular bill; tail comparatively longer than in others of the genus. *Above*, forehead and crown ochraceous with a wide olive supercilium extending to nape and a smaller ochraceous eye-stripe below; back olive; a rufous patch along wing; tail brown, rufous at base. *Below*, throat and breast ochraceous; belly pale grey, looking practically white in the field. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, sparingly distributed. From east Nepal through Sikkim, Darjeeling and Bhutan; from 2700 to 3400 m at all seasons. Keeps almost exclusively to dense bamboo (maling, *Arundinaria racemosa* and prong, *A. aristata*).

GENERAL HABITS. In large parties of 20 to 30 birds, quite fearless, spending most of their time clambering up and down the bamboo stems in feverish haste to scrutinize them from top to bottom.

FOOD. Mostly vegetable: bamboo and birch buds, tiny seeds; also insects.

VOICE and CALLS. A continual twittering and a faint, mouse-like *cheep* uttered as they flit from stem to stem.

BREEDING. Unknown. *Season*, probably June-July.

MUSEUM DIAGNOSIS. See 1239.

		Page
3 Crown rufous		
a Ear-coverts black, throat dark brown.....	<i>P. flavirostris</i>	210
b Ear-coverts black, throat black-speckled buff.....	<i>P. gutticolliis</i>	212
c Ear-coverts not black		
i Larger; wing well over 80 mm.....	<i>P. ruficeps</i>	207
ii Smaller; wing well under 80 mm.....	<i>P. atronipercillaris</i>	205
B Small size; total length under 13 cm		
4 Throat black.....	<i>P. nipalensis</i>	200
5 Throat ochraceous.....	<i>P. fulvifrons</i>	199

1237. Brown Parrotbill. *Paradoxornis unicolor* (Hodgson)
H.(eteromorpho) unicolor Hodgson, 1843, Jour. Asiat. Soc. Bengal 12: 483
(the Cachar, Nepal)
Baker, FBI No. 92, Vol. 1: 108
Plate 79, fig. 13

LOCAL NAME. *Lho-ranpio-pho* (Lepcha).
SIZE. Bulbul; length c. 21 cm (8 in.).

FIELD CHARACTERS. A dull olive-brown babbler-like bird with dark head, conspicuous black eyebrow and very short thick yellow bill. *Above*, head greyish brown with a hoary aspect especially on the sides; a pale ring round the eye; a dark eye-stripe; rest of upperparts olive-brown. *Below*, throat and breast greyish brown; rest of underparts olive-brown. Sexes alike.
STATUS, DISTRIBUTION and HABITAT. Uncommon resident. From east Nepal to Sikkim, Darjeeling, Bhutan, NEFA (Tawang and presumably through the Agency); from c. 2700 to 3400 m at all seasons, but descending to 2000 m in winter. Keeps almost exclusively to dense maling bamboo (*Arundinaria* sp.) and dwarf rhododendron growth.

Extralimital. Southeast Tibet, northeastern Burma, northwestern Yunnan and southwestern Szechuan.

GENERAL HABITS. In small noisy parties of half a dozen or so, sometimes in company with *Conostoma*, skulking, and reluctant to fly long distance. Sits very upright and keeps edging up to the top of bamboo stems, occasionally clinging upside down and pecking about on mossy branches. Flight slow, weak, fluttering and babbler-like.

FOOD. Bamboo and bracken buds, moss or other vegetable matter, and insects — beetles etc.

VOICE and CALLS. When alarmed, flutters into the densest cover uttering chirrups and a sort of bleating sound (Meinertzhagen). Other notes, a faint *churr*, *churr* (Stanford).

BREEDING. Unknown. *Season*, appears to be late since birds collected in May were not breeding and a male collected in late June had gonads enlarged.

		Wing	Bill (from skull)	Tarsus	Tail
♂♂	56-57	c. 7	—	— mm	— mm
♀♀	55-56	c. 7	c. 18	c. 60 mm	c. 60 mm (Stevens, Desfaves)

COLOURS OF BARE PARTS. Iris red-brown. Bill horny pink, culmen with a broad band dark horny. Tarsus brownish plumbeous (Stevens).

1239. Tibetan Fulvousfronted Parrotbill. *Paradoxornis fulvifrons chayulensis* (Kinnear)
Suthora fulvifrons chayulensis Kinnear, 1940, Bull. Brit. Orn. Cl. 60: 56
(Lung, Chayul Valley, SE. Tibet)
Not in Baker, FBI

LOCAL NAMES. None recorded.
SIZE. Sparrow —; length c. 12 cm (4½ in.).
FIELD CHARACTERS. As in 1238.
STATUS, DISTRIBUTION and HABITAT. Resident. Southeast Tibet south of the main range in the hills adjacent to northeastern Bhutan, and the northern Dafia-Miri hill tracts of NEFA (and presumably through the Agency). Affects dense bamboo.
Extralimital. The species extends to northwestern Yunnan, western Szechuan and southern Shensi.
GENERAL HABITS, FOOD and VOICE. As in 1238.
BREEDING. Undescribed. *Season*, June-July (nestling taken in early July by Ludlow).

MUSEUM DIAGNOSIS. Differs from the nominate race in having the upperparts paler, especially on rump. *Below*, the fulvous does not usually extend below the breast and is paler. Abdomen and thighs greyer.
MEASUREMENTS. Wing 8 ♂♂ 54-59; 4 ♀♀ 53-57 mm (Ludlow).
COLOURS OF BARE PARTS. As in 1238.

PARADOXORNIS NIPALENSIS (Hodgson)		Page
Key to the Subspecies		
A Ear-coverts ochraceous or orange-chestnut		
1 Paler; a larger area of grey between ear-coverts and back.....	<i>P. n. crocotius</i>	204
2 Darker; a smaller area of grey between ear-coverts and back.....	<i>P. n. hamii</i>	202
B Ear-coverts slaty		
3 Crown smoky grey		
a Paler; grey of crown fading gradually into rufescent back....	<i>P. n. garhwalensis</i>	201
b Darker; grey of crown ending abruptly on nape.....	<i>P. n. nipalensis</i>	202
4 Crown bright ochraceous		
c Breast deep fulvous.....	<i>P. n. patriciae</i>	204
d Breast pale grey.....	<i>P. n. polietis</i>	203

BABBLERS

201

1239a. Garhwal Parrotbill. *Paradoxornis nipalensis garhwalensis*
Fleming & Traylor

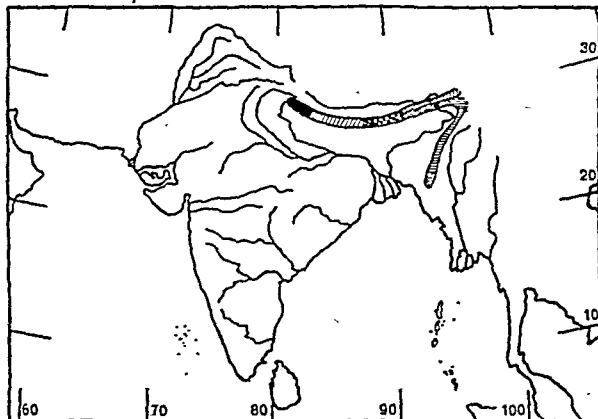
Paradoxornis nipalensis garhwalensis Fleming & Traylor, 1964, Fieldiana: Zoology
35: 531 (Kurumtoli, Garhwal, Uttar Pradesh)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in *nipalensis* (1240).

STATUS, DISTRIBUTION and HABITAT. Resident. Northeast Garhwal and

Paradoxornis nipalensis

Distributional ranges

■ *garhwalensis* (1239a). ▨ *nipalensis* (1240). ▩ *humii* (1241).
▤ *crocotius* (1243). ▥ *poliotis* (1242). ▦ *patriciae* (1244).

northern Almora, between 2100 and 2700 m. Habitat undescribed, probably as in *nipalensis*.

GENERAL HABITS, FOOD and VOICE. As in 1241.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Paler above and below than *nipalensis*. Rufous of back less intense; pale grey-brown of crown fades gradually into rufescent back rather than terminating abruptly on the nape; superciliary stripe brown rather than blackish.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂?	52-53	7-8	18-19	56-57 mm (Fleming & Traylor)

COLOURS OF BARE PARTS. Unrecorded.

BABBLERS

203

'flows' after it in a disorderly rabble. Interspersed in this round of restless activity are short pauses when the birds may be seen huddled together side by side, looking rather like miniature munias at a distance. When angry, puffs out the black coronal stripes and black throat.

FOOD. Insects and vegetable matter (bamboo buds etc.).

VOICE and CALLS. Members of a party keep up a continual high-pitched twittering, a variety of *cheeps* and *chirrs* and (alarm) a loud purring chatter. Also a plaintive little bleat.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Differs from *nipalensis* in having the crown and ear-coverts ochraceous or orange-chestnut.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	45-51	7-8	c. 19	52-57 mm (SA, Stresemann)

COLOURS OF BARE PARTS. Iris pale pearly brown; bill horn yellow; feet slate-blue (Meinertzhagen). Iris brown; bill black (Stevens).

1242. Blyth's or Assam Orange Parrotbill. *Paradoxornis nipalensis poliotis* (Blyth)

Suthora poliotis Blyth, 1851, Jour. Asiat. Soc. Bengal 20: 522
(Cherrapoonji, Khasi Hills)

Suthora manipurens Godwin-Austen & Walden, 1875, Ibis: 250
(near Karakhul, Manipur hills)

Suthora daflensis Godwin-Austen, 1876, Ann. Mag. Nat. Hist. 17: 32
(Toroputu Peak, Daffa Hills)
Baker, FBI No. 94, Vol. 1: 109

LOCAL NAME. *Dao mougasha kashiba* (Cachari).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in *nipalensis* (1240) but crown bright ochraceous, conspicuous in the field.

STATUS, DISTRIBUTION and HABITAT. Resident. From east Bhutan through NEFA to the Mishmi Hills, Nagaland and Manipur; from c. 1500 to at least 2600 m, and the hills of Assam from 600 to 1200 m. Affects bamboo jungle and dense evergreen forest with tangled undergrowth in very broken country, steep hillsides with rocky ravines.

Extralimital. Northeastern Burma and northwestern Yunnan. The species extends north to Szechuan, east to Fukien and Formosa and south to southeastern Burma, northern Thailand and Laos.

GENERAL HABITS, FOOD and VOICE. As in 1241.

BREEDING. Season, May and June. Nest, a tiny, neat and compact cup of bamboo leaves and fine grasses, coated on the outside with cobwebs, lined with finer grasses and root hairs. Fixed in a cluster of twigs springing from a bamboo node or in a thick bush, less than two feet (60 cm) from the ground. Eggs, 2 to 4, generally 3, pale blue, very like those of *Zosterops* but darker and less glossy. Average size of 20 eggs 13.7 × 11.9 mm (Baker).

TIMALIINAE

202

1240. Ashy-eared Parrotbill. *Paradoxornis nipalensis nipalensis* (Hodgson)

Suthora Nipalensis Hodgson, 1837, Ind. Rev. 2 (1): 32 (Nepal; restricted to Kathmandu Valley by Ripley, Synopsis: 370)
Baker, FBI No. 93, Vol. 1: 109

LOCAL NAME. *Suthora* (Nepal).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. A tiny orange-brown bird with conspicuous black supercilium, white moustache and black throat. Above, crown grey, back tawny olive, brighter on rump; a broad white moustache. Wings blackish with rufous and white edges. Below, chin and throat black. Sides of neck grey, breast pale grey, belly whitish washed with tawny. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident. Central Nepal; eastern and western limits to be determined. From 2000 to 2900 m. Affects ringal bamboo and undergrowth in oak forest.

GENERAL HABITS, FOOD and VOICE. As in 1241.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Differs from *humii* in having a grey crown and slaty ear-coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	47-52	7-8	17-18	54-58 mm (Fleming & Traylor)

COLOURS OF BARE PARTS. Unrecorded.

1241. Blackfronted Parrotbill. *Paradoxornis nipalensis humii* (Sharpe)

Suthora humii Sharpe, 1883, Cat. Bds. Brit. Mus. 7: 487 (Darjeeling)¹
Baker, FBI No. 95, Vol. 1: 110
Plate 96, fig. 22

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in *nipalensis* (1240) but crown and ear-coverts ochraceous, not grey.

STATUS, DISTRIBUTION and HABITAT. Uncommon resident. From east Nepal, Sikkim, Darjeeling to east Bhutan (where it intergrades with *poliotis*); from 1200 to 3300 m at all seasons, mostly in a lower zone than *P. fulvifrons*; more addicted to a varied tree-and-scrub growth than the latter and therefore more widely distributed. Affects mixed deciduous and bamboo jungle, rhododendron and bamboo undergrowth in oak forest, generally in very broken country and steep hillsides.

GENERAL HABITS. A gregarious and confiding bird reminiscent of the Redheaded Tit, found in parties of 3 to 30 or more, often in association with other babblers and tits, hunting with feverish activity among bamboo clumps and low bushes, clinging to sprigs and leaves in acrobatic positions. When a bird suddenly decides to fly off to the next tree, the entire party

¹ See Biswas, JBNHS 59: 406 for restriction of type locality.

TIMALIINAE

204

MUSEUM DIAGNOSIS. Differs from *humii* in having the ear-coverts slaty, the crown, including forehead, a brighter ochraceous, the back more olive; feathers of black chin faintly tipped with white; rest of underparts pale grey becoming whitish on abdomen and lacking any ochraceous.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	44-46	c. 7	c. 18	c. 52 mm (Baker, Desfaves)

Weight ♂ ♀ 5-6 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill fleshy yellow. Legs and feet slate-grey or bluish slaty. [Bill in spring grey-black, base of lower mandible bright pink (Stanford).]

1243. Tibetan Small Parrotbill. *Paradoxornis nipalensis crocotius* Kinnear

Paradoxornis poliotis crocotius Kinnear, 1954, Ibis 96: 484, new name for *Suthora poliotis intermedia* Kinnear, 1944, Ibis 86: 70 (Yönpu La, near Trashigong, E. Bhutan), preoccupied
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1241.

STATUS, DISTRIBUTION and HABITAT. Resident. Eastern Bhutan and south-east Tibet (Shakti, Mönnyul) at 2100 to 2400 m. Affects tall grass, deciduous and bamboo jungle.

GENERAL HABITS, FOOD and VOICE. As in 1241.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Similar to *humii* but generally paler especially on the head which is dull cinnamon-yellow; cheeks paler with a large area of pale grey separating them from the darker cinnamon-yellow of the back. Differs from *poliotis* by the bright crocus-yellow cheeks.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
2 ♂♂	50, 51	—	— mm
1 ♀	50	7	57 mm (Ludlow)

COLOURS OF BARE PARTS. As in *humii*.1244. Mizo Hills Parrotbill. *Paradoxornis nipalensis patriciae* Koelz

Paradoxornis nipalensis patriciae Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 2 (Blue Mountain, Lushai Hills)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1242.

BABLERS

205

STATUS, DISTRIBUTION and HABITAT. Resident. Southeastern Assam in the Mizo (Lushai) Hills; from 1500 to 2400 m.
GENERAL HABITS, FOOD and VOICE. As in 1241.
BREEDING. Unknown.
MUSEUM DIAGNOSIS. More richly coloured than *ripponi* of Mount Victoria; grey of the ear-coverts less extensive; black of throat separated from deep fulvous of breast by less intervening grey. Differs from *politis* in having the breast fulvous, not pale grey.
MEASUREMENTS and COLOURS OF BARE PARTS. Unrecorded.

PARADOXORNIS ATROSUPERCILIARIS (Godwin-Austen)
Key to the Subspecies
A short black supercilium.....*P. a. atrosuperciliaris*
No supercilium.....*P. a. oatesi*

1245. Lesser Redheaded Parrotbill. *Paradoxornis atrosuperciliaris oatesi* (Sharpe)
Suthora oatesi Sharpe, 1903, Handl. Gen. Bds. 4: 70. New name for *Chleuasiscus ruficeps* Blyth (1845), *nee* *Paradoxornis ruficeps* Blyth (1842)
Chleuasiscus ruficeps Blyth, 1845, Jour. Asiat. Soc. Bengal 14: 578 (Darjeeling)
Baker, FBI No. 101, Vol. 1: 114
Plate 96, fig. 20

LOCAL NAME. *Chongto-phep-pho* (Lepcha).
SIZE. Sparrow; length c. 15 cm (6 in.).
FIELD CHARACTERS. As in 1246 but lacks the black supercilary stripe. Easily confused with *P. ruficeps* from which it differs in its smaller size, smaller and blunter bill, and more graduated tail; ear-coverts are much lighter in colour, ochraceous rather than dark ferruginous.
STATUS, DISTRIBUTION and HABITAT. Very rare. Obtained only from Sikkim and Darjeeling at c. 2100 m. Not recorded since the last century. Habitat not described; probably as in 1246.
GENERAL HABITS, FOOD and VOICE. Unrecorded.
BREEDING. Unknown.
MUSEUM DIAGNOSIS. See Field Characters. Differs from the nominate race (1246) in being less richly coloured and lacking the short black supercilium.
MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	75-78	c. 8	c. 23	c. 80 mm (Baker)

COLOURS OF BARE PARTS. Iris bright red-brown. Bill creamy, fleshy white or pale horny. Legs greenish plumbeous (Baker).

BABLERS

207

COLOURS OF BARE PARTS. Iris red-brown. Bill pale grey, tipped white. Legs pale blue-grey; claws whitish grey; soles pale green (Stanford). Iris reddish brown. Bill pinkish flesh. Legs and feet plumbeous (SDR).

PARADOXORNIS RUFICEPS Blyth
Key to the Subspecies
Underparts whitish, buff restricted to flanks.....*P. r. ruficeps*
Entire underparts buff.....*P. r. bakeri*

1247. Greater Redheaded Parrotbill. *Paradoxornis ruficeps ruficeps* Blyth
Paradoxornis ruficeps Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 177 (Bootaan)
Baker, FBI No. 104, Vol. 1: 116
Plate 96, fig. 19

LOCAL NAME. *Chongto-phep-pho* (Lepcha).
SIZE. Bulbul—; length c. 18 cm (7 in.).
FIELD CHARACTERS. Above, head deep ferruginous; rest of upperparts olive-brown. Below, whitish tinged with buff on sides of belly. Distinguished from Lesser Redheaded Parrotbill (1245) by its larger size, less blunt bill, less graduated tail and deep ferruginous sides of head. Sexes alike.
STATUS, DISTRIBUTION and HABITAT. Resident, locally distributed. Darjeeling, Sikkim, Bhutan and NEFA to the Dibang river; from plains level to 1400 m at all seasons. Affects bamboo, scrub growth, dense thickets of reeds and mixed grasses along the banks of rivers.
GENERAL HABITS, FOOD and VOICE. As in 1248.
BREEDING. Season, April to July. Nest, a neat and compact cup of grass strips and a very few cobwebs, lined with fine fibrous threads of bamboo stems. The material used is particularly clean and new-looking. The neatness and yellowness of the nest is a conspicuous feature. Placed and fastened in the spray of a bamboo, in saplings or in reeds between one and two metres from the ground. Eggs, 2 or 3, of two types: (a) white to dull creamy marked with light to dark brown with secondary markings of lavender, or (b) blue-grey marked with dark brown and reddish brown; in both types the markings consist of smudges and ill-defined blotches, more numerous at the large end. Average size of 12 eggs 22.6 × 16.7 mm (Baker).
MUSEUM DIAGNOSIS. Differs from *bakeri* (1248) in being smaller and in having the ferruginous of the head darker, the rest of upperparts tinged with rusty, and the buff of the underparts restricted to the flanks.
Young, like adult but paler on head and cheeks; wings, tail and back washed with rusty brown; first primary more rounded and tail-feathers narrower.
MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	84-90	15-16	28-29	75-85 mm (Baker, MD, SA)

Weight 1 ♂ 30; 1 ♀ 34 g (SA).
COLOURS OF BARE PARTS. Iris deep red-brown; orbital skin slate-blue. Bill: upper mandible horny brown, lower fleshy brown; mouth slate-blue. Legs dark plumbeous blue; claws horn-brown.

206

TIMALIINAE

1246. Blackbrowed Parrotbill. *Paradoxornis atrosuperciliaris atrosuperciliaris* (Godwin-Austen)
Chleuasiscus ruficeps var. *atrosuperciliaris* Godwin-Austen, 1877, Proc. Asiat. Soc. Bengal 46: 147 (Sadiya, Assam)
Suthora ruficeps rufina Koelz, 1952, Jour. Zool. Soc. India 4: 37 (Laikul, N. Cachar)
Baker, FBI No. 102, Vol. 1: 114
Plate 96, fig. 21

LOCAL NAME. *Dao mougasha* (Cachari).
SIZE. Sparrow; length c. 15 cm (6 in.).
FIELD CHARACTERS. Above, crown, nape and sides of neck ferruginous, ear-coverts ochraceous; a pale area around the eye and a short black supercilium. Back rufous olive-brown; wings rufous and brown, inner edges buff; tail brown, graduated. Below, entirely creamy buff. Sexes alike.
The short black supercilium distinguishes it from the larger *P. ruficeps*.
STATUS, DISTRIBUTION and HABITAT. Uncommon resident. East Pakistan in the northeast highlands, Assam in the Khasi and Cachar hills, the Patkai Range, and NEFA in the Mishmi Hills and Abor-Miri Hills (?); from c. 600 to 1500 m, reaching the foothills in winter. Affects reed-bamboo and high grass and scrub jungle.
Extralimital. Northern Burma and western Yunnan to western Laos.
GENERAL HABITS. Goes about in parties of six to twelve or more, almost invariably in company with *Gampsorhynchus rufulus* (1347), often with *P. ruficeps* and *P. flavirostris*. A great skulker never taking flight unless forced, working through cover; every now and then an individual will climb to a tall grass stem, chirp loudly and immediately descend again. Often feeds upside-down like a tit. Flight fluttering, similar to that of *Gampsorhynchus*.
FOOD. Vegetable matter and insects. The stomach of one individual contained small seeds, small beetles, a spider's nest and a pupa (Stanford).
VOICE and CALLS. A distinctive and curious wheezy call-note, like the twang of a guitar, and a loud chittering alarm-note (Smythies); also a mewling note [same as above?] (Stanford).
BREEDING. Season, April to July. Nest, a deep cup of fine shreds of grass and whitish grass-bark, broad pieces of bamboo leaves, lined with some grass stems and a few scraps of tree bark. The colour of the exterior is yellowish white, that of the interior darker and browner. Placed in a cluster of twigs growing from a bamboo node or attached to some coarse reeds within a couple of metres from the ground. Eggs, apparently 3, pale blue. Size, (one) 19.5 × 15.2 mm (Baker).
MUSEUM DIAGNOSIS. Differs from *oatesi* in being darker and more richly coloured and having a black supercilium. Distinguished from *P. ruficeps* by smaller size, blunter bill and the presence of a supercilium.
MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
1 ♂	74	—	—	— mm (SDR)
1 ♀	70	11	22	71 mm (DeGayer)

208

TIMALIINAE

1248. Assam Redheaded Parrotbill. *Paradoxornis ruficeps bakeri* (Hartert)
Scaevola ruficeps bakeri Hartert, 1900, Novit. Zool. 7: 548 (Hungnam, N. Cachar)
Prithiparus ruficeps prithiparus Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 2 (Sangau, Lushai Hills)
Prithiparus ruficeps rufinotus Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 2 (Cherrapunji, Khasia Hills)
Baker, FBI No. 105, Vol. 1: 117

LOCAL NAMES. *Dao mougasha gejae* (Cachari); *Indo-rui ingaoria* (Naga); *Wahleira* (Mikir).
SIZE. Bulbul—; length c. 18 cm (7 in.).
FIELD CHARACTERS. As in 1247, but entire underparts buff.
STATUS, DISTRIBUTION and HABITAT. Resident; locally common. NEFA in the Mishmi Hills east and south of the Dibang river, the Patkai Range, Nagaland, Manipur and the adjacent hills of Burma, the hills of Assam south to the Mizo (Lushai) Hills, and the hills of East Pakistan south to Sylhet and the Chittagong region. From the foothills to at least 1800 m, more usually above 600 m. Affects wet forest, bamboo and scrub jungle and, in the foothills, reed-beds and elephant grass.
Extralimital. Northern and eastern Burma. Another subspecies in northern Vietnam.
GENERAL HABITS. Keeps in pairs or small parties, often consorting with other babblers. Actions very tit-like but slower. Spends much of its time clambering about the smaller twigs and branches, sometimes hanging head downwards and in this fashion proceeding along the lower side of some thin branch. In reeds and long grass, moves about like babblers, taking short flights from stem to stem, alighting on the ground, then climbing again to the summit of a reed before once more taking flight. A skulker like other members of the genus; when disturbed makes its way through cover without showing itself and disappears. Flight level but weak, never long-sustained — a few wing-flaps followed by a short glide; in flying the wings make a soft whirl peculiar to the species.
FOOD. Insects and seeds.
VOICE and CALLS. A very characteristic squirrel-like chitter interrupted with a series of rather slowly pronounced double notes *tee-ur* (SDR). When feeding, utters a constant *chir-chirup* and when separated from one another, its call is the typical bleat of the family. 'So curiously like it to the plaintive bleat of a small kid in distress that I have more than once been deceived by it' (Baker). A peculiar snapping of the bill may be heard as a party moves about.
BREEDING. Season, April to July. Nest and eggs, as in 1247. Average size of 47 eggs 21.5 × 16.7 mm (Baker).
MUSEUM DIAGNOSIS. Differs from *ruficeps* in having the entire underparts buff; there is a considerable variation in the shade of colour of the head and of the upperparts.
MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	89-95	15	28	82-85 mm (Baker, MD)

BABBLERS

209

Wing ♂ 86-90; ♀ (2) 84 mm (SDR).
COLOURS OF BARE PARTS. Iris brown to reddish brown; orbital skin blue.
Bill: upper mandible dark brownish or blackish horn; lower and tip of upper greyish horn. Legs and feet bluish grey.

PARADOXORNIS GULARIS Gray

Key to the Subspecies

Underparts white *P. g. gularis*
Underparts suffused with fulvous *P. g. transfluvialis*

1249. Greyheaded Parrotbill. *Paradoxornis gularis gularis* Gray

Paradoxornis gularis Gray, 1845, Gen. Bds. 2: 389 (Bhutan, ex Horsfield MS.)
Baker, FBI No. 106, Vol. 1: 118

Plate 96, fig. 16

LOCAL NAME. *Chongto phep-pho* (Lepcha).

SIZE. Bulbul —; length c. 16 cm (6 in.).

FIELD CHARACTERS. *Above*, head dark grey with black forehead continued behind in a black supercilium extending to the nape. Lores and eye-ring white. Bill yellow. Rest of upperparts rufous-brown, wings and tail darker. *Below*, white, with a black bib. Sexes alike. The conspicuous head pattern renders this species unmistakable.

STATUS, DISTRIBUTION and HABITAT. Resident; scarce and local. Darjeeling, Sikkim and through Bhutan and NEFA east to Sadiya; from c. 900 to 1500 m (once 2400 m), reaching the duars and plains in winter. Affects bamboo, bushes and low trees.

GENERAL HABITS, FOOD and VOICE. As in 1250, q.v.

BREEDING. *Season*, April to June. The only nest recorded was said to have been placed in the fork of a tree, 9 metres from the ground. *Nest* and *eggs*, as in 1250.

MUSEUM DIAGNOSIS. Differs from *transfluvialis* (1250) in having the underparts suffused with fulvous.

Young. Similar to adult but upperparts brighter rust colour; crown not so pure grey; black chin-patch less defined. First primary rounded; tail-feathers narrower.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	85-95	13-14	c. 27	74-80 mm
♀♀	84-89	12 (1)	23 (1)	74 (1) mm
			(Ludlow, Baker, SA)	

Weight 1 ♂ 29; 1 ♀ 29 g (SA).

COLOURS OF BARE PARTS. Iris red-brown. Bill chrome-yellow. Legs and feet greenish horn (HW). Bill orange-yellow. Legs slaty green (Stanford).

1250. Assam Greyheaded Parrotbill. *Paradoxornis gularis transfluvialis* (Hartert)

Scotorynchus gularis transfluvialis Hartert, 1900, Novit. Zool. 7: 584
(Guilang, N. Cachar)

Prittiparus gularis schoeniparus Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 2
(Karong, Manipur)

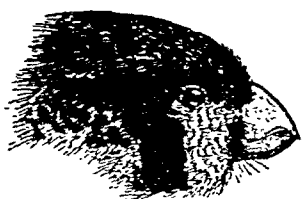
Baker, FBI No. 107, Vol. 1: 118

LOCAL NAMES. *Deo mougasha gophu* (Cachari); *Indo-ruí gahabele* (Kacha Naga).

BABBLERS

211

olive-brown; wings and tail brown; ear-coverts black, cheeks white; a very deep, parrot-like yellow bill. *Below*, chin black; upper throat barred white and brown; throat deep brown; rest of underparts fulvous. Sexes alike.



x c. 1

The black ear-coverts distinguish this species from all parrotbills except *P. guttaticollis* which has whitish underparts and almost no black on throat.

STATUS, DISTRIBUTION and HABITAT. Resident; scarce in the hills, locally common in the plains. From east

Nepal (two specimens in the British Museum, including type) east along the foothills through Darjeeling, Sikkim, Bhutan and NEFA to the Mishmi Hills, the plains of the upper Assam Valley and surrounding hills, Nagaland, Assam and East Pakistan in Sylhet and the Chittagong region. In the terai, duars and base of hills (once at 1900 m, Sikkim), up to 1500 in the Assam hills and to 2400 m in the Naga hills; also in the lowlands of the Assam Valley. In the latter region, affects dense thickets of reeds, elephant-grass, wild cardamom, and mixed grasses along the banks of rivers; in the hills, mixed grass and bamboo but keeps mostly to the valleys where there is plenty of ekra or elephant-grass.

GENERAL HABITS. In the non-breeding season, keeps in small parties of up to a dozen birds, more often only seven or eight. Very shy and reluctant to take flight but greatly adept at concealing itself. When undisturbed, often mounds to the tops of reeds, now and then taking short flights into the air much in the manner of some *Prinias*, uttering a loud chirrup as it rises (display?). Keeps low down when under observation. The noise made by their mandibles as they nibble at the reeds is distinctly audible though the birds may not be visible.

FOOD. Chiefly vegetable matter (bamboo shoots, seeds); also insects and their larvae found in the crevices of reeds, especially during the breeding season.

VOICE and CALLS. A striking whistle rendered as *phew, phew, phew*, *phuit* commencing in a low tone and rapidly ascending in scale and volume (Stevens). Other notes: a bleating or mewling cry (Baker), and a mellow warble of three notes (Cripps).

BREEDING. *Season*, April to July. *Nest*, a very neat and compact, deep cup, made with fine strips of bark or coarse grasses and bamboo, mixed with fine strips of bamboo or grass blades, bound with cobwebs, lined with grass, bark and fine grass stems, occasionally with hair. The clear, yellow colour of the nest is remarkably bright but blends perfectly with the surroundings. Usually affixed to three or four reed-stems or in a cluster of twigs jutting out from a bamboo node, at a height of one to one and a half metres above the ground, exceptionally in saplings. This species seems to have a predilection for wet places and even in the hills selects a wet patch where there is some grass, cane or reeds. *Eggs*, 2 or 3, occasionally

210

TIMALIINAE

SIZE. Bulbul —; length c. 16 cm (6 in.).

FIELD CHARACTERS. As in 1249, but underparts suffused with fulvous.

STATUS, DISTRIBUTION and HABITAT. Common resident. The hills of Assam, East Pakistan in the Chittagong region, Manipur and Nagaland, north in the Patkai Hills to the range of *gularis*; from 600 to 2100 m. Affects bamboo jungle and various types of forest.

Extralimital. Burma and northwestern Thailand; the species extends to central Vietnam, Hainan, Fukien and Anhwei.

GENERAL HABITS. Keeps in small parties of six to eight birds in trees as well as bushes, low tree jungle or undergrowth in lofty forest; less restricted to bamboo than other parrotbills, less of a skulker, and apparently does not associate with them or other babblers. 'Their way of picking up a bud, carrying it to a convenient twig and holding under their feet while picking it to pieces is very tit-like' (La Touche).

FOOD. Vegetable matter, grubs and insects (La Touche).

VOICE and CALLS. A loud call of four notes on the same tone when one bird of a pair is calling to the other; alarm, a harsh chattering note (Smythies).

BREEDING. *Season*, April to July. *Nest*, a very neat, compact cup of grass well bound with cobweb, lined with fine grass stems and shreds of grass bark. Placed in saplings, usually between two and three metres above the ground. *Eggs*, 2 or 3, rarely 4, variable in colour and markings but similar to those of *P. ruficeps* (1247). Average size of 71 eggs 21.1 × 15.9 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	85-90	12-13	c. 25	c. 78 mm
		(Depth at base 9-10)		(Baker)

COLOURS OF BARE PARTS. Iris deep red-brown. Bill chrome-yellow to almost orange horny yellow. Legs and feet slaty brown, occasionally with a bluish tinge.

1251. Gould's or Blackthroated Parrotbill. *Paradoxornis flavirostris* Gould¹

Paradoxornis flavirostris Gould, 1836, Proc. Zool. Soc. London: 17 (Nepal)
Baker, FBI No. 90, Vol. 1: 105

Plate 96, fig. 17

LOCAL NAMES. *But-but sorü* (plains Miris); *Deo mougasha gadeba* (Cachari).

SIZE. Bulbul; length c. 19 cm (7½ in.).

FIELD CHARACTERS. *Above*, crown and nape rufous-chestnut; back

¹ *Paradoxornis flavirostris* and *P. guttaticollis* should be listed as a superspecies, most closely related to each other; the differences in calls, size, hind toe and bill size (the latter not apparent in measurements) and lack of intergradation in their area of overlap with strict ecological and altitudinal replacement, incline us to think that they are species, perhaps a double invasion of Assam of similar ancestral stock after long isolation.

212

TIMALIINAE

4, white, sparsely speckled at the larger end with pale reddish. Average size of 50 eggs 21.9 × 16.2 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *P. guttaticollis* as follows: upperparts including crown darker; chin barred black and white; throat dark brown; rest of underparts fulvous. It is also a little larger and somewhat stouter.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	85-90	c. 12	c. 30	100-110 mm
				(Baker)

Bill from skull, 19 mm; greatest depth of upper mandible c. 10 mm. Length of hind toe including claw c. 20 mm.

COLOURS OF BARE PARTS. Iris deep red or red-brown. Bill wax-yellow to bright yellow. Legs clear slate to plumbeous grey.

1252. Whitethroated Parrotbill. *Paradoxornis guttaticollis* David

Paradoxornis guttaticollis David, 1871, Nouv. Arch. Mus. Paris 7: 14
(Moupin, east Chwanben, China)

Paradoxornis austeni Gould, 1874, Bds. Asia 3, pt. 26, pl. 73
(near Kuchai, Naga Hills and Shillong, Assam)

Baker, FBI No. 91, Vol. 1: 106

Plate 96, fig. 18

LOCAL NAME. *Deo mougasha gadeba* (Cachari).

SIZE. Bulbul; length c. 19 cm (7½ in.).

FIELD CHARACTERS. *Above*, crown and nape rufous-cinnamon; rest of upperparts olive-brown; cheeks white; ear-coverts black. *Below*, pale creamy buff lightly speckled with black on throat. Sexes alike.

Distinguished at once from *P. flavirostris* in lacking the dark brown throat, and from other parrotbills by its black ear-coverts.

STATUS, DISTRIBUTION and HABITAT. Resident; locally common. East Pakistan in Sylhet and the Chittagong Hill Tracts, the hills of Assam north to Nagaland and the Patkai Range; from c. 900 to over 2100 m, mostly 1500 to 1800 m. Replaces *P. flavirostris* at higher elevations. Affects scrub and grass on abandoned cultivation, bushes, and bamboo jungle but is less restricted to the latter than Blackthroated Parrotbill (1251).

Extralimital. Extends east to northern Vietnam, Kwangtung and Fukien.

GENERAL HABITS. A noisy, pugnacious bird found in small parties, sometimes in association with other babblers, e.g. *Garrulax ruficollis*. Carriage upright as in others of the genus.

FOOD. Insects and seeds (including cultivated millet).

VOICE and CALLS. A series of 6 or 7 harsh, peculiar notes on the same tone, lasting about two seconds; alarm, a variety of chattering and strident notes (Smythies). Also a bleating call (Baker).

BREEDING. *Season*, April to June. *Nest*, similar to that of *P. flavirostris*, made with the same yellow material and lined with yellowish, rarely dark-coloured strips of grass. As a rule placed between 90 and 180 cm above the ground in bamboo clumps, or occasionally in a shrub or stout weed. Little attempt is made at concealment and attention is drawn to it by the

BABLERS

213

fussy and noisy behaviour of the owners. Eggs, 2 or 3, variable but indistinguishable from those of *P. flavirostris*. One variety is described as pale green-grey with numerous but faint blotches and smudges of sepia and brown, and underlying spots of lavender and a few scrawly lines of dark brown. Average size of 34 eggs 22.2 × 16.4 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *P. flavirostris* in having the underparts pale cream-buff, not fulvous, lightly speckled with black on throat; upperparts paler, less rufous; bill smaller and legs weaker.

Young. Similar to adult but crown paler; upperparts and edges of wings and tail tinged with pale rust. First primary (as.) more rounded with broader outer web; rectrices narrower and more pointed.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	80-85	8-9	c. 26	c. 100 mm (Baker)

Bill from skull 17 mm; greatest depth of upper mandible 10 mm. Length of hind toe including claw 17 mm.

Weight 1 ♀ 26 g (SDR).

COLOURS OF BARE PARTS. Iris brown to red-brown. Bill wax-yellow. Legs and feet slaty grey (Baker). Iris brown. Bill yellow. Feet bluish grey (SDR).

Genus TURDOIDES Cretzschmar

Turdoides Cretzschmar, 1826, in Rüppell's Atlas zu der Reise in n. Afrika, (Vög.): 7, pl. 4. Type, by monotypy, *Turdoides leucocephala* Cretzschmar

Argus Lesson, 1831, Traité d'Orn.: 402. Type, by subsequent designation (Gray, 1855), *Malurus squamiceps* Cretzschmar

Acanthoptila Blyth, 1855, Jour. Asiat. Soc. Bengal 24: 478. Type, by original designation, *Timalia nipalensis* Hodgson

Differs from *Garrulus* in having the covering membrane of the nostrils more or less covered by plumes. Rictal bristles short and stout; feathers of the forehead short, firm and close. Legs very strong.

Key to the Species

	Page
I Breast with distinct black streaks..... <i>T. nipalensis</i>	234
II Breast not distinctly streaked	
A Throat cinnamon..... <i>T. rufescens</i>	231
B Throat not cinnamon	
a Forehead with white shaft-streaks..... <i>T. malcolmi</i>	220
b Whole crown heavily streaked with dark brown	
1 Throat white or pinkish buff..... <i>T. caudatus</i>	214
2 Throat fulvous with dark shaft-streaks..... <i>T. earlei</i>	216
c Crown unstreaked	
3 Crown cream-buff paler than back or concolorous but back with a varying amount of rufous..... <i>T. affinis</i>	232
4 Forehead deep grey..... <i>T. subrufus</i>	222
5 Crown concolorous with or darker than back	
i Lores and chin white, bill black..... <i>T. longirostris</i>	219
ii Lores and chin not white, bill yellow..... <i>T. striatus</i>	224

BABLERS

215

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	85-94	21-25	28-30	112-128 mm (HW, Tiechurst)

Weight 1 ♀ 38; 1 ♂ 31 g (BB).

COLOURS OF BARE PARTS. As in 1254.

1254. Common Babbler. *Turdoides caudatus caudatus* (Dumont)

Cassythrus caudatus Dumont, 1823, Dict. sci. nat. (ed. Levaillant) 29: 268 (India)

Chalorhes [sic] *eclipses* Hume, 1877, Stray Feathers 5: 337

(Punjab, Trans-Indus = Peshawar)

Baker, FBI No. 192, Vol. 1: 198

Plate 79, fig. 4

LOCAL NAMES. Heddo, Lailo (Sind); Chiltchil, Sor, Genga, Chhōta gengā, Dumri (Hindi); Shirdādi (Gujarati); Chinna rida (Telugu); Huni (Tamil); Chilappan (Malayalam).

SIZE. Bulbul +; length c. 23 cm (9 in.).

FIELD CHARACTERS. A slim earthy brown babbler with a long, graduated, loosely attached tail. Above, head and back drab brown heavily streaked with dark brown. Tail narrowly cross-banded. Below, throat white; rest of underparts creamy buff or pinkish-buff lightly streaked with dark on sides of breast. Legs yellow. Sexes alike. For distinction from other members of the genus see Key to the Species.

STATUS, DISTRIBUTION and HABITAT. Resident; generally common and widely distributed, more locally so, south of the Godavari river. West Pakistan (except for the range of *huttoni*) and India from the N.W.F.P. along the foothills to Dehra Dun and the plains east to eastern Bihar (possibly northwestern East Pakistan) and eastern Madhya Pradesh (not recorded in Orissa), and the whole Peninsula south to Cape Comorin and Rameswaram Island; also the Laccadive Islands. In semi-desert and the dry plains and stony lower hills normally up to 900 m in the Peninsula; sometimes up to 2100 m in the Himalayas (Dharmasala). Affects xerophytic thorn scrub jungle, sandy flood plains dotted with clumps of tamarisk, sarpat grass (*Saccharum*), and ber bushes (*Zizyphus*), etc. Occasionally enters cultivation, gardens and compounds especially in the north.

GENERAL HABITS. Keeps in flocks of six to twenty individuals, sometimes even in the breeding season, spending its time on the ground, hopping about rapidly with a bouncing gait, more commonly scuttling like a rat under the sparse vegetation and hedges, uttering pleasant whistling trills. Switches tail before commencing to run, sometimes cocking it up to look like an oversize *Prinia*. When alarmed, e.g. at the appearance of a cat or mongoose, the birds nervously twitch their wings and hop from bush to bush, peering down at the intruder, loosely jerking their tails, the whole sisterhood combining to hurl invectives at it in disorderly chorus. Loath to take flight; when leaving one patch of cover for another, fly off singly, one after another with a weak flight—a few rapid flaps followed by a glide on outspread wings and tail, close to the ground. Roosts at night

214

TIMALIINAE

TURDOIDES CAUDATUS (Dumont)

Key to the Subspecies

Paler and greyer.....	<i>T. c. huttoni</i>
Darker and browner.....	<i>T. c. caudatus</i>

1253. Afghan Babbler. *Turdoides caudatus huttoni* (Blyth)

Malacocercus Huttoni Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 476 (Kandahar, Afghanistan)

Cf. Vaurie, C., 1953, Amer. Mus. Novit., No. 1642: 5-8

Baker, FBI No. 193, Vol. 1: 199

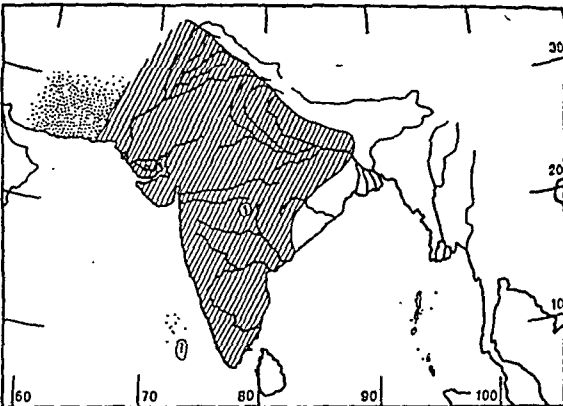
LOCAL NAMES. Pinkulag (Baluchi); Suru, Dām dārāz (Persian).

SIZE. Bulbul +; length c. 23 cm (9 in.).

FIELD CHARACTERS. As in 1254.

STATUS, DISTRIBUTION and HABITAT. Common resident. West Pakistan

Turdoides caudatus



in Baluchistan roughly west of a line from Kalat to the Basul river on the Makran coast. Affects scrub in the plains and lower hills up to 1200 m. *Extralimital.* Southeastern Afghanistan and eastern Iran. The species extends west to southwestern Iran and southeastern Iraq.

GENERAL HABITS, FOOD and VOICE. As in 1254, q.v.

BREEDING. Season, April and May. Nest and eggs, as in 1254.

MUSEUM DIAGNOSIS. Similar to *caudatus* but paler and greyer, the central marks on the feathers less defined and not so dark.

216

TIMALIINAE

in a tightly packed row along a favourite branch, all heads facing the same way, preceded by much characteristic community trilling.

FOOD. Mainly insects—ants, caterpillars, beetles, grasshoppers, etc. Flying termites frequently captured in mid-air, like bulbul, by springing a metre or so vertically from a bush-top; also spiders, grains and berries especially *Lantana*. In season, feeds largely on the nectar of *Capparis aphylla* flowers; the birds get their forehead thickly coated with pollen and thus act as important fertilization agents.

VOICE and CALLS. A number of pleasant musical whistles which-which-which-ri-ri-ri-ri constantly uttered as the flock moves about. Squeaky alarm-notes when suddenly come upon, very like those of a covey of bush quails (*Perdix*) when flushed and scattering.

BREEDING. Season, varying locally to cover almost the whole year; mostly March to July, extending into October. Double-brooded. Nest, a neat compact cup of grass and rootlets, practically always lined with the same but finer material. It is typical, and once seen cannot be mistaken for any other, the most noticeable points being symmetry of form, cleanliness and the great thickness of the walls. Almost invariably placed low down in thorny bushes (e.g. *Zizyphus*, *Prosopis*, *Lantana*), generally between 60 and 120 cm from the ground, sometimes lower or up to 180 cm. A favourite situation is in hedges of prickly pear (*Opuntia*). Fronds of low date palms also availed of. Eggs, commonly 4, often 3, exceptionally 5, turquoise blue. Average size of 180 eggs 21.2 × 16.1 mm (Baker). Incubation takes 13 to 15 days. Both sexes share in construction, incubation, and nest-feeding. Frequently brood-parasitized by the Pied Crested Cuckoo (*Clamator jacobinus*) and Hawk-Cuckoo (*Cuculus varius*).

MUSEUM DIAGNOSIS. See Key to the Subspecies.

Young. Like adult but dark markings on head and nape rounder, occupying most of the feathers; tips and pale outer webs of wing-feathers paler. Postjuvinal moult complete.

Moult of adult are irregular and practically every stage of moult may be seen in different individuals at any time of the year.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	76-85	20-23 (once 25)	26-29	113-130 mm
♀ ♀	72-82	20-22	27-29	(1) 101 mm (HW, SA, Waite)

Weight 2 ♂♂ 40, 40 g (Roonwal). 10 ♂♀ 30-40 (av. 36) g—SA.

COLOURS OF BARE PARTS. Iris brown, yellow or orange-yellow. Bill fleshy brown or brown, base of lower mandible yellow; mouth pale flesh. Legs and feet yellow; claws horny brown. Gape and mouth of young bright yellow.

TURDOIDES EARLEI (Blyth)

Key to the Subspecies

Throat darker.....	<i>T. e. earlei</i>
Throat paler.....	<i>T. e. semistriatus</i>

BABBLERS

217

1255. Western Striated Babbler. *Turdoides earlei sonivius* (Koelz)

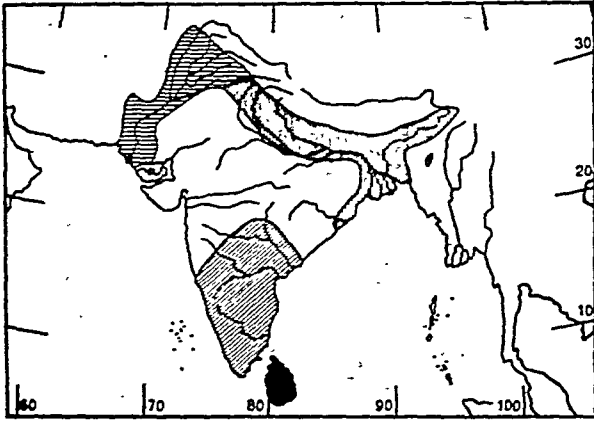
Argy earlei sonivius Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1:3 (Khinjar Lake, Sind)
Baker, FBI No. 191 (part), Vol. 1: 197

LOCAL NAME. *Lelo* (Sind).

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1256.

STATUS, DISTRIBUTION and HABITAT. Resident; very local. The plains of the Indus river system, from Peshawar and Bannu east to the Sutlej

Turdoides earlei and *T. offinis*

Distributional ranges

T. e. sonivius (1255).*T. e. earlei* (1256).*T. a. offinis* (1257).*T. a. leproderus* (1268).

river, south to Sibi (Baluchistan) and the mouths of the Indus. Affects reeds, bulrushes and high grass on swampy ground. Inhabits better wooded and moister localities than *T. caudatus*.

GENERAL HABITS, FOOD and VOICE. As in 1256.

BREEDING. Season, March to August. Probably double-brooded. Nest and eggs, as in 1256.

MUSEUM DIAGNOSIS. Similar to 1256 but throat paler.

MEASUREMENTS. 1 ♂ Wing 95; bill from skull 22 mm (SA). Other measurements and COLOURS OF BARE PARTS as in 1256.

BABBLERS

219

Weight 1 ♂ 46 g (Dieselhorst). 1 o? 48 g (BB).

COLOURS OF BARE PARTS. Iris yellow; eyelids plumbeous. Bill fleshy yellow, culmen, nostrils and tip darker horn colour; mouth yellow. Legs and feet plumbeous or fleshy plumbeous; claws pinkish.

1257. Slenderbilled Babbler. *Turdoides longirostris* (Hodgson)

Pycnonotus longirostris Hodgson, 1854, in Horsfield & Moore, Cat. Bds. Mus. E. I. Co. 1: 408 (Nepal)
Baker, FBI No. 197, Vol. 1: 202
Plate 79, fig. 10

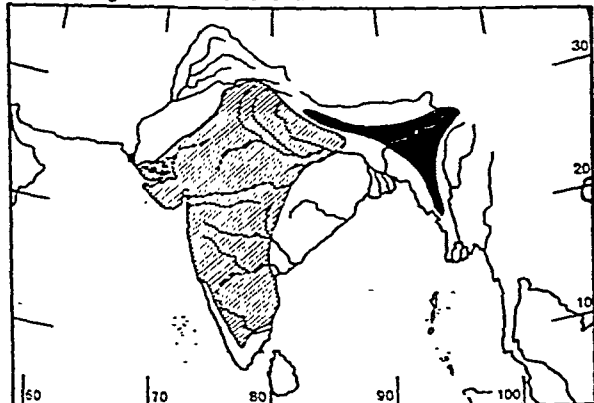
LOCAL NAME. *Des ling titri* (Cachari).

SIZE. Bulbul +; length c. 23 cm (9 in.).

FIELD CHARACTERS. Above, deep reddish brown; lores and cheeks whitish; ear-coverts ferruginous. Bill black, slender and curved. Below, chin and upper throat whitish; rest of underparts ferruginous becoming albescent on abdomen. Tail cross-barred. Sexes alike.

The whitish cheeks distinguish this species.

STATUS, DISTRIBUTION and HABITAT. Resident; locally common, especially so in the Manipur basin. Oudh terai (specimen in British Museum); Nepal terai (Hodgson) and east through Jalpaiguri district, the Sikkim, Bengal

Turdoides longirostris and *T. malcolmi*

Distributional ranges

T. longirostris (1257).*T. malcolmi* (1258).

and Assam duars, east Lakhimpur district near Sadiya, Assam in the Khasi Hills and Cachar, and Manipur (common round Logtak Lake). In the lowlands in long grass, usually near water, ditches or lakes; on the grassy plateaux of the Khasi Hills between 900 and 1200 m.

218

TIMALIINAE

1256. Striated Babbler. *Turdoides earlei earlei* (Blyth)

Malacocercus Earlei Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 369 (vicinity of Calcutta)
Baker, FBI No. 191 (part), Vol. 1: 197
Plate 79, fig. 5

LOCAL NAMES. *Bādā-phinga* or *ganga*, *Chilchil* (Hindi); *Dorā chhāstāri* (Bengali).

SIZE. Bulbul; length c. 21 cm (8 in.).

FIELD CHARACTERS. An earth-brown bird with a long graduated tail and streaked head and back. Above, head and back drab brown streaked with dark brown; tail finely cross-barred. Below, fulvous with dark shaft-streaks on throat and breast. Sexes alike.

Distinguished from *T. caudatus* by its fulvous (not white) throat; habitat (q.v.) different.

STATUS, DISTRIBUTION and HABITAT.

Resident; common in suitable biotope.

The plains of the Ganges and of the Brahmaputra river systems, from Punjab (east of the range of *sonivius*) through Uttar Pradesh, Nepal terai, Bihar (?), West Bengal, East Pakistan and Assam east to Sadiya; also Orissa in the Mahanadi river delta, and Manipur. Affects tall grass, elephant-grass, rushes and reed-beds in swampy areas, mainly along the course of the great rivers; also observed in dry grass and acacia scrub (winter only?). Replaces *T. caudatus* in moist terrain.

Extralimital. The plains of Burma.

GENERAL HABITS. Very gregarious and noisy, being found in flocks of 7-10 or more even in the breeding season. Clambers about reeds and grass in search of food and does not descend as much to the ground as other babblers. When one bird flies the rest follow one after the other, sailing with a weak flight, head poked out, then pitching into the grass.

FOOD. Insects and snails; also some vegetable matter.

VOICE and CALLS. A loud trisyllabic whistle *keep quiet* (Roseveare) and a rather slow *cheer cheer cheer* (Donahue).

BREEDING. Season, overall March to October or later, but with two main periods: March to May and August to October. Double-brooded. Nest, a neat, compact and rather massive, cup-shaped structure, made of grass, reed-leaves and rootlets, lined with the same but finer material and firmly bound to some close-growing reed-stems or placed in some little bush surrounded by high grass. Nearly all nests are found in the vicinity of water. Eggs, 3 or 4, pale blue. Average size of 60 eggs 22.8 × 17.6 mm (Baker). Brood-parasitized by Pied Crested Cuckoo (*Clamator jacobinus*).

MUSEUM DIAGNOSIS. Differs from *sonivius* in having a darker throat. Specimens from Assam are somewhat richer in colour.

Young. As adult but paler. Primary and tail characters present; postjuvinal moult complete.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	85-93	c. 20	c. 32	120-130 mm (Baker)

220

TIMALIINAE

Extralimital. Northern Arakan.

GENERAL HABITS. Gregarious and noisy like others of the genus; also singly (when quiet), and in pairs. An inveterate skulker. Keeps closely to the grass and rarely shows itself; threads its way through the densest growth with ease. Feeds both on the ground and above in grass and reeds.

FOOD. Mostly insects.

VOICE and CALLS. A variety of notes, some pleasant, some discordant.

BREEDING. Season, May and June. Nest, a neat cup of leaves, grass-blades, stems and a few twigs, bound together with fibres and rootlets and lined with fine grass-stems and rootlets; placed in small, scrubby bushes growing in a sea of grass. Eggs, 3 to 5, pale blue, similar to those of *T. caudatus*. Average size of 20 eggs 21.5 × 16.7 mm (Baker). The birds sit close; when leaving the nest they slink quietly into the grass and are not as noisy and demonstrative as most members of the genus. Not gregarious in the breeding season.

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	75-79	c. 18-19	c. 30	115-120 mm (Baker)

Weight 1 ♀ 35 g (SDR).

COLOURS OF BARE PARTS. Iris white or bluish white. Bill black. Legs and feet dark brown.

1258. Large Grey Babbler. *Turdoides malcolmi* (Sykes)

Timelia malcolmi Sykes, 1832, Proc. Zool. Soc. London: 88 (Dukhun = Poona)
Baker, FBI No. 195, Vol. 1: 200
Plate 79, fig. 8

LOCAL NAMES. *Ghagāi*, *Gāgāi*, *Sāthāi* (Hindi); *Gongye* (Kannada); *Kākāiti* or *Khāits* (Marathi); *Bhāizā* (U.P., Lucknow); *Lālāis* (Gujarati); *Verrā-chāda*, *Gemo-sida* (Telugu).

SIZE. Myna; length c. 28 cm (11 in.).

FIELD CHARACTERS. Above, greyish brown mottled with dark brown on back. Forehead with pale ashy (whitish) shaft-streaks. Tail faintly cross-barred. Below, creamy buff with a pinkish tinge on throat and breast. Sexes alike.

The light ashy forehead, bright yellow eyes, and whitish outer feathers of the long graduated tail (spread out in flight) are diagnostic.

STATUS, DISTRIBUTION and HABITAT. Resident; common but locally distributed; most common on the Deccan tableland. May have spread recently with increase in cultivation. From Punjab (Ferozepore and Ludhiana) east along the edge of the plains to eastern Uttar Pradesh (Gorakhpur and Ghazipur), south through Rajasthan (east of the Thar Desert) to Kutch and Saurashtra, and through the Peninsular south to Tamil Nadu (Nilgiris and Palni), and east to a line Ghazipur-Ambikapur (east M.P.)-Nellore. Its occurrence in Sind (Schwan *vide Itis* 1922: 541) and in Kerala needs confirmation. Ascends the hills to c. 1200 m in the

BABLERS 221

Peninsula. Affects dry, open, sparsely scrubbed country, babool and dhāk (*Butea*) jungle, cultivation, city gardens and village environs (though not everywhere). Usually found in less dry facies than that of *T. caudatus* and not so wooded as that of *T. striatus*, but locally side by side with either. (See map, p. 219.)

GENERAL HABITS. Very gregarious; keeps in parties usually of five to twelve birds even during the breeding season, though nesting birds separate into pairs; flocks of twenty are common and sometimes as many as forty keep together. Frequently seen in association with Common and Jungle Babblers in appropriate facies. Feeds on the ground and in low vegetation. Active on legs, feeble on wings. Very excitable; if one member is set upon by a hawk or other enemy, the rest of the flock combines in its defence with much noise and bluster and may succeed in driving off the marauder. In scrub jungle it is the first bird to give warning of an intruder's approach, thus causing annoyance to observers by alerting other species.

FOOD. Mostly insects; also grain, seeds and berries. Sometimes ripening jowari on cob in standing fields.

VOICE AND CALLS. Unmistakable for that of the Jungle Babbler, being flatter and less squeaky. Common call, a monotonous, plaintive, drawling *kay-kay-kay-kay* etc., kept up in chorus for minutes at a stretch. A short alarm-note, and noisy chattering on spying an enemy.

BREEDING. Season, ill-defined; nests are found in every month, but most birds breed during the hot months and the monsoon, from March to September, with possibly two peak periods: March-April and June-July with some regional variation. Nest, an untidy cup of grass, small twigs and roots, either without lining or with a slight one of fine rootlets and grass-bents. Generally placed low down in scrub, but quite often in small trees up to five, rarely nine metres. Eggs, 4, often 3, glossy blue. Average size of 36 eggs 24.2 × 19.5 mm (Baker). Commonly brood-parasitized by Pied Crested Cuckoo (*Clamator jacobinus*), two fledglings of the latter along with one or two (or none) of the babbler frequently observed with a flock. Communal nesting common (or usual?). Pairs continue to remain with the flock throughout, merely detaching themselves from time to time to attend to their domestic chores. More than one pair often seen working on the same nest and sharing in incubation and feeding the nestlings. The 'sisterhood' takes corporate action in the care of the nest and the fledglings after they leave it, even though these be only impostor cuckoos. (For an interesting note on communal nesting see Malcolm Macdonald, JBNHS 56: 132, and editorial comment.)

MUSEUM DIAGNOSIS. See Key to the Species.
Young. Like adult but no spots on mantle and more buffish, less grey on upper coverts. Primary characters present; postjuvénal moult complete.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	108-120	22-27	35-36	129-145 mm
♀♀	110-118	23-24	34-35	128-136 mm (HW, SA)

Weight 27 ♂ ♀ 63-92 (av. 75.7) g—SA.

BABLERS 223

plains and foothills to c. 1000 m. Affects dense scrub undergrowth, particularly where intermixed with tall coarse grass and bamboo brakes, edges of forest and abandoned coffee clearings.

GENERAL HABITS, FOOD AND VOICE. As in 1260, q.v.
BREEDING. As in 1260.

MUSEUM DIAGNOSIS. Like *hyperythrus*, but less richly coloured.
MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1260.

1260. Kerala Rufous Babbler. *Turdoides subrufus hyperythrus* (Sharpe)

Argya hyperythra Sharpe, 1883, Cat. Bds. Brit. Mus. 7: 390 (Madras, restricted to Palghat by Ripley, 1953, Postilla No. 17: 4)
Baker, FBI No. 196 (part), Vol. 1: 201

LOCAL NAME. *Chenchilappan* (Malayalam).
SIZE. Myna —; length c. 25 cm (10 in.).
FIELD CHARACTERS. Above, forehead deep grey; rest of upperparts olive-brown tinged with rufous. Tail slightly cross-barred. Below, bright ferruginous. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident; fairly common. Kerala and western Tamil Nadu; plains and foothills to c. 1000 m. Affects secondary jungle and dense scrub undergrowth in evergreen or moist-deciduous biotope — especially where intermixed with tall coarse grass and bamboo brakes as on the edge of forest clearings for cultivation and plantations. Though habitat sometimes overlaps that of the Jungle Babbler locally, the two species do not intermingle.

GENERAL HABITS. Usually keeps in parties of six to eight individuals rummaging among fallen leaves, flicking them aside or turning them over in search of insects. A great skulker, more often heard than seen, creeping in and out of bamboo stems with the agility of a rat. Especially wary when venturing up into the branches of trees for flower-nectar, and will dive headlong into the undergrowth on the slightest suspicion.

FOOD. Mainly insects, but also berries, particularly of *Lantana*, and nectar of *Erythrina*, *Salmdia* and other flowers.

VOICE AND CALLS. A continual shrill but not unpleasant whistling *tree-tree-tree*, rather of the quality of the chirping of a large cricket, sometimes without a break for ten seconds or more, preceded and punctuated now and then by one or two typical harsh babbler squeaks (SA). Same squeaks on alarm.

BREEDING. Season, not well-defined: overall February to November, mostly February to May. Nest, a deep, massive cup of leaves, grass blades, and creeper stems carelessly and roughly wound about the exterior, lined more neatly with fine rootlets. Placed in a fork in bushes or small trees. Eggs, normally 4, dark blue. Average size of 17 eggs 25 × 18.1 mm (Baker).

MUSEUM DIAGNOSIS. More richly coloured than *subrufus*.
Young. Like adult but upperparts deeper, richer brown. Postjuvénal moult complete.

222 TIMALIINAE

COLOURS OF BARE PARTS. Iris bright lemon-yellow. Bill horny brown, darker at gape and paler at base of lower mandible; mouth blackish brown (bright lemon-yellow in juvenile). Legs and feet brownish grey; claws dusky.

TURDOIDES SUBRUFUS (Jerdon)

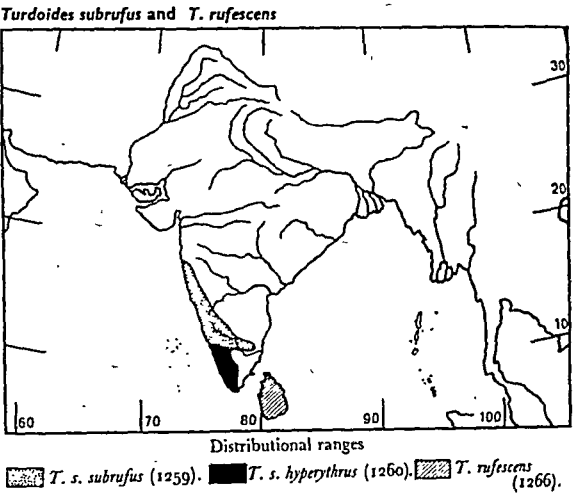
Key to the Subspecies

More richly coloured..... *T. s. hyperythrus*
Less richly coloured..... *T. s. subrufus*

1259. Rufous Babbler. *Turdoides subrufus subrufus* (Jerdon)

Timalia subrufa Jerdon, 1839, Madras Jour. Lit. Sci. 10: 259 (Manantoddy, Wynaad)
Timalia poecilorhyncha Lafresnaye, 1840, Rev. Zool.: 65 (Nilgiris, restricted to the northern slopes by Ripley, 1953, Postilla No. 17: 4)
Baker, FBI No. 196 (part), Vol. 1: 201
Plate 79, fig. 12

LOCAL NAME. *Jungli-khyr* (Hindi).
SIZE. Myna —; length c. 25 cm (10 in.).
FIELD CHARACTERS. As in 1260.
STATUS, DISTRIBUTION AND HABITAT. Resident, rare in the northern parts, commoner in the southern. Maharashtra in the Western Ghats from Mahabaleshwar south through Mysore to the northern slopes of the Nilgiri Hills and east in northern Tamil Nadu to the Shevaroy Hills. From the



224 TIMALIINAE

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	89-94	21-25	c. 33	115-118 mm
♀♀	88-92	21-22	c. 33	103-105 mm (HW, SA, Koelz)

Weight ♂ ♀ 2-2.7 oz (c. 57-78 g) — Davison.
COLOURS OF BARE PARTS. Adult. Iris creamy white. Bill: upper mandible dark horny brown except at gape; lower mandible, gape and mouth bright yellow. Legs and feet dusky yellow; claws dusky. Young. Iris dark grey. Legs patchy brown and yellow in front, yellow behind. Rest as in adult.

TURDOIDES STRIATUS (Dumont)

Cf. Ripley, S. D., 1958, Postilla, Yale Peabody Mus., No. 35: 5-10
Naik, R. M. & Andrews, M. I., 1966, *Paco* 4: 22-47
Andrews, M. I. & Naik, R. M., 1966, *Paco* 4: 48-57

Key to the Subspecies

	Page
A Tail ashy at base, general colour ashy	224
1 General colour paler, belly cream-buff..... <i>T. s. sindianus</i>	
2 General colour darker, belly more fulvous buff	230
a Greyer; throat and breast less heavily mottled..... <i>T. s. striatus</i>	
b Browner; breast heavily streaked..... <i>T. s. orientalis</i>	226
B Tail rufous- or warm brown, general colour browner	228
3 Rump buff, paler than back..... <i>T. s. somervillei</i>	
4 Rump concolorous with back	228
c Breast and upper belly heavily streaked..... <i>T. s. malabaricus</i>	
d Breast and upper belly fulvous, hardly streaked..... <i>T. s. arisanus</i>	229

1261. Sind Jungle Babbler. *Turdoides striatus sindianus* (Ticehurst)

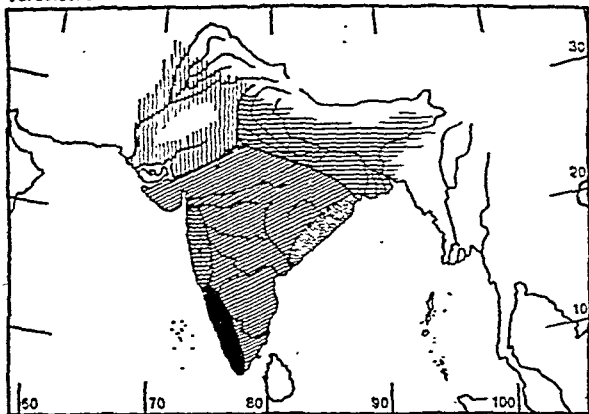
Crateropus terricolor sindianus Ticehurst, 1920, Bull. Brit. Orn. Cl. 40: 156 (Karachi, Sind)
Baker, FBI No. 185, Vol. 1: 193

LOCAL NAMES. *Sāibhāi* (Hindi); *Vānd lālto* (Gujarati); *Nelō, Kangō* (Bhil).
SIZE. Myna; length c. 25 cm (10 in.).
FIELD CHARACTERS. As in 1262, but tail grey-brown, visibly barred.
STATUS, DISTRIBUTION AND HABITAT. Resident; common but unevenly distributed. West Pakistan, Punjab, Rajasthan and Kutch, from the Himalayan foothills (Kohat to Simla) south along the Indus valley to Karachi

BABBLERS

225

and east from the Gulf of Kutch to the Yamuna and Chambal rivers, including the Aravalli Range but excluding the Thar Desert. Intergrades with other subspecies along its eastern limits. In the plains and foothills

Turdoides striatus

Distributional ranges

■ *s. striatus* (1265). ■ *s. orientalis* (1262). ■ *s. somervillei* (1263). ■ *s. malabaricus* (1264). ■ *s. erissae* (1264a).

up to 1200 m, locally up to 1800 m. Affects cultivation, gardens, mango groves, sheesham plantations with tall coarse grass (where it is found side by side with *T. earlei*), tamarisk jungle, and scrubby hillsides.

GENERAL HABITS, FOOD and VOICE. As in 1262, q.v.

BREEDING. Season, ill-defined, mostly March to September. Nest and eggs, as in 1262. Average size of 21 eggs 24.1 × 17.9 mm (Osmaston); of 30 eggs 25 × 19.4 mm (Baker).

MUSEUM DIAGNOSIS. Differs from nominate *striatus* (1265) in being more ashy above; belly paler, cream-buff. Differs from *orientalis* in having the breast mottled as the throat, not heavily streaked; *somervillei* is much browner, has a rufous-brown tail, blacker wing-quills, darker throat and ochraceous-buff belly.

Young, like adult but paler. Primary and tail characters present; postjuvenile moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	104-111	21-25	35-37	100-114 mm
♀♀	99-110	23-25	35	104-110 mm (HW)

Weight 2 ♂♂ 66, 77; 3 ♀♀ 68-77; 1 ♂ 59 g (BB, Paynter).

BABBLERS

227

Very fond of nectar of *Salmaia*, *Butea*, *Erythrina* and other blossoms which it doubtless helps to cross-pollinate.

VOICE and CALLS. A harsh conversational *ki-ki-ki* uttered as the birds move about which frequently breaks out into a loud, discordant chorus of squeaking and chattering under any sort of excitement.

BREEDING. Season, ill defined; mainly March to October with a peak period from June to August, after the onset of the rains; nests may be found every month. For details of gonadal cycles, weights and sexual maturity see M. I. Andrews & R. M. Naik, 1966, *Pavo* 4: 48-57. Nest, a loosely put together cup of twigs, roots, grass and various other material, scantily lined with rootlets and fine grass. Placed in bushes and trees from one to nine metres above the ground, usually between two and four metres, often in gardens, orchards, hedges or euphorbia thickets. Eggs, normally 4, frequently 5 or 6, once 7; the larger clutches may be the product of more than one hen. Colour, deep turquoise blue. Average size of 100 eggs (including those of nominate *striatus*) 25.2 × 19.6 mm (Baker). Both sexes share in building, incubation and tending the young. Breeding not synchronized or 'colonial'. More than one concurrent nest per sisterhood unrecorded. Apparently pairs breed consecutively rather than concurrently. Breeding birds continue to remain with the flock during this period, only detaching themselves from time to time to attend to their domestic chores. More than two birds have been frequently observed building a single nest and feeding nestlings communally. Commonly brood-parasitized by *Clamator jacobinus* and *Cuculus serripes*. The impostor hawk-cuckoo continues to be tended by its foster-parents and is accepted by the unsuspecting sisterhood even when it has grown considerably larger than themselves. However, the moment the youngster moves from one tree to another in order to keep up with the flock, its hawk-like flight and appearance immediately arouse their suspicion. The members give the 'Ware-hawk' alarm-call and make as if to scatter with every sign of nervousness, notwithstanding that as soon as it has settled some of them (even besides the foster parents?) will resume feeding the importunate fledgling as before!

MUSEUM DIAGNOSIS. Differs from *striatus* and *striatus* by the darker throat and more heavily streaked breast. Differs from *somervillei* in having the base of the tail ashy brown, not rufous- or warm brown. Very similar to *malabaricus* but greyer, less brown, especially on tail. *T. s. erissae* is more rufescent brown on back, has a more rufous-brown tail and the breast and belly fulvous without the heavy streaking.

Young, a pale edition of the adult. Primary and tail characters present, and postjuvenile moult complete.

For details of moults, age determination and pterylosis, see R. M. Naik & M. I. Andrews, 1966, *Pavo* 4: 22-47.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	94-109 (mostly c. 106)	21-25	33-36	100-117 mm
♀♀	94-111	21-25	34-36 (HW, Roonwal)	93-112 mm

Weight 10 ♂♂ 60-80 (av. 65) g—SA.

226

TIMALIINAE

COLOURS OF BARE PARTS. Iris white to pale straw. Bill yellow (breeding), horn-brown (winter). Legs and feet dull yellow.

1262. Peninsular Jungle Babbler. *Turdoides striatus orientalis* (Jerdon)

Melocircus orientalis Jerdon, 1847, Ill. Ind. Orn. text to pl. 19 ('jungles of the Carnatic, and ... Eastern Ghats,' restricted to Horsleykonda, west of Nellore, by Ripley, 1958, Postilla No. 35: 9)
Baker, FBI No. 183 (part), Vol. 1: 191

LOCAL NAMES. *Vānā lalidā* (Gujarati); *Sāthhāi*, *Pengga myna*, *Jāngli-khyr*, *Ghōngghāi*, *Gayange* (Hindi); *Peddā-rīdā*, *Admī-rīdā* (Telugu).

SIZE. Myna; length c. 25 cm (10 in.).

FIELD CHARACTERS. A familiar earthy brown bird of tousy untidy appearance with creamy white eyes, yellowish bill and legs, and longish tail which appears to be loosely stuck into the body. Above, drab grey-brown, a little greyer on head and nape. Rump and tail-coverts buff; tail rufous-brown. Below, throat drab-grey; breast streaked with pale brown; belly creamy buff. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident. One of the commonest birds of the Peninsula. Gujarat and the western half of Madhya Pradesh south through the Peninsula to the Nilgiris and Palnis (except for the ranges of *somervillei*, *malabaricus* and *erissae* q.v.). Intergrades with *sindicus* in the Little Rann of Kutch, and with *striatus* in southwestern Uttar Pradesh along the Yamuna river. In the plains and hills up to 1500 m. Affects deciduous forest, bamboo and cultivation.

GENERAL HABITS. Very gregarious; seen the year round in parties of six to twelve, well deserving its Hindi name of *Sāthhāi* (= 'seven brothers', or 'Seven Sisters' as transmuted into English!). Large flocks break up into smaller groups during the breeding season. Jungle Babblers often form the nucleus of the mixed itinerant hunting parties. They spend much of their time hopping about on the ground, vigorously turning over or flicking aside dead leaves in search of food, taking to trees and bushes at the slightest disturbance. Each flock keeps to a more or less restricted territory. All the members of a 'sisterhood' roost together sitting side by side with their bodies touching each other. Individuals may frequently be seen shuffling themselves among the dripping foliage of a bushy tree after a shower. When curious or agitated, has a habit of fluffing out its plumage, especially that of the back which assumes an arched appearance, drooping the wings, spreading and depressing the tail, and pivoting uneasily from side to side, peering at and chivvying the intruder all the while. Very plucky in united defence of individuals from attacks by predators, and a flock may successfully rescue a 'sister' from the talons of a hawk simply by blustering noisy demonstrations against the aggressor.

FOOD. Mainly insects: grasshoppers, ants, beetles, cockroaches, caterpillars, etc., and spiders. For insects (mostly injurious) identified among stomach contents in an intensively cultivated area in Bihar, see Mason & Lefroy, 1912: 51-4. Four out of the 36 birds examined had taken frogs! Also eats grains, seeds, banyan figs, *Lantana*, *Zizyphus* and other berries.

228

TIMALIINAE

COLOURS OF BARE PARTS. Adult. Iris creamy white. Bill pale yellow, pale horny at tip; mouth and commissure near gape bright yellow. Legs, feet and soles pale yellow; claws fleshy horny. Fledgling. Iris greyish brown. Bill: upper mandible brownish flesh, lower yellow; gape creamy yellow. Legs, feet and claws pale flesh-colour.

1263. Bombay Jungle Babbler. *Turdoides striatus somervillei* (Sykes)

Timalia Somervillei Sykes, 1832, Proc. Zool. Soc. London: 88
('Ghats' = Bombay Ghats)
Baker, FBI No. 183, Vol. 1: 194

LOCAL NAMES. *Sāthhāi* (Hindi); *Khāts* (Marathi).

SIZE. Myna; length c. 25 cm (10 in.).

FIELD CHARACTERS. As in 1262, but with blacker wing-quills and markedly red tail-coverts and tail. Breast more heavily streaked.

STATUS, DISTRIBUTION and HABITAT. Common resident. Southeastern Gujarat and coastal Maharashtra, from the Tapti river south along the western flank of the Ghats to Goa (where it intergrades with *malabaricus*); from the coast to the tops of the hills. Intergrades in the north and east with *orientalis*. Affects gardens, scrub and patches of moist-deciduous forest.

GENERAL HABITS, FOOD and VOICE. As in 1262, q.v.

BREEDING. As in 1262.

MUSEUM DIAGNOSIS. Differs from *orientalis* (1262) and *striatus* (1265) in having the upperparts more rusty brown; striations on mantle less marked; rump and upper tail-coverts rufous or ferruginous; flight-feathers blacker. Breast with pale centres to feathers more pronounced; under tail-coverts and tail ferruginous, the last obsoletely cross-banded or not at all.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	93-109 (av. of 11, 102.5)	22-26	35-37	98-111 mm (SA, HW)

Weight 8 ♂♂ 59-72 (av. 60.5) g—SA.

COLOURS OF BARE PARTS. As in 1264.

1264. Malabar Jungle Babbler. *Turdoides striatus malabaricus* (Jerdon)

Melocircus malabaricus Jerdon, 1847, Ill. Ind. Orn. text to plate 19 ('forests of Malabar and on the side of the Neilgherries' = Travancore [Kerala]), ride Whistler, 1935, JBNHS 38: 72

Baker, FBI No. 184, Vol. 1: 192

LOCAL NAME. *Karizhakkā* (Malayalam).

SIZE. Myna; length c. 25 cm (10 in.).

FIELD CHARACTERS. As in 1262; see Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident; common but somewhat unevenly distributed: Kerala and coastal Mysore. Intergrades with *somervillei* about Goa and with *orientalis* in the hills of eastern central Kerala. Chiefly low country, but also in the hills up to 1200 m. Affects mixed

BABLERS

229

deciduous bamboo forest and scrub jungle with *Lantana*. Avoids evergreen but occasionally present in secondary growth on its outskirts. Partial to cashew and jack-fruit gardens surrounding homesteads.

GENERAL HABITS, FOOD AND VOICE. As in 1262, q.v.
BREEDING. Season, the entire year, but chiefly January to March. Nesting, as in 1262. Eggs, 3 or 4, turquoise blue. Average size of 30 eggs 25.4 × 19.7 mm (Baker).

MUSEUM DIAGNOSIS. For distinction from adjacent subspecies see 1262 and 1263; also 1264a.

MEASUREMENTS			
	Wing	Bill (from skull)	Tarsus
♂♂	101-107	24-25	c. 36
♀♀	101-109	22-24	33-35
			(SA, Koelz)

COLOURS OF BARE PARTS. Iris creamy or yellowish white. Bill and orbital skin pale yellow; mouth and gape bright deep yellow. Legs and feet yellowish flesh.

1264a. **Orissa Jungle Babbler.** *Turdoides striatus orissae* Jerdon
Turdoides striatus orissae Jerdon. See Ripley, 1969, Jour. Bombay nat. Hist. Soc. 66: 168
(Barkot, alt. 120 m, Bamra, Sambalpur dist., Orissa)¹
Baker, FBI No. 183 (part), Vol. 1: 191

LOCAL NAMES. None recorded.
SIZE. Myna; length c. 25 cm (10 in.).
FIELD CHARACTERS. As in 1262, but more rufescent brown; underparts uniformly fulvous; breast unstreaked.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Orissa east of the Ghats and perhaps northeastern Andhra Pradesh south to (and including?) the Godavari river delta. Biotope as in 1262.

GENERAL HABITS, FOOD AND VOICE. As in 1262, q.v.
BREEDING. As in 1262.

MUSEUM DIAGNOSIS. Differs from *striatus* in being more rufescent brown above and more fulvous, less grey below. Differs from *orientalis* by the same characters and by lacking the heavy streaking on the breast. *Malabaricus* (which it most resembles) is darker but less rufescent above, more heavily streaked on back; its underparts, especially throat, are much darker; breast, upper belly and flanks heavily streaked (v. unstreaked in *orissae*).

MEASUREMENTS			
	Wing	Bill (from skull)	Tarsus
2 ♂♂	103, 104	25	35
2 ♀♀	94, 99	25, 23	35
			(Desfayes)

COLOURS OF BARE PARTS. As in 1265.

¹ The description of this form (1969, JOURNAL 66: 168) is merely for the designation of a *Nesophila* rather than a *Turdoides*. The Bombay Natural History Society (N

BABLERS

231

1266. **Ceylon Rufous Babbler.** *Turdoides rufescens* (Blyth)¹
M. (alacocercus) rufescens Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 453 (Ceylon)
Baker, FBI No. 189, Vol. 1: 195
Plate 79, fig. 11

LOCAL NAMES. *Ratu-demalichchā* (Sinhala); *Vēlaikkāra-kūrūi* (Tamil).

SIZE. Myna; length c. 25 cm (10 in.).
FIELD CHARACTERS. Superficially like Jungle Babbler but entirely rufous-brown with cinnamon throat and breast and somewhat greyer head and darker ear-coverts. Bill and legs bright yellow. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident; moderately plentiful. Endemic to Ceylon in the Wet zone and neighbouring hills to over 2100 m. Affects deep primeval forest, thickets and bamboo scrub in well-wooded areas. (See map, p. 222.)

GENERAL HABITS. Unlike the Jungle Babbler, it is a forest-loving species found only in the dampest forest tracts and seldom away from deep jungle. Very sociable and noisy; keeps in parties of six to twelve or more, actively working about the lower limbs of trees, and threading its way through the branches of low jungle, thus resembling more a laughing thrush than a babbler. It has the quick movements of the former, jerking up its wings and tail, restlessly jumping to and fro on its perch. Its flight is weak and consists of little more than fluttering from tree to tree, with an occasional glide across a ravine. Appears not to mix with other species but has, in common with *T. affinis* and *Gerrulax cinereifrons*, a curious association with small squirrels of the *Fimambulus* group. 'Whenever a flock of these birds is on the feed, a squirrel is almost sure to be found in their near neighbourhood' (Henry).

FOOD. Chiefly insects.
VOICE AND CALLS. A continual chattering, squeaking and chirping (Henry). According to Legge, its notes resemble those of *Gerrulax* more than *Turdoides*, and it seems not to indulge in long periods of silence as does the latter, but a continual low babble from the flock usually betrays its whereabouts in the jungle.

BREEDING. Season, March to May. Unlike *affinis* and *striatus*, this species is such an adept at concealing its nest that little is known of its nesting habits. Nest, said to be similar to that of *affinis*, a cup of grass and small twigs, placed among creepers surrounding the trunk of a tree or in a low fork of a tree. Eggs, 2 or 3, very similar to those of *affinis* according to Legge. Measurements of 4 eggs: length 23.3 to 24.2 mm; width 17.8 to 18.1 mm (Baker).

MUSEUM DIAGNOSIS. Rectrices, secondaries and outer web of secondaries very faintly cross-banded.

Wing formula:			
	<i>T. rufescens</i>	Primaries (aa.)	<i>T. striatus</i> sp.
1st	c. 24 mm > primary-coverts		c. 36 mm > primary-coverts
2nd	c. 18 mm > 1st		c. 23 mm > 1st
3rd	c. 17 mm > 2nd		c. 10 mm > 2nd
4th	c. 6 mm > 3rd		c. 4 mm > 3rd
5th	c. 3 mm > 4th		
	5th longest (= 6th)		4th longest (= 5th)

¹ In view of the differences in ecological choice, wing formula, possibly also in voice and behaviour, as well as the lack of any intergradation, *T. rufescens* is better retained as a full species, not a subspecies of *T. striatus*.

230

TIMALIINAE

1265. **Bengal Jungle Babbler.** *Turdoides striatus striatus* (Dumont)
Coscyphus striatus Dumont, 1823, Dict. sci. nat. (ed. Levrault) 29: 268 (Bengale)
Maina Terricolor Hodgson, 1836, Jour. Asiat. Soc. Bengal 5: 711 (Nipal). *Nom. n.*
M. (alacocercus) terricolor = Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 367 (Bengal, Nepal and Assam = Nepal)
Baker, FBI No. 183 (part), Vol. 1: 191
Plate 79, fig. 7

LOCAL NAMES. *Sāthhāi*, *Pengya myna* (Hindi); *Kāth-bāichā* (Bihar); *Chātākā* (Bengali).

SIZE. Myna; length c. 25 cm (10 in.).
FIELD CHARACTERS. As in 1262, but tail dark grey-brown, noticeably barred.

STATUS, DISTRIBUTION AND HABITAT. Resident; locally common. Northern India east of the Yamuna river in the Gangetic plain north to Dehra Dun, Nepal terai and duns, Sikkim and Bhutan foothills, West Bengal, Assam Valley as far as Dibrugarh, and East Pakistan east to Comilla; plains and foothills, locally up to c. 1600 m. Affects gardens, orchards, hedges in cultivation, bushes on waste ground, and secondary scrub forest.

GENERAL HABITS, FOOD AND VOICE. As in 1262, q.v.
BREEDING. As in 1262.

MUSEUM DIAGNOSIS. Description: *Above*, pale brown including coverts, and tertials; greyish on head and rump, slightly fulvous on upper tail-coverts, the back with dark brown streaks and whitish shaft-strips. Tail brown, paler at base, darker at tip and cross-rayed. Wings dark brown, ashy on outer edges. Lores whitish with a narrow dark line above. *Below*, chin and throat grey with faint darker bars; breast fulvous ashy with paler centres and shafts to the feathers. Belly, vent, and under tail-coverts fulvous, tinged brown at sides and with faint white shafts.

Differs from *sindianus* in being browner, less ashy; underparts more fulvous buff; grey of throat not extending so far down on breast; *orientalis* has a more heavily streaked breast; *orissae* is more rufescent brown above, has a fulvous belly, unstreaked breast and rufous-brown tail.

YOUNG, a pale edition of the adult. Upperparts and head pale brown, not grey. Underparts rufescent, brownish on breast. Edges of primaries ochraceous.

MEASUREMENTS			
	Wing	Bill (from skull)	Tarsus
♂♂	103-111	c. 24	32-34
♀♀	96-107	23-24	c. 33
			(BB, Rand & Fleming)

COLOURS OF BARE PARTS. Iris yellowish white or creamy white; orbital skin pale yellow. Bill yellow, yellowish white, dirty whitish or, rarely, pale horny yellow. Legs, feet and claws yellow, fleshy yellow or yellowish white.

232

TIMALIINAE

MEASUREMENTS			
	Wing	Bill (from skull)	Tarsus
♂♂	104-113	22-24	33-34
♀♀	97-106	22-24	32-35
			(HW, SDR)

COLOURS OF BARE PARTS. Iris white or yellowish white; orbital skin pale greenish yellow. Bill orange-yellow, deepest on basal half. Legs and feet chrome-yellow.

TURDOIDES AFFINIS (Jerdon)
Key to the Subspecies
Crown cream-coloured contrasting with back..... *T. a. affinis*
Crown greyish, concolorous with back..... *T. a. taprobanus*

1267. **Whiteheaded Babbler.** *Turdoides affinis affinis* (Jerdon)
Malacocircus affinis Jerdon, 1847, Ill. Ind. Orn., text to pl. 19
(Travancore, [Kerala])
Turdoides poliopterus Oberholser, 1920, Proc. Biol. Soc. Washington 33: 84, new name for *Turdus griseus* Gmelin (Coromandel Coast, India), *not* *Turdus griseus* (Boddaert)
Baker, FBI No. 186, Vol. 1: 193
Plate 79, fig. 9

LOCAL NAMES. *Kariyilakkili* (Malayalam); *Chinda sida* (Telugu); *Tharittu-kūrūi*, *Pandri-kūrūi* (Tamil).

SIZE. Bulbul +; length c. 23 cm (9 in.).
FIELD CHARACTERS. *Above*, crown cream colour; ear-coverts greyish brown. Upper back and rump drab brown; dorsal feathers dark brown fringed with grey, giving the middle back a somewhat scaly appearance. Wings dark brown, drab brown when folded. Tail cross-banded in the middle, basal half grey-brown, distal half dark brown. *Below*, throat and breast dark brown, each feather edged with grey. Belly and under tail-coverts ochraceous buff, flanks greyish. Bill and feet pale yellow. Sexes alike.

The dingy cream-coloured crown contrasting with the dark ear-coverts, as well as its sharper, more musical call-notes distinguish this species.

STATUS, DISTRIBUTION AND HABITAT. Resident; locally common. Andhra Pradesh from the Godavari and Penganga rivers, and western Mysore from the Belgaum area, south through Tamil Nadu and Kerala to Kanyakumari (Cape Comorin) and Rameswaram Island. Birds from the latter place are intermediate between peninsular and Ceylon races. Absent or scarce in Mysore east of the Western Ghats. In the low country and foothills up to c. 300 m, exceptionally 1000 m. Affects dense secondary jungle, dry scrub, particularly *Lantana*, often in the vicinity of cultivation, precincts of villages and homesteads; also orchards and urban gardens and compounds; the common babbler of Hyderabad City and Madras. Prefers drier and more open low scrub country than the Jungle Babbler, but both are frequently found side by side and sometimes in association where their respective preferences overlap. (See map, p. 217.)

GENERAL HABITS. Similar to those of the Jungle Babbler with which it often associates. Most of its food is taken on the ground. Has a habit of

BABBLERS

233

holding down underfoot morsels too large to swallow, while it tears off pieces. Flight weak; if any distance is to be covered, prefers to hop to the top of a tree and take off from there, proceeding in a series of rapid flutterings alternating with sailings, the birds usually following each other one at a time.

FOOD. Insects and vegetable matter — wild figs, berries of *Lantana* and *Zizyphus*, paddy grains, nectar of *Erythrina*, *Butea* and other large flowers, kitchen scraps around human habitations etc. Also recorded are whip-scorpions and (once) a lizard (*Celotes versicolor*).

VOICE AND CALLS. Sharper and more musical than those of the Jungle Babbler, very distinct. A musical trill *tr-r-r-r-r* uttered by one or more members of a flock from the ground or some low perch while the rest hop about for food. The tail of the calling bird is spread out and hangs loose while it nervously twitches or flicks its wings and pivots from side to side (SA). Also some noisy conversational squeaks.

BREEDING. *Season*, ill-defined. Overall January to November, mainly March to June with a second peak period in October-November. *Nest*, much as that of the Jungle Babbler, an open bowl of twigs and rootlets, coarse grass, some green weeds and leaves or other material (old newspaper recorded), lined with fern stems or rootlets. Diameter about 8 cm at the rim, depth of cup about 5 cm. Built in similar sites but rather lower down, usually between one and two metres from the ground, less often up to six metres or higher. Bushy mango grafts are much favoured. *Eggs*, 3 or 4, turquoise blue. Average size of 60 eggs 24×18.8 mm (Baker). Frequently brood-parasitized by *Clamator jacobinus*. Incubation period, 14 to 17 days. Both sexes build the nest and feed the young. When the young leave the nest, they accompany their parents and join the sisterhoods; they are then fed by the other members of the party, as well as by their own parents. Communal or cooperative nest-building and feeding of young as described in JBNHS 61: 181-3 (P. J. Sanjeeva Raj) is probably normal in the *Turdoides* group of babblers.

MUSEUM DIAGNOSIS. Differs from *taprobatus* in being browner and less washed with grey and having the crown and nape creamy, contrasting with dark ear-coverts. Differs from the Jungle Babbler, among other characters, by the colouring and squamation of throat and breast.

Young, resembles adult but streaking on mantle, and squamation on throat and breast very indistinct, pale and almost unicolorous. Primary and tail characters present. Postjuvinal moult complete.

Complete postnuptial moult takes place from June to November, but odd body-feathers are being moulted practically throughout the year.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	94-109	20-22	32-35	95-107 mm
♀♀	99-110	19-23	31-35	95-109 mm (HW, SA)

COLOURS OF BARE PARTS. Adult. Iris from creamy or greyish white to pale blue. Bill, legs, feet and claws pale yellow. Mouth pale pinkish yellow. Young. Iris greenish grey. Bill pale flesh; mouth bright orange-yellow.

BABBLERS

235

STATUS, DISTRIBUTION AND HABITAT. Resident, very local but not uncommon; some downward movement in winter. Not recorded in more than a hundred years since Hodgson's days, it was believed to be extinct until its rediscovery in 1948 (Proud, JBNHS 48: 699, Ripley, JBNHS 49: 393). It has since proved to be fairly common in some areas, even within easy reach from Kathmandu (Fleming, JBNHS 51: 941; Proud, JBNHS 56: 330; Rand & Fleming, *Fulldiana* 4: 126; Fleming & Traylor, *Fulldiana* 35: 477 and 35: 532). From the Nepal-Kumaon border east to central Nepal (Kathmandu Valley); from 1500 to 2000 m in summer (Proud, loc. cit.); recorded in winter from 900 to 1600 m. Affects dense secondary scrub on hillsides.

GENERAL HABITS. In pairs during the breeding season, in small groups of three to ten birds during the winter. Feeds almost entirely on the ground, searching for food among low bushes, turning over dead leaves, occasionally venturing into the open. Disappears at the slightest disturbance, only to come creeping out a minute or two later. Pairs form in March.

Pre-breeding activities. The male sits on some prominent bush, usually in full view but not quite on top, whence it sings from morning till night. Particularly noisy after rain and in the middle of the day. As soon as a bird starts to call, it is answered by another and another, usually some 200 metres apart. During March and April the singing male is usually accompanied by a female, low in the scrub. She spends a good deal of time preening herself, uttering low churring calls. The male may occasionally pick up a leaf and offer it to the female. While moving through the bushes, she frequently picks up dead pine needles and leaves, carries them for a short distance before dropping them; the male occasionally does the same. At times both birds fly, just skimming the bushes, sometimes for a considerable distance, but in an awkward, top-heavy manner. Pairs may occasionally preen each other, uttering low churring notes and raising the feathers of the head into a crest. The female may be seen begging food like a young bird, with drooping wings and tail (Proud).

FOOD. Chiefly insects.

VOICE AND CALLS. Usual call, a clear *el-el-el-el* uttered as it hops about on the ground. Alarm, a low *churr*. Female, in addition to churring notes, has a loud *trick-trick-trick-trick*. A pair will sometimes burst out in a wild crescendo of screaming calls, when they sound very like the Jungle Babbler. Song: The male has a great variety of notes, but the tone, a peculiar harsh yet ringing whistle, is always the same. It is unlike that of a typical *Turdoides*, nor does it have the beautiful pure whistle of so many *Certhia* species. A phrase most often heard starts with a few fine whistles, then continues up the scale: *ter-ter-ter-ter-ter-ter*. It has also, in the breeding season only, a very distinctive and peculiar phrase down the scale: *tee-tee-tee-tee-tee-tee*, sometimes preceded by a running trill. There are many other variations. The song can be heard most of the year but is more frequent from March to September (Proud). Other renditions of song:

there, chir, chir, wee wee
right here, right here, right here
ter-ter, ter-ter, ter-ter, ter-ter
fwink, chip, chip

234

TIMALIINAE

1268. **Ceylon Whiteheaded Babbler.** *Turdoides affinis taprobatus* Ripley *Meleocircus striatus* Swainson, 1833, Zool. Ill., ser. 2, 3, pl. 127 and text (Ceylon), *nee Cosyphus striatus* Dumont, 1823 = *Turdoides striatus* (Dumont) *Turdoides affinis taprobatus* Ripley, 1958, Postilla, Yale Peabody Mus., No. 35: 10 (Alawna, Ceylon)

Baker, FBI No. 187, Vol. 1: 194

LOCAL NAMES. *Demalishchā* (Sinhala); *Vilaikāra-kūrūri*, *Keleni-kūrūri*, *Pelung-kūrūri* (Tamil).

SIZE. Bulbul +; length c. 23 cm (9 in.).

FIELD CHARACTERS. As in 1267, but crown concolorous with back. 'Its pale orbital region and bluish white eye give it a curiously anaemic look' (Henry).

STATUS, DISTRIBUTION AND HABITAT. Common resident. Ceylon, all zones, in the lowlands and lower hills to c. 1500 m. Affects semi-open country, scrub jungle and gardens. Avoids heavy forest.

GENERAL HABITS, FOOD AND VOICE. As in 1267, q.v.

BREEDING. *Season*, throughout the year but chiefly March to May and again September to October in the hills and in the Wet zone, and mainly November to March in the low-country Dry zone. Nesting, as in 1267. *Eggs*, in the hills 3 to 5, generally 4; in the lowlands usually 3, rarely 4, similar to those of *affinis*. Average size of 50 eggs 23.8×18.4 mm (Baker). Frequently brood-parasitized by *Clamator jacobinus*.

MUSEUM DIAGNOSIS. Differs from *affinis* (1267) in having a much greyer wash on head and body, with reduced or absent subterminal blackish spots, and lacks the cream-coloured crown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	102-110	21-22	31-32	101-102 mm
♀♀	101-107	21-22	31-34	92-103 mm (HW, SDR)

COLOURS OF BARE PARTS. Iris creamy white. Bill, legs, feet and claws pale lemon. Mouth pale yellow.

1269. **Spiny Babbler.** *Turdoides nipelensis* (Hodgson)

Timalia nipelensis Hodgson, 1836, Asiat. Res. 19: 182 (Nepal)

Baker, FBI No. 193, Vol. 1: 204

Plate 79, fig. 6

LOCAL NAMES. None recorded.

SIZE. Bulbul +; length c. 25 cm (10 in.).

FIELD CHARACTERS. *Above*, dark olive-brown with whitish ear-coverts, eye-ring and short supercilium. *Eye* white. Tail faintly cross-banded. *Below*, breast creamy buff finely streaked with black. Throat white or streaked like breast. Belly whitish. Flanks and under tail-coverts tawny olive. Tail strongly graduated. Sexes alike.

The streaked breast and usually whitish ear-coverts distinguish this babbler.



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236

TIMALIINAE

poakil, poakil, poakil, chup, chup, etc. (Fleming).

Bursts of song often culminate in three or four clear and loud *ter-ter-ter-ter*, a characteristic feature.

BREEDING. *Season*, April, May and June (?), between c. 1500 and 1800 m. *Nest*, a deep grass cup placed in a small bush or built into a sturdy grass clump, not specially well concealed [A very loose shallow grass cup in the fork of a tree — Hodgson]. *Eggs*, 3 or 4, pale blue measuring about 28×16.5 mm. Both parents feed the young. Share of the sexes in incubation, and period, unknown (R. L. Fleming, Jr. in *epist.*).

MUSEUM DIAGNOSIS. The shiny black, rigid and pointed shafts of the feathers on head, nape, sides of neck and breast are characteristic. Shafts of chin and throat feathers have the same character but may be white or, in part or all, black. In a few specimens the throat is mostly brown with only a little white mottling.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂♂	79-86	21-25	30-32	104-117 mm
7 ♀♀	81-87	20-26	30-33	107-117 mm (Rand & Fleming)

Weight 2 ♂♂ 58, 64 g (Dieselhorst, Paynter).

COLOURS OF BARE PARTS. Iris white. Bill: upper mandible brownish black, lower light grey on the basal half. Legs and feet light brownish grey.

Genus BABAX David

Babax David, 1875, Jour. troisième Voy. Expl. Chine 1: 181. Type, by original designation, *Pterorhinus lanceolatus* Verreaux

Close to *Turdoides*. Wing short and rounded; tail long, much graduated. Bill rather slender, slightly curved; rictal bristles long and strong; nostrils oval, exposed, overhung by numerous hairs.

Key to the Species

Wing under 115 mm; upper plumage rich brown....*B. lanceolatus*
Wing over 120 mm; upper plumage grey.....*B. woodi*

1270. **Chinese Babax.** *Babax lanceolatus woodi* Finn

Babax woodi Finn, 1902, Jour. Asiat. Soc. Bengal 71: 125

(Kamperlet, Mount Victoria, Chin Hills)

Babax victorinus Rippon, 1905, Bull. Brit. Orn. Cl. 15: 97

(Mount Victoria, Chin Hills)

Babax lanceolatus erileta Koeh, 1954, Contrib. Inst. Regional Exploration, No. 1: 3 (Blue Mountain, Lushai Hills)

Baker, FBI No. 180, Vol. 1: 187

Plate 76, fig. 12

LOCAL NAMES. None recorded.

SIZE. Myza +; length c. 28 cm (11 in.).

FIELD CHARACTERS. An unmistakable babbler. *Above*, head and back boldly striped chestnut-brown and grey; a black moustachial stripe. Rump and tail dark brown. *Below*, cream colour, streaked with chestnut-brown, more heavily so on belly and flanks. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Rare resident. The Mizo (Lushai) Hills, from c. 1500 m up (found breeding at 1800 m in the Chin Hills, but on Mount Victoria restricted to a higher zone, 2600-3000 m). Affects thin, scattered forest and the more open hillsides covered with bracken, brambles and reedy grass.

Extralimital. The Chin Hills of Burma. The species extends north to Shensi and east to Fukien.

GENERAL HABITS. A shy species found in pairs or small parties. Hops with great agility through dense bushes as well as on the ground. In this respect it behaves like a laughing thrush though it is less confined to the ground; on the contrary, it freely ascends trees and may often be seen in the highest crowns of deciduous trees, especially in the mornings and evenings (Heinrich).

FOOD. Unrecorded. Presumably insects.

VOICE and CALLS. A full, far-sounding double whistle of wailing quality *ou-phée ou-phée* repeated six or eight times at short intervals; the second, emphasized note lies about two tones higher than the first (Heinrich). Also keeps up a continual flow of soft musical notes, varied occasionally by a harsher outburst, rendered as *auā quā qua quo, qui wa wa wa*, and *zerr-zerr-zerr-zerr* (Schäfer). A harsh noise like a creaking gate-hinge (H. C. Smith).

BREEDING. Season, April to June. Nest, cup-shaped, made of dead leaves, grass, bits of bracken, etc., lined with rootlets. Placed in low bushes within a metre from the ground. Eggs, 2 to 4, generally 3, spotless, deep blue approaching those of *Garrulax squamatus*. Average size of 15 eggs 27.3 × 20.3 mm.

MUSEUM DIAGNOSIS. See Key to the Species.

Young, like adult, but pale markings on upperparts and wing-coverts largely absent, except on hindneck. Streaks on flanks much less defined, but lower throat more streaked than in adult. Primary and tail characters present, i.e. first primary rounder at tip; outer rectrices narrower and more pointed. Postjuvénal moult complete.

MEASUREMENTS			
	Wing	Bill (from feathers)	Tarsus
♂ ♀	c. 100	c. 25	c. 35
			c. 140 mm (Baker)

Wing 7 ♂♂ 98-103; 9 ♀♀ 98-102 mm (Heinrich).

COLOURS OF BARE PARTS. Iris white to bright orange. Bill horn or black. Legs and feet horny grey.

1271. Giant Babax. *Babax waddelli waddelli* Dresser

Babax waddelli Dresser, 1905, Proc. Zool. Soc. London: 54
(Tsangpo Valley, Tibet = Chaksam)

Babax lanceolatus lunsdeni Kinnear, 1938, Bull. Brit. Orn. Cl. 58: 76
(Le La, between Chayul Dzong and Charmé, SE. Tibet)
Baker, FBI No. 182, Vol. 1: 189
Plate 76, fig. 14

LOCAL NAMES. *Jomo, Soio, Teh-teh, Kyu-mo* (Tibetan).

SIZE. Pigeon; slimmer. Length c. 31 cm (12 in.).

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FIELD CHARACTERS. Very similar to *B. lanceolatus* (1270) but larger; bill longer and more curved. Plumage greyer above; tail blackish instead of brown. Above, ashy grey with broad stripes of blackish brown. Black moustachial stripe less prominent than in *lanceolatus*. Below, ashy grey with narrower streaks of chestnut. Belly and under tail-coverts ashy. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Common resident. Extreme north-eastern Sikkim (and possibly northern NEFA) in Tibetan facies, north of the main range; from 2800 to 4500 m. Affects arid scrub, especially thickets of *Hippophae rhamnoides*.

Extralimital. Southeast Tibet from Gyantse to the Tsangpo bend.

GENERAL HABITS. Keeps in parties of five or six in the non-breeding season, mainly to the ground, hopping about and turning over dead leaves and skulking in dense bushes. Very difficult to see even in leafless bushes in winter.

FOOD. Mostly insects; also berries (*Hippophae*).

VOICE and CALLS. 'Its spring call is a rapid series of quavering whistling notes, whilst in early mornings it has a pleasant thrush-like song' (Ludlow). Also a harsh grating call.

BREEDING. Season, April to June. Nest, a large ragged structure of twigs, fibres, dried grass and bits of wool, generally placed in a thorn bush about two metres from the ground. Eggs, usually 3, deep turquoise blue. Average size of 24 eggs 33.1 × 21.6 mm (Baker), and of 9 eggs 34 × 22.2 mm (Ludlow). Both sexes incubate.

MUSEUM DIAGNOSIS. See Key to the Species.

	Wing	Bill (from skull)	Tail
8 ♂ ♀	130-138 (av. 134)	34-40 (av. 36)	150-155 mm
♂ ♂	136-142	34-39	(Vaurie) — mm
♀ ♀	128-135	31-39	— mm (Ludlow, Kinnear)

♂ ♀ Tarsus 40-43 mm (Baker).

COLOURS OF BARE PARTS. Iris greyish white. Bill, legs, and feet blackish horn colour (Hartert).

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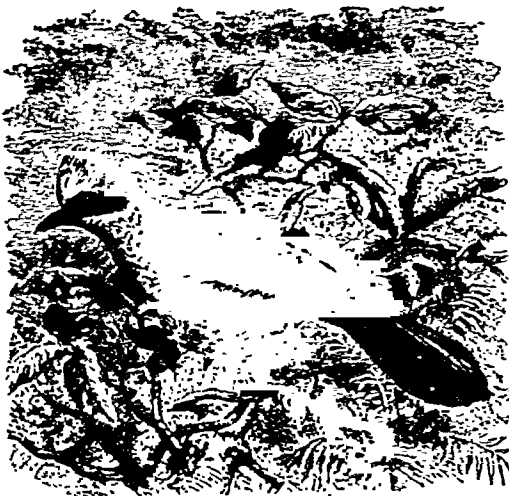
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Order PASSERIFORMES (cont.)
Family MUSCICAPIDAE (cont.)
Subfamily TIMALIINAE: Babblers (cont.)



Whitecrested Laughing Thrush (1283)

Genus GARRULAX Lesson

Garrulax Lesson, 1831 (June), *Traité d'Orn.*: 647. Type, by subsequent designation, Gray, 1846, *Garrulax Belangeri* Lesson, but *nomen nudum*, type designated by Ripley (Synopsis: 380), *Garrulax rufifrons* Lesson
Ianthocincla Gould, 1835, *Proc. Zool. Soc. London*: 48. Type, by original designation, *Cinclotoma ocellatum* Vigors
Trochalopteron Blyth, 1843, *Jour. Asiat. Soc. Bengal* 12: 952, ex Hodgson MS. Type, by subsequent designation, *Trochalopteron subunicolor* Hodgson
Grammatoptila Gray, 1855, *Cat. Gen. Subgen. Bds.*: 48. Type, by original designation, *Garrulus striatus* Vigors
Stactocichla Sharpe, 1883, *Cat. Bds. Brit. Mus.* 7: 328, 449. Type, by monotypy, *Garrulax merulinus* Blyth
Dryonastes Sharpe, 1883, *Cat. Bds. Brit. Mus.* 7: 453. Type, by original designation, *Ianthocincla ruficollis* Jardine & Selby
Bill strong and straight. Legs strong. Wing short and rounded, often edged with a brighter colour. Sexes usually alike. Most species noisy and very gregarious outside the breeding season.

1

BABBLERS

3

		Page
g	A whitish supercilium	
a ¹⁴	Throat spotted..... <i>G. merulinus</i>	37
a ¹⁵	Throat not spotted..... <i>G. sannio</i>	39
h	No supercilium	
a ¹⁶	Crown slate-grey, back unspotted..... <i>G. cinereifrons</i>	3
a ¹⁷	Crown chestnut, back spotted..... <i>G. erythrocephalus</i>	57

1272. Ashyheaded Laughing Thrush. *Garrulax cinereifrons* Blyth¹

Garrulax cinereifrons Blyth, 1851, *Jour. Asiat. Soc. Bengal* 20: 176 (Ceylon)

Baker, *FBI No. 190*, Vol. 1: 196
Plate 79, fig. 14

LOCAL NAMES. *Ala-damalichā* (Sinhala); *Velaikkāra-kūri* (Tamil).

SIZE. Myna; length c. 23 cm (9 in.).

FIELD CHARACTERS. *Above*, forehead, crown and ear-coverts grey; rest of upperparts dark reddish brown. *Below*, chin and throat whitish (ochraceous buff); rest of underparts rufous-brown (clay-colour). Sexes alike.

Distinguished from the Rufous Babbler (1266) mainly by its black bill, dark grey legs and grey head. It is also somewhat less unkempt-looking.

STATUS, DISTRIBUTION and HABITAT. Resident in Ceylon; moderately plentiful in the low-country Wet zone and Hill zone to c. 1500 m. Affects dense, humid forest.

GENERAL HABITS. Lives in flocks of ten to twenty individuals working steadily through the damp undergrowth, fluttering from tree to tree and exploring the mossy recesses of fallen trunks. Keeps up a constant flow of squeaks and chattering which can be mistaken for those of the Rufous Babbler which inhabits the same jungles. Such flocks are often accompanied by one or two jungle squirrels.

FOOD. Chiefly insects.

VOICE and CALLS. Breaks out constantly into a harsh chattering which is taken up in turn by all the members of the troop; this chattering is usually finished up with a hurried sort of scream (Legge). Also a flow of squeaks and chatterings while working through the undergrowth.

BREEDING. Unknown. *Season*, appears to be between March and July (full-fledged nestlings seen in April and August). *Nest*, described by native woodmen as a large cup placed in bushes. *Eggs*, said to be dark blue, 3 or 4 to the clutch.

MUSEUM DIAGNOSES. See Field Characters. Young as adult, but first primary soft and blunt and rectrices narrower and pointed.

¹ As already pointed out by Ripley (*Spolia Zeylanica* 24: 223, 1946), this species is most closely related to *Garrulax leucotis*.

2

TIMALIINAE

Key to the Species

		Page
I	Under surface of tail tipped with white or rufous	
A	Size large, tail over 150 mm; upperparts conspicuously spotted with white or buff	
1	Crown and throat black..... <i>G. ocellatus</i>	31
2	Crown brown, throat cinnamon..... <i>G. maximus</i>	29
B	Size medium, tail under 150 mm; upperparts not spotted with white	
3	Underparts yellow..... <i>G. galbanus</i>	18
4	Underparts not yellow	
i	Throat white or buff	
a	A black collar	
a ¹	Larger, tarsus over 40 mm; a black chin stripe <i>G. pectoralis</i>	8
a ²	Smaller, tarsus under 40 mm; no chin stripe <i>G. monileger</i>	6
b	No black collar	
a ³	Crown plain olive-brown..... <i>G. albogularis</i>	4
a ⁴	Crown finely barred with black <i>G. caeruleatus (subcaeruleatus)</i>	34
ii	Chin and throat black..... <i>G. variegatus</i>	21
iii	Chin and throat neither black nor white	
c	Tip of tail rufous	
a ⁵	Edge of wing pale blue..... <i>G. squamatus</i>	51
a ⁶	Edge of wing whitish..... <i>G. rufogularis</i>	25
a ⁷	Wing crimson..... <i>G. phoeniceus</i>	62
d	Tip of tail white or greyish	
a ⁸	Primary-coverts black	
b ¹	Wing tipped with black and white..... <i>G. cineraceus</i>	24
b ²	Wing almost uniform slaty..... <i>G. henrici</i>	54
a ⁹	Primary-coverts not black	
b ³	Plumage striated..... <i>G. lineatus</i>	44
b ⁴	Plumage squamated..... <i>G. subunicolor</i>	53
b ⁵	Underparts barred whitish and brown..... <i>G. austeni</i>	50
II	Under surface of tail not tipped with white or rufous	
C	Plumage striated	
5	Tail narrowly cross-barred..... <i>G. virgatus</i>	49
6	Tail not cross-barred..... <i>G. striatus</i>	10
D	Plumage not striated	
7	Chin and throat white	
iv	Crown white..... <i>G. leucolephus</i>	14
v	Crown squamated..... <i>G. caeruleatus</i> (except <i>subcaeruleatus</i>)	33
vi	Crown slaty..... <i>G. delesserti</i>	19
8	Throat and breast grey..... <i>G. jerdoni</i>	41
9	Chin black	
vii	Ear-coverts white..... <i>G. chinensis nuchalis</i>	17
viii	Ear-coverts black	
e	A rufous patch on sides of neck..... <i>G. ruficollis</i>	36
f	A white patch on sides of neck..... <i>G. affinis</i>	55
ix	Ear-coverts tawny olive-brown; a white supercilium <i>G. cashinians</i>	40
x	Chin neither black nor white	

4

TIMALIINAE

MEASUREMENTS

		Wing	Bill (from feathers)	Tail
4	♂♂	114-118	22-24	100-104 mm
2	♀♀	110, 116	22, 23	95, 105 mm (SDR)

Bill from skull 27 mm. Tarsus 36 mm (MD).

Weight 1 ♂ 70 g (SDR).

COLOURS OF BARE PARTS. Iris pale yellowish white or whitish. Bill black, base of lower mandible greyish or greyish white. Legs bluish brown or bluish grey-brown.

GARRULAX ALBOGULARIS (Gould)

Key to the Subspecies

Belly more richly coloured, ferruginous..... <i>G. a. albogularis</i>
Belly paler, ochraceous..... <i>G. a. whistleri</i>

1273. Western Whitethroated Laughing Thrush. *Garrulax albogularis whistleri* Baker

Garrulax albogularis whistleri Baker, 1921, *Bull. Brit. Orn. Cl.* 42: 29 (Simla)
Baker, *FBI No. 138*, Vol. 1: 154

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. *Above*, olive-brown with tawny forehead, black lores and eye-rim. Outer edge of wing grey. Tail olive-brown, graduated, the rectrices broadly tipped with white (except the central pair) showing up as a prominent white terminal band, especially when spread in flight and while alighting. *Below*, throat conspicuously white bordered on breast by an olive-brown band. Belly and under tail-coverts ochraceous. Terminal half of tail white. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, common but rather locally distributed especially in the western part of its range; subject to some vertical movements. The western Himalayan outer ranges from the Indus river east to Kumaon. From 1800 to 2900 m in summer (up to tree-line in Garhwal), and from 1200 to at least 2400 m in winter, rarely or occasionally descending to 450 m in the cold weather. Affects dense forest of oak, fir, decidar; also scrub and light jungle, sometimes coming into gardens.

GENERAL HABITS. Gregarious even in the breeding season; keeps in flocks of six to twelve birds and in winter up to thirty or more, commonly in association with other laughing thrushes, tree pies, jays and Blue Magpies. Feeds a good deal on the ground but on the whole keeps more to the trees than *G. leucolephus*, searching the crevices of bark, tearing off lumps of moss, and slipping away through the branches with rapidity. Sometimes ventures into harvested fields, hopping on the ground like a Jungle Babbler, digging with its bill for food. Less wary of man than other laughing thrushes.

FOOD. Chiefly insects; also berries and seeds.

BABLERS

5

VOICE and CALLS. While feeding keeps up a soft, low *teh, teh*, rather like a common note of the Black Bulbul and very reminiscent of a flock of tits though louder (HW). When alarmed, bursts into an extraordinary series of sibilant squeals and hisses which develop into choruses of shrill squeaky 'laughter' when birds really excited. For renditions see 1274.

BREEDING. *Season*, March to July. *Nest*, a cup of coarse grass, bamboo leaves, roots, moss, lichen or other material, usually thickly lined with rootlets. Placed in a bush, at the top of a sapling or near the extremity of a horizontal branch, between one and four metres from the ground, sometimes up to six metres. *Eggs*, normally 3, exceptionally 4, longish ovals, glossy intense blue, deeper than those of most Indian laughing thrushes. Average size of 60 eggs 29 × 21.1 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *albogularis* (1274) in having the upperparts paler (more greyish), the ochraceous of underparts duller, and in being slightly larger.

Young like adult but upperparts tinged rufescent; flanks paler; olive-brown pectoral band less distinct.

MEASUREMENTS

	Wing, ♂ ♀ 132 (worn) to 144 mm (Baker).		Tarsus	Tail
	Wing	Bill (from skull)		
1 ♀	137	23	43	149 mm (MD)

COLOURS OF BARE PARTS. As in 1274.

1274. Eastern Whitethroated Laughing Thrush. *Garrulax albogularis albogularis* (Gould)

Ianthocincla albogularis Gould, 1836 (8 April), Proc. Zool. Soc. London: 187 (Nepal)
Baker, FBI No. 137, Vol. 1: 153
Plate 77, fig. 15

LOCAL NAME. *Karriam-pho* (Lepcha).

FIELD CHARACTERS. As in 1273, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident subject to some vertical movements. The Himalayas from western Nepal east through Sikkim, Bhutan and NEFA at least to Shergaon c. 27°N, 92°15'E. (Whistler, *Ibis* 1941: 172); eastern limit unknown. Also Assam in North Cachar ['Very rare everywhere'; recorded twice in the Barail range; nest found (Baker, JBNHS 8: 174 and FBI 1: 153)]. From 1800 to 3300 m, descending to 900 m in winter. Affects dense forest but does not shun thin and open scrubby hillsides, apparently frequenting the latter in winter.

Extralimital. The species extends to southwestern Szechuan, Yunnan and northwestern Vietnam; also Formosa. Introduced on Kauai (Hawaii).

GENERAL HABITS and FOOD. As in 1273. In winter large loose flocks of between fifty and a hundred not uncommon. Fond of rummaging on the ground amongst bonfire and kitchen ashes on the site of pilgrim and muleteer bivouacs.

BABLERS

7

with undergrowth of rattan brakes etc. Geographical and vertical distribution of this species coincides with that of *G. pectoralis*.

Extralimital. Burma. The species extends east to Vietnam, Hainan and Anhwei.

GENERAL HABITS. Highly gregarious. Keeps in flocks outside the breeding season, often in company with its larger 'double' *G. pectoralis* or other laughing thrushes. Feeds on the ground, turning over dead leaves with much rustling and scratching. Behaves exactly as *G. pectoralis* (1278) with which it shares the same ecological niche. Flocks break up at the end of March.

FOOD. Insects, snails, small lizards, etc.; also berries, seeds and other vegetable matter.

VOICE and CALLS. Usually silent and secretive if people are about, but once they fancy the danger has passed, utter a noisy chorus of hollow-sounding musical whistles (SA). Voice indistinguishable from that of *G. pectoralis* (1278) q.v.

BREEDING. *Season*, March to July, chiefly April and May. *Nest and eggs* (4 or 5) very similar to those of *G. pectoralis*; nest placed in identical situations. Average size of 100 eggs 28.4 × 21.3 mm (Baker). Commonly brood-parasitized by the cuckoos *Clamator jacobinus*, *C. coromandus* and presumably also *Cuculus sparveroides*.

MUSEUM DIAGNOSIS. *G. m. badius* (1276) is darker, more saturated with rufous. For distinguishing from *G. pectoralis*, see Field Characters.

Young very similar to adult but paler. Necklace dusky, underparts less fulvous. Distinguished from the young of *pectoralis* by the olive-brown primary-coverts (v. black). Postjuvencal moult complete.

MEASUREMENTS

	Wing		Tarsus	Tail
	Wing	Bill (from skull)		
♂ ♂	119-132	29-30	41-44	121-132 mm
♀ ♀	116-126	—	—	— mm

(SA, Rand & Fleming, Heinrich)

Weight 5 ♂ ♀ 77-91 g (SA).

COLOURS OF BARE PARTS. Iris yellow, orange-yellow or reddish yellow. Bill dark horn, tip paler. Legs and feet yellowish brown or brownish flesh.

1276. Mishmi Necklaced Laughing Thrush. *Garrulax monileger badius* Ripley

Garrulax monileger (sic) *badius* Ripley, 1948, Proc. Biol. Soc. Washington 61: 102 (Tezu, Mishmi Hills, NE. Assam)
Baker, FBI No. 134 (part), Vol. 1: 151

LOCAL NAMES. None recorded.

SIZE. Myna +; length 27 cm (11 in.).

FIELD CHARACTERS. As in 1275, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. NEFA from the Mishmi Hills to the Patkai Range; from the edge of the plains to c. 900 m. Affects tropical evergreen forest.

GENERAL HABITS, FOOD and VOICE. As in 1275.

BREEDING. As in 1275.

6

TIMALIINAE

VOICE and CALLS. As in 1273; very noisy. A continual musical chattering *chip chip chip chip*; alarm *quwik, tsueeeee* (Fleming). Voice more subdued and less harsh than that of *G. leucolophus*, but shriller.

BREEDING. As in 1273.

MUSEUM DIAGNOSIS. Differs from *whistleri* (1273) in being more richly coloured, especially on underparts.

MEASUREMENTS

	Wing		Tarsus	Tail
	Wing	Bill (from skull)		
♂ ♂	123-136	25-30	45-48	125-141 mm
♀ ♀	122-135	24-30	45-48	125-137 mm

(BB, Fleming, SA)

Weight 17 ♂ ♂ 97-114; 7 ♀ ♀ 78-105 g (GD, SA).

COLOURS OF BARE PARTS. Iris dull white to bluish white. Bill horny black; mouth yellow. Legs and feet plumbeous; claws grey; soles yellowish white.

GARRULAX MONILEGER (Hodgson)

Key to the Subspecies

Paler, less richly coloured.....*G. m. monileger*
Darker, more saturated with rufous.....*G. m. badius*

1275. Necklaced Laughing Thrush. *Garrulax monileger monileger* (Hodgson)

Cinclosoma monilegera Hodgson, 1836, Asiat. Res. 19: 147 (Nepal)
Baker, FBI No. 134 (part), Vol. 1: 151
Plate 76, fig. 11

LOCAL NAMES. As for 1278; *Chhōta pengā* (Bengal).

SIZE. Myna +; length c. 27 cm (11 in.).

FIELD CHARACTERS. At first sight confusingly like *G. pectoralis* (1278) from which it may be distinguished by the following: Lack of check-stripe between throat and ear-coverts. Necklace much narrower on the breast, nearly covered by the rufous of the lower throat; chin and throat white (*G. pectoralis* has a buff throat bordered with white along the broad black necklace). White of belly extends up to the nuchal collar along and below the necklace. Shoulders (primary-coverts) olive-brown, concolorous with upperparts and rest of wing (*contra* blackish brown in *pectoralis*). It is also smaller in size with less strong bill, legs and feet, the latter paler coloured (yellowish brown as against slate-grey); the bill is entirely dark while in *pectoralis* it is paler at the base of the lower mandible.

STATUS, DISTRIBUTION and HABITAT. Resident, fairly common except in the western part of its range. From west-central Nepal east through Sikkim, Darjeeling, Jalpaiguri district, Bhutan, NEFA to the range of *G. m. badius*, the hills of Assam (except the Patkai Range), Nagaland, Manipur and East Pakistan in the northeastern hills and the Chittagong region; from the edge of the plains to c. 1000 m, locally up to 1400 m. Affects thick evergreen and moist-deciduous forest and secondary jungle

8

TIMALIINAE

MUSEUM DIAGNOSIS. Differs from *G. m. monileger* (1275) in being darker, more saturated with rich rufous, particularly on the nuchal collar and on the underparts.

MEASUREMENTS

3 ♂ ♂ Wing 120-124 mm (SDR).

COLOURS OF BARE PARTS. Iris whitish orange to orange-yellow. Bill black, tip light grey. Legs light grey.

GARRULAX PECTORALIS (Gould)

Key to the Subspecies

Paler, less richly coloured.....*G. p. pectoralis*
Darker, more richly coloured.....*G. p. melanotis*

1277. Nepal Blackgorgeted Laughing Thrush. *Garrulax pectoralis pectoralis* (Gould)

Ianthocincla pectoralis Gould, 1836 (8 April), Proc. Zool. Soc. London: 186 (Nepal)
Baker, FBI No. 132 (part), Vol. 1: 150
Plate 76, fig. 13

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 29 cm (12 in.).

FIELD CHARACTERS. As in 1278, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. Central Nepal to eastern Nepal, from the edge of the terai up to 1650 m. Affects secondary growth, cut-over scrub and forests of sal, pine, etc. with dense undergrowth.

GENERAL HABITS, FOOD and VOICE. As in 1278.

BREEDING. As in 1278.

MUSEUM DIAGNOSIS. *Paler and less richly coloured than melanotis* (1278). This species has a fine fleshy yellow eye-rim which is absent in *G. monileger*.

MEASUREMENTS

Wing, 4 ♂ ♂ 144-149; 4 ♀ ♀ 139-143 mm (Rand & Fleming).

COLOURS OF BARE PARTS. As in 1278.

1278. Assam Blackgorgeted Laughing Thrush. *Garrulax pectoralis melanotis* Blyth

Garrulax melanotis Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 949 (Arracan)
Garrulax McClellandi Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 949 (Assam)
Garrulax wroghii Bonaparte, 1850, Consp. Gen. Av. 1: 371 (Assam)
Garrulax waddellii Ogilvie-Grant, 1894, Bull. Brit. Orn. Cl. 3: xxix (Rungeet (Rangit) River, Sikkim)
Baker, FBI No. 132 (part), Vol. 1: 150

LOCAL NAMES. *Ol-phs* (Lepcha); *Piang-kam* (Bhutia); *Pereri* or *Purishi* (Dalla); *Bdāi pengā* (Bengali).

¹ The Burmese race *melanotis*, illustrated, differs only in having the broad tips to the tail buff instead of white; the pectoral gorget is often incomplete.

BABLERS

9

SIZE. Myna +; length c. 29 cm (12 in.).

FIELD CHARACTERS. Above, olive-brown with a rufous nuchal collar and white supercilium extending to the collar. Shoulder (primary-coverts) blackish brown; outer edge of wing whitish. Tail graduated, the rectrices, except central pair, black, broadly tipped with white, showing in flight as a broad terminal band. Ear-coverts varying from striped black and white to entirely white or black, bordered above and behind by black, and below by a black chin stripe. Below, throat mostly buff bordered by white along the broad necklace. Centre of belly white, flanks ochraceous. Sexes alike.

Confusingly similar to Necklaced Laughing Thrush (*G. monileger*); for distinguishing from it see 1275 Field Characters.

STATUS, DISTRIBUTION and HABITAT. Common resident. From Darjeeling, Sikkim, and Jalpaiguri district east through Bhutan and NEFA to the Mishmi Hills; the hills of Assam, Nagaland and Manipur, and East Pakistan in the northeastern hills and the Chittagong region; from the edge of the plains to c. 1200 m, locally up to 1700 m. Affects dense forest, secondary growth and bamboo jungle, often bordering cultivation.

Extralimital. Burma to Arakan and western Yunnan. The species ranges east to Vietnam, Hainan and Anhwei.

GENERAL HABITS. Highly gregarious; goes about in troops of 10 to 25, often in association with *G. monileger* and other laughing thrushes. To cross an open space, the members of a flock glide one after another (never all together unless scared), in a continuous flowing motion. Flight rather clumsy and jay-like, yet stronger than of most laughing thrushes. Feeds much on the forest floor, proceeding by long hops. On alarm, flies up into bushes and mounts into trees, hopping rapidly from branch to branch, then gliding off as described. Its ability to disappear into cover when in danger is remarkable. The birds often display, in spring and at other times as well, hopping about on the ground, flirting and spreading their wings, bowing and performing like circus contortionists, all the while uttering loud calls (Baker).

FOOD. Mostly insects.

VOICE and CALLS. Very noisy. Keeps up an incessant querulous conversational squeaking, a nasal *week, week, week* (SA); also described as a strange, very human piping to which are usually added several short high whistles. The several individuals simultaneously and confusedly uttering these strange calls sound like an orchestra of mournful piping (Heinrich). According to the same observer, its voice is undistinguishable from that of *G. monileger*. Also has some harsh, grating calls.

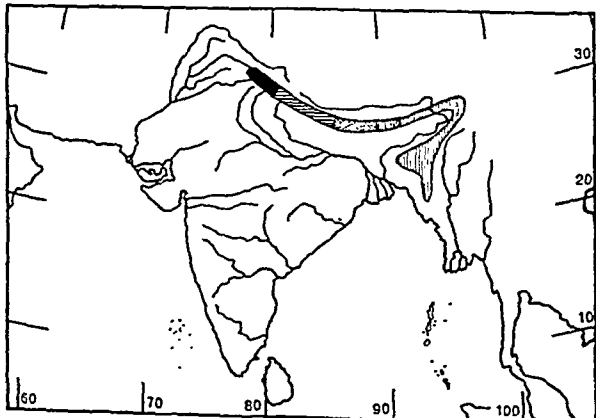
BREEDING. Season, March to August, mainly April to June. Nest, a broad, rather shallow but bulky saucer, untidily and rather loosely put together; made mostly of bamboo leaves, with other dead leaves, roots, scraps of moss, bracken, etc., bound by weed stems and tendrils, lined with rootlets and fine grass stems. Placed in bushes or small trees, from near the ground to about six metres up. Eggs, 3 to 5 (rarely up to 7), most often 4, deep blue. Average size of 100 eggs 31.4 × 22.7 mm (Baker). The incubating bird sits close but is adept in slipping off without giving a clear view and hiding in the undergrowth with no sign of its presence. Commonly brood-parasitized by *Clamator coromandus* and *Cuculus sparrerioides*.

BABLERS

11

STATUS, DISTRIBUTION and HABITAT. Resident, locally common, subject to vertical movements. The western Himalayas from Kulu and Mandi to

Garrulax striatus



Distributional ranges

- *striatus* (1279).
- ▨ *ribex* (1280).
- ▤ *sikkimensis* (1281).
- ▧ *cranbrookii* (1282).

Garhwal; from 1200 to 2700 m, mostly between 2000 and 2700 m in summer. Affects dense forest and better-wooded nullahs and ravines; local in its choice of habitat.

GENERAL HABITS. More arboreal than most laughing thrushes, feeding in the canopy of tall trees as well as in undergrowth and lower branches. Keeps in pairs in the breeding season, otherwise in small noisy parties of five to eight birds—sometimes singly—frequently in association with other laughing thrushes and trees pies; rather parochial, frequenting the same patch of forest day after day. Often found at fruiting trees in company with bulbuls, barbets and fruit pigeons.

FOOD. Insects, berries and seeds.

VOICE and CALLS. A variety of loud, discordant cackling notes resembling those of a domestic fowl that has laid an egg, and sometimes a harsh unmusical chorus of chattering laughter. A lively, rich whistling call rendered as *eh-se-aw-oh-white oh-white* (Frome), which usually betrays the presence of the birds a long way off. A frequent call-note is a double whistle *wh-eh*, easily imitated (Stanford). Alarm, a harsh *cick-cick-cick-cick*. Other calls, doubtless variants of above, under 1281.

BREEDING. Season, April to July, mostly May and June. Nest, a broad, shallow cup strongly made of coarse grass, twigs, rootlets, dead leaves, moss or green ferns, and lined with rootlets. Placed in a sapling or among

10

TIMALIINAE

MUSEUM DIAGNOSIS. Differs from *G. p. pectoralis* (1277) in being darker and more richly coloured.

Young, as adult but paler. Primary-coverts black with pale tips. Postjuvenile moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	130-152	32-36	46-48	122-144 mm
♀♀	130-148	c. 35	46-49	118-135 mm

(SA, HW, SDR, Heinrich)

Weight 1 ♂ 156; 2 ♀♀ 135, 135 g (SDR, SA).

COLOURS OF BARE PARTS. Iris reddish- or orange-brown; fleshy circumorbital ring chrome yellow. Bill: upper mandible blackish brown, lower mandible basally grey, distally brown; extreme bill-tip whitish. Legs and feet slate-grey; claws horny white.

GARRULAX STRIATUS (Vigors)

Key to the Subspecies

	Page
A A broad black stripe from eye to nape..... <i>G. s. cranbrookii</i>	13
B No black stripe	
1 Paler, less olive; larger..... <i>G. s. striatus</i>	10
2 Darker, more olive; smaller..... <i>G. s. ribex</i>	12
3 Darker than 2, more red-brown..... <i>G. s. sikkimensis</i>	12

1279. Western Striated Laughing Thrush. *Garrulax striatus striatus* (Vigors)

Garrulax striatus Vigors, 1831, Proc. Zool. Soc. London: 7

(Himalaya Mountains, restricted to Naini Tal by Baker, 1920, JBNHS 27: 245)

Baker, FBI No. 177 (part), Vol. 1: 184

Plate 76, fig. 10

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. A large umber-brown laughing thrush conspicuously white-streaked, with a short thick bill and loose, mop-like crest. Above, crest dark brown, white-streaked in front. Back umber-brown with fine white streaks. Tail chestnut-brown, with minute white tips to outer rectrices. Below, throat and sides of head densely streaked. Breast and belly brownish grey with paler streaks. Sexes alike.

Distinguished from the species *virgatus* mainly by its larger size, crest, and lack of supercilium. *G. lineatus* is much smaller with dusky streaks.



× c. 1

12

TIMALIINAE

climbers, from one to six metres above the ground. Eggs, almost invariably 2, pale blue. Average size of 35 eggs 33.3 × 23.3 mm (Baker). Brood-parasitized by *Clamator coromandus*.

MUSEUM DIAGNOSIS. Differs from *ribex* (1280) in being paler, less olive.

Young, like adult but streaks on underparts not so sharp.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	145-165	27-28	139-148 mm
♀♀			(SDR, CBT)

COLOURS OF BARE PARTS. As in 1280.

1280. Nepal Striated Laughing Thrush. *Garrulax striatus ribex* Ripley

Garrulax striatus ribex Ripley, 1930, Proc. Biol. Soc. Washington 63: 103

(Godavari, Central Valley, Nepal)

Baker, FBI No. 177 (part), Vol. 1: 184

LOCAL NAME. *Bhiakura* (Pahari, all laughing thrushes).

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. As in 1279; see Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to some vertical movements. The central Himalayas from eastern Kumaon to eastern Nepal; from c. 1500 to 2700 m descending to c. 1000 m in winter. Affects dense forest and thickets.

GENERAL HABITS, FOOD and VOICE. As in 1279.

BREEDING. As in 1279.

MUSEUM DIAGNOSIS. Differs from *striatus* by smaller size and generally darker more olive-tinted upper surface and flanks. From *sikkimensis* it differs by being distinctly lighter, less red-brown, particularly on the back and lower parts, the dark edging to the median streaks noticeably darker.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	138-151	26-30	c. 42	128-138 mm
♀♀	132-142	27-30	c. 42	126-139 mm

(BB, SDR, Rand & Fleming)

Weight 5 ♂♂ 126-148; 1 ♀ 138 g (GD).

COLOURS OF BARE PARTS. Iris brownish pink to dull brick-red with a thin yellow inner ring. Bill dark horny, paler on base of lower mandible. Legs and feet pale slate; claws horny; soles yellowish grey.

Plate 73, fig. 4

1281. Sikkim Striated Laughing Thrush. *Garrulax striatus sikkimensis* (Ticehurst)

Garrulax striatus sikkimensis Ticehurst, 1924,

Bull. Brit. Orn. Cl. 44: 104 (Sikkim)

Baker, FBI No. 177 (part), Vol. 1: 184

LOCAL NAMES. *Namfiek-pha* (Lepcha); *Kojiam* (Bhutea).

SIZE. Myna +; length c. 28 cm (11 in.).

BABLERS

13

FIELD CHARACTERS. As in 1279; see Museum Diagnosis.
STATUS, DISTRIBUTION and HABITAT. Common resident, subject to some vertical movements. Eastern Nepal from the Arun Kosi river to eastern Bhutan. Breeds between 1500 and 2700 m, optimum zone 1800-2400 m; in winter descends to c. 750 m in Sikkim, and to the foothills of Bhutan. Recorded also as high as 2700 m in winter. Affects dense rain-forest with heavy undergrowth; also secondary and scrub jungle.
GENERAL HABITS and FOOD. As in 1279.
VOICE and CALLS. As in 1279. Flocks keep up a sharp conversational squealing, reminiscent of the Pariah Kite's (*Milvus migrans*). Song, recorded in Sikkim and Bhutan — doubtless variants of those under 1279 — a loud rich musical whistle uttered with shaggy crest erected *O-willyou-willyou-wit* sometimes ending with *wit-witoo*. Two common variants of this are *whewyou-you-witoo* and *white to greet you* (accent on *greet*). These phrases repeated unvaryingly every 3 to 5 seconds for many minutes from the same stance. Another call is Father reminiscent of the 'brain fever' call of hawk-cuckoo, *tiwo-wo* (first *wo* loudest) repeated singly at intervals, not in runs or crescendo.
BREEDING. As in 1279. Eggs said to be more pointed than those of the western races. Average size of 16 eggs 33.1 × 22.7 mm (Baker).
MUSEUM DIAGNOSIS. Differs from *vibex* in being darker, more red-brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀ ¹	126-152 (mostly 130-142)	23-30	39-47	121-137 mm

(SA, SDR, GBT, Stresemann)

Weight 1 ♂ 92; 3 ♀ 99-106 g (SA).

COLOURS OF BARE PARTS. Iris reddish brown (the iris of one specimen examined immediately after death was pinkish biscuit colour; two hours later brownish scarlet. SA). Bill blackish brown. Legs and feet plumbeous; claws horny brown.

1282. Assam Striated Laughing Thrush. *Garrulax striatus cranbrookii* (Kinnear)

Grammatoptila striata cranbrookii Kinnear, 1932, Bull.

Brit. Orn. Cl. 53: 79 (Adung Valley, Burma)

Garrulax striatus brahmputra Hachisuka, 1953, Auk 70: 92.

New name for *Grammatoptila austeni* Oates, preoccupied.

Grammatoptila austeni Oates, 1889, Fauna Brit. India, Birds 1: 104 (Dafila and Naga Hills, Assam). Not *Trochalepteron Austeni* Godwin-Austen, 1870

= *Garrulax austeni austeni* (Godwin-Austen)

Baker, FBI No. 178, Vol. 1: 185

LOCAL NAME. *Daopa* (Cachari).

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. As in 1279 but with a broad black stripe on side of crest from eye to nape, and no shaft-streaks on crown.

¹ A remarkable disproportion in the sexes has been noted. Of 14 specimens collected in Sikkim and Bhutan between January and April in different years, 13 birds in a row proved to be female, only the last being a male! It is difficult to accept this as mere coincidence (SA).

BABLERS

15

STATUS, DISTRIBUTION and HABITAT. Common resident. The Himalayas from Chamba east through Nepal, Sikkim, N. Bengal (Jalpaiguri district), Bhutan and NEFA to the Mishmi Hills; from the duars and foothills to 1700 m, locally (Sikkim) up to 2100 m, extending to adjacent plains in the eastern half of its range (east of Nepal). Optimum breeding zone 600 to 1500 m. Observed at 1700 m in winter; there may be some downward movement in the cold season. Affects forest with dense undergrowth and secondary scrub and bamboo jungle — especially broken foothills country with wooded ravines and bordering terraced cultivation.



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GENERAL HABITS. A very noisy species, gregarious at all seasons, keeping in flocks of six to twelve, sometimes up to forty individuals; often accompanied by other laughing thrushes, tree pies, Green Magpies and occasionally Red Junglefowl. Feeds mostly on the ground, turning over and flicking aside dead leaves, uttering soft single contact chuckles continuously. Shy as a rule but may also be very inquisitive. Very boisterous when disturbed, exploding into choruses of loud cackling 'laughter'. The flocks move about in scattered follow-my-leader style from tree to tree, three or four birds sometimes perching huddled up affectionately on a twig for a brief moment. On the ground they progress in long bouncing or volplaning hops. Like its white-throated congener (1274) often seen rummaging for scraps among wood ashes on the site of pilgrims' or muleteers' bivouacs.

FOOD. Chiefly insects, berries and seeds; also small reptiles and flower-nectar. Larger items held under foot and torn with bill or hacked by vigorous hammer blows of the bill.

VOICE and CALLS. One of the noisiest birds, always calling one another with a variety of notes, bursting out every now and again into a cacophony of cackling choruses 'in which each member tries to outshout the rest' (Baker). One bird leads with a loud, pleasant *pick* or *pick-wo* and the whole flock chimes in with a tumult of discordant cackling; throughout the performance the leader beats time with his *pick-wo* refrain at regular intervals, bill raised skyward and his half-drooped wings fluttering — as if conducting an orchestra! (SA). On the ground these outbursts are often accompanied by dancing, posturing and flapping of wings by the entire company. In the distance the clamour sounds not unlike the yelping of a pack of hounds in full cry. It has also been aptly rendered by one observer (Zafar Futehally) as *Ré-ré-ré, mǎrgio, mǎrgio, mǎrgio*, etc. (= 'I am dead' or 'Help! murder!' in Gujarati).

BREEDING. Season, end of March to September. Mostly April to June. Nest, a large but shallow cup roughly made of grass, bamboo leaves, roots,

14

TIMALIINAE

STATUS, DISTRIBUTION and HABITAT. Common resident. From eastern Bhutan through NEFA to the Mishmi Hills, and Assam in the Khasi and Cachar hills, Nagaland and Manipur (?); from c. 1400 to at least 2400 m, reaching the foothills in winter (600 m in NEFA). Affects deep forest of great trees with plenty of undergrowth.

Extralimital. The Chin Hills of Burma.

GENERAL HABITS, FOOD and VOICE. As in 1279, q.v.

BREEDING. Season, April to August, chiefly May and June. Nest as in 1279. Eggs, 2 or 3, pale blue. Average size of 34 eggs 31.5 × 23.5 mm (Baker). Both sexes share, at least, incubation.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂ ♂	134-149	29-31	120-129 mm
♀ ♀	133-143	c. 31	127-130 mm

(Kinnear, SDR, HW)

COLOURS OF BARE PARTS. Iris reddish brown. Bill blackish brown. Legs and feet greyish brown; soles yellowish.

GARRULAX LEUCOLOPHUS (Hardwicke)

Key to the Subspecies

Abdomen paler, pectoral belt rufous.....*G. l. leucolophus*
Abdomen darker, pectoral belt chestnut.....*G. l. patkaicus*

1283. Himalayan Whitecrested Laughing Thrush. *Garrulax leucolophus leucolophus* (Hardwicke)

Corvus leucolophus Hardwicke, 1815, Trans. Linn. Soc.

London 11: 208, pl. 15 (Mts above Hardwar)

Baker, FBI No. 128 (part), Vol. 1: 146

Plate 77, fig. 16

LOCAL NAMES. *Rawil-kahy* (Hindi); *Karria-pho* (Lepcha); *Karria-goka* (Bhutesa); *Puhu* (Mishmi).

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. An unmistakable large olive-brown laughing thrush with a white crested head, throat and breast and prominent black eye-mask.

Above, crown and crest white becoming slightly ashy on nape. A broad eye-stripe from lores to ear-coverts jet black. A rufous collar blending into the olive-brown back. Tail blackish. Below, throat, sides of neck and breast white bordered by a rufous band joining the nuchal collar. Belly olive-brown. Sexes alike.

... from the nominate (1283) chiefly in having

TIMALIINAE

16

moss or other material, loosely bound with creepers and tendrils, and lined with rootlets. Generally placed in shrubs within reach of the hand among low, dense jungle, sometimes as high as six metres. Eggs, 3 to 6, normally 4, white with innumerable tiny pits over the whole surface. Average size of 30 eggs 29.2 × 23.5 mm (Baker). Both sexes incubate; incubation period about 14 days. Frequently brood-parasitized by the cuckoos *Glaucator jacobinus* and *G. coromandus*.

MUSEUM DIAGNOSIS. Differs from *patkaicus* in being paler; nuchal collar and pectoral belt rufous.

Young, like adult but crest shorter; nuchal feathers ashy brown. More ferruginous on upperparts; coverts and outer edges of wing more rusty; underparts suffused with dull vinaceous brown. Postjuvénal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	124-136	28-30	46-48	125-131 mm
♀ ♀	129-138	27-30	45-49	125-135 mm

(BB, SA, Rand & Fleming)

♂ ♀ 130-140 (SDR)

Weight 3 ♂ 123-129; 5 ♀ 119-123 g (GD, SA).

COLOURS OF BARE PARTS. Iris reddish brown; orbital skin pale bluish slate. Bill black. Legs and feet dull black or plumbeous; claws dark horny; sole yellowish grey.

1284. Assam Whitecrested Laughing Thrush. *Garrulax leucolophus patkaicus* Reichenow

Garrulax patkaicus Reichenow, 1913, Jour. f. Orn. 61: 557

(Patkai Mountains, Upper Burma)

Garrulax leucolophus hardwickii Ticehurst, 1926, Bull.

Brit. Orn. Cl. 46: 113 (Naga Hills)

Baker, FBI No. 128 (part), Vol. 1: 146

LOCAL NAMES. *Naga-dhaopuleka* (Assam); *Dao-flantu* (Cachari); *Ngo* (Naga).

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. As in 1283; see Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Common resident. The hills of Assam, Nagaland and Manipur, and East Pakistan in the northeastern hills and the Chittagong region; from the base of the hills to c. 1800 m, most common between 400 and 800 m. Affects deep forest, dense secondary growth on abandoned cultivation and, less often, bamboo-jungle.

Extralimital. Northern and western Burma. Other races in Thailand, the Indochinese countries and western Sumatra.

GENERAL HABITS, FOOD and VOICE. As in 1283.

BREEDING. As in 1283.

MUSEUM DIAGNOSIS. Differs from the nominate race (1283) in being darker, especially on belly; nuchal collar and pectoral belt chestnut.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1283.

Weight ♂ ♀ 104-130 g (SDR).

BABBLERS

17

1285. Chestnutbacked Laughing Thrush. *Garrulax chinensis nuchalis*.
Godwin-Austen

Garrulax nuchalis Godwin-Austen, 1876, Ann. Mag. Nat. Hist. 18: 411
(Khasi-Naga Hills, North Bengal)
Baker, FBI No. 121, Vol. 1: 140
Plate 77, fig. 10

LOCAL NAME. Pak-chi-loka (Trans-Dikku Naga).

SIZE. Myna; length c. 23 cm (9 in.).

FIELD CHARACTERS. Above, forehead, lores, eye-rim and a short stripe behind eye black. Ear-coverts and sides of neck white. Crown slaty with a few small white feathers in front. A broad rufous-chestnut nuchal collar. Rest of upperparts olive-brown, the outer edge of wing light grey and the tip of tail black. Below, chin and throat black. Breast pale grey. Belly olive-brown. Sexes alike.

The large white cheek-patch in combination with the black throat and rufous collar identifies this species.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. From the Mishmi Hills south through East Lakhimpur, the Patkai Range, Nagaland, east Manipur; from the base of the hills to c. 900 m. Affects thick scrub jungle on broken ground, and rocky scrub-clad ravines; also high grass.

Extralimital. Extends to northern Burma. The species ranges east to Vietnam, Hainan and Kwangtung.

GENERAL HABITS. Keeps in small parties sometimes in company with other laughing thrushes, feeding on the ground in thick scrub, each bird every now and then clambering up to the top of a bush and uttering loud calls and soon joined in chorus by the others.

FOOD. Insects (ants etc.) recorded. Presumably also berries and seeds.

VOICE and CALLS. An unmistakable *churr* when alarmed; a rich, loud whistling song of four or five notes which at once attracts attention (Smythies). Call-note, a soft *chip* (Stanford).

BREEDING. Season, March to July, mostly May and June. Nest, a neat and compact cup of bracken with an inner layer of dead leaves and broad grass-blades, lined with moss, rootlets and fibres. Placed in dense-foliaged bushes within a metre or so from the ground. Eggs, 3 sometimes 2, very pale blue (an abnormal clutch of white eggs has been taken). Average size of 40 eggs 28.5 × 20.7 mm (Baker). Both birds incubate. Sits very close, but slips away quietly into the low jungle when approached, uttering a low chuckle as it disappears.

MUSEUM DIAGNOSIS. *G. propinqua* of southern Burma (Vol. 6, plate 72) lacks the rufous collar.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	106-117	26-27	c. 40	106-115 mm (HW, Baker)

COLOURS OF BARE PARTS. Iris blood-red to brick red; orbital skin grey. Bill black. Legs and feet pale fleshy or fleshy grey.

BABBLERS

19

GARRULAX DELESSERTI (Jerdon)

Key to the Subspecies

All rectrices blackish brown.....*G. d. delesserti*
Four outer rectrices rufous.....*G. d. gularis*

1287. Wynaad Laughing Thrush. *Garrulax delesserti delesserti* (Jerdon)

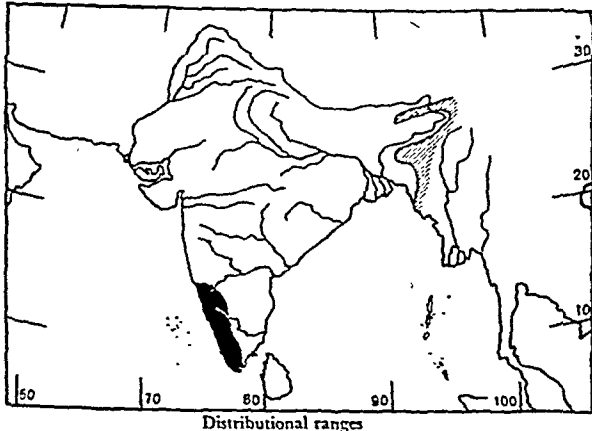
Crateropus delesserti Jerdon, 1839 (Oct.), Madras Jour.
Lit. Sci. 10: 256 (Wynaad, S. India)
Baker, FBI No. 131, Vol. 1: 149
Plate 77, fig. 6

LOCAL NAMES. *Pattengen kili* (Malayalam); *Pūn kūrti* (Tamil).

SIZE. Myna; length c. 23 cm (9 in.).

FIELD CHARACTERS. An uncrested laughing thrush, chiefly chestnut-brown above, ashy and chestnut below. Crown and nape brownish slate. Lores, eye-rim and ear-coverts black. Bill mostly yellow. Back chestnut-brown. Tail blackish brown. Below, throat white; breast ashy grey. Lower belly and under tail-coverts rufous. Legs dusky yellow. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. Range disjunct from that of the subspecies *gularis* of northeastern India: the hills of southwest India from Goa and Belgaum south through western Mysore,

Garrulax delesserti

Distribution ranges

■ *delesserti* (1287)

▨ *gularis* (1288).

Kerala and western Tamil Nadu; from the base of the hills to the highest elevations. Affects humid rain forest with dense undergrowth of *Strobilanthes*, thorny cane-brakes and cardamom sholas.

18

TIMALIINAE

1286. Yellowthroated Laughing Thrush. *Garrulax galbanus galbanus* Godwin-Austen

Garrulax galbanus Godwin-Austen, 1874, Proc. Zool. Soc.
London: 44, pl. 10 (Manipur Valley, NE. Bengal)
Garrulax galbanus galbanus Koels, 1954, Contrib. Inst.
Regional Exploration, No. 1: 2 (Blue Mountain, Lushai Hills)
Baker, FBI No. 127, Vol. 1: 107
Plate 77, fig. 5

LOCAL NAMES. None recorded.

SIZE. Myna; length c. 23 cm (9 in.).

FIELD CHARACTERS. A striking-looking laughing thrush with a black face and chin and yellow underparts. Above, crown and nape ashy-brown with a thin whitish supercilium; rest of head black. Remainder of upperparts ochraceous brown. Outer rectrices with broad white tips preceded by black. Below, chin black. Rest of underparts pale yellow, washed with olive on flanks. Under tail-coverts white. Sexes alike.

In flight, the white of the rectrices and the under tail-coverts make it very conspicuous.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. Nagaland, Manipur, Assam in the Cachar and Mizo (Lushai) hills, and East Pakistan in the Chittagong region; from c. 800 to 1800 m. Affects open jungle, tall grass intermixed with trees and shrubs and outskirts of dense evergreen forest.

Extralimital. The Chin Hills of Burma. Another race in northeastern Kiangsi.

GENERAL HABITS. Keeps in pairs or small parties of up to six individuals, sometimes in larger flocks ('50-80' — Hume), often in association with *G. ruficollis*. Feeds on the ground; always on the move in follow-my-leader, style through the long grass; when flushed flies up into trees and threads its way through the branches.

FOOD. Chiefly insects; also small seeds.

VOICE and CALLS. A feeble chirping call frequently uttered.

BREEDING. Season, April to June. Nest, a cup roughly made of grass stems, bamboo leaves, creepers and fine twigs, lined with yellow grass-seed stems or rootlets; the yellow lining seems to be a distinguishing feature. Placed in the fork of a bush between 30 cm and 3 m above the ground. Eggs, normally 3, sometimes 2, exceptionally 4, white or 'occasionally very pale blue'. Average size of 80 eggs 25.8 × 18.6 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	92-96	20-22	c. 35	c. 105-110 mm (Baker)

Weight 2 ♂ 56, 57; 1 ♀ 55 g (SDR).

COLOURS OF BARE PARTS. Iris pinkish brown to reddish brown; orbital skin blue. Bill black. Legs and feet blackish grey.

20

TIMALIINAE

GENERAL HABITS. Very gregarious. Keeps in flocks of six to fifteen and sometimes up to forty or fifty individuals. Feeds mostly on the ground, rummaging among the mulch, turning over or flicking aside dead leaves, and occasionally ascending small trees. A half-dozen birds may often be seen huddled affectionately on the same branch, preening each other. A great skulker; scuttles into cover on the least disturbance, the birds hopping swiftly from bush to bush, uttering a chorus of squeaky shrieks as they disappear.

FOOD. Mostly insects; also berries and seeds.

VOICE and CALLS. Characteristic shrill chattering and cackling of the genus, starting with one individual, followed one after another by the rest of the flock till it finally ends up in a chorus of loud, discordant 'laughter' (SA). Also an occasional low harsh churring and a call-note similar to the chirp of a fledgling thrush. Voice very similar to that of *Turdoides subrufus*, 1260 (La Personne).

BREEDING. Season, ill-defined; mostly during the monsoon: April to August in Kerala, July to September in Kanara. There is also evidence of breeding in December, February and March. Nest, a bulky, untidy semi-domed cup of twigs, creepers and roots, lined with rootlets. Placed in bushes, saplings or *Strobilanthes* plants, within a couple of metres from the ground. Eggs, 3 or sometimes 4, rarely more, white. Average size of 50 eggs 27.5 × 21.3 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *gularis* in having the crown and nape darker, the feathers of the forehead tipped with black. Back a darker chestnut-brown; tail darker with the under surface blackish brown, not rufous. Underparts white, not yellow; less grey on breast.

Juvenile and first-winter birds similar to adult but slightly duller above; coverts and edges of wings not so deep chestnut; showing the normal differences of the subfamily Timaliinae, namely the possession of a soft blunt first primary and narrow, pointed rectrices. Postjuvenile moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	100-113	30-31	c. 39	97-107 mm
♀ ♀	108-113	c. 31	—	101-106 mm (SA)

COLOURS OF BARE PARTS. Adult: Iris scarlet or 'maroon-brown'. Gape and upper mandible dark horny brown, lower mandible pale yellowish flesh; palate yellow, gullet pink. Legs, feet and claws pinkish flesh with grey tinge. Juvenile and immature: Iris pale pinkish buff. Eye-rim bright yellow, orbital skin paler yellow. Bill: upper mandible horny brown except tip, nostrils, lores and a spot on culmen near forehead, which are yellow; gape and lower mandible bright yellow. Legs and feet dusky yellow, claws paler.

One specimen (age?): Iris brownish orange. A bare post-orbital patch bluish slate. Bill: upper mandible horny brown, lower pale yellow or cream. Legs and feet dirty brownish grey; claws creamy white.

BABLERS

21

1288. Yellowbreasted Laughing Thrush. *Garrulax delesserti gularis* (McClelland)

Ianthocincla gularis McClelland, 1839 (1840),
(Oct. 22, 1839 = March 1840), Proc. Zool. Soc. London : 159 (Assam)
Garrulax gularis greater Koelz, 1954, Contrib. Inst.
Regional Exploration, No. 1: 2 (Sangau, Lunhai Hills)
Baker, FBI No. 136, Vol. 1: 152
Plate 77, fig. 7

LOCAL NAMES. None recorded.
SIZE. Myna; length c. 23 cm (9 in.).
FIELD CHARACTERS. As in 1287 but white of underparts replaced by yellow, the four outer rectrices rufous and the bill entirely black. Seen from below, the tail is rufous, not blackish. Sexes alike.
STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. The Himalayan foothills of eastern Bhutan and NEFA (mostly confined to the base of the hills), the hills of Assam, Nagaland and Manipur, and East Pakistan in the northeastern hills and the Chittagong region; from c. 1000 to 1800 m. Affects thick evergreen undergrowth, dense secondary growth, less often bamboo and scrub jungle.

Extralimital. Northern Burma and northern Laos. Range widely disjunct from that of the nominate race (southwest India).

GENERAL HABITS AND FOOD. As in 1287, q.v.
VOICE AND CALLS. A loud, rather sweet whistle in addition to the usual cackling notes of its kind (Baker).

BREEDING. Season, April to July, mostly May. Nest as in 1287. Eggs, generally 3, sometimes 2, white or pale blue. Average size of 100 eggs 29.2 x 20.5 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *delesserti* in having the back olive-brown tinged with rufous instead of chestnut-brown. Crown and nape slate grey. Tail less blackish above, rufous below, the four outer rectrices being rufous. Sides of breast a darker grey. White of underparts replaced by primrose yellow in fresh specimens. This colour however fades rapidly in museum skins and becomes white. The resemblance between the two forms then becomes so striking that they may casually be confused. However, wing in *gularis* usually under 100 mm, in *delesserti* usually 100 mm or over.

Young, like adult but wings richer in colour; ashy grey of breast mixed with rusty; crown black fringed at base with rufous.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	95-104	29-32	38-42	90-94 mm
			(Baker, MD, SA)	

Weight 1 ♂ 92 g (SDR).

COLOURS OF BARE PARTS. Iris reddish brown. Bill black. Legs and feet yellowish orange.

GARRULAX VARIEGATUS (Vigors)

Key to the Subspecies

Edges of primaries grey.....*G. v. similis*
Edges of primaries yellow.....*G. v. variegatus*

BABLERS

23

(JBNS 16: 47), it is common in Chitral 'throughout the year up to 1800 m'. Affects open forest of fir and birch with dense rhododendron and ringal bamboo growth, patches of *Viburnum* at the forest edges as well as various types of dense jungle, especially in winter. Occasionally enters gardens. Has adapted itself to open willow groves in the Chandra and Bhaga valleys in Lahul, Himachal Pradesh (Alexander, H. G., 1951, JBNS 49: 609).

GENERAL HABITS. A great skulker. Keeps in pairs during the breeding season, otherwise in flocks up to twenty or more. Feeds among bushes but often ascends trees, hopping energetically from branch to branch close to the trunk, diving into cover on alarm. Flight weak, interspersed with short sailings, tail spread wide.

FOOD. Insects, berries and fruits.

VOICE AND CALLS. Loud musical whistles rendered as *weet-a-weer* or *weet-a-two-weer*, far-reaching and unmistakable (Bates); also transcribed as *zdrp-di-i-wiah* and *di-pi-wiah* (i pronounced as ee) often well represented by the words *choky william* 'which is immediately taken up by hidden accomplices in the bushes around' (Magrath). In the non-breeding season, when in flocks, often call with a *ple-weer* similar to that of the Streaked Laughing Thrush but louder and clearer; when alarmed, utters subdued muttering and squealing notes which sound like a nestful of young chicks clamouring for food (Bates).

BREEDING. Season, April to August, chiefly May and June. Nest, a large and somewhat untidy cup of grass with some strips of birch bark, leaves or moss, lined with rootlets, finer grass or pine needles. Usually placed in bushes, about one metre off the ground, sometimes in the fork of a small tree up to six metres or so. Eggs, normally 3, sometimes 2, rarely 4, blue or blue-green profusely blotched and spotted, especially near the large end, with liver-brown, red-brown, dark brown or brownish black. Average size of 60 eggs 27.8 x 21 mm (Baker). Both sexes incubate. Sometimes brood-parasitized by Indian Cuckoo (*Cuculus micropterus*, 576).

MUSEUM DIAGNOSIS. Differs from nominate *variegatus* (1290) in having the outer webs of wing-feathers grey and the yellow on tail replaced by grey.

MEASUREMENTS. As in 1290.

Weight 10 ♂ ♀ (Apr.-May) 59-72 (av. 64.5) g—SA.

COLOURS OF BARE PARTS. Iris peridot-green (Meinertzhagen). Bill black. Legs and feet flesh-colour.

1290. Eastern Variegated Laughing Thrush. *Garrulax variegatus variegatus* (Vigors)

Cinlosoma variegatum Vigors, 1831, Proc. Zool. Soc. London: 56
(Himalayas = Simla-Almora area, according to Ticehurst & Whistler, 1924, Ibis: 471)
Baker, FBI No. 162, Vol. 1: 173
Plate 77, fig. 13

LOCAL NAME. *Gates* (Nepal).

SIZE. Myna ±; length c. 24 cm (10 in.).

FIELD CHARACTERS. As in 1289 but grey of wings and tail replaced by yellow. Grey head, white cheeks, black band down centre of throat, yellow in wings and tail and rusty underparts are leading pointers. Sexes alike.

TIMALIINAE

22

1289. Western Variegated Laughing Thrush. *Garrulax variegatus similis* (Hume)

Trochopteron simile Hume, 1871, Ibis: 408 (Far Northwest = Gilgit)
Baker, FBI No. 163, Vol. 1: 174

LOCAL NAMES. None recorded.

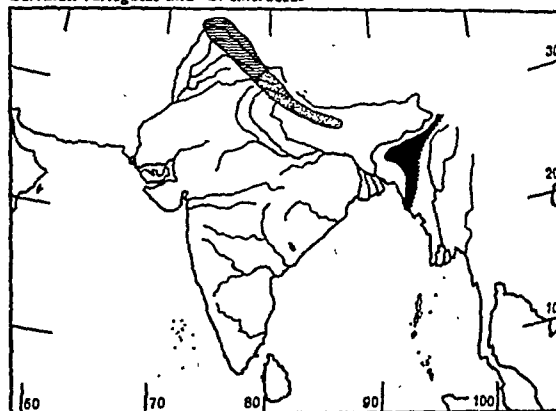
SIZE. Myna ±; length c. 24 cm (10 in.).

FIELD CHARACTERS. Above, forehead tawny; lores black. Crown, nape and ear-coverts dark grey with a short white streak behind eye. Back, rump and upper tail-coverts olive-brown. Wings silvery grey with a black and a rufous shoulder-patch and a larger black patch on centre of wing; secondaries blackish tipped with white. Tail black, distally grey with white tip, the latter colour more in evidence when tail is spread. Below, chin and centre of throat black, broadly bordered with buff. Breast and flanks pale olive-brown. Lower belly and under tail-coverts rufous. Sexes alike.

The black and grey pattern of wing and tail, whitish cheeks and black band down centre of throat identify this species.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The western Himalayas from Kohat, Chitral and Gilgit east through the mountains of northern West Pakistan, the outer ranges of Kashmir to Lahul and Chamba, meeting the nominate race in Saraj. In Kangra both subspecies may be seen on the same ground in winter, sometimes in the same flock. Breeds between 1800 and 3300 m, mostly above 2400 m. Found in winter from 1200 to at least 2100 m. According to Fulton

Garrulax variegatus and *G. cineraceus*



▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).
■ *G. c. cineraceus* (1291).

Distributional ranges

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

▨ *G. v. similis* (1289). ■ *G. v. variegatus* (1290).

■ *G. c. cineraceus* (1291).

24

TIMALIINAE

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. From the Karei Lake between Dharmasala and Dalhousie (c. 76°E.) east to central Nepal. One of the highest altitude laughing thrushes; breeds from 2100 m to 3300 m on the Duala Dhar and around Simla, generally above 2400 m in Garhwal, and from 2700 m to tree-line (4100 m) in Nepal. From October to March, usually below 2100 m, down to 1000 m but also recorded as high as 2700 m at this season in Nepal. Affects forests of oak, fir or birch with dense undergrowth of rhododendron and other bushes, or dwarf rhododendron patches at or above timber-line. In winter frequents steep hillsides with dense ringal bamboo, briar and other undergrowth.

GENERAL HABITS, FOOD AND VOICE. As in 1289. Shrill musical whistles *p'ti-pieyou* or *pitit-whit* as contact calls (SA).

BREEDING. As in 1289.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Colouring of edgings of primaries and of rectrices very variable. Typically these are yellow, varying from golden to orange and even olive-yellow, but specimens with reddish orange, orange-brown and pink have been recorded.

Young, a dull version of the adult, a little darker above and less bright below.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	101-109	c. 23	c. 38	c. 120 mm
♀ ♀	98-103	—	—	— mm
		(from feathers)		(Rand & Fleming, MD)
♂ ♀	102-112	c. 20	c. 38	c. 130 mm
				(Baker)

Weight 2 ♂♂ 67, 69 g (GD).

COLOURS OF BARE PARTS. Iris pale yellow-green, brown, raw sienna-brown, pale yellowish brown. Bill black. Legs and feet pale reddish orange-brown (Hume) or iris pale yellow. Bill dark brown, yellowish at base of lower mandible. Legs and feet pale brown (HW).

1291. Ashy Laughing Thrush. *Garrulax cineraceus cineraceus* (Godwin-Austen)

Trochopteron cineraceum Godwin-Austen, 1874, Proc. Zool. Soc. London: 43
(Manipur Valley, NE. Bengal)
Baker, FBI No. 141, Vol. 1: 156
Plate 77, fig. 4

LOCAL NAME. *Lahu* (Angami Naga).

SIZE. Myna; length c. 22 cm (9 in.).

FIELD CHARACTERS. Above, forehead and centre of crown to nape black. Lores, orbital area and ear-coverts whitish. A short black eye-stripe and black moustachial stripe breaking into short streaks on sides of head. Sides of crown and back amber-brown; tail graduated, of same colour with a black subterminal band and tipped with white, especially conspicuous when tail is spread. Wing edged with ashy, the secondaries with broad

BABBLERS

25

subterminal black band tipped with a thin white crescent. *Below*, throat buffish with short dark streaks. Breast pinkish grey. Belly and under tail-coverts tawny-olive. Sexes alike.

The white crescents on black wing-tip and streaked throat in conjunction with the white tips of tail identify this species.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to seasonal vertical movements. Assam in the Cachar hills, Nagaland and Manipur (see map, p. 22). Breeds from 1500 m upwards, generally above 1800 m. Tytler (*apud* Baker) found it breeding between 2100 and 2400 m near Kohima (Nagaland) while Ripley (JBNS 50: 496) met with it between 1200 and 1500 m in winter in the same region. Affects thick bushes in damp forest and thick scrub and secondary growth near villages or cultivation. Avoids high or shady forest.

Extralimital. The Chin Hills of Burma. The species extends to northern Burma, western Yunnan and southeastern Szechuan.

GENERAL HABITS. Keeps in pairs in the breeding season, otherwise in small parties. Feeds mostly on the ground scratching and turning over dead leaves, or even cattle dung in search of insects.

FOOD. Insects and berries.

VOICE and CALLS. A variety of low, rather musical calls. Alarm, a thrush-like call. Song, usually uttered from a bush-top, a loud *dū-dūnd* reminiscent of call of *Pomatorhinus erythrogenys* (Schäfer).

BREEDING. *Season*, April to June. *Nest*, a cup of moss, leaves, rootlets, grass and twigs, lined with rootlets or fine stems. Placed in thick bushes within two metres of the ground. *Eggs*, 2 or 3, unspotted blue. Average size of 150 eggs 25.3 × 18.6 mm (Baker). Brood-parasitized by Hawk-Cuckoo (*Cuculus varius*).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	86-89	c. 20	c. 32	c. 100 mm (Baker)

Wing, 2 ♂♂ 90, 92; 2 ♀♀ 88, 88 mm (Heinrich).

Weight 4 ♂♂ 47-51 g (SDR).

COLOURS OF BARE PARTS. Iris creamy yellow to pinkish cream. Bill: upper mandible brownish horn, lower yellowish or whitish horn. Legs and feet pale brownish flesh.

GARRULAX RUFUGULARIS (Gould)

Key to the Subspecies

A	Page
1 Crown dark brown or blackish brown	
1 Ear-coverts rufous..... <i>G. r. occidentalis</i>	26
2 Ear-coverts black..... <i>G. r. rufogularis</i>	27
B Crown black, tail chestnut-brown	
3 Rusty of throat extending to breast..... <i>G. r. rufitinctus</i>	28
4 Rusty of throat more restricted	
a Greyer below, paler above..... <i>G. r. rufiberbis</i>	28
b Less grey below, darker above..... <i>G. r. assamensis</i>	29

BABBLERS

27

1294. Rufouschinned Laughing Thrush. *Garrulax rufogularis rufogularis* (Gould)

Ianthocincla rufogularis Gould, 1835, Proc. Zool. Soc. London: 48

(Himalayas = Sikkim)

Cinclosoma rufimentum Hodgson, 1836, Asiat. Res. 19: 148 (Nepal = Kathmandu)

Baker, FBI No. 143, Vol. 1: 158

Plate 76, fig. 9

LOCAL NAME. *Narbigican-pho* (Lepcha).

SIZE. Myna; length c. 22 cm (9 in.).

FIELD CHARACTERS. Above, forehead and centre of crown to nape black. Lores buff. Ear-coverts black. Sides of head and back umber-brown, the latter with half-moon shaped black spots. Tail graduated, chestnut, with a broad black subterminal band and rufous tip showing as a broad rufous band when it is spread. Wings black and grey with whitish outer edges, the secondaries with subterminal black band tipped with a white crescent. *Below*, chin and under tail-coverts rufous. Throat whitish with black sides mingled with white. Breast pale greyish, flanks olive-brown, both with black spots. Belly whitish. For sex differences see Museum Diagnosis.

The black-spotted back and rufous chin identify this species.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common, subject to some seasonal vertical movements. The Himalayan foothills from central Nepal east through Sikkim, Darjeeling, Bhutan and NEFA at least to the Miri Hills; from c. 600 to 1900 m, optimum zone 1000-1800 m. Reported from as low as the Buxa duars (Ingis) and exceptionally as high as 3500 m in December in Sikkim (Meinertzhagen). Elevations below 900 m are winter records. Affects dense undergrowth in oak and rhododendron forest and forest edges, scrub jungle and secondary growth near cultivation.

GENERAL HABITS. Less gregarious than most laughing thrushes. Keeps in pairs or small family parties haunting low bushes and feeding mostly on the ground. Takes to wing with reluctance; flight weak and ill-sustained. A great skulker more often heard than seen and doubtless often overlooked.

FOOD. Insects, berries and seeds.

VOICE and CALLS. Not very noisy but has the usual range of chuckles and low conversational chatter of the genus, and some loud squealing alarm-notes.

BREEDING. *Season*, April to September. *Nest*, a rather deep cup made mostly of tendrils, with some twigs, roots, leaves, scraps of bracken and grass-bents, some nests being made entirely of one or two of these materials to the exclusion of the rest; the lining is almost always of rootlets. Usually built in a fork of a bush or tree at heights varying from c. 60 cm to 6 metres. *Eggs*, normally 3, sometimes 2 or 4, white. Average size of 15 eggs 26.2 × 19.4 mm (Baker). Both sexes take part in incubation. Period undetermined. Brood-parasitized by the cuckoos *Cuculus spheeroides* and *Clemator coromandus*.

MUSEUM DIAGNOSIS. Female greyer, less olive-brown on upperparts than male; black spots smaller and paler; white tips of flight-feathers narrower. Sexes differ particularly in the colour of the underparts: greyer in male, browner in female; olive-brown of breast and flanks more extensive in male (Dieschhorst).

Young, upperparts unspotted, except crown which is slightly spotted with blackish; underparts spotted as in adult; chin pale rusty.

26

TIMALIINAE

1292, 1293. Western Rufouschinned Laughing Thrush. *Garrulax rufogularis occidentalis* (Hartert)

Ianthocincla rufogularis occidentalis Hartert, 1909, Vög. pal. Fauna 1: 635

(Dehra Dun)

Garrulax rufogularis grossenori Ripley, 1950, Proc. Biol. Soc. Washington 63: 104

(Rakcha, Dailekh Dist., western Nepal)

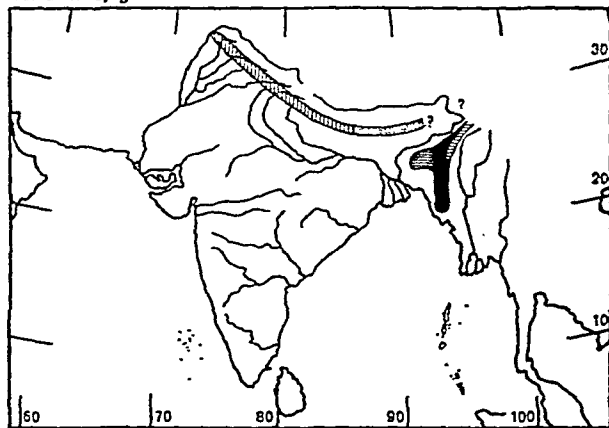
Baker, FBI No. 145, Vol. 1: 159

LOCAL NAMES. None recorded.

SIZE. Myna; length c. 22 cm (9 in.).

FIELD CHARACTERS. As in nominate *rufogularis* (1294) but ear-coverts rufous, white apical crescents on secondaries thinner and less apparent, upperparts, especially tail, more olive and spotting on underparts lighter.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. The western Himalayan foothills from Murree (West Pakistan) and Lolab

Garrulax rufogularis

Distributional ranges

▨ *occidentalis* (1292). ▤ *rufogularis* (1294). ▧ *rufiberbis* (1295a). ■ *assamensis* (1296). ▩ *rufitinctus* (1295).

(Kashmir) east to central Nepal; from c. 600 to 1800 m, mostly 900 to 1200 m. Affects dense thickets and scrub jungle especially on the edges of cultivation.

GENERAL HABITS, FOOD and VOICE. As in 1294.

BREEDING. *Season*, April to August. *Nest* and *eggs* (cf 2 or 3) as in 1294. Average size of 20 eggs 26.1 × 19.4 mm (Baker).

MUSEUM DIAGNOSIS. As *rufogularis* (1294) but paler, more olive, less rufous above; ear-coverts rusty red. See also Field Characters.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1294.

28

TIMALIINAE

Differs from *occidentalis* (1292) in being more rufous above and in having the tail chestnut-brown with broader subterminal black band and deeper rufous tips; ear-coverts black.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	88-98	23-24	c. 35	98-110 mm
♀♀	87-99	23-25	c. 37	97-103 mm

(BB, SA, Rand & Fleming)

Weight 5 ♂♂ 58-68; 2 ♀♀ 58, 58 g (SA).

COLOURS OF BARE PARTS. Iris crimson-brown. Bill: upper mandible horny-brown, lower pale whitish horn, darker at gape. Legs and feet greyish horny brown; claws pale horny brown.

1295. Khasi Rufouschinned Laughing Thrush. *Garrulax rufogularis rufitinctus* (Koelz)

Ianthocincla rufogularis rufitincta Koelz, 1952, Jour. Zool. Soc. India 4: 37

(Pynursla, Khasia Hills)

Baker, FBI No. 144 (part), Vol. 1: 159

LOCAL NAMES. None recorded.

SIZE. Myna; length c. 22 cm (9 in.).

FIELD CHARACTERS. As in 1294, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident. Meghalaya in the Khasi and Garo hills, between 900 and 1800 m. Habitat as in 1295.

GENERAL HABITS, FOOD and VOICE. As in 1294.

BREEDING. As in 1294.

MUSEUM DIAGNOSIS. Differs from *rufiberbis* (1295a) in being paler; feathers of crown have much less pronounced black edging; black markings of back reduced in size; rusty of throat extends to breast; a rusty wash over the belly.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1294.

1295a. Burmese Rufouschinned Laughing Thrush. *Garrulax rufogularis rufiberbis* (Koelz)

Ianthocincla rufogularis rufiberbis Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 3 (between Langyang and Htaungaw, Kachin State, Upper Burma)

Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Myna; length c. 22 cm (9 in.).

FIELD CHARACTERS. As in 1294, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident. The Patkai Range and eastern Nagaland (Ripley, JBNS 58: 281), at c. 1200 m. Habitat as in 1295.

Extralimital. Northern Burma. Another subspecies in northern Vietnam.

GENERAL HABITS, FOOD and VOICE. As in 1294.

BREEDING. Unrecorded.

BABBLERS

29

MUSEUM DIAGNOSIS. Differs from nominate *rufogularis* (1294) in being more uniformly grey, the rufous coloration of the chin paler and more restricted. Colour of back brighter, black edges of feathers somewhat larger. Crown black rather than dark brown of Himalayan races. Greyer below than *assamensis* with reduced and paler rufous on chin; paler above and on lores.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1294.

1296. Assam Rufouschinned Laughing Thrush. *Garrulax rufogularis assamensis* (Hartert)

Ianthocincla rufogularis assamensis Hartert, 1909, Vög. pal. Fauna 1: 635 (Margherita, Assam)

Baker, FBI No. 144 (part), Vol. 1: 159

LOCAL NAME. *Mi-pa-pita* (trans-Dikku Naga).

SIZE. Myna; length c. 22 cm (9 in.).

FIELD CHARACTERS. As in 1294, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident. Assam from Margherita and Cachar south to the Chin Hills of Burma, and East Pakistan in the Chittagong Hill Tracts. Affects heavy undergrowth in forest, and cut-over scrub.

GENERAL HABITS, FOOD AND VOICE. As in 1294.

BREEDING. As in 1294.

MUSEUM DIAGNOSIS. Like *rufogularis* (1294) but chin and part of ear-coverts pale rust; crown black; black on sides of throat more extensive. Not so fulvous on upperparts. On the whole a somewhat more saturated form than 1294.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1294.

Weight 1 ♂ 67; 1 ♀ 64 g (SDR).

1297. Giant Laughing Thrush. *Garrulax maximus* (Verreaux)

Pterorhinus maximus Verreaux, 1871, Nouv. Arch. Mus. Paris 6, Bull. 36, pl. 3, fig. 1 (Montagnes du Thibet chinois = Mouping)

Not in Baker, FBI

Plate 76, fig. 15

LOCAL NAME. *Gya tra* (Tibetan).

SIZE. Pigeon ±; length c. 35 cm (14 in.).

FIELD CHARACTERS. A large laughing thrush conspicuously spotted with white on the back, and with a very long tail.

Above, crown brown, lores whitish, ear-coverts and supercilium cinnamon-rufous. Upper back and sides of neck grey. Back brown and black with conspicuous, round white spots. Rump and upper tail-coverts rufous brown with same spots. Outer edge of wing ashy; all flight-feathers and their coverts tipped with white. Tail graduated; central rectrices greyish brown, outer rectrices dark brown tipped with white. *Below*, throat and upper breast cinnamon-rufous finely barred with pale buff on the latter. Rest of underparts buff, darker on belly and under tail-coverts, sides of breast barred with blackish. Under surface of tail dark brown with white tips. Sexes alike.

BABBLERS

31

of small twigs, lined with dry grass, and placed in a clump of bamboo c. 120 cm above the ground. The two eggs measured 36 × 22.5 and 35.2 × 22 mm (Ludlow).

MUSEUM DIAGNOSIS. See Field Characters. Birds from between the Subansiri and the Tsangpo Valley may be intermediate between *maximus* and *ocellatus*.

Young. *Above*, as in adult but spots on back less numerous, and triangular, not round. Rump and upper tail-coverts unspotted. *Below*, rufous of throat and breast duller, unbarred; rest of underparts uniform buff, no bars on breast or flanks. Tail shorter.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
11 ♂♂	133-134	31-36	[c. 43]	170-186 mm
5 ♀♀	134-141	32-35	—	177-183 mm (Ludlow)

COLOURS OF BARE PARTS. Unrecorded.

GARRULAX OCELLATUS (Vigors)

Key to the Subspecies

Tail chestnut-brown.....	<i>G. o. ocellatus</i>
Tail with much grey.....	<i>G. o. griseicauda</i>

1298. Garhwal Whitespotted Laughing Thrush. *Garrulax ocellatus griseicauda* Koelz

Garrulax ocellatus griseicauda Koelz, 1950, Amer. Mus. Novit., No. 1452: 7 (Wan, Garhwal, United Provinces, India)

Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Pigeon ±; length c. 32 cm (13 in.).

FIELD CHARACTERS. As in 1299, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident. Garhwal, Kumaon and west Nepal, intergrading with *ocellatus* in Nepal (Fleming & Traylor, 1964, *Fieldiana*, Zool. 35: 534). Habitat as in 1299.

GENERAL HABITS, FOOD AND VOICE. As in 1299.

BREEDING. As in 1299.

MUSEUM DIAGNOSIS. Differs from *ocellatus* (1299) in having much grey on the tail (however, Ludlow, 1944, *Ibis* 86: 74, states that the colour of the tail seems to be a variable character); also appears to have a longer tail.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	135 (type)	33	163, 167 mm
♀♀	132-136	31-32	157-164 mm (Koelz, Fleming & Traylor)

COLOURS OF BARE PARTS. As in 1299.

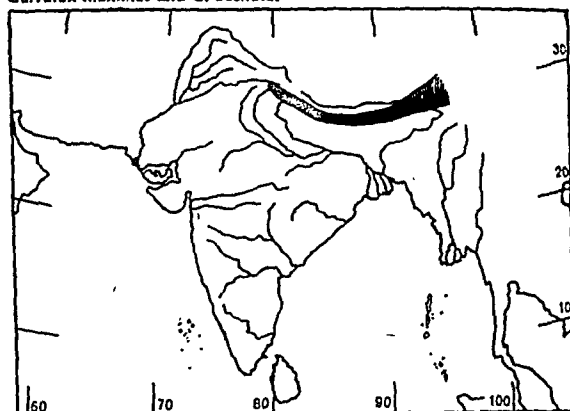
30

TIMALIINAE

Easily distinguished from *G. ocellatus* (1299) by the rufous throat and brown cap, and longer tail.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Southeast Tibet in the lower Tsangpo Valley, between 2200 and 2900 m (up to 4900 m

Garrulax maximus* and *G. ocellatus



Distributional ranges

▨ *G. o. griseicauda* (1298).

■ *G. o. ocellatus* (1299).

▨ *G. maximus* (1297).

in Szechuan). Affects dense, dry subalpine forest with plenty of glades and undergrowth.

Appears to intergrade with *ocellatus* between the upper Subansiri and the Tsangpo Valley (*vide* Ludlow, 1944, *Ibis* 86: 74). The ranges of these two species are complementary.

Extralimital. Ranges from southeast Tibet and northwestern Yunnan to southern Kansu.

GENERAL HABITS. A secretive species but conspicuous by its loud calls. Very gregarious, often associating with other laughing thrushes. Hops on the ground where it finds most of its food, tossing over leaves with the long bill.

VOICE AND CALLS. Shrill, far-carrying notes reminding one of *Cuculus sparveroides*. Often calls in chorus: an individual starts with shrill screams *gno gnoit gno gnoit*, the others accompanying it with short, jerky, rapid and oft-repeated rattles *tscherr, tscherr, tscherr*. Voice very similar to that of *G. ocellatus* (Schäfer).

FOOD. Unrecorded. Probably as in 1299.

BREEDING. Season, presumably May to July (eggs found in June). *Nest*, (one described) a shallow, cup-shaped structure, composed of a foundation

TIMALIINAE

32

1299. Whitespotted Laughing Thrush. *Garrulax ocellatus ocellatus* (Vigors)

Cinlosoma ocellatum Vigors, 1831, Proc. Zool. Soc. London: 55 (Himalaya Mts, restricted to Darjeeling by Baker, FBI 1: 156)

Baker, FBI No. 140, Vol. 1: 155

Plate 76, fig. 16

LOCAL NAMES. *Moonali bhiakora* (Pahari); *Lho-karrem-pha* (Lepcha).

SIZE. Pigeon; length c. 32 cm (13 in.).

FIELD CHARACTERS. Resembles the Giant Laughing Thrush (1297) but has black crown, ear-coverts and throat. Upper back fulvous, lower back chestnut-brown, both spotted with black and buff. Tail chestnut with black subterminal band and white tip, the outer rectrices dark brown tipped white. Sides of neck ashy, sides of lower throat cinnamon-rufous. Underparts buff, mottled with black on breast and flanks. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. A high-elevation species. Resident, fairly common. Nepal (intergrades with *griseicauda*), Darjeeling, Sikkim, Bhutan, NEFA (Tawang, upper Subansiri, and presumably east through the Agency); from 2100 to 3450 m at all seasons, breeding mostly above 2800 m. Affects light forest with undergrowth, thick rhododendron scrub and bushes at the edges of fields, in sunny situations.

Extralimital. Chumbi Valley and southeast Tibet, possibly intergrading with *G. maximus* between the upper Subansiri and the Tsangpo (Ludlow, 1944, *Ibis* 86: 74). The species extends to northeastern Burma, northwestern Yunnan and southwestern Szechuan.

GENERAL HABITS. Much as those of *G. maximus*. Not a conspicuous bird in spite of its size, but inquisitive and easily observed. Keeps in pairs and small parties of five to eight, working through the bushes, hopping on the ground and pecking noisily among dead leaves. Often associated with *G. affinis* (1323).

FOOD. Insects; seeds and fruits. Appears to be almost entirely vegetable even in the breeding season. Nestlings are fed with insects.

VOICE AND CALLS. Very similar to those of *G. maximus*. In breeding season a piercing 8-syllabled call (Ludlow). Song, a beautiful, very human whistle *tu wee, tu wee, tu willy-o* (Proud). The birds not only answer one another but respond readily to an imitation of this call. Also: *Q-twe-twe-twe-koi-koi* emitted from the top of a bush (in winter) and a subdued *pie, pie, pie, pie* (Fleming). Smythies describes its 'call-note' as a loud *cree-cree-cree-cree-r-r-r-cree-cree-cree* at the rate of two *cree* per second; if suspicious, keeps uttering a low interrogative note which rises to a squawk of alarm if the bird is suddenly startled.

BREEDING. Little known. Season, May and June. *Nest*, a large, loose cup about 17 cm across, made of twigs, dry grass or bamboo leaves, lined with rootlets, placed in bushes or small trees within a couple of metres from the ground. Eggs, normal clutch probably 2, deep blue-green, spotted or with a few chocolate-brown specks near the broad end. Size of three eggs 30 × 21.8; 32.7 × 21.5 mm (Hume) and 30.9 × 21.2 mm (Osmaston, both in Baker). As in *G. leucolophus* and *G. albigularis*, the young leave the nest long before they are full-grown (Diesselhorst).

BABBLERS

33

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies; for details of plumage Baker, loc. cit.

Young, like adult but head browner; white spots on upperparts smaller, absent on rump and upper tail-coverts; throat browner and edgings less sharp. Probably not distinguishable from young of *G. maximus*. Timaline juvenile characters of wing and tail (i.e. soft blunt first primary and narrow, pointed rectrices) present. Postjuvinal moult apparently not complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	122-135	27-30	—	146-162 mm
♀♀	117-137	28-29	45	148-161 mm

(Rand, Fleming, T aylor, Stresemann, SA)

Weight 1 ♂ 110; 4 ♀ 110-113; 1 ♂ 114 g (Diesselhorst, SA). 1 ♂ (September) 121 g — SDR.

COLOURS OF BARE PARTS. Iris stone-yellow. Bill horny, darker on culmen and tip. Legs and feet fleshy, dusky in front (Stevens). Or: Iris greyish khaki. Legs, feet and claws pale flesh-colour (SA).

GARRULAX CAERULATUS (Hodgson)

Key to the Subspecies

	Page
A Outer rectrices tipped with white..... <i>G. c. subcaerulatus</i>	34
B Outer rectrices not tipped with white	
1 More rufous above; crown-feathers more broadly edged with black..... <i>G. c. livingstoni</i>	35
2 More olive, less rufous above; black edgings of crown-feathers narrower..... <i>G. c. caerulatus</i>	33

1300. Himalayan Greysided Laughing Thrush. *Garrulax caerulatus caerulatus* (Hodgson)

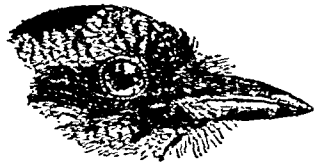
Cinclosoma caerulatus Hodgson, 1836, Asiatic Res. 19: 147 (Nepal)
Baker, FBI No. 123 (part), Vol. 1: 141

Plate 77, fig. 14

LOCAL NAMES. *Tarma-pho* (Lepcha); *Piang-kam* (Bhutea).

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. The only laughing thrush in its range with white underparts and grey flanks. Above, forehead and orbital area black. Ear-coverts black tipped with whitish. Crown rufous-brown, nape olive-brown fulvous on the sides, both finely barred with black giving the head a scaly appearance. Sides of throat and back olive-brown. Wings rufous brown. Tail chestnut. Below, throat, breast, belly and under tail-coverts white, the latter tinged with pink. Sides slaty. Sexes alike.



BABBLERS

35

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. As in 1300 but three outer rectrices broadly tipped with white.

STATUS, DISTRIBUTION and HABITAT. Resident. Assam in the Khasi Hills, between 1200 and 1800 m. Keeps almost entirely to undergrowth in pine forest, occasionally mixed oak and rhododendron.

GENERAL HABITS, FOOD and VOICE. As in 1300.

BREEDING. Season, May and June. Nest and eggs as in 1300. Average size of 40 eggs 29.3 × 20.8 mm (Baker).

MUSEUM DIAGNOSIS. Similar to *caerulatus* but upperparts paler; ear-coverts and cheeks above and below them white, with slight black tips. Three outer rectrices broadly tipped with white.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1300.

1302. Nagaland Greysided Laughing Thrush. *Garrulax caerulatus livingstoni* Ripley

Garrulax caerulatus livingstoni Ripley, 1952, Jour. Bombay nat. Hist. Soc. 50: 497 (Mt Japvo, Naga Hills, Assam)

Dryonastes caerulatus livingstoni Koez, 1953, Jour. Zool. Soc. India 4: 153 (Kohima, Naga Hills)

Baker, FBI No. 123 (part), Vol. 1: 141

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. As in 1300, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, fairly common. Assam in north Cachar, Nagaland, Manipur and adjacent Burma; from 1200 to 2300 m. Habitat as in 1300.

GENERAL HABITS, FOOD and VOICE. As in 1300.

BREEDING. As in 1300.

Extralimital. The species extends to northern Burma and Yunnan; also the mountains of Fukien and Formosa.

MUSEUM DIAGNOSIS. Differs from *caerulatus* in having the crown more rufous-brown, the feathers more broadly edged with black; upperparts richer, more saturated with rufous. Differs from *subcaerulatus* in lacking the broad white tipping of the three outer rectrices.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂ (type)	118	24	125 mm (SDR)

Weight 1 ♂ 93 g (SDR).

COLOURS OF BARE PARTS. Iris brown; orbital skin dark blue. Bill black. Legs and feet pale bluish white.

34

TIMALIINAE

STATUS, DISTRIBUTION and HABITAT. Resident, locally distributed; some downward movement in winter. From central Nepal to Darjeeling, Sikkim, Bhutan and (?) NEFA. Breeding zone not satisfactorily determined: between 1500 and 2400 m in Bhutan (Ludlow); up to 2700 m in Sikkim (Stevens) and possibly as low as 1000 m (Gammie); in Nepal, Proud found it very common on Sheopuri and Phul Chowk (= Phulchauki Danda) in summer, while Biswas noted it at c. 2000 m in April and May; breeds between 1500 and 2000 m (Diesselhorst). Recorded in winter at c. 1500 m in the Nepal Valley and as low as 600 m in the Bhutan duars. Affects undergrowth in forest, and ringal bamboo and scrub-covered hillsides.

GENERAL HABITS. Keeps in parties of three to twelve or more, feeding in low bushes and on the ground. Makes a great disturbance when feeding on the latter, 'hurling earth and dead leaves in all directions with the vigour of a puppy digging for rats' (Proud). Timid in winter but bolder in spring and then in taller trees (Fleming). Flight weak and ill-sustained. Usually escapes by hopping from branch to branch in the undergrowth.

FOOD. Berries, seeds and other vegetable matter (Diesselhorst). Probably also insects.

VOICE and CALLS. Loud musical calls and liquid whistles, some of them rendered by Fleming as *orik-chorr*, *brain fever* and *new jericho* (do, si, fa, la). Also keeps up a constant flow of conversational, soft and pleasant notes, now and then breaking out in loud, discordant calls. One of its call-notes is a loud *oh dear dear*, and the alarm-note a very sharp and distinctive chitter (Harington).

BREEDING. Season, May to July. Nest, cup-shaped, made of bamboo leaves, twigs and stems of creepers, lined with rootlets. Placed in bushes, bamboo clumps or trees between one and three metres from the ground, rarely higher. Eggs, 3, sometimes 2, pale blue, unmarked. Average size of 15 eggs 30.5 × 22.1 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies.

Young, like adult but lacks the black edges to crown-feathers; flanks tinged with brown and under tail-coverts with buff (brown according to Ludlow). Postjuvinal moult complete. Postnuptial moult completed in late October.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	106-115	24-28	41-43	124-133 mm
♀♀	103-110	25-29	40-42 (114)	122-131 mm

(Rand & Fleming, SDR, BB, SA)

Weight 4 ♂♂ 82-99; 6 ♀♀ 79-84 g (GD, SA).

COLOURS OF BARE PARTS. Iris red or red-brown; orbital skin livid. Bill horny black, paler and greyer at the base. Legs and feet pale fleshy.

1301. Khasi Hills Greysided Laughing Thrush. *Garrulax caerulatus subcaerulatus* Hume

Garrulax subcaerulatus Hume, 1878, Stray Feathers 7: 140 (Shillong)
Baker, FBI No. 124, Vol. 1: 142

LOCAL NAMES. None recorded.

TIMALIINAE

36

1303. Rufousnecked Laughing Thrush. *Garrulax ruficollis* (Jardine & Selby)

Ianthocincla ruficollis Jardine & Selby, 1838, Ill. Orn. 2, pl. 21
(Himalayas = Sikkim, restricted by Meinertzhagen, 1928, Ibis: 515)
Baker, FBI No. 120, Vol. 1: 139

Plate 77, fig. 9

LOCAL NAMES. *Rapchen-pho* (Lepcha); *Pobdya*, *Hath gurri-gurri* (Bengali); *Doo-poo-leka* (Assam); *Doo-popalika* (Cachar).

SIZE. Myna; length c. 23 cm (9 in.).

FIELD CHARACTERS. A dark babbler with black forehead, ear-coverts, throat and upper breast. A large rufous patch on sides of neck and rufous vent. Crown and nape slaty. Back, rump, belly and wings dark olive-brown, the last with pale outer edges. Tail black. Sexes alike.

The only laughing thrush with a large rufous patch or collar on sides of neck. While calling with upraised bill this rufous collar becomes very prominent.

STATUS, DISTRIBUTION and HABITAT. Common resident. East Nepal (not recorded since Hodgson's time), Sikkim, N. Bengal (the Darjeeling and Jalpaiguri districts), Bhutan, NEFA to the Mishmi Hills, East Pakistan in the northeastern hills and the Chittagong region, Assam south to Tripura and the Mizo Hills, Nagaland and Manipur. A bird of the foothills and adjacent plains, ascending to 1500 m in the Himalayas and to 600 m (rarely up to 1200 m) south of the Brahmaputra.

Frequents a variety of habitats: scrub and grass, bamboo jungle, high grass and reeds, edges of cultivation, hedgerows, scrub pastures, secondary growth, tea gardens, outskirts of forest and less commonly humid evergreen forest.

Extralimital. Western and northern Burma.

GENERAL HABITS. In pairs or parties of three to twenty birds according to the season. Hops about on the ground or in low bushes, rummaging among the mulch, flicking aside or turning over dead leaves in search of food. Will often flutter up into a larger bush, gradually hopping further up towards the top, flitting its tail, and then fly down among lower bushes again. At times indulges in a noisy game of 'follow-my-leader' across open spaces, 'each venture into an opening being a good and sufficient reason for an outburst of raucous cackling' (Baker). Flight rather heavy and ungainly. Parties break up in March.

FOOD. Insects, molluscs, seeds and berries.

VOICE and CALLS. A noisy species. The birds constantly utter a running chorus of sharp rather musical notes reminiscent of the Pied Myna (*Sturnus contra*) as the flock threads its way through the thickets, often bursting out in a tumult of loud squeals or calling and answering each other. Has a three-noted mellow whistle, the first of which sounds as if produced by a broken reed (SDR). Two of the more usual calls may be rendered as: *trireet-trireet*, repeated for several minutes, and *trireet-trireet-trireet* (pause) *trireet-trireet-trireet* (pause) and so on unvaryingly for maybe a quarter-hour at a stretch. Possibly two separate individuals are involved in this. The song is varied and pleasing, one or two phrases forming the basis of the

BABLERS

37

theme, upon which many variations are grafted and often combined into phrases of fair length. While singing with upraised bill flicks wings and the depressed expanded tail and pivots from side to side on the perch.

BREEDING. *Season*, overall March to August, chiefly April and May. *Nest*, cup-shaped, rather untidy exteriorly, made of leaves, grass, roots, weed stems, occasionally dry moss and lichen, all bound together with long weed stems and tendrils. Placed in bushes, generally between one and two metres up, less often up to six metres. *Eggs*, 3 or 4, pale skim-milk blue, very rarely white. Average size of 200 eggs 25.7 × 20 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	96-100	23-24	36-37	101-111 mm (SA)

Weight 6 ♂ ♀ 60-73 g (SDR, SA).

COLOURS OF BARE PARTS. Iris crimson or brown; eye-rim yellow. Bill, legs, feet and claws dark horny brown.

GARRULAX MERULINUS Blyth

Key to the Subspecies

More richly coloured; spots more numerous. . . . *G. m. toxostomus*
Less richly coloured; spots less numerous. *G. m. merulinus*

1304. Assam Spottedbreasted Laughing Thrush. *Garrulax merulinus merulinus* Blyth

Garrulax merulinus Blyth, 1851, Jour. Asiat. Soc. Bengal 20: 521
(Cherra Punji, Khasia Hills)
Baker, FBI No. 179 (part), Vol. 1: 186
Plate 76, fig. 8

LOCAL NAMES. None recorded.

SIZE. Myna; length c. 22 cm (9 in.).

FIELD CHARACTERS. A very thrush-like babbler with a buff throat and breast spotted with dark brown, and a whitish stripe behind the eye. Centre of belly buff, rest of plumage brown.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common: Assam in the Khasi and Mizo (Lushai) Hills, between 900 and 1800 m. Affects deep and damp forest with heavy undergrowth of *Rubus* etc. and bamboo jungle. Densely overgrown abandoned shifting-cultivation clearings are favourite haunts.

GENERAL HABITS. A true laughing thrush in its habits, noisy, gregarious and an inveterate skulker, usually extremely difficult to approach on account of its wellnigh impenetrable habitat. 'Never will you find them in any place in which it is possible even to creep about, without cutting your way' (Hume). Keeps in parties of ten to twenty individuals, feeding on the ground among fallen leaves. Flies better than most laughing thrushes.

BABLERS

39

COLOURS OF BARE PARTS. Iris pale pinkish buff; orbital skin pale leaden. Bill: upper mandible blackish, lower mandible and gape pale greyish. Legs and feet pale brown.

1306. Whitebrowed Laughing Thrush. *Garrulax sannio albosuperciliaris* Godwin-Austen¹

Garrulax albosuperciliaris Godwin-Austen, 1874, Proc. Zool. Soc. London: 45
(Manipur Valley, NE. Bengal)
Baker, FBI No. 126 Vol. 1: 144
Plate 77, fig. 8

LOCAL NAMES. None recorded.

SIZE. Myna; length c. 23 cm (9 in.).

FIELD CHARACTERS. A plain-coloured laughing thrush with buff lores outlined above the eye by a white supercilium and below by a buffish hite cheek-patch. Rest of plumage olive-brown, darker on head, throat and tail. Centre of belly buff, under tail-coverts ferruginous. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Rare resident. Nagaland, Manipur, and Assam in north Cachar, from c. 1000 to 1800 m. Affects dense forest, scrub pastures, secondary growth or bamboo and open hillsides covered with bracken and wild raspberry scrub.

Extralimital. The species extends north to Szechuan and Hupeh, and east through northern Burma to Fokien, Kwangtung and Vietnam.

GENERAL HABITS. Less shy than most laughing thrushes. Usually seen in small parties, sometimes singly or in pairs, working through scrub jungle or undergrowth. Parties break up in March.

FOOD. Seeds, berries, rice, small molluscs.

VOICE and CALLS. A noisy species. Notes more complaining and less hilarious than those of *G. leucolophus*.

BREEDING. *Season*, March to June. *Nest*, cup-shaped, similar to that of *G. ruficollis* but larger and more massive. Made of dark-coloured grass, fern, roots and bamboo leaves, bound together with weed stems and tendrils and lined with fern roots and fern stems; some nests are made almost entirely of bamboo leaves and grass. Usually placed low down in thick bushes — *Rubus* brakes etc. — or sometimes in small saplings. *Eggs*, 3 or 4, white or pale blue. Average size of 100 eggs 26 × 19.4 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. Said to be distinguishable from other (extralimital) races by the continuous white supercilium and brown ear-coverts. See also footnote below.

Young, a little paler than adult. Upper tail-coverts and throat yellowish brown. Juvenal timinaline characters of wings and tail present, namely soft, blunt first primary and narrow, pointed rectrices. Postjuvenal moult complete.

¹ A doubtfully tenable race, but see Deignan, H. G., 1952, *Pestilla*, No. 11 (26 March). He points out that this subspecies of *G. sannio*, wholly isolated from the Chinese populations, is distinct in having a deep brown pileum, a cold dark olivaceous brown mantle and a strong vinaceous wash over the entire underparts. The post-ocular stripe is blackish brown in the adult & pale brown to dark in birds from China.

38

TIMALIINAE

FOOD. Unrecorded; presumably insects for the most part.
VOICE and CALLS. Very noisy. Has a great variety of clear, beautiful notes and a coughing, oft-repeated chuckle (Hume).

BREEDING. *Season*, from the end of April to July, mostly in June and July. *Nest*, a rather bulky cup of roots, grass, bamboo and other leaves, more or less mixed with bracken fronds and moss, lined with rootlets, or occasionally with fine creeper stems or tendrils. Materials vary according to location of nest, whether in evergreen forest or bamboo jungle. Nest placed low down in thick shrubs or well inside bamboo clumps. *Eggs*, generally 2, often 3, blue with a tinge of green, unmarked. Average size of 50 eggs 28.7 × 21.2 mm (Baker). Both sexes share in incubation; period not known. The bird is a close sitter, slinking off the nest at the last moment, then skulking quietly in the cover.

MUSEUM DIAGNOSIS. For distinction from *toxostomus* see 1305.

Young, like adult but more rufous above and on flanks, wings and tail. Post-juvenal moult complete.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	93-99	24	40	c. 96-100 mm (Baker)

Bill from skull 29 mm.

COLOURS OF BARE PARTS. Iris pale yellowish or pinkish; brown in young birds. Bill dark horny brown, black at tip and on culmen, greyish on lower mandible. Legs and feet pale to dark brown, claws darker, soles paler.

1305. Manipur Spottedbreasted Laughing Thrush. *Garrulax merulinus toxostomus* (Koelz)

Stactocichla merulina toxostomina Koelz, 1952, Jour. Zool. Soc. India 4: 38
(Karong, Manipur)
Baker, FBI No. 179 (part), Vol. 1: 186

LOCAL NAME. *Moh mapeh* (Angami Naga).

SIZE. Myna; length c. 22 cm (9 in.).

FIELD CHARACTERS. As in 1304, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. Assam in north Cachar, Nagaland and Manipur, from 900 to 2400 m. Affects dense secondary scrub and undergrowth in damp evergreen forest.

Extralimital. The adjacent hills of western Burma, and northern Burma. The species extends to Vietnam.

GENERAL HABITS, FOOD and VOICE. As in 1304.

BREEDING. As in 1304.

MUSEUM DIAGNOSIS. Differs from *merulinus* (1304) in being more richly coloured. Below, the feather bases are deeper in colour, especially on the throat. Black spots average rounder, smaller and more numerous. Under tail-coverts more ferruginous. Crown usually differentiated from back. For details of plumage see Hume, SF 11: 162.

MEASUREMENTS. As in 1304.

40

TIMALIINAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	93-104	22-25	c. 37	105-117 mm (HW)

Weight 2 ♂♂ 68, 68; 1 ♀ 56 g (SDR).

COLOURS OF BARE PARTS. Iris dull brownish maroon, liver-brown or light brown; orbital skin pale fleshy grey. Bill blackish. Legs and feet pale brown with a faint purplish fleshy tinge; claws darker.

1307, 1308. Nilgiri Laughing Thrush. *Garrulax cachinnans* (Jerdon)¹

Crotopus cachinnans Jerdon, 1839, Madras Jour. Lit. Sci. 10: 255
(Nilgiris)
Baker, FBI No. 165, Vol. 1: 176
Plate 77, fig. 2

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. An olive-brown and rufous laughing thrush with a very pronounced white eye-stripe. Above, crown slaty brown, nape slaty. A conspicuous white supercilium. Lores and a short streak behind eye black. An incomplete white eye-ring. Cheeks tawny olive. Rest of upperparts olive-brown. Below, chin black. Breast and belly ochraceous. Lower belly and flanks olive-brown. Sexes alike.

Distinguished from *G. jerdoni* by its rufous, not grey, breast.

STATUS, DISTRIBUTION and HABITAT. Resident, very common but range curiously restricted. Confined to the Nilgiri Hills (western Tamil Nadu); from c. 1200 m to the summit. A geographical representative of the closely related *G. jerdoni* of Kerala. Affects dense undergrowth in forests, sholas, even hill-station gardens or wherever there are a few bushes or a patch of scrub.

GENERAL HABITS. Much the same as those of *G. jerdoni* (1310), q.v. Generally seen in flocks of a dozen or more commonly in association with the itinerant mixed hunting parties in sholas. Feeds on the ground as well as in low bushes, climbing into trees when disturbed and hopping along branches lightly and with great agility.

FOOD. Insects and berries, especially wild raspberry (*Rubus* spp.), and 'hill guava' (*Rhodomyrtus tomentosa*).

VOICE and CALLS. Very noisy. Has loud squeals and laughing calls — some of the most characteristic bird sounds of the Nilgiris — similar to those of *G. jerdoni*. The spirited 'laughing' calls, *pe-ka-ka* etc., are uttered with bill raised vertically and tail depressed. Another member of the flock invariably beats time with a harsh *ka-ka-ka*, almost identical with one of the calls of the tree pie (*Dendrocitta vagabunda*).

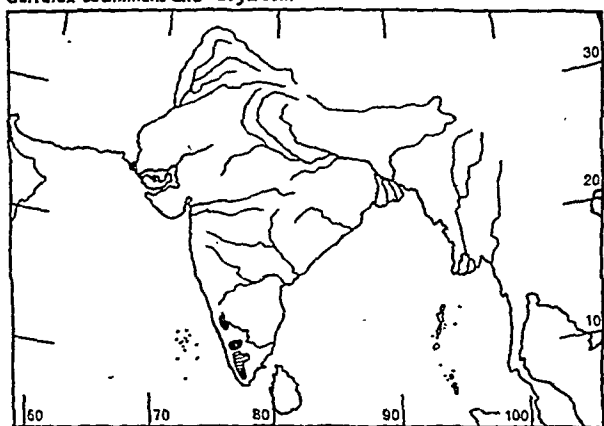
BREEDING. *Season*, overall February to July, chiefly May and June. *Nest*, cup-shaped, made of roots, dead leaves, small twigs, moss, grass and some

¹ No. 1308, *Garrulax cachinnans sinensis* (Davison), 1856, *Ibis*: 204 (locality unknown) is believed to be based on two stained specimens in Trivandrum Museum, Kerala. They differ from *cachinnans* in having the black of lores and chin replaced by dark brown, and the crown hair-brown instead of slaty brown.

BABBLERS

41

Garrulax cachinnans and *G. jerdoni*



Distributional ranges
G. cachinnans (1307). *G. j. jerdoni* (1309).
G. j. fairbanki (1310). *G. j. meridionale* (1311).

lichen, lined with fine grass, sometimes with a few feathers and scraps of wool. Placed in bushes or small trees between one and three metres above the ground. Eggs, pale blue, marked with blotches, spots and specks of pale reddish brown, and a few short lines of the same colour. Average size of 40 eggs 25.6 × 18.8 mm (Baker). Commonly brood-parasitized by Pied Crested Cuckoo (*Clamator jacobinus*).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	92-96	16-18	30-32	c. 100 mm (Baker)
2 ♀ ♀	85, 89	(from skull) c. 22	c. 32	86, 94 mm (MD)

COLOURS OF BARE PARTS. Iris red-brown to crimson. Bill black. Legs and feet greenish plumbeous.

GARRULAX JERDONI Blyth

Key to the Subspecies

- A Chin black.....*G. j. jerdoni*
B Chin grey.
1 Supercilium mostly grey, not extending behind eye.....*G. j. meridionale*
2 Supercilium white, extending behind eye.....*G. j. fairbanki*

BABBLERS

43

GENERAL HABITS. Keeps in parties of six to twelve birds hunting among undergrowth and in low bushes, occasionally descending to the ground. A great skulker, creeping away through cover on the least suspicion.

FOOD. Insects, berries and fruits (especially *Rubus*, *Maesa* and *Trema*).

VOICE AND CALLS. Loud shrieks, whistles and 'laughter' uttered in chorus, and a variety of pleasant call-notes, some mellow and rather like an oriole's. Members of a party keep in touch by means of a call rendered as a rousing *pee-koko*, *pee-koko*: call, answer, quiet; call, answer, quiet — and so on. Other notes: *ku-h-yu* repeated several times, a deliberate *har-har-har* and a low-pitched scolding resembling that of the Redwhiskered Bulbul (Nichols). Alarm, some squeaky shrieks rather like those of the Jungle Babbler but louder and shriller, and a low *wit-wit-wit* as the bird disappears through the undergrowth.

BREEDING. Season ill defined. Overall December to June, chiefly April to June. Nest, cup-shaped, made mostly of coarse grass occasionally mixed with moss or bracken leaves, lined with fine grass. Usually well concealed in an upright fork of a rather isolated bush, or anchored in tall brackens, within a couple of metres from the ground. Eggs, usually 2, pale blue with blotches, spots and speckles of pale reddish brown and dark brown; indistinguishable from those of *G. cachinnans*. Average size of 15 eggs 25.6 × 19.1 mm (Baker). Both sexes share in building, incubation and care of the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

Young, like adult but crown and nape not so dark, less contrasting with mantle; lower breast tinged with rufous; ear-coverts browner.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	83-91	21-23	33-35	86-97 mm
♀ ♀	81-86	20-23	33-35	86-92 mm (SA, HW)

COLOURS OF BARE PARTS. Adult: Iris reddish brown. Bill horny brown: mouth pink. Legs and feet slaty brown; claws brown; soles greyish yellow. Young: Iris brown. Mouth pale pinkish yellow. Rest as in adult.

1311. South Kerala Laughing Thrush. *Garrulax jerdoni meridionale* (Blanford)

Trochopteron meridionale Blanford, 1880, Proc. Asiat. Soc. Bengal: 184 (Mynall, S. Travancore Hills)
Baker, FBI No. 169, Vol. 1: 178

LOCAL NAME. *Chiluchikippān* (Malayalam).

SIZE. Myna ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1310 but supercilium shorter, not extending behind the eye; grey of underparts whiter and extending down to centre of belly. Crown, nape and rest of upperparts unicolorous dull sooty grey-brown, no contrast between them.

TIMALIINAE

42

1309. Coorg Whitebreasted Laughing Thrush. *Garrulax jerdoni jerdoni* Blyth

Garrulax (?) *herdoni* Blyth, 1851, Jour. Asiat. Soc. Bengal 20: 522 (Banasure Peak)
Baker, FBI No. 167, Vol. 1: 177

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1310 but chin and cheeks black and crown slaty brown.

STATUS, DISTRIBUTION AND HABITAT. Resident. Southwestern Mysore in the Brahmagiri hills and Banasure Peak at c. 1500 to 1800 m. Habitat undescribed, probably not different from that of *fairbanki*.

GENERAL HABITS, FOOD AND VOICE. As in 1310, q.v.

BREEDING. As in 1310. Eggs, similar to those of *G. cachinnans*; two eggs measure 26.1 × 19.8 and 25.1 × 19.2 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies; for details of plumage, Baker, loc. cit.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	80-83	c. 18	c. 32	c. 90 mm (Baker)

COLOURS OF BARE PARTS. Iris crimson (adult), red-brown (immature). Bill dull black. Legs, feet and claws dark plumbeous brown (Davison).

1310. Kerala Laughing Thrush. *Garrulax jerdoni fairbanki* (Blanford)

Trochopteron fairbanki Blanford, 1869, Jour. Asiat. Soc. Bengal 38: 175 (Palni Hills)
Baker, FBI No. 168, Vol. 1: 178
Plate 77, fig. 3

LOCAL NAME. *Chiluchikippān* (Malayalam).

SIZE. Myna ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. Above, crown and nape dark sooty brown; a white supercilium extending behind eye and a blackish stripe below it from lores through eyes; rest of upperparts olive-brown. Below, throat, cheeks and breast grey; belly rufous. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The hills of Kerala and western Tamil Nadu north of the Achankovil Gap (c. 9°N. lat.): Cardamom, Kannan Devan and Palni hills (not recorded from the Nelliampathies), and High Wavy Mountains; from c. 1200 m to the summits. Confined to evergreen biotope in wild raspberry and bracken thickets lining hill streams through tea and cardamom plantations, scrub and secondary jungle near hillmen's settlements, occasionally populous hill-station gardens (Kodaikanal, Munnar), and edges of sholas; appears to shun the deeper woods. Its occurrence coincides with that of the wild raspberry (*Rubus* spp.).

TIMALIINAE

44

STATUS, DISTRIBUTION AND HABITAT. Common resident. Southern Kerala ghats from the Achankovil Gap south to the Ashambu Hills, from c. 1100 m upwards. Habitat as in 1310. Has a parallel altitudinal distribution with the wild raspberry, *Rubus* spp., whose lower limit here is also the same.

GENERAL HABITS, FOOD AND VOICE. As in 1310, q.v.

BREEDING. As in 1310.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	85-88	21-22	35-36	95-96 mm
♀ ♀	84-85	c. 20	c. 35	c. 96 mm (SA)

COLOURS OF BARE PARTS. Adult: Iris crimson. Bill horny brown; mouth pink. Legs and feet brownish slate; claws horny brown; soles yellow. Immature: Iris olive-brown. Mouth pinkish yellow. Rest as in adult. Juvenile: Iris olive-brown. Bill horny brown except commissure and extreme tip which are yellow; gape and mouth bright yellow. Legs, feet and claws as in adult.

GARRULAX LINEATUS (Vigors)

Key to the Subspecies

	Page
A Subterminal band on under surface of outer rectrices over 1 cm wide	
1 Throat and breast dark chocolate, ear-coverts dull greyish brown	49
2 Throat, breast and ear-coverts rufous..... <i>G. l. staefer</i>	48
B Subterminal band on under surface of outer rectrices under 1 cm wide	
3 Lower belly and rump olive-brown	
a Throat more rufous; subterminal band of outer rectrices well marked..... <i>G. l. lineatus</i>	46
b Throat greyer, the shafts on each side of it tipped with white; subterminal band reduced to a line..... <i>G. l. gilgit</i>	46
4 Lower belly and rump grey..... <i>G. l. bilkeritshi</i>	44

1312. Baluchistan Streaked Laughing Thrush. *Garrulax lineatus bilkeritshi* (Zarudny)

Trochopteron (*Ianthocincla*) *lineatus bilkeritshi* Zarudny, 1910, Orn. Monatsb. 18: 188 (Kulyab, Tadzhikistan)
Ianthocincla lineatus ziaratensis Ticehurst, 1920, Bull. Brit. Orn. Cl. 41: 55 (Ziarat)
Baker, FBI No. 174, Vol. 1: 182

LOCAL NAMES. None recorded.

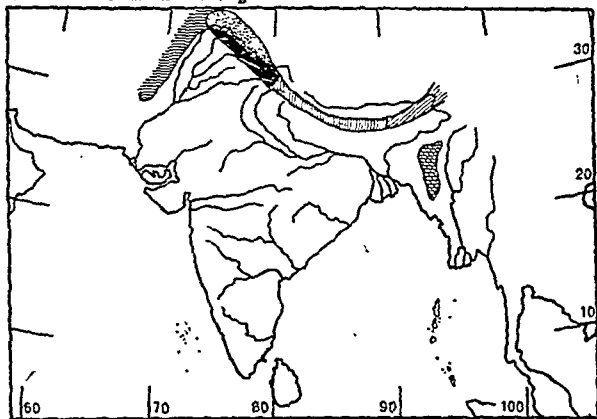
SIZE. Bulbul ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1314, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, fairly common. The Quetta-Fishin district of West Pakistan in the Central Brahui Range (Murdar, Takatu, Zarghun and Khalifat mountains),

BABBLERS

45

Garrulax lineatus and *G. virgatus*

Distributional ranges

- *G. l. bilkitchi* (1312). ■ *G. l. gilgit* (1313).
 ■ *G. l. lineatus* (1314). ■ *G. l. setifer* (1315).
 ■ *G. l. imbricatus* (1316). ■ *G. virgatus* (1317).

and in the Fort Sandeman district (Torkhan, Shingar and the Takht-i-Sulaiman). Breeds between 2400 and 3000 m. Moves down in winter and reaches Quetta during cold waves. Affects juniper scrub, bush-covered slopes and bushy nullahs, entering gardens in winter.

Extralimital. Eastern Afghanistan and Tadzhikistan. The species in other races extends east along the Himalayas to NEFA and southeastern Tibet.

GENERAL HABITS, FOOD and VOICE. As in 1314.

BREEDING. Season, May to July. Nest, described as a massive structure of fibrous material and bulbous plant stems, lined with fine grass stems and hair, about 120 cm up in a leafy bush. Eggs, unmarked turquoise-blue as in 1314; fade considerably after being blown. Two eggs measure 26.3×19 and 26×18.8 mm (Baker).

MUSEUM DIAGNOSIS. Paler than *gilgit* (1313); differs from it in having paler rusty, not chestnut, ear-coverts; grey, not olive-brown, rump and upper tail-coverts, and grey, not grey-brown belly; the markings on the breast are paler and yellower, not red-brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	80-85	c. 18	26-27	92-97 mm (HW, CBT)

COLOURS OF BARE PARTS. Not recorded. Probably not different from those of 1314.

BABBLERS

47

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to seasonal vertical movements. The western Himalayas from Murree and Hazara east through Kashmir (south of the main range), Himachal Pradesh, Lahul, Kulu and Uttar Pradesh to Kumaon. Intergrades with *setifer* in Kumaon-western Nepal, and with *gilgit* in Hazara. Breeds between 1200 and 3000 m; optimum zone 1800-2700 m. Altitudinal zone appears to vary according to local conditions. From October to March, it is mostly found between 1000 and 1800 m though a few birds may be seen as high as 2700 m. In Lahul it occurs between 3000 and 3600 m. Occasionally descends to 600 m during cold spells. Affects bush-covered slopes, *Berberis* and *Rosa* scrub (Lahul), wooded nullahs, cultivation, undergrowth in open forest, even venturing into gardens, courtyards of houses or verandas.

GENERAL HABITS. Seen in pairs or small parties of three to six according to the season. Keeps more to the ground than most other laughing thrushes, shuffling along in tangles of grass, bracken and low bushes, hopping or creeping on the ground like an accenter, flitting its wings and jerking its tail to one side, then to the other. Reluctant to fly; when disturbed, merely flies a short distance downhill and pitches into the nearest cover. Hops up a tree rapidly from branch to branch but seldom if ever ascends very high and does not sail from tree to tree as other members of the genus often do, but rather drops to the ground and scuttles hurriedly to the next bush, half hopping, half flying. A skulker when away from habitations.

FOOD. Insects, berries, seeds, occasionally even bread-crumbs.

VOICE and CALLS. Members of a party keep up an incessant conversational squeaking in low querulous notes rendered as *chit-chit-chitrr*, *chicker-chicker*, *willy-killy-cree* or a soft, churring *er-r-r* (HW). The oftenest heard call-note is a loud, clear whistle *p'ly-wee*, or *titty-titty-we* are uttered from a prominent perch. Alarm; a plaintive, unmistakable *twee-twee-twee* (Bates) or *sweet-pea-pea-pea* (Fleming); the Kashmiris hear it as *sheen-a-pay-pay-pay* and regard the bird as the herald of winter on first hearing it in autumn when it comes into town limits, for this call means 'oh! snow, fall, fall, fall'. Song phrases uttered during the breeding season from tree-top or branch: *tril-tru*, *trul* and *ju-wi-ye* (Magrath); a jingling squeaky whistle of three descending rather plaintive notes *pee-pi-pi* of the timbre of those of *Zosterops* or *Muscicapa thalassina* (SA). Song period: March to September.

BREEDING. Season, overall March to September, chiefly May and June. At least two broods are normally reared. Nest, a deep cup of coarse grass and dead leaves, loose and untidy on the exterior but more compactly woven inside, lined with fine grass and rootlets. Well concealed in low bushes, sometimes at the end of low fir branches, in a pollarded tree, in thick grass on sloping banks, once in a honeysuckle climbing up a veranda; usually within a metre from the ground, sometimes up to a couple of metres. Eggs, 2 to 4, normally 3, turquoise-blue, unmarked. Average size of 16 eggs 25.8×18.7 mm (Osmaston) and of 100 eggs 25.6×18.4 mm (Baker). Both sexes share in, at least, incubation. Frequently brood-parasitized by the cuckoos *Clamator jacobinus*, *Cuculus micropterus* and *C. sparveroides*.

MUSEUM DIAGNOSIS. Differs from *setifer* (1315) in being paler both above and below, with broader grey edges to the feathers of the underparts. See also Key to the Subspecies.

TIMALIINAE

46

1313. Gilgit Streaked Laughing Thrush. *Garrulax lineatus gilgit* (Hartert)

Ianthocincla lineatum gilgit Hartert, 1909, Vög. pal. Fauna 1: 636 (Gilgit)

Baker, FBI No. 173, Vol. 1: 182

LOCAL NAMES. None recorded.

SIZE. Bulbul \pm ; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1314, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to seasonal vertical movements. West Pakistan in N.W.F.P. from Safed Koh and Samana to Chitral, east to the Indus, north to Gilgit, the Hunza Valley as far as Hunza (Baltit), the Indus Valley as far as Skardu, and Astor to the north side of the Burzil Pass; from 1400 to 3600 m, mostly between 1800 and 3000 m, descending to the lower valleys in winter (but recorded as high as 2700 m in this season). Affects bushes in open pine or fir forest, wild rose scrub and other thickets, shrubby near cultivation, entering orchards at lower levels in winter. Fond of creeping about the stone walls of houses in mountain villages.

GENERAL HABITS, FOOD and VOICE. As in 1314.

BREEDING. Season, nest and eggs (c/2-4) as in 1314. Seven eggs average 24.9×18.5 mm (Baker).

MUSEUM DIAGNOSIS. Similar to *lineatus* (1314) but paler and greyer, less rufous. See also Key to the Subspecies.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1314.

1314. Simla Streaked Laughing Thrush. *Garrulax lineatus lineatus* (Vigors)

Cinclosoma lineatum Vigors, 1831, Proc. Zool. Soc. London: 56 (Himalaya Mts = NW. Himalayas vide Hume, 1875, Stray Feathers 3: 396 = Simla-Almora area)

Ianthocincla lineatum griestentior Hartert, 1909, Vög. pal. Fauna 1: 636 (Western Himalayas, Simla)

Baker, FBI No. 172, Vol. 1: 142

Plate 76, fig. 2

LOCAL NAME. Sheen-a-pi-pin (Kashmir).

SIZE. Bulbul \pm ; length c. 20 cm (8 in.).

FIELD CHARACTERS. A small uncrested streaked laughing thrush with a greyish white terminal band on rounded tail.

Above, crown and upper back grey streaked with dark brown; middle back streaked with white; rump olive-brown. Ear-coverts and wings rufous; tail olive-brown faintly barred, rufous on sides, tipped greyish. Below, throat and breast streaked with rufous, each feather with a white shaft. Lower belly olive-brown. Tail graduated with black subterminal spot on outer rectrices and pale grey tip. Sexes alike.

The rather similar Striated Laughing Thrush (1279) is much larger and has a conspicuous mop-like crest.

TIMALIINAE

48

Young, like adult but rusty markings and shaft-streaks on breast less well defined. Head and rump browner. Primary character not present (i.e. 1st primary not blunt and soft), but rectrices narrower. Postjuvénal moult, only of body-feathers.

MEASUREMENTS

Wing 3 ♂♂ 71-81; 2 ♀♀ 78, 82 mm (Rand & Fleming).

Weight 25 ♂♂ (Apr.-May) 36-46 (av. 40.7) g—SA.

COLOURS OF BARE PARTS. Iris reddish brown. Bill dark brown, paler at base of lower mandible. Legs and feet fleshy brown.

1315. Nepal Streaked Laughing Thrush. *Garrulax lineatus setifer* (Hodgson)

Cinclosoma setifer Hodgson, 1836, Asiatic Res. 19: 148 (Nepal)

Baker, FBI No. 171, Vol. 1: 180

LOCAL NAME. Bhekura (Nepal).

SIZE. Bulbul \pm ; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1314, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common, subject to seasonal vertical movements. Nepal, Darjeeling and Sikkim; from c. 1800 to 3000 m, up to 3300 in the Langtang Valley, and 3900 m in Khumbu. Recorded in winter from 1000 to 2700 m. Affects hillside scrub undergrowth, open forest and edges of cultivation. Not confined to thick growth as most laughing thrushes are.

GENERAL HABITS, FOOD and VOICE. As in 1314.

BREEDING. As in 1314.

MUSEUM DIAGNOSIS. Differs from *lineatus* in having the head browner (less ashy), rump darker, ear-coverts and streaks of underparts darker. Black subterminal band on outer rectrices much broader.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	77-81	18-19	c. 29	90-97 mm
♀♀	72-80	c. 19	c. 29	c. 90 mm (BB, Rand & Fleming)

Weight 3 ♂♂ 39-45; 3 ♀♀ 37-43 g (GD).

COLOURS OF BARE PARTS. Iris brown. Bill horny brown, paler on commissure and lower mandible; mouth pale yellowish flesh. Legs and feet pale horny brown.

BABBLERS

49

1316. *Bhutan Streaked Laughing Thrush. Garrulax lineatus imbricatus* Blyth*G. (garrulax) imbricatus* Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 951 (Bhutan)

Baker, FBI No. 175, Vol. 1: 183

LOCAL NAMES. None recorded.

SIZE. Bulbul \pm ; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1314, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. Bhutan and western NEFA (Tawang region). Eastern limit unknown. Breeds between 1500 and 2400 m, locally up to 3000 m. A specimen from the Buxa duars in May. Affects thick scrub on the edges of cultivation; also bushes and long grass in uncultivated areas.

EXTRALIMITAL. Tibetan areas adjacent to its range in Bhutan and NEFA

GENERAL HABITS, FOOD and VOICE. As in 1314. Usually tame and confiding. On occasion behaves very like Jungle Babbler, hopping about picking kitchen scraps around, and even entering, occupied labourers' hutments; scuttling off with squeaky whistles into adjoining shrubby in alarm at inmates' movements, but soon returning to feed when all is quiet again.

BREEDING. Unrecorded; probably as in 1314.

MUSEUM DIAGNOSIS. Streaks darker than in other subspecies and occupying the whole feather. Rump darker than in *setifer*. Upperparts uniform dark chocolate colour with dark shafts on head and white shafts on mantle and scapulars. Underparts dark chocolate with white shaft-streaks on breast. Ear-coverts dull greyish brown with pronounced white shaft-tips. Subterminal band of tail blacker and wider.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
$\sigma^7 \sigma^7$	77-82	17-21	29-34	84-102 mm
$\varphi \varphi$	74-80	18-20	30-33	94-102 mm

(SA, Kinnear)

Weight 3 $\sigma^7 \sigma^7$ 46-50; 4 $\varphi \varphi$ 42-45; 8 $\sigma^7 \varphi$ 44-52 g (SA).

COLOURS OF BARE PARTS. As in 1315.

1317. *Manipur Streaked Laughing Thrush. Garrulax virgatus* (Godwin-Austen)*Trochlopteron virgatum* Godwin-Austen, 1874, Proc. Zool. Soc. London: 46 (Razami under Kopamedza Ridge, Naga Hills)*Trochlopteron virgatum querulum* Koelz, 1952, Jour. Zool. Soc. India 4: 38 (Hmuntah, Lushai Hills)

Baker, FBI No. 170, Vol. 1: 179

Plate 76, fig. 7

LOCAL NAME. *Deo-phit* (Cachari).

SIZE. Myna +; length c. 25 cm (10 in.).

FIELD CHARACTERS. Above, forehead and supercilium to nape white. Lores rufous-chestnut; crown and back dark brown with conspicuous

BABBLERS

51

FIELD CHARACTERS. A rufous-brown laughing thrush with underparts barred and mottled with whitish and brown. A pale wing-bar and pale grey outer edge of wing. Sides of neck finely streaked with white. Tail rufous-brown above, blackish below with white tips. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Scarce resident. Assam in the Khasi, Cachar and Mizo hills, Nagaland and Manipur; from 1800 to 2700 m, less often down to 1500 m, rarely 1200 m. Affects oak and rhododendron forest, bushes in ravines and clearings, and bamboo thickets along forest margins.

EXTRALIMITAL. Another subspecies on Mt Victoria, Chin Hills.

GENERAL HABITS. Keeps in pairs or small family parties, moving along the ground under cover of thickets, occasionally climbing in low bushes. Reluctant to fly and when forced to, does so with the usual fluttering and sailing.

FOOD. Insects and seeds.

VOICE and CALLS. A liquid three-noted whistle to meet you very reminiscent of that of *Pellonura ruficeps* but much louder; also a soft tick when working in the underbush and some loud harsh calls like a wounded tree pie (SDR). Song, a pleasant, flute-like phrase, easy to imitate, *ti-ti-ti-tia-tui-ti* the fourth note longer and lower, with several variations; call-note, a double, loud, resounding whistle *krü-krü*; alarm-note, a subdued *krüpp... krüpp... krüpp* frequently and quickly repeated (Heinrich).

BREEDING. Season, April to August, mostly the latter half of April and May. Nest, cup-shaped, made of tendrils, roots, leaves, moss, grass, etc., lined with rootlets and a few bents. Usually placed in bushes within a couple of metres from the ground, sometimes up to three metres in small trees. Eggs, usually 3, sometimes 4, occasionally 2, white. Average size of 46 eggs 26.3 x 19 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters; for details of plumage Baker, loc. cit.

	Wing	Bill (from feathers)	Tarsus	Tail
4 $\sigma^7 \sigma^7$	90-100	c. 20	c. 35	c. 120 mm
1 φ	90			

(Baker, φ wing by SDR)Weight 4 $\sigma^7 \sigma^7$ 63-74; 1 φ 59 g (SDR).

COLOURS OF BARE PARTS. Iris brown to pale whitish brown. Bill black. Legs and feet brown.

1319. *Bluewinged Laughing Thrush. Garrulax squamatus* (Gould)*Isalictes squamatus* Gould, 1835, Proc. Zool. Soc. London: 48 (Sikkim)*Trochlopteron squamatum subquadratum* Koelz, 1952, Jour. Zool. Soc. India 4: 38 (Pynursla, Khasia Hills)

Baker, FBI No. 164, Vol. 1: 174

Plate 76, fig. 5

LOCAL NAMES. *Ternal-pho* (Lepcha); *Nabem* (Bhutia).

SIZE. Myna +; length c. 25 cm (10 in.).

50

TIMALIINAE

white shaft-streaks. Rump olive-brown with pale streaks. Tail olive-brown finely cross-rayed. Wings rufous-chestnut with whitish shoulders. Below, chin and throat chestnut shading into ochraceous-buff on rest of underparts, all except chin with white shaft-streaks. Flanks olive-brown. Sexes alike.

The larger Striated Laughing Thrush (1279) has a loose mop-like crest and no supercilium.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. Assam hills in Cachar (the whole of the hill-ranges, according to Baker), Nagaland, Manipur and Mizo Hills (see map, p. 45); from c. 900 to 2400 m. Affects damp evergreen forest with heavy undergrowth, stunted oak forest with undergrowth of ferns and other plants, and thick secondary growth.

EXTRALIMITAL. The Chin Hills of Burma.

GENERAL HABITS. Not gregarious and not as noisy as other laughing thrushes, shy and retiring. Generally keeps in pairs to thick undergrowth and on the ground, seldom showing itself.

FOOD. Chiefly insects; doubtless also berries and seeds.

VOICE and CALLS. A peculiar, soft, single-noted call and some sweet conversational notes.

BREEDING. Season, April to July. Nest, a deep, stoutly built cup of tendrils, dead leaves, grasses, roots, fine bents, bamboo-leaves, bracken and moss, lined with rootlets. Well concealed in thick bushes, from near the ground to about two metres up. Eggs, 2 or 3, more often the former, clear blue with sometimes a greenish tinge, indistinguishable from those of *G. lineatus*. Average size of 100 eggs 26 x 19.2 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
$\sigma^7 \varphi$	85-89	c. 17	c. 31	110-115 mm

(Baker)

(from skull)

6 $\sigma^7 \sigma^7$	82-87	—	mm
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1 φ	81	21	mm
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(Heinrich)

COLOURS OF BARE PARTS. Iris brown, sometimes yellowish; orbital skin dusky plumbeous. Bill very dark to blackish brown. Legs and feet fleshy; claws brownish; sole yellowish.

1318. *Browncapped Laughing Thrush. Garrulax austeni austeni* (Godwin-Austen)*Trochlopteron austeni* Godwin-Austen, 1870, Jour. Asiat. Soc. Bengal 39: 105 (Hengdan Peak, N. Cachar)

Baker, FBI No. 146, Vol. 1: 160

Plate 76, fig. 6

LOCAL NAME. *Deo-gajao-i-ba* (Cachari).

SIZE. Myna; length c. 22 cm (9 in.).

TIMALIINAE

52

FIELD CHARACTERS. A dark olive-brown laughing thrush with black scaly markings over the whole body, especially on back. A black supercilium and white eye, very conspicuous. Wing black with pale blue outer edge and a large rufous shoulder-patch. Both upper and under tail-coverts chestnut; tail blackish with a rufous terminal band. Sexes alike.

The similarly scaly species *subunicolor* (1320) lacks the black supercilium, has buff wings and belly, and the outer rectrices tipped white.

STATUS, DISTRIBUTION and HABITAT. Resident, uncommon in the Himalayas, more common south of Brahmaputra R. From central Nepal (Biswas, JBNHS 59: 215) east through Darjeeling, Sikkim, Bhutan and NEFA to the Mishmi Hills; the hills of Assam, Nagaland and Manipur. In the Himalayas breeds between 1000 and 2400 m, mostly 1300-2200 m (recorded at 3400 m in winter in the Darjeeling district by Meinertzhagen). In the Khasi and Cachar hills, breeds mostly between 900 and 1200 m, more sparingly to 1500 m, occasionally to 1800 m. Affects humid dense bushes, ringal bamboo and rhododendron, especially along the banks of streams and rivers.

EXTRALIMITAL. Extends to western and northern Burma, and western Yunnan; also northern Vietnam.

GENERAL HABITS. Found singly or more usually in pairs or small family parties keeping close to the ground in dense cover. An inveterate skulker, seldom taking flight when alarmed, diving into thicker cover and escaping silently and unseen.

FOOD. Insects, berries and seeds.

VOICE and CALLS. Call-note, a thrush-like *chuck* (SDR); some rich and full conversational notes (Baker); clamouring loudly when excited (Meinertzhagen). Song rendered as *car-white-to-go* and *free-for-you* (Fleming).

BREEDING. Season, April to July. Nest, a compact cup of leaves, fine twigs, grass, roots and some moss, bound with a few tendrils and long roots, lined with rootlets. Usually placed in low bushes within a couple of metres from the ground. Eggs, normally 3, often 2, seldom 4, deep blue, unmarked. Average size of 50 eggs from Assam 29.4 x 20.7 mm (Baker). Eggs taken in Sikkim by Osmaston differ in being much paler and bigger, nine eggs averaging 29.9 x 22.2 mm.

MUSEUM DIAGNOSIS. See Field Characters. Appears to be dimorphic, some birds having a bronze-coloured tail with rufous tip and the crown concolorous with the back, others a black tail and ashy crown. Sides of head and lores may be rufous or olive-brown. For details of plumage, see Baker loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
$\sigma^7 \varphi$	92-105	24-25	39	97-103 mm
$\sigma^7 \sigma^7$	100-106	—	—	102-107 mm
$\varphi \varphi$	98-103	—	—	93 (one) mm

(Heinrich, Mayr, BB, SDR)

Weight 1 φ 84 g (SA).

COLOURS OF BARE PARTS. Iris ivory white (brown in juvenile). Bill dark brown. Legs and feet brownish flesh.

BABLERS

53

1320. Plaincoloured Laughing Thrush. *Garrulax subunicolor subunicolor* (Blyth)

Trochaloheron subunicolor Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 952 (Nepal)
Ianthocincla subunicolor griseata Rothschild, 1921, Novit. Zool. 28: 33
 (Shweli-Salween Divide, Yunnan)
 Baker, FBI No. 160, Vol. 1: 171
 Plate 76, fig. 1

LOCAL NAMES. *Tarmal-pho* (Lepcha); *Nabom* (Bhutea).

SIZE. Myna; length c. 23 cm (9 in.).

FIELD CHARACTERS. An olive-brown laughing thrush with dark scaly markings over the whole body plumage. Crown and nape washed with grey. Bill very short. Central rectrices olive-brown; the rest largely black, the outer three tipped white. A large straw-coloured patch on wing, the outer edge very pale grey, some flight-feathers with pale tips. Abdomen buff, also scaly. Sexes alike. Distinguished from *G. squamatus* by lack of the black supercilium; also by the straw-coloured wing-patch and the white-tipped outer rectrices.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to some vertical movements; locally common. Eastern Nepal [Ilam district; Ting Sang, c. 86°E. long. (Diesselhorst)]; also a probable sight record from the Chautara district, central Nepal (Biswas, JBNHS 59: 215), Darjeeling, Sikkim; Bhutan and NEFA to the Mishmi Hills. Breeds from 1800 to at least 3600 m (from 2100 to 3900 m in northern Burma). Recorded in winter from 800 to 3400 m; a withdrawal from the highest zone in the cold season is probable. Affects thickets of *Rubus* and dwarf rhododendron, bamboo, undergrowth in mixed deciduous forest, and secondary growth. Occurs both in thick forest and open areas ('over alpine meadow', Cranbrook, JBNHS 37: 353).

EXTRALIMITAL. Extends to southeast Tibet, northeast Burma and north-west Yunnan; another race in northern Vietnam.

GENERAL HABITS. Keeps in flocks of ten to twenty birds in the non-breeding season, moving through tangles of bushes and vines or on the ground.

FOOD. Insects (beetles, grasshoppers, etc.), snails, centipedes, berries and green vegetable matter.

VOICE AND CALLS. A clear whistle of four notes, a sharp alarm-note and some squeaky conversational notes.

BREEDING. Season, April to June. Nest, cup-shaped, made of grass, moss, lined with soft bamboo leaves. Placed in bushes or on a low branch within a metre or so from the ground. Eggs, 3 or 4, pale greenish blue, unmarked. Three eggs measure 29.5 × 23 to 30.3 × 23 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters; for details of plumage Baker, loc. cit.

YOUNG, like adult but upperparts, especially rump, more rusty with the black scalloping barely indicated. Throat dark brown, breast more rusty brown, scalloping absent or faintly indicated. Rectrices narrower.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	90-95	18	c. 35	c. 100-105 mm (Baker)
♂ ♀	90-100	(from skull) 19-20	36-40	95-120 mm (Mayr, SDR, SA)
7 ♂ ♀	89-96 mm (Stresemann).			

BABLERS

55

GARRULAX AFFINIS Blyth

Key to the Subspecies

Edgings of breast-feathers greyish white and conspicuous.....*G. a. affinis*
 Edgings of breast-feathers dull grey and relatively inconspicuous.....*G. a. bethelae*

1322. Western Blackfaced Laughing Thrush. *Garrulax affinis affinis* Blyth

Garrulax affinis Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 950
 (Nepal = central Nepal)

Garrulax affinis flammiger Rand, 1953, Nat. Hist. Miscellanea, No. 116: 2
 (Lete, Baglung Dist., West Nepal)
 Baker, FBI No. 161 (part), Vol. 1: 172
 Plate 77, fig. 12

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. As in 1323, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, fairly common. West-central and central Nepal. Breeds between 2800 and 4100 m, winters between 1500 and 3600 m. Affects pine and birch thickets, bamboo, juniper and stunted rhododendron.

GENERAL HABITS, FOOD AND VOICE. As in 1323.

BREEDING. As in 1323.

MUSEUM DIAGNOSIS. See 1323 under Museum Diagnosis.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1323.

1323. Eastern Blackfaced Laughing Thrush. *Garrulax affinis bethelae* Rand & Fleming

Garrulax affinis bethelae Rand & Fleming, 1956, Fieldiana, Zool. 39, No. 1: 2
 (Thangu, Sikkim)
 Baker, FBI No. 161 (part), Vol. 1: 172

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. Above, head mostly black with a white malar patch, white sides to nape and white semi eye-ring. Back brown, finely scalloped. Wings olive-yellow with slate tip and outer edge, and a small black shoulder-spot. Upper tail-coverts rufous-brown. Tail olive-yellow with slate tip. Below, chin black; rest of underparts rufous-brown with grey scale-like markings. Sexes alike.

The black face with two white patches combined with yellow-and-slate wings identify this species.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The eastern half of Nepal, Darjeeling, Sikkim, Bhutan, western NEFA [Tawang (Whistler, *Ibis* 1941: 173), Tsu Valley, Mishmi Hills

TIMALIINAE

54

Weight 3 ♂♂ 63-69 g (GD, SA).

COLOURS OF BARE PARTS. Iris straw. Bill blackish brown. Legs and feet horny brown.

1321. Prince Henry's Laughing Thrush. *Garrulax henrici* (Oustalet)

Trochaloheron Henrici Oustalet, 1892, Ann. Sci. Nat. 12: 274
 (South Tibet = Aio and Soutu)
 Baker, FBI No. 176, Vol. 1: 183
 Plate 77, fig. 11

LOCAL NAME. *Jomo* (= the lady, Tibetan).

SIZE. Myna +; length c. 25 cm (10 in.).

FIELD CHARACTERS. Above, crown and back mouse grey. Lores and ear-coverts dark chestnut-brown, with fine white supercilium above and white crescentic cheek-patch below. Folded wings ashy with a blackish shoulder-patch and a larger rufous patch. Tail blackish grey tipped with white. Below, buffish grey diffusely dark streaked, with chestnut vent and under tail-coverts. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. Southeastern Tibet and probably NEFA in Tibetan facies (upper Subansiri and Tsangpo basins).¹ Also locally in the upper Arun Valley, just north of the Nepal border (Wollaston, *Ibis* 1922: 506). The dominant laughing thrush between 2700 and 4500 m, descending to 2000 m in winter. Affects scrub in the dry as well as the wet zone.

GENERAL HABITS. Keeps in pairs during the breeding season, otherwise in small parties, always on the move, seldom showing itself, flying low from cover to cover.

FOOD. Unrecorded. Doubtless berries and insects.

VOICE AND CALLS. Has the typical noisy chattering of the genus, and a fluty call *whoh-hee* (Waddell in FBI). Its call-notes resemble those of *G. affinis* with which at times it associates (Ludlow).

BREEDING. Season, May and June. Nest, a rather untidy structure of dried grass, dead leaves, strips of bark, moss, etc. lined with dry twisted grass. Placed in low bushes and hedges. Eggs, 2 or 3, indistinguishable from those of *G. erythrocephalus*. Average size of 13 eggs, 30.5 × 21 mm (Ludlow).

MUSEUM DIAGNOSIS. See Field Characters.

YOUNG, like adult but browner; ear-coverts blackish instead of brown.

MEASUREMENTS

Wing 3 ♂♂ 103, 106, 111 mm; 10 ♀♀ 101-107 mm (Ludlow. The figure 130 given in *Ibis* 1944: 77 is a lapsus for 103 mm.)

Bill (from skull) 23; tarsus 37; tail 137 mm (MD).

Hartert (p. 632) gives

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	115	22-23	c. 37	140-150 mm
♀♀	110			

COLOURS OF BARE PARTS. Iris crimson. Bill nut-brown. Legs and feet dark plumbeous.

¹ The locality Shoaka (= Shows) given in FBI 1: 183 is not in the Mishmi Hills but in Tibet as pointed out by Ludlow, *Ibis* 1944: 77.

TIMALIINAE

56

(Bailey, JBNHS 24: 75) and probably throughout the Agency at suitable elevations). One of the highest-altitude laughing thrushes, breeding between 2400 and 4200 m, mostly above 2800 m, locally up to 4500 m. Found in winter between 1600 and at least 3600 m. Affects rhododendron bushes, scrub oak and bamboo in mixed oak and conifer, or birch and fir forest, and dwarf rhododendron above timber-line.

EXTRALIMITAL. Southeastern Tibet. The species extends to southwestern Szechuan and northern Vietnam; also Formosa.

GENERAL HABITS. Keeps in pairs during the breeding season, otherwise in small parties usually not in mixed company during the summer months, but in winter often with *Alcippe rimpectus*. Feeds mostly in bushes, often near or on the ground and also in the crowns of small trees. Runs about rat-like in the scrub over moss-covered boulders and fallen tree-trunks at great speed, seldom taking wing. Not so timid as other laughing thrushes but very noisy when excited.

FOOD. Berries (*Rubus*, *Viburnum*, *Gaultheria*, wild strawberries, etc.), crab-apples, seeds and insects.

VOICE AND CALLS. Has the usual low conversational chuckles of the genus. Alarm, a long rolling *whirr-whirr* (Stanford). Song, uttered from an elevated position, the top of a bush or rock, the bird usually remaining and hidden by overhanging foliage; described as a mournful, monotonous and continually repeated four-note strophe (Cranbrook), probably the same rendered by Diesselhorst as *ti ti ti ti wü* or by SA as a melodious whistling *to-wee* or *to-wee-you*. Fleming describes a variety of clear calls *you wryy, wheeooo, eee-rrr, kay-luck*. The song may be heard every month, but more regularly from March to August (Proud).

BREEDING. Season, May and June. Nest, cup-shaped, exteriorly made mostly of moss and fine twigs with an inner layer of dry rhododendron leaves, root fibres and a few grass blades, lined only with root fibres. Diameter of nest c. 18 cm, of cup 7.5 cm, depth of cup 5 cm. Placed in bushes, usually rhododendron, between 1 and 2.5 m from the ground. Eggs, 2 or 3, blue with a greenish tinge, marked with a few blackish-brown spots and scrolls, mostly around the larger end. Average size of 12 eggs 28.5 × 21.2 mm (Baker). Like many species of the genus, both parents get very excited, raising intense outcries against intruders.

MUSEUM DIAGNOSIS. Differs from the nominate race (1322) in having the underparts generally darker, with the edgings of the feathers dull grey ± greyish white. The crown averages blacker but this not constant. For details of plumage see Baker loc. cit.

YOUNG, a dull version of the adult; lacks grey edges to mantle and ashy edges on breast. Rectrices narrower, but juvenal timeline character of wing (soft blunt first primary) not present (Whistler).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	98-115	24 (2)	36-40 (3)	134-135 (2) mm
♀♀	102-110	23 (2)	39-42 (2)	118-127 (2) mm

(Kinntear, Rand & Fleming, SA)
 Wing 28 ♂♀ 99-109 mm (Stresemann).

BABBLERS

57

Weight 8 ♂ 67-80; 6 ♀ 66-72 g (GD, SA, SDR).

COLOURS OF BARE PARTS. Iris brown or 'olive-khaki'. Bill horny black. Legs pinkish- or horny brown; claws dark brown.

GARRULAX ERYTHROCEPHALUS (Vigors)

Key to the Subspecies

(All races intergrade along their given boundaries)

	Page
A Chin and throat black	
a Crown chestnut	
1 Paler..... <i>G. e. erythrocephalus</i>	57
2 Darker..... <i>G. e. kali</i>	59
b Anterior crown streaked with black	
3 Upper back paler..... <i>G. e. nigrimentus</i>	59
4 Upper back darker..... <i>G. e. imprudens</i>	60
B Chin and throat chestnut	
c Back and breast with black round spots	
5 Supercilium absent or less pronounced..... <i>G. e. erythrolaema</i>	62
6 A well-marked grey supercilium..... <i>G. e. godwini</i>	61
d Back and breast with brown oval spots..... <i>G. e. chrysopterus</i>	61

1324. Redheaded Laughing Thrush. *Garrulax erythrocephalus erythrocephalus* (Vigors)

Cinlosoma erythrocephalus Vigors, 1832, Proc. Zool. Soc. London: 171 (Himalayas, restricted to Chamba by Baker, 1920, 'Handlist': 15, an action which takes precedence over the restriction to Simla-Almora area by Ticehurst & Whistler, 1924, Ibis: 468-73, or to Simla by Vaurie, 1953, Bull. Brit. Orn. Cl. 73: 78)

Baker, FBI No. 148 (part), Vol. 1: 163

Plate 76, fig. 4

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 28 cm (11 in.).

FIELD CHARACTERS. An olive-brown laughing thrush with rufous-chestnut crown and nape, black chin and scale-like black markings on breast, neck and upper back. Wing and sides of tail olive-yellow; a chestnut shoulder-patch. Underparts deep ferruginous. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common, subject to vertical movements. The Himalayas from Changla Gali and Murree east to Kumaon. Breeds between 1800 and 3300 m, optimum zone 2100-2700 m. From mid October to early April found mostly between 1200 and 2000 m and probably also higher, descending to c. 700 m during cold spells. Affects dense undergrowth of dwarf rhododendron, *Rubus*, *Berberis*, etc. on hillsides, along nullahs, and at the edge of terraced cultivation and upland pastures.

GENERAL HABITS. Keeps in pairs in the breeding season, otherwise in parties of four to six, sometimes up to thirty individuals, often in company with *G. albugularis* or *G. affinis*. Frequents low cover, flying restlessly from bush to bush or bouncing quickly over the ground, the long tail slightly raised, and digs under dead leaves; sometimes seen at medium heights in

BABBLERS

59

and streaks, mostly at the broad end. Average size of 100 eggs 28.4 × 21.4 mm (Baker). Commonly brood-parasitized by Pied Crested Cuckoo and hawk-cuckoos.

MUSEUM DIAGNOSIS. The palest member of an east-west cline. Crown entirely rufous. For details of plumage see Baker, loc. cit.

Young, as adult but mantle tinged brown, black spots absent; chin black; throat rusty-olive, no spots; ear-coverts less markedly chestnut. Underparts grey with a buffy tinge; edges to wings duller. Rectrices narrower.

MEASUREMENTS. As in 1325.

COLOURS OF BARE PARTS. Iris greyish hazel. Bill blackish brown. Legs and feet horn-brown.

1325. Nepal Redheaded Laughing Thrush. *Garrulax erythrocephalus kali* Vaurie*Garrulax erythrocephalus kali* Vaurie, 1953, Bull. Brit. Orn. Cl. 73: 78

(Lete, Kali River Valley, Baglung dist., west-central Nepal)

Baker, FBI No. 148 (part), Vol. 1: 163

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. As in 1324, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. Western and central Nepal. Altitudinal distribution and habitat as in 1324.

GENERAL HABITS, FOOD AND VOICE. As in 1324.

BREEDING. As in 1324.

MUSEUM DIAGNOSIS. Intermediate between 1324 and 1326. Crown entirely rufous.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	100-105	25-26	114-117 mm
♀♀	92-105	24-25	105-108 mm

(BB, Rand & Fleming)

COLOURS OF BARE PARTS. As in 1324.

1326. Sikkim Redheaded Laughing Thrush. *Garrulax erythrocephalus nigrimentus* (Oates)*Trochospiza nigrimentus* Oates, 1889, Fauna Brit. India, Bds., ed. 1, 1: 91

(The Himalayas from Nepal to the Dafia Hills in Assam, inferentially restricted to Sikkim, by Kinnear, 1937, Ibis: 32)

Baker, FBI No. 150 (part), Vol. 1: 164

Plate 76, fig. 3

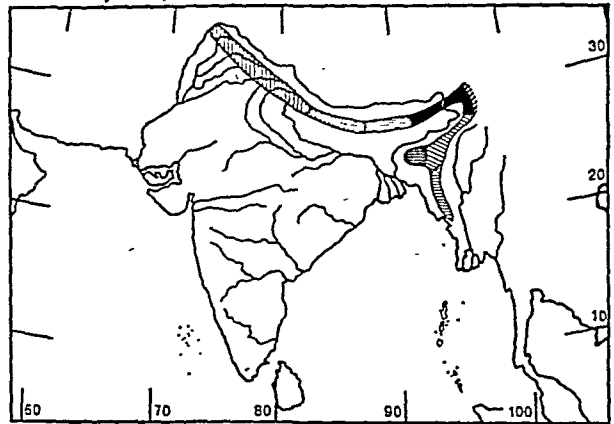
LOCAL NAMES. *Tephrothra* (Lepcha); *Pening* (Bhutia).

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. As in 1324. See Museum Diagnosis.

TIMALIINAE

58

Garrulax erythrocephalus

Distributional ranges

erythrocephalus (1324). *kali* (1325). *nigrimentus* (1326).
imprudens (1327). *godwini* (1329). *chrysopterus* (1328).
erythrolaema (1330).

moss-covered trees, less often high up in trees. Shy, a great skulker and usually silent; easily overlooked and difficult to observe even when its characteristic chuckling murmurs proclaim its proximity in the undergrowth.

FOOD. Insects, snails, leeches (once), seeds, berries and other vegetable matter. Food appears to be predominantly animal in spring and summer, and vegetal in autumn (Diesselhorst) and very likely also in winter, this being probably true for other high-altitude laughing thrushes as well.

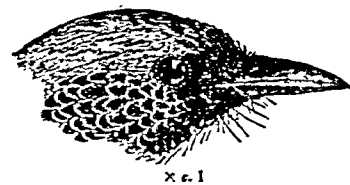
VOICE AND CALLS. A constant series of low twitters and chuckles when moving through thickets. A deep churring alarm-note *m-u-r-r-r-r*. The song consists of several short phrases given three or four times at intervals of a few seconds: *pearl-lee, to-reaper, to-real-year, you reap* (Fleming). Other calls: a clear double whistle *phew* or *puweep* easily imitated and to which the bird responds (HW). A loud *wee-oo-wee-uhp*, the last note higher and louder [probably uttered by a different bird] (Smythies) sometimes given separately, sometimes in runs. Questing note, when looking for mate that has been shot, a soft musical single *tui-ee-you* repeated every half-second or so (once for over 10 minutes) while hopping in the shrubbery (SA).

BREEDING. Season, May to August. Nest, a substantial, cup-shaped structure of broad grass bents, fern fronds, moss and dead leaves, lined with rootlets. Usually placed in a bush within a couple of metres from the ground. Eggs, 2 or 3, turquoise-blue sparsely marked with liver-coloured blotches

60

TIMALIINAE

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. East Nepal, Darjeeling, Sikkim, Bhutan, western NEFA (Tawang) and southeast Tibet; from 2000 to 3000 m (Nepal), 3300 m (Bhutan) in summer, and from 1200 to over 3000 m in winter [recorded at 3500 m in December (Meinertzhagen) and from Buxa duars 600 m in the same month]. Affects forest with thick undergrowth and especially tangled bushes on steep sides of ravines.



x c. 1

GENERAL HABITS, FOOD AND VOICE. As in 1324.

BREEDING. As in 1324. Eggs, usually 2, rarely 3, turquoise-blue marked with liver-coloured blotches and streaks. Average size of 32 eggs 28.5 × 20.9 mm (Baker). Size of 2 eggs 31.2 × 21.7 and 28.2 × 21.5 mm (Ludlow).

MUSEUM DIAGNOSIS. Differs from *kali* (1325) in having the sides of crown grey, the rufous restricted to nape, the anterior part of crown being broadly streaked with black; ear-coverts black with pale edges.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	97-107	23-25	37-43	110-124 mm
♀♀	93-103	22-25	39-42	105-125 mm

(Rand & Fleming, SA)

Weight 14 ♂ 75-89; 7 ♀ 70-88 g (GD, SA).

COLOURS OF BARE PARTS. Iris olive-brown or hazel-brown. Bill horny black. Legs and feet brownish flesh; claws horny brown.

1327. NEFA Redheaded Laughing Thrush. *Garrulax erythrocephalus imprudens* Ripley

Garrulax erythrocephalus imprudens Ripley, 1948, Proc. Biol. Soc. Washington 61: 102 (Tidding Saddle above Dreyi, Mishmi Hills, northeast Assam)

Baker, FBI No. 150 (part), Vol. 1: 164

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. As in 1324. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. NEFA from the Dafia to the Mishmi hills; limits undetermined. Altitudinal distribution and habitat presumably as in 1326.

GENERAL HABITS, FOOD AND VOICE. As in 1324.

BABBLERS

61

MUSEUM DIAGNOSIS. Differs from *nigritentus* (1326) in being darker brown on upper back, and darker olive-brown with somewhat heavier black subterminal barring on throat and breast; more fulvous whitish on nape, sides of lower throat and breast. This colour fades rapidly and foxed specimens of *nigritentus* tend to assume the reddish brown tone of *imprudens*.

MEASUREMENTS. As in 1326.

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet brown.

1328. Khasi Redheaded Laughing Thrush. *Garrulax erythrocephalus chrysoplerus* (Gould)

Ianthocincla chrysoptera Gould, 1835, Proc. Zool. Soc. London: 48
(Himalayas *errone* = Khasi Hills)
Baker, FBI No. 153, Vol. 1: 166

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. As in 1324 but with a grey supercilium and chestnut throat. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, very locally distributed. Khasi Hills between 1200 and 1900 m. Affects bushes in open pine forest.

GENERAL HABITS, FOOD and VOICE. As in 1324.

BREEDING. Season, April to July. *Nest*, as in 1324. *Eggs*, generally 3, sometimes 2, more boldly marked than those of the Himalayan races. Average size of 50 eggs 30.6 × 21.6 mm (Baker).

MUSEUM DIAGNOSIS. Differs from other races in having brown oval lunar (gibbous) spots instead of black round spots on back and breast. A broad grey supercilium. Ear-coverts rufous, more or less tinged with grey. Chin and throat dark chestnut. Yellow on wing more golden, less greenish yellow.

Young (immature). A dull edition of the adult. Spots on breast and back obsolete. Juvenal timaline characters — soft blunt first primary, narrower rectrices — present.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	101-106	20-21	c. 38	110-115 mm (Baker)

COLOURS OF BARE PARTS. Iris yellowish or greyish brown, sometimes grey. Bill dark horny brown. Legs and feet fleshy or yellowish brown.

1329. Nagaland Redheaded Laughing Thrush. *Garrulax erythrocephalus godwini* (Harington)

Trochaloipteron erythrocephalus godwini Harington, 1914, Bull. Brit. Orn. Cl. 33: 92
(Hengdan Peak, N. Cachar Hills)
Baker, FBI No. 151, Vol. 1: 165

LOCAL NAME. *Dau-qua-lok* (Cachari).

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. As in 1324. See Museum Diagnosis.

BABBLERS

63

1331. Himalayan Crimsonwinged Laughing Thrush. *Garrulax phoeniceus phoeniceus* (Gould)

Ianthocincla phoenicea Gould, 1837, Icones Av., pl. 3 (Nepal)
Baker, FBI No. 156, Vol. 1: 168
Plate 77, fig. 1

LOCAL NAMES. *Tilji-pho* (Lepcha); *Ripcha* (Bhutea).

SIZE. Myna ±; length c. 23 cm (9 in.).

FIELD CHARACTERS. An olive-brown laughing thrush with bright crimson sides of head, wings and tips of under tail-coverts. A black supercilium. Crown streaked with black. Tail black with reddish tip and outer rectrices. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common, subject to slight vertical movements or nomadism in winter. From Nepal (not recorded since Hodgson's days and probably restricted to the easternmost part) east through Darjeeling, Sikkim, Bhutan and NEFA to the Mishmi Hills; from c. 900 to 1800 m at all seasons, reaching the foothills (duars, c. 600 m) in winter. Affects undergrowth in evergreen forest and dense thickets of secondary growth on the edge of cultivation and along streams.

GENERAL HABITS, FOOD and VOICE. As in 1332, q.v.

BREEDING. As in 1332. Average size of 50 eggs 25.9 × 18.5 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *bakeri* in being darker. For details of plumage see Baker, loc. cit.

Young, like adult but crimson of face less brilliant; upperparts less rufous; supercilium less distinct; rectrices narrower; reddish tip of tail less sharply defined.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	81-93	c. 18	c. 32	c. 100 mm (Baker)
		(from skull)		
3 ♂♂	85-93	20-22	33-35	92-110 mm
1 ♀	85	21	33	102 mm
2 ♂?	83, 87	20, 21	33, 35	90, 95 mm (SDR, SA)

Weight 2 ♂? 51, 52 g (SA).

COLOURS OF BARE PARTS. Iris brown (juv.) to deep crimson; orbital skin dull leaden-dusky. Bill dark brown to black. Legs and feet brown.

1332. Assam Crimsonwinged Laughing Thrush. *Garrulax phoeniceus bakeri* (Hartert)

Trochaloipteron phoeniceum bakeri Hartert, 1909, Bull. Brit. Orn. Cl. 33: 10
(Laisung, North Cachar)
Trochaloipteron phoeniceum khasium Koelz, 1952, Jour. Zool. Soc. India 4: 38
(Laitlyngkot, Khasi Hills)
Baker, FBI No. 157, Vol. 1: 169

LOCAL NAME. *Dao-yao-gajao* (Cachari).

SIZE. Myna ±; length c. 23 cm (9 in.).

62

TIMALIINAE

STATUS, DISTRIBUTION and HABITAT. Common resident. Assam in Cachar, Nagaland and western Manipur; from c. 1500 to 2800 m. Affects undergrowth in evergreen forest, stunted oak and dwarf rhododendron scrub.

GENERAL HABITS, FOOD and VOICE. As in 1324.

BREEDING. Not recorded. Probably as in 1328.

MUSEUM DIAGNOSIS. Similar to *erythrolaema* (1330) and doubtfully distinct (Peters' Check-List 10: 376). A grey supercilium, and forehead greyer.

MEASUREMENTS

Wing ♂♂ 97-103; ♀♀ 93-106 mm (SDR).

Weight ♂♂ 74-92 g (SDR).

COLOURS OF BARE PARTS. Iris dark greyish brown. Bill blackish brown. Legs and feet fleshy brown.

1330. Manipur Redheaded Laughing Thrush. *Garrulax erythrocephalus erythrolaema* (Hume)

Trochaloipteron erythrolaema Hume, 1881, Stray Feathers 10: 153
(Matchi, E. Manipur Hills)
Baker, FBI No. 149, Vol. 1: 164

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. As in 1324. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Common resident. East Manipur hills south through the Mizo Hills; from 1500 to 2700 m (mostly 2500-3000 m on Mt Victoria). Affects thick bushes and bamboo in forest.

Extralimital. Chin Hills and Arakan Yomas. The species extends to southwestern Yunnan and northern Vietnam.

GENERAL HABITS and FOOD. As in 1324.

VOICE and CALLS. The song consists of three loud, far-carrying, flute-like notes *tiuuu* repeated every few seconds, the first and last notes short and on the same tone, the middle one loud and rising; another call is rendered as *kreh-krü-krü* the last 'ü' more accentuated; call-note a sharp and loud trill (Heinrich). See also 1324.

BREEDING. Season, April-May. *Nest* as in 1324. *Eggs*, usually 2. Average size of 33 eggs 29.9 × 20.5 mm (Baker).

MUSEUM DIAGNOSIS. Differs from the nominate race (1324) in having a grey forehead and supercilium, the ear-coverts pinkish rufous, the point of chin grey and the throat and breast chestnut, nearly concolorous with crown. Spots on back browner; spots on breast much smaller and triangular, not hemispherical.

MEASUREMENTS

Wing 10 ♂♂ 98-106; 8 ♀♀ 92-102 mm (Stresemann).

COLOURS OF BARE PARTS. As in 1329.

GARRULAX PHOENICEUS (Gould)

Key to the Subspecies

Paler; grey of belly more pronounced.....*G. p. bakeri*
Darker; grey of belly less pronounced.....*G. p. phoeniceus*

TIMALIINAE

64

FIELD CHARACTERS. As in 1331, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, fairly common. The hills of East Pakistan and Assam south to the Chittagong region and the Mizo Hills, Nagaland and Manipur; from 900 to 1800 m, up to 2400 m in the eastern ranges (1400 to 2500 m on Mt Victoria). Affects dense undergrowth in evergreen forest or in shady deciduous forest.

Extralimital. Western Burma. The species extends to southern Yunnan and northern Vietnam.

GENERAL HABITS. A skulker like most others of the genus. Keeps in pairs or small parties of four or five individuals according to the season, sometimes in the mixed hunting parties. Forages in undergrowth and on the ground, only occasionally going up in trees.

FOOD. Insects, seeds and berries.

VOICE and CALLS. Song, a five- to six-note phrase, the end of which is a characteristic series of three or four notes on the same tone. The second note of the song is about two tones higher than the first, the last between the second and first. Also a four-noted call, the first and last on the same tone, the second and third a half tone higher (Heinrich). It also has a variety of squeaky conversational calls both harsh and sweet, typical of the genus.

BREEDING. Season, April to July. *Nest*, a deep cup of dry leaves, grass, fine twigs and roots, occasionally some moss, lichen or other material, lined with rootlets. Usually placed low down in bushes, occasionally in saplings up to two or three metres above the ground. *Eggs*, 2 or 3, rarely 4, blue with numerous dark brown scrolls and a few spots scattered irregularly over the whole surface. Average size of 100 eggs 26.1 × 18.5 mm (Baker). Both sexes take part in incubation and feeding the young. Incubation period undetermined.

MUSEUM DIAGNOSIS. Differs from the nominate race (1331) in being paler and in having the grey of the abdomen much more pronounced. Also said to be slightly smaller.

MEASUREMENTS

Wing 7 ♂♂ 85-90; 8 ♀♀ 79-87 mm (Stresemann).

Weight 2 ♂♂ 45, 48 g (SDR).

COLOURS OF BARE PARTS. As in 1331.

Genus LEIOTHRIX Swainson

Leiothrix Swainson, 1832, Fauna Boreali-Americana, Bds.: 490. Type, by original designation, *Parus fuscatus* Temminck = *Sylvia lutea* Scopoli
Meria Hodgson, 1837, Ind. Rev. 2 (1): 34; (2): 63. Type, by original designation, *Meria argentaria* Hodgson

Bill stout, about half the length of the head, slightly notched near tip, culmen curved.

Key to the Species

Crown black.....*L. argentaria*
Crown greenish.....*L. lutea*

Page
63
67

BABBLERS

65

LEIOTHRIX ARGENTAURIS (Hodgson)

Key to the Subspecies

Page

- A Lower nape with a golden orange wash
 a Orange on nape pale and less extensive.....*L. a. argenteauris* 65
 b Orange on nape deep and more extensive.....*L. a. curvicalaris* 66
 B Lower nape without any orange wash.....*L. a. temnyi* 67

1333. Himalayan Silvereared Mesia. *Leiothrix argenteauris argenteauris* (Hodgson)*Mesia argenteauris* Hodgson, 1837, Ind. Rev. 2 (2): 88 (Nepal)

Baker, FBI No. 376 (part), Vol. 1: 354

Plate 80, fig. 1

LOCAL NAMES. *Dang-rapchil-pho* (Lepcha); *Jhāṅghiri* (Pahari).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. A bright-coloured arboreal babbler with black crown and moustachial stripe and silvery ear-coverts.

Male. Forehead yellow, throat and breast bright orange-yellow. Wing edged with yellow, with a crimson patch. Both upper and under tail-coverts crimson.

Female differs in having the under tail-coverts ochraceous and the upper olive-yellow.

Young (immature) like female but crown yellowish.

Easily distinguished from the Redbilled Leiothrix by the black crown, silvery ear-coverts, and square (not forked) tail.

STATUS, DISTRIBUTION and HABITAT. Resident, fairly common but less so west of Sikkim; subject to slight vertical or erratic movements in winter. The Himalayas from Garhwal east through Nepal, Darjeeling, Sikkim, Bhutan and NEFA to the Dihang river; from the foothills to c. 2100 m. Affects scrub-jungle, bush-clad open spaces, secondary growth, bushes in evergreen forest, especially the outskirts and more open portions, abandoned cultivation clearings and tea plantations.

GENERAL HABITS. Usually seen in parties of six to thirty birds or more outside the breeding season. Keeps to bushes in forest, sometimes going fairly high up in the canopy. Searches actively for insects among the foliage, behaving much like tits, clinging to sprigs in acrobatic positions and peering under leaves, the flocks rapidly 'flowing' from tree to tree in disorderly follow-my-leader style, all the while uttering subdued chirrups. Seemingly always in great haste. Occasionally makes fly-catching sallies after escaping insects. Pairs form in April; the birds then become very shy and hard to see.

FOOD. Insects, seeds and berries.

VOICE and CALLS. Members of a feeding party keep up a continual chirrup with occasional long-drawn, clear whistling notes *seetee-siueetee*

BABBLERS

67

MUSEUM DIAGNOSIS. More richly coloured than *argenteauris*; orange on nape deeper and more extensive, likewise that colour on forehead and underparts. In *temnyi* (1334) the orange does not descend so far on breast and back.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1333.

1334. Burmese Silvereared Mesia. *Leiothrix argenteauris temnyi* (Mayr & Greenway)*Mesia argenteauris temnyi* Mayr & Greenway, 1938, Proc. New England Zool. Cl. 17: 3 (Hai Bum, Upper Burma)*Leiothrix argenteauris gertrudis* Ripley, 1948, Proc. Biol. Soc. Washington 61: 103 (Dening, Mishmi Hills)

Baker, FBI No. 376 (part), Vol. 1: 354

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1333, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. NEFA in the Mishmi Hills, Assam in the Cachar hills, Nagaland and Manipur; from c. 700 to 1500 m. Habitat as in 1333.

EXTRALIMITAL. Northern Burma and Western Yunnan. The species extends east to Vietnam and south through the Malay Peninsula and Sumatra.

GENERAL HABITS, FOOD and VOICE. As in 1333.

BREEDING. As in 1333.

MUSEUM DIAGNOSIS. Differs from *argenteauris* in having the nape yellowish olive without any golden-orange wash. Throat without any reddish wash and with an ochraceous striation. The statement by Mayr loc. cit. that it differs in its smaller size is not borne out by measurements of larger series.

MEASUREMENTS

	Wing	Tail	
♂♂	72-79	(1) 65	mm
♀♀	72-75	(2) 64, 65	mm
		(SDR, Mayr)	

Weight ♂♂ 25-26; ♀♀ 22-25 g (SDR).

COLOURS OF BARE PARTS. As in 1333.

LEIOTHRIX LUTEA (Scopoli)

Key to the Subspecies

- Inner primaries conspicuously edged with red.....*L. l. calyptga*
 Red on edge of primaries reduced or absent.....*L. l. temensis*

1335. Western Redbilled Leiothrix. *Leiothrix lutea kumziensis* Whistler*Leiothrix lutea kumziensis* Whistler, 1943, Bull. Brit. Orn. Cl. 63: 62

(Dehra Dun, United Provinces)

Baker, FBI No. 351 (part), Vol. 1: 328

LOCAL NAMES. *Nawachara* (Dehra Dun); *Peking Robin* (agriculturalists' name).

SIZE. Sparrow —; length c. 13 cm (5 in.).

TIMALIINAE

66

reminiscent of the jingling call of Blackheaded Sibia (SA). A cheerful song of seven or eight notes rendered as *u-cherit, cherit-cherit* (Stanford). Wings frequently flirited while singing.BREEDING. Season, April to August. Nest, cup-shaped, c. 8.5 cm in diameter, 8 cm in overall depth, the depth of cup being c. 6.5 cm. Made of bamboo or other leaves, grass and moss, lined with rootlets. Placed in bushes within a couple of metres from the ground, sometimes as low as a few centimetres. Indistinguishable in size, structure and situation from that of *L. lutea*. Eggs, 4, sometimes 3, rarely 5, also identical with those of *L. lutea* (1336) although eggs with a white ground are perhaps more often found among those of *argenteauris*. Average size of 200 eggs 20.9 × 16.1 mm (Baker). Building, incubation and care of young shared by both sexes. Nest completion takes about four days. Incubation begins with first egg; period c. 14 days. The birds sit closely, but even when not seen leaving the nest, soon give away the site by their fussy demonstrations.MUSEUM DIAGNOSIS. For distinction from *temnyi* see 1334 under Museum Diagnosis; for details of plumage Baker, loc. cit. In all races the back is greenish, wearing to grey.

Young (immature), male and female, dull versions of their respective adults. Birds can be sexed upon fledging: male has red tail-coverts, female rusty-green. Nestlings are covered with pale buff down. Postjuvinal moult of body, wing-coverts and tertials.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	70-81	17-19	24-26	63-72 mm
♀♀	70-78	17-18	23-24	63-70 mm
				(BB, CBT, SA)

Weight 1 ♂ 25; 1 ♀ 23 g (SA).

COLOURS OF BARE PARTS. Iris brown to red-brown. Bill orange tinged brown at base; gape light orange in nestlings. Legs and feet yellowish flesh.

MISCELLANEOUS. This species and the Redbilled Leiothrix (1336) are commonly kept as cage-birds and under the name of Silver-ear and Peking Robin respectively largely exported to Europe and the U.S.A.

1333a. Assam Silvereared Mesia. *Leiothrix argenteauris curvicalaris* (Koelz)*Mesia argenteauris curvicalaris* Koelz, 1953, Jour. Zool. Soc. India 4: 153

(Tura Mountain, Garo Hills, Assam)

Baker, FBI No. 376 (part), Vol. 1: 354

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1333, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. Assam in the Garo, Khasi and Mizo hills, and East Pakistan in the Chittagong Hill Tracts; from c. 900 to 1500 m. Habitat as in 1333.

GENERAL HABITS, FOOD and VOICE. As in 1333.

BREEDING. As in 1333.

TIMALIINAE

68

FIELD CHARACTERS. As in 1336 but lacks crimson on wing. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Uncommon resident, subject to slight vertical or erratic movements in winter. The western Himalayas from Kashmir (1 specimen in Brit. Mus. collected by Biddulph; 2 specimens in the Indian Museum, by Stoliczka) east to Kumaon. Breeds from 1000 to 2400 m. Recorded in winter from 1000 to 2100 m but more frequent at the lower levels. Affects scrub and secondary growth on outskirts of cultivation.

GENERAL HABITS, FOOD and VOICE. As in 1336.

BREEDING. As in 1336.

MUSEUM DIAGNOSIS. Distinguished from *calyptga* (1336) by the greyer tinge of the green on upperparts, the yellowish wash on crown greener and more restricted, and red on outer edge of inner primaries reduced or absent.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1336.

1336, 1337. Eastern Redbilled Leiothrix. *Leiothrix lutea calyptga* (Hodgson)*Behila Calyptga* Hodgson, 1837, Ind. Rev. 2(2): 88 (Nepal)*Leiothrix lutea luteola* Koelz, 1952, Jour. Zool. Soc. India 4: 39

(Mawryngkneng, Khasi Hills)

Baker, FBI No. 351 (part), Vol. 1: 328

Plate 80, fig. 2

LOCAL NAMES. *Jhāṅghiri* (Pahari); *Raphil-pho* (Lepcha); *Dachila-tuku-gojas* (Cachar).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. A sprightly greyish olive bird with bright yellow throat and breast, pale lores and eye-ring, and scarlet bill. Wing black with yellow-and-crimson edges, and a small orange patch. Tail forked, the outer rectrices slightly curved outwards — black above olive below, except tip and edges which are black. The long olive upper tail-coverts have a pale narrow terminal bar; under tail-coverts pale yellow.

Female differs in having the crimson of wing replaced by yellow.

The olive crown, scarlet bill, and absence of whitish ear-coverts distinguishes this species from the Silvereared Mesia (1333).

STATUS, DISTRIBUTION and HABITAT. Resident, subject to slight vertical or erratic movements in winter, locally common. From western Nepal east through Sikkim, Darjeeling, Bhutan and NEFA at least to the Abor and Mimi hills; Nagaland, Manipur and Assam in the Cachar hills. Breeds from 1500 to 2400 m, locally down to 1000 m or up to 2700 m. Winters between 699 and 2100 m. Affects undergrowth in forest, wooded ravines, secondary growth on abandoned cultivation clearings, and tea plantations.

EXTRALIMITAL. Chin Hills and Arakan Yomas of Burma. The species extends east to northern Vietnam and north to Szachuan and Anhwei. Introduced into Hawaiian Islands.

GENERAL HABITS. Keep in pairs in the breeding season, otherwise in small parties of four to six individuals, usually in association with *Stachyris*

BABBLERS

69

or other babblers. Habits similar to those of Silver-eared Mesia with which it also frequently consorts. Usually seen scuttling through undergrowth, sometimes hopping on the ground foraging and turning over dead leaves in the manner of a laughing thrush. Pairs form in April.

FOOD. Insects, seeds and berries.

VOICE and CALLS. Alarm, a series of harsh, hissing notes and a somewhat explosive *k'd'k-cha-jō-jō* followed by a call sounding like *pile-pile-pile* (the second note higher); while feeding, keeps up a clear and rather wistful but unvaried piping *pe-pe-pe-pa* (rising-low), or a rapid *pū-pū-pū-pū-pū*; also a soft, muttering *che-cha-cha* and a loud rustling call (Lister). The song is a loud, cheerful warbling reminiscent of the Red-whiskered Bulbul's, rather more prolonged and more musical (SA). Song period February to August, mainly April to June (Proud).

BREEDING. Season, April to October, chiefly May and June. Nest, cup-shaped, made of fine bents, dead leaves, moss, lichen or other materials, usually lined with rootlets. Placed low down in bushes, less often up to a couple of metres. Eggs, 3 or 4, rarely 5, pale blue, rarely white, usually marked with bold blotches of dark red-brown or umber-brown, mostly at the large end. Nest as well as eggs indistinguishable from those of Silver-eared Mesia. Average size of 200 eggs 21.9 × 16.1 mm (Baker). The female seems to do most of the nest-building, the male bringing her the material. Incubation shared by both sexes, though female appears to do the greater part. Nest location is soon given away by the fussy demonstrations of the owners. Brood-parasitization by *Cuculus canorus* reported by Baker.

MUSEUM DIAGNOSIS. Differs from *kumaiensis* (1335) in having the back greener, and conspicuous crimson outer edgings on inner primaries. For details of plumage see Baker, loc. cit. Postnuptial moult completed in October.

Young: upperparts browner, with no contrast between crown and mantle. Underparts much paler. Upper tail-coverts narrower and white tips merely indicated. Male rather brighter than female. Postjuvénal moult takes place in October.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	65-72	14-16	25-28	55-59 mm
♀♀	65-70	14-16	24-26	53-58 mm

(BB, SA, Rand & Fleming)

Weight 3 ♂♂ 20-23; 1 ♀ 20 g (Diesselhorst); 12 ♂♂ 21-25 g (SA).

COLOURS OF BARE PARTS. Iris brown or reddish-brown. Bill coral red, black at base of both mandibles. Legs, feet and claws pale horny brown.

Genus MYZORNIS Blyth

Myzornis Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 984.

Type, by monotypy, *Myzornis pyrrhous* Blyth

Bill slender, nearly as long as the head, notched; culmen gently curved. Nostrils covered by a membrane. Tail about two-thirds the length of wing. Tarsus long and slender.

70

TIMALIINAE

1338. Fire-tailed Myzornis. *Myzornis pyrrhous* Blyth

Myzornis pyrrhous Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 984 (Nepal)
Baker, FBI No. 367, Vol. 1: 345

Plate 72, fig. 2

LOCAL NAME. *Lho-sagrit-pho* (Lepcha).

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. Male. A brilliant little dark green bird with red and green tail. Crown scalloped with black. A black stripe from lores through eye. Wing black with a reddish streak, white tips and white inner edge. Female only slightly different (see Museum Diagnosis).



x c. 1

STATUS, DISTRIBUTION and HABITAT. Resident, locally distributed, subject to some vertical movements. From central Nepal (Proud, JBNHS 58: 804, breeding; Deshayes, sight record 1964), east through Darjeeling, Sikkim, Bhutan and NEFA (Pachakshiri, Ludlow, *Ibis* 1944: 86, and probably throughout the Agency at suitable altitudes); from 1600 to 3600 m. Recorded at 2700 m in winter. Breeding zone not determined but probably above 2700 m. Affects rhododendron, juniper and other bushes, also heavy jungle and bamboo thickets, preferably on sunny hillside.

Extralimital. Southeastern Tibet, northeastern and northwestern Burma. GENERAL HABITS. Usually keeps solitary, in parties of three or four or small flocks frequently in association with sunbirds, warblers and the smaller babblers, searching for food amongst bushes and shrubs, sometimes up in trees. Habitually visits flowering shrubs and trees, especially rhododendron, to probe into the blossoms for nectar. Presumably assists in their cross-pollination since shot specimens often show pollen adhering to the forehead and breast-feathers. Also takes insects and spiders from the flowers and foliage, and from moss-covered tree-trunks, running up these in the manner of a tree creeper or hovering at sprigs on rapidly beating wings, like a sunbird or flowerpecker. Occasionally captures insects by flycatcher-like aerial sallies. Observed switching up tail like a robin while hopping amongst bushes (J. Panday).

FOOD. Insects and spiders, flower nectar (*Rhododendron*, *Berberis*, etc.), tree-sap and berries.

VOICE and CALLS. Normally silent. A high-pitched *tri-tit* (Deshayes). Song, if any, not recorded.

BREEDING. The only authentic nest so far known was in a deep mossy juniper forest at c. 3700 m in Nepal. It was about 6 metres from the ground, close against the trunk of a large juniper and so imbedded in moss and lichen that details could not be seen. Both parents were feeding young at the time — late May (Desirée Proud, JBNHS 58: 804 and in *epist.*). One egg sent to Hume (but authenticity not certain) was white without markings. It measured about 17 × 13 mm.

* The tongue possesses terminal bristles, an adaptation for nectar-feeding as in the Honey-eaters of the Australasian Region, or in the Indo-Malayan genus *Chloropsis*.

BABBLERS

71

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Female, like male but red tinge of underparts duller, red on wing and tail less bright. The primary-coverts are sometimes pale blue, not always white as given in FBI.

Young, male and female, duller than their respective adults. Juvenal timeline wing and tail characters (i.e. soft blunt first primary; narrower rectrices) not present.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂♂	57-63	15-16	23-24	45-48 mm
8 ♀♀	56-62	13-18	23-24	40-47 mm

(not 70-75 as in FBI)

(SA, MD, Stresemann)

Weight 3 ♂♂ 11-13; 3 ♀♀ 11-12.5 g (SA, SDR).

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet yellowish brown.

Genus CUTIA Hodgson

Cutia Hodgson, 1836, Jour. Asiat. Soc. Bengal 5: 773.

Type, by original designation, *Cutia nipalensis* Hodgson

Bill somewhat curved, notched, pointed, slightly longer than half length of head; rictal bristles very short; nostrils longitudinal, covered by a membrane; frontal bristles short and firm. Tail slightly rounded, about two-thirds length of wing; upper tail-coverts very long, reaching nearly to tip of tail.

1339. Nepal Cutia. *Cutia nipalensis nipalensis* Hodgson

Cutia nipalensis Hodgson, 1836, Jour. Asiat. Soc. Bengal 5: 774 (Nepal)

Cutia nipalensis nagaensis Koels, 1954, Contrib. Inst.

Regional Exploration, No. 1: 9 (Kohima, Naga Hills)

Baker, FBI No. 353, Vol. 1: 329

Plate 80, fig. 3

LOCAL NAMES. *Khatya* (Nepal); *Motum-pho*, *Rapnün-pho* (Lepcha).

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. Male. A handsome but rather dumpy, arboreal bird with white underparts and bold black rib-like markings on flanks. Crown slaty blue. A broad black band from lores to nape. Wing black and slaty blue. Back and upper tail-coverts a striking rufous, the latter covering all but the tip of the tail which is black. Under tail-coverts buff. Under surface of wing white and black.

x c. 1

Female duller than male. Head-band chocolate-brown instead of black. Back dull rufous-brown with drop-like oval black spots.

In flight, this species looks like a short, squat woodpecker with rufous upper tail-coverts.

72

TIMALIINAE

STATUS, DISTRIBUTION and HABITAT. Resident, locally distributed. From Kumaon (specimens in Field Mus. Chicago) and Nepal (mostly in Kathmandu Valley) east through Darjeeling, Sikkim, Bhutan and NEFA; also Nagaland, Manipur and Assam in Cachar and Mizo hills; from c. 1350 to 2500 m. Recorded in winter up to 2100 m in Sikkim, and at c. 900 m in Cachar. Breeding zone not determined but probably above 1500 m. Affects heavy oak and mossy evergreen forest.

Extralimital. The Chin Hills of Burma. The species extends south through the Malay Peninsula and east to Vietnam.

GENERAL HABITS. Keeps in small parties, commonly in the mixed itinerant associations, usually frequenting the foliage canopy of forest trees, running swiftly along the branches or hopping up mossy trunks with rapidity; may occasionally be seen on the ground, collecting grit. Usually rather silent.

FOOD. Beetles and other insects, larvae, pupae, insect eggs, gastropods, seeds and berries (*Viburnum*, *Michelia*, *Magnolia*, etc.).

VOICE and CALLS. A loud, distinctive double chip and a shrill chip (Stanford). A loud, monotonous *chichip-chip-chichip* (*piou-piou-piou...* Smythies) repeated 6 to 160 times or more — SA.

BREEDING. Unknown. Fully fledged young noted in June on Mt Victoria (Heinrich).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young male, like adult but upperparts paler. Young female, like adult female but crown darker; lores, ear-coverts and sides of neck nearly black; spots on back rounder. Barring on flanks in both sexes replaced by twin spots on the feathers. Timeline primary and tail characters not present (HW).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	88-101	20-23	30-33	53-66 mm
♀♀	83-93	19-21	27-30	56-60 mm

(SA, BB, Stresemann)

Weight 9 ♂♂ 48-56; 3 ♀♀ 40-46 g (GD, SDR, SA).

COLOURS OF BARE PARTS. Iris dull crimson-brown. Bill black, basal half of lower mandible bluish. Legs and feet bright (gamboge) yellow.

Genus PTERUTHIUS Swainson

Pteruthius Swainson, 1832, Fauna Boreali-Americana, Bds.: 491.

Type, by original designation, *Lanius erythrorus* Vigors

Hilarocichla Oates, 1889, Fauna Brit. India, Bds. 1: 243.

Type, by monotypy, *Pteruthius rufoenter* Blyth

Bill about half the length of the head, notched and strongly hooked at the tip. Rictal bristles weak. Tarsus strong. Sexes dissimilar.

Key to the Species

Page

A Size large: wing over 70 mm

1 Inner secondaries chestnut

a Crown black.....*P. fasciatus* ♂ 74b Crown grey.....*P. fasciatus* ♀ 74

BABBLERS

73

Page

2	Secondaries chestnut at tip only		
c	Back chestnut.....	<i>P. rufiventris</i> ♂	73
d	Back green.....	<i>P. rufiventris</i> ♀	73
B	Size small: wing under 70 mm		
3	Forehead chestnut (♂) or rufous (♀).....	<i>P. asobarbus</i>	80
4	Forehead grey.....	<i>P. xanthochlorus</i>	76
5	Forehead and crown green		
e	Tips of wing-coverts white.....	<i>P. melanotis</i> ♂	79
f	Tips of wing-coverts ochraceous buff.....	<i>P. melanotis</i> ♀	79

1340. Rufousbellied Shrike-Babbler. *Pteruthius rufiventris* Blyth

Pteruthius rufiventris Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 183
(no locality = Darjeeling)
Baker, FBI No. 360, Vol. 1: 337
Plate 80, fig. 4

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 17 cm (7 in.).

FIELD CHARACTERS. Male. Above, head, wings and tail black, the last and the secondaries narrowly tipped with chestnut. Back and rump chestnut. Below, throat and breast ashy, divided from black of head by a white line. A yellow patch on sides of breast. Belly vinous-brown darker on flanks.

Female. Above, head grey, back of crown and ear-patch black. Back and folded wings bright greenish yellow, the secondaries tipped with chestnut. Lower rump and upper tail-coverts chestnut. Central rectrices green, outer mostly black, all narrowly tipped with chestnut. Below, as in male.

STATUS, DISTRIBUTION AND HABITAT. Sparse resident. East Nepal (Jiri, November 1960 — Fleming & Traylor, *Feldiana*, Zool. 35: 536, the only post-Hodgsonian record) east through Darjeeling, Sikkim, Bhutan and NEFA to the Mishmi Hills, Nagaland and Manipur; between c. 1500 and 2500 m (recorded at 2700 m in winter in Burma). Seasonal movements, if any, unknown. Affects dense, moss-covered oak and evergreen forest, and occasionally secondary scrub.

Extralimital. The Chin Hills and northern Burma into Yunnan; another race in northern Vietnam.

GENERAL HABITS. Keeps in small parties in company with tits and babblers. A fearless, rather lethargic bird feeding near the ground as well as in the tops of lofty trees, hopping from twig to twig.

FOOD. Lepidoptera, beetles and other insects.

VOICE AND CALLS. Not described; usually very silent. 'A curious shrill whirr-i-oh heard from a flock which contained some of these birds was possibly uttered by them' (Stanford).

BREEDING. Unknown.

MUSEUM DIAGNOSIS. See Field Characters.

Young (sex?), very like adult female with dull black head and green back; lesser, median and greater coverts tipped with the greenish colour of the mantle; wings as in adult male; underparts grey shading into white on belly (HW).

BABBLERS

75

STATUS, DISTRIBUTION AND HABITAT. Resident, fairly common, subject to some vertical and erratic movements in winter. The Himalayas from Murree and Kashmir (one record, Dickinson, JBNHS 63: 204) east to the Mishmi Hills; the hills of Assam south to the Mizo Hills; Nagaland and Manipur. East Pakistan hills (?). Breeds between 1500 and 2500 m; winters mostly between 1200 and 2000 m sometimes higher, seldom descending as low as 300 m (Nepal, Rand & Fleming). Affects heavy broad-leaved forest of oak, rhododendron, etc.; in the western Himalayas also pine, deodar and spruce.

Extralimital. Western and northwestern Burma. The species extends north to Szechuan, east to Vietnam, Kwangsi and Fukien, south to Sumatra, Java and northern Borneo.

GENERAL HABITS. Strictly arboreal. Keeps in pairs in the breeding season, otherwise in parties of six to ten birds or singly in the mixed associations of tits, minivets, drongos and other species. Feeds mostly in the higher canopy, running along the boughs and hopping from branch to branch, exploring leaves and crevices and under the moss; or it works its way slowly up a tree, often hopping sideways along a branch or clinging on the trunk sideways like a nuthatch; 'having arrived at the top it may spend half an hour or more calling persistently before resuming its feeding on another tree' (Smythies). Often seen sitting and peering about in a curious short-sighted manner. A remarkably fearless bird, but sluggish in its movements and easily overlooked. Flight jerky, dipping with weak and hurried wing-beats.

FOOD. Beetles, caterpillars and other insects, seeds and berries.

VOICE AND CALLS. A harsh, grating call like the 'churring' of a shrike uttered now and again 10 or more times in quick succession while foraging, varied occasionally by a loud quick-repeated *kekew-kekew*, 3 or 4 times. Each is usually prefaced by a subdued *tik*, audible only at close range. In timbre and cadence this call is strangely reminiscent of the 'wailing' of a domestic chicken that has got separated from its mother hen! Song loud and far-carrying, rendered as *cha-cher, cha-cha-chip* and *cha-wip-chip-chip* (Smythies). Song period in Nepal: February to June (Proud).

BREEDING. Season, April to June. Nest, a loosely made cup of rootlets, fibres and a few twigs, coated on the outside with moss and lichen, lavishly plastered with cobwebs and lined with rootlets. Suspended hammock-wise (like an oriole's nest) in a horizontal fork toward the extremity of a branch, very high up near the top of trees. Extremely difficult to find. Eggs, 2 to 4, pinkish white, profusely marked with tiny flecks and spots of purple-brown, forming a ring around the large end. Variable in size between c. 24 x 19 and 21 x 16 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species. For details of plumage see Baker, loc. cit.

Young male: head grey tinged fulvous; post-ocular streak as in adult; lores, under eye and ear-coverts dark grey. Mantle olive-brown; upper tail-coverts greenish olive. Wings and tail as in adult but lesser, median and greater coverts edged yellowish white, tips of tail yellow. Female differs from adult female in having the head grey-brown like the mantle; ear-coverts dark slate-grey.

Postjuvinal moult involves body, lesser, median and inner half of greater coverts. First-winter birds recognized by remains of edging on the outer greater coverts.

74

TIMALIINAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	85-90	20-22	29-31	(75) 80-84 mm
♀♀	86-89	20	32 (1)	79-85 mm

Weight 7 ♂♂ 44-48; 2 ♀♀ 42, 44 g (SDR, SA).

COLOURS OF BARE PARTS. Variable. Iris grey to blue-grey (brown in one ♀); orbital skin grey. Bill: upper mandible black, lower pale grey to blue-grey, pale flesh to grey at tip. Legs and feet pale pinkish brown to chocolate-brown or fawn colour; claws brown to chocolate or grey-brown; soles yellow (one grey) (Stanford).

1341. Redwinged Shrike-Babbler. *Pteruthius flaviscapitis validirostris* Koelz

Lanius erythropterus Vigors, 1831, Proc. Zool. Soc. London: 22 (Himalaya Mountains = Murree, Punjab, vide Baker, 1922, 'Fauna' 1: 331), *not Lanius erythropterus* Shaw, 1809, preoccupied

Pteruthius erythropterus validirostris Koelz, 1951, Jour. Zool. Soc. India 3: 28 (Kohima Naga Hills, Assam)

Pteruthius erythropterus nocereus Koelz, 1952, Jour. Zool. Soc. India 4: 40 (Tura Mountain, Garo Hills)

Pteruthius erythropterus glauconotus Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 9 (Sangau, Lushai Hills)

Pteruthius validirostris riptigi Biswas, 1960, Bull. Brit. Orn. Cl. 80: 106. New name for *Lanius erythropterus* Vigors, preoccupied
Baker, FBI No. 354, Vol. 1: 331
Plate 80, fig. 8

LOCAL NAME. *Dao-kranji* (Cachari).

SIZE. Myna —; length c. 16 cm (6½ in.).

FIELD CHARACTERS. Male. A stocky short-tailed black and white arboreal bird with chestnut in wings.

Above, head black with a white post-ocular stripe; back ashy grey. Wings black tipped with white, the inner secondaries chestnut. Inner edge of primaries white, conspicuous in flight. Tail black, short. Below, pale ashy, nearly white, the lower flanks vinous brown.

Female. Above, head grey, back brownish grey. Outer edge of folded wing yellowish green tipped white, the inner secondaries chestnut. Central rectrices green, outer blackish tipped yellow. Underparts pale buff.

The chestnut inner secondaries distinguish both sexes. In flight white inner edges to the primaries flash, combining with the underside to give the bird a very white appearance.

76

TIMALIINAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	78-86	18-20	27-30	59-64 mm
♀♀	78-87	17-20	27-29	57-66 mm

Weight 3 ♂♂ 36-38; 6 ♀♀ 34-44 g (SDR, GD, SA).

COLOURS OF BARE PARTS. Iris variable: greenish grey, olive-green, grey, bluish grey, deep blue or brown. Bill: upper mandible black with bluish slate on edges and sides of basal third; lower mandible bluish slate, paler on tip. Legs and feet dark flesh to brownish flesh; claws horny brown; soles fleshy white.

PTERUTHIUS XANTHOCHLORUS Gray

Key to the Subspecies

		Page
A	A white eye-ring.....	<i>P. x. hybridus</i> 78
B	No white eye-ring	
1	Crown of male blackish.....	<i>P. x. xanthochlorus</i> 77
2	Crown of male ashy grey.....	<i>P. x. occidentalis</i> 76

1342. Western Green Shrike-Babbler. *Pteruthius xanthochlorus occidentalis* Harington

Pteruthius [sic] xanthochlorus [sic] occidentalis Harington, 1913, Bull. Brit. Orn. Cl. 33: 82 (Dehra Dun)
Baker, FBI No. 359, Vol. 1: 336

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm. (5 in.).

FIELD CHARACTERS. Male. Above, head grey. Back olive-green. Closed wing greenish with blackish shoulder-patch and a faint, pale wing-bar. Tail with narrow white tip. Below, throat and breast pale ashy; belly yellow. Female slightly duller than male.

STATUS, DISTRIBUTION AND HABITAT. Uncommon resident, subject to some vertical movements. The Himalayas from Murree to western Nepal (Doti district, Fleming, JBNHS 65(2): 331, 1968). Breeds between 1800 and 3000 m, optimum zone 2100-2700 m. Descends in winter to 1200 m but is however regularly seen at this season up to at least 2400 m. Affects forests of oak, spruce, hemlock (*Tsuga*) and deodar.

GENERAL HABITS. Strictly arboreal. A quiet and inconspicuous little bird usually found in groups of two to four in the mixed hunting parties of tits, leaf warblers and tit-babblers, among whom it is easily overlooked.

Often looks deceptively like some leaf-warbler in such a mixed gathering but does not droop or nervously flick wings in the characteristic phylloscopine manner. Distinguished also by comparatively sluggish movements and stiff, upright carriage. Frequent the tops of trees where it hops from twig to twig; also descends to the undergrowth. Often perches along a branch instead of across it, and may sometimes be seen clinging to tree-trunks or creeping along a branch like a nuthatch.

FOOD. Insects (ants, beetles, etc.), berries and seeds.
VOICE and CALLS. Usually very silent. Call, a quick-repeated single note *whit*. For description of song, see 1344.

BREEDING. *Season*, April to August. *Nest*, a deep purse-shaped structure, flimsy and fragile-looking, made of fine fibres and hair-like lichen bound together with cobweb, lined with rootlets and exteriorly decorated with a few flakes of lichen. Suspended hammock-wise in the fork of a small branch by means of cobweb, from about half a metre to 5 m above the ground. *Eggs*, 2 to 4, cream-coloured with blotches of red-brown mostly in a zone at the large end. Average size of 34 eggs 18.4 × 13.7 mm (Baker).

MUSEUM DIAGNOSIS. Like nominate race (1343) but whole crown and nape ashy grey and underparts paler.

Young, as adult but upperparts duller, more olive-brown; grey of head and face not differentiated from upperparts. Underparts paler. Greater and median coverts tipped yellow. Postjuvinal moult involves body, lesser, median and inner greater coverts. First-winter birds distinguished by pale tips of unmoulted greater coverts.

MEASUREMENTS. As in 1343.

COLOURS OF BARE PARTS. Iris grey-brown. Bill blue-grey, pale at tip. Legs and feet fleshy grey.

1343. Eastern Green Shrike-Babbler. *Pteruthius xanthochlorus xanthochlorus* Gray

Pteruthius xanthochlorus Gray, 1846, Cat. Mamm. Bds. Nepal: 95, 155 (Népal)
Baker, FBI No. 358, Vol. 1: 335
Plate 80, fig. 5

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1342 but crown blackish in male, grey in female.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common, subject to some vertical movements. The eastern Himalayas from central Nepal east through Darjeeling, Sikkim and Bhutan into NEFA (Tawang, and probably through the Agency). Affects deciduous or coniferous forest, from 2100 to 3000 m at all seasons, probably descending lower in winter. Recorded at Tawang [27°33'N., 91°48'E.] 3600 m (Whistler MS.; date not given but probably in summer).

GENERAL HABITS and FOOD. As in 1342, q.v.

VOICE and CALLS. As in 1344.

BREEDING. *Season*, chiefly May and June. *Nest*, as in 1342 but apparently somewhat higher — three to eight metres above the ground. *Eggs*, 3 or 4, variable in colour though typical of the genus in character. For details see Baker (*Nidification* 1: 313). Average size of 15 eggs 18.8 × 14.7 mm.

MUSEUM DIAGNOSIS. See Key to the Subspecies. For details of plumage see Baker, loc. cit.

1345. Chestnut-throated Shrike-Babbler. *Pteruthius melanotis melanotis* Hodgson

Pteruthius melanotis Hodgson, 1847, Jour. Asiat. Soc. Bengal 16: 448 (Terai, Southeast Himalayas = Nepal *sic* Gadow, 1883, Cat. Bds. Brit. Mus. 8: 118)
Pteruthius melanotis melanotis Koelz, 1952, Jour. Zool. Soc. India 4: 40 (Kohima, Naga Hills)
Baker, FBI No. 356, Vol. 1: 333
Plate 80, fig. 7

LOCAL NAME. *Ku-er-pho* (Lepcha).

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. Male. *Above*, olive-green with yellow forehead and a grey nuchal collar. A conspicuous white eye-ring and a greyish white supercilium. Lores and round the eye black. A black crescentic line behind yellow ear-coverts. Wing grey with a broad black bar between two narrow white bars. Tail greenish and black with white outer rectrices and tips. *Below*, throat and upper breast chestnut, rest yellow.

Female, like male but head markings less distinct, black area around eye replaced by grey. Eye-ring conspicuous. Throat mostly buffish with cinnamon sides or moustache. Wing greenish, the broad black bar between two narrow salmon-rufous ones instead of white.

P. aenobarbus (1346) male has a chestnut forehead and lacks the black upright crescent on sides of neck. The female has a rufous forehead (v. yellow).

STATUS, DISTRIBUTION and HABITAT. Uncommon resident, subject to vertical movements. From central Nepal east through Darjeeling, Sikkim, Bhutan and NEFA to the Mishmi Hills; from c. 1800 to 2700 m, optimum zone 2100-2400 m, in winter between 700 and 2000 m. Also, more scarcely, Nagaland, Manipur and Assam in the Cachar and Khasi hills (not found in the Garo Hills where Koelz collected *aenobarbus*), south to the Chittagong Hill Tracts of East Pakistan, from 1200 m up to at least 2100 m. Affects humid but cool, deep evergreen forest in the more open parts (glades, stream-sides, etc.).

Extralimital. Extends east through Burma to northern Vietnam; another subspecies in the Malay Peninsula.

GENERAL HABITS. Entirely arboreal; frequents mostly the canopy of trees. In the non-breeding season found either singly, in pairs or in small groups usually in the large mixed roving parties of tits, leaf warblers and other small babblers, sivas, minlas and flycatchers such as *Rhipidura hypoxantha* and *Culicicapa*. Tends to be overlooked amongst these restless gatherings, but its comparatively sluggish movements, dumpy build and upright carriage unmask its identity.

FOOD. Insects (large green grasshoppers etc.).

VOICE and CALLS. Usually silent. Call-note, a pleasant *too-tweet, too-tweet* not often uttered unless the birds are separated (Baker).

BREEDING. *Season*, April to June. *Nest*, a flimsy but strong cup of ferns, the roots, twigs, bits of tendrils and lichen, strengthened with cobweb, the outside more or less covered with moss and lichen; lining, usually scanty,

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	60-64	12-13	20-23	45-49 mm
♀♀	58-64	12 (1)	22 (1)	45 (1) mm

(Rand & Fleming, Kinnear, SA, Stresemann)

Weight 2 ♂♂ 14, 14; 1 ♀ 15 g (SA).

COLOURS OF BARE PARTS. As in 1342.

1344. Chin Hills Green Shrike-Babbler. *Pteruthius xanthochlorus hybridus* Harington

Pteruthius [sic] pallidus hybridus Harington, 1913, Bull. Brit. Orn. Cl. 33: 82 (Mt Victoria, Chin Hills)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1343, but male with a conspicuous white eye-ring.

STATUS, DISTRIBUTION and HABITAT. Scarce resident. Nagaland and Assam in the Mizo Hills (specimens in the Koelz coll.). Affects primeval deciduous forest with dense undergrowth.

Extralimital. The Chin Hills of Burma. The species extends to western Szechuan, southeastern Yunnan and northwestern Fukien.

GENERAL HABITS. Described by Heinrich as a very restless bird found mostly in the undergrowth of forest.

FOOD. As in 1342.

VOICE and CALLS. The song is a rapid, monotonous repetition of a single note reminding one very much of the song of *Stachyris chrysaea* (1212) although not so full and melodious, without any pause between the first and the following notes (Heinrich). Call-note, a single *whit* (Stanford).

BREEDING. Unrecorded.

MUSEUM DIAGNOSIS. Differs from the nominate race (1343) in having a white ring round the eye; head not so dark; sides of neck and flanks paler yellow.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	59-63	11	20-21	45-48 mm
♀♀	59-64	11	19	44-48 mm

(HW, Heinrich)

COLOURS OF BARE PARTS. Iris red-brown. Bill black, lower mandible slaty grey. Legs and feet brown to smoke-brown.

is of rootlets. The nest is suspended between forking horizontal twigs between c. 2 and 5 metres from the ground. *Eggs*, 4 or 5, occasionally 2 or 6, normally pale lilac-white or pale cream stippled with purplish brown or light rufous, especially around the large end. Average size of 40 eggs 17.9 × 13.5 mm (Baker). Incubation by both sexes; period undetermined.

MUSEUM DIAGNOSIS. See Field Characters.

Young, ♂ and ♀ like adult ♀ but browner on upperparts; underparts paler. Postjuvinal moult of body and wing-coverts which then show the sexual distinction (HW).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	55-63	11-12	20-22	39-45 mm
♀♀	56-59	11-13	20-22	38-42 mm

(SA, Rand & Fleming, BB, SDR)

Weight 4 ♂♂ 10-15; 1 ♀ 14 g (SDR, SA).

COLOURS OF BARE PARTS. Iris brown (red-brown, grey in a spring bird — Stanford). Bill: upper mandible dark slate-grey, lower grey to pale flesh. Legs whitish brown to pale fleshy brown.

1346. Chestnutfronted Shrike-Babbler. *Pteruthius aenobarbus aenobarbulus* Koelz

Pteruthius aenobarbus aenobarbulus Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 9 (Nokrek, Garo Hills)
Baker, FBI No. 357, Vol. 1: 335 (= *intermedius*)
Plate 80, fig. 6

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. Male. *Above*, forehead chestnut; forecrown yellow; rest of upper plumage olive-green. A conspicuous white eye-ring surrounded by an incomplete black ring; a greyish white supercilium behind which a patch of grey (not forming a nuchal collar); ear-coverts yellow. Wing green with white outer edge and white tips to secondaries, and a large black shoulder-patch across which are two broad white bars. Outer rectrices black tipped white, the outermost white with a black streak near tip of outer web. *Below*, throat deep chestnut; rest of underparts yellow.

Distinguished from *melanotis* mainly by the chestnut forehead (v. yellow) and absence of the crescentic black patch on side of neck.

Female, forehead rufous-chestnut; no black round white eye-ring; shoulders olive-green with two salmon-buff bars. Throat pale ochraceous; rest of underparts greyish white with a tinge of yellow. Distinguished from female *melanotis* by same characters as male.

STATUS, DISTRIBUTION and HABITAT. Known only from the type specimen collected by Koelz in the Garo Hills, Assam. Altitude not given. Affects fairly open forest and edges of evergreen.

Extralimital. The species extends east to Vietnam and Kwangsi, and south through the Malay Peninsula and Java.

BABBLERS

81

GENERAL HABITS. Similar to those of *melanotis*; seems to frequent lower trees and bushes.

FOOD. Insects.

VOICE and CALLS. Unrecorded.

BREEDING. Season, probably April and May; Koelz reports his specimen of 7 March as 'breeding male'. Nest and eggs not recorded in detail but appear to be similar to those of *melanotis*. Average size of 9 eggs 18.5 x 13.3 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. Differs from *intermedius* of Burma in having the brown of throat much restricted, not descending over the breast, but sharply defined as a throat-patch. Yellow of forehead deeper; upperparts more yellow, less green (Koelz).

MEASUREMENTS and COLOURS OF BARE PARTS. Unrecorded.

Genus *GAMPSORHYNCHUS* Blyth

Gampsorhynchus Blyth, 1844, Jour. Asiat. Soc. Bengal 13 (1): 370.

Type, by monotypy, *G. rufulus* Blyth

Tail longer than wing, much graduated. Bill about half the length of head; upper mandible curved at tip. Rictal bristles very long and stiff.

1347. Whiteheaded Shrike-Babbler. *Gampsorhynchus rufulus rufulus* Blyth

Gampsorhynchus rufulus Blyth, 1844, Jour. Asiat. Soc. Bengal 13 (1): 371

(Darjeeling)

Gampsorhynchus rufulus chomensis Koelz, 1954, Contrib. Inst.

Regional Exploration, No. 1: 4 (Nichuguard, Naga Hills)

Baker, FBI No. 232, Vol. 1: 231

Plate 78, fig. 1

LOCAL NAMES. *Gungto-phet-pha* (Lepcha); *Daphlantu-tiba* (Cachari).

SIZE. Bulbul +; length c. 23 cm (9 in.).

FIELD CHARACTERS. Whole head, nape, a shoulder-patch, throat, breast and belly white, the latter washed with buff. Under tail-coverts buff. Rest of plumage olive-brown, wing with buff inner edge. Tail strongly graduated and tipped with buff. Sexes alike.

Young (immature) has light chestnut head and breast.

STATUS, DISTRIBUTION and HABITAT.

Resident, generally common. The base of the hills from eastern Nepal (specimens in Brit. Mus.) through Darjeeling, Sikkim, N. Bengal (Jalpaiguri dist., Bhutan, and NEFA to the Mishmi Hills; Nagaland, Manipur and the hills of Assam south to the Chittagong region of East Pakistan; from the edge of the plains to c. 1200 m. Affects secondary growth, bamboo, bush and grass jungle and undergrowth in evergreen forest in broken foothills country.



BABBLERS

83

ACTINODURA EGERTONI Gould

Key to the Subspecies

	Page
A Crown-feathers edged with black..... <i>A. e. levisi</i>	84
B No black edging to crown-feathers	
1 Crown ashy brown or dark grey contrasting with mantle	
a Back rufous-brown..... <i>A. e. egertoni</i>	83
b Back olive-brown..... <i>A. e. ripponi</i>	85
2 Crown browner, less ashy, less contrasting with mantle... <i>A. e. khasiana</i>	85

1348. Himalayan Barwing. *Actinodura egertoni egertoni* Gould

Actinodura Egertoni Gould, 1836, Proc. Zool. Soc. London: 18 (Nepal)

Baker, FBI No. 321, Vol. 1: 303

Plate 78, fig. 4

LOCAL NAME. *Ramio-pha* (Lepcha).

SIZE. Bulbul +; length c. 23 cm (9 in.).

FIELD CHARACTERS. Above, forehead rufous; loose, mop-like ashy brown crest, and ear-coverts paler. Back and rump rufous-brown. Wing narrowly cross-banded, a black patch within a large rufous patch, and a pale outer edge. Tail strongly graduated, rufous-brown, narrowly cross-banded, each feather tipped white. Below, chin rufous, throat and breast pinkish brown; rest of underparts tawny olive, centre of belly white. Under surface of tail dark grey with white spots. Sexes alike.

May be mistaken for *Garrulax lineatus* but distinguished by barred wings. *Actinodura nipalensis* and *A. waldeni* have a darker crown and black tail.

STATUS, DISTRIBUTION and HABITAT. Common resident. The Himalayas from central Nepal (Biswas, JBNHS 59: 220; Stevens *et al.* Baker, *Nidification* 1: 281), east through Darjeeling, Sikkim, Bhutan and NEFA to the Miri Hills. Breeds from 1200 to at least 2000 m (2400 m, Osmaston *et al.* Baker); recorded in winter from 1000 to 1800 m and around Buxa duars (W. Bengal). Affects dense secondary growth and mixed trees-and-scrub in evergreen forest.

GENERAL HABITS. Keeps in pairs during the breeding season, otherwise in small slow-travelling parties of six to twelve, usually not associating with other species though sometimes found in company of sibilas and laughing thrushes whose habits and behaviour are very similar. Frequents dense thickets, bushes and low trees, occasionally the high canopy, clambering about and poking into holes and crannies, and foraging about amongst clumps of orchids and other epiphytes, at times clinging upside-down like a tit or fluttering in front of a sprig. Dives into undergrowth when alarmed. Pairs form in the latter half of April.

FOOD. Mainly insects (grasshoppers, ants, etc.); also berries, figs and seeds.

VOICE and CALLS. A feeble conversational *chee* constantly uttered while feeding (SA). For description of song see 1351.

BREEDING. Starts, April to July. Nest, cup-shaped, made of fern, bamboo or other dead leaves held together with fibrous roots, coated exteriorly with green moss and lined with rootlets; amount and proportion of each material

82

TIMALIINAE

Extralimital. Burma. The species extends east to Vietnam and south through the Malay Peninsula.

GENERAL HABITS. Arboreal, gregarious and noisy. Keeps in parties up to fifteen, often in association with wood shrikes, drongos, scimitar babblers and others in thick shrubbery and clumps of bamboo. Usually tame and inquisitive. More active on the wing than most Timaliidae. General appearance, flight and behaviour reminiscent of the bulbuls.

FOOD. Insects; berries (?).

VOICE and CALLS. A weird, grating *kaw-ka-yark* (Smythies), and a variety of calls incessantly uttered.

BREEDING. Season, end of April to August, chiefly May. Nest, a shallow flimsy saucer of dead leaves, twigs, roots and lichen bound together with roots and tendrils, plastered with cobweb, and lined with fine grass and rootlets. Placed in bushes a couple of metres from the ground. The species appears to move into deeper evergreen forest for breeding purposes. Eggs, 3 or 4, of two types: pale green with blotches of dark brown and secondary markings of dull grey scattered over the whole surface but more numerous at the larger end; or pale dull reddish with primary markings of reddish brown. Except for size, they resemble the eggs of *Pellorneum albiventre* (1164). Average size of 20 eggs 29.9 x 17.6 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. For details of plumages see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	90-100	20-21	26-31	110-120 mm (Baker, SA)

Weight 1 ♂ 57 g (SDR).

COLOURS OF BARE PARTS. Iris yellow ('orange-straw' — SA). Bill plumbeous, paler on lower mandible. Legs, feet and claws flesh; soles yellowish.

Genus *ACTINODURA* Gould

Actinodura Gould, 1836, Proc. Zool. Soc. London: 17.

Type, by original designation, *Actinodura Egertoni* Gould

Sibia Hodgson, 1836, Asiat. Res. 19: 145. Type, by monotypy, *Sibia*?

Nipalensis = *Cinclosoma*? *Nipalensis* Hodgson

Irops 'Hodgson' = Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 929, 953.

Type, by monotypy, *Cinclosoma Nipalense* Hodgson = *Sibia Nipalensis* Hodgson

Bill about half the length of head. Rictal bristles long; chin feathers with hair-like tips. Wing feathers narrowly cross-banded. Tail graduated, considerably longer than wing.

Key to the Species

	Page
A Forehead rufous..... <i>A. egertoni</i>	83
B Forehead brown, concolorous with crown	
1 Feathers of crown with pale edges..... <i>A. waldeni</i>	83
2 Feathers of crown with pale shaft-streaks..... <i>A. nipalensis</i>	86

84

TIMALIINAE

varies in different nests. Placed in bushes or small trees from one to six metres above the ground. Eggs, 3, or sometimes 4, pale blue, marked all over with dark brown blotches, spots, loops, whorls and fine lines. Many eggs very similar to those of *Garrulax phoeniceus* (1332). Average size of 25 eggs 22.9 x 17.7 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies. For details of plumage see Baker, loc. cit.

Young, like adult but crown brown instead of ashy brown; underparts more uniformly ochraceous brown, no white on belly.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	79-90	17-19	29-33	93-115 mm (SA, Stresemann)

Weight 2 ♂♂ 33, 37; 2 ♀♀ 33, 36 g (SA).

COLOURS OF BARE PARTS. As in 1349.

1349. Mishmi Barwing. *Actinodura egertoni levisi* Ripley

Actinodura egertoni levisi Ripley, 1948, Proc. Biol. Soc. Washington 61: 105

(Drey, Mishmi Hills)

Not in Baker, FBI

LOCAL NAME. None recorded.

SIZE. Bulbul +; length c. 23 cm (9 in.).

FIELD CHARACTERS. As in 1348, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. NEFA in the Mishmi Hills (Ali & Ripley, JBNHS 48: 28; Baker, *Records Ind. Mus.* 8: 263), probably intergrading with *egertoni* in the Abor Hills. Affects scrub jungle and dense shrubbery in evergreen forest.

GENERAL HABITS, FOOD and VOICE. As in 1348.

BREEDING. Unrecorded; probably as in 1348.

MUSEUM DIAGNOSIS. Differs from *egertoni* (1348) in having pronounced dark edgings on a very grey head, in having more dark grey wash on the neck, a darker back, and a tendency to broader striping on the tertaries. Differs from *khasiana* in being darker and not having the pronounced barring on the central rectrices. Differs from *riptoni* in being much darker, more rufous brownish on the back and more rufous on tail.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
4 ♂♂	81-90	20	29-31	104-116 mm
8 ♀♀	81-91	19-20	29-31	101-111 mm (MD)

COLOURS OF BARE PARTS. Iris brownish grey. Bill: upper mandible brown, lower mandible yellow at base, fleshy at tip. Legs and feet brownish flesh.

BABBLERS

85

1350. Assam Barwing. *Actinodura egertoni khasiana* Godwin-Austen

Actinodura khasiana Godwin-Austen, 1876, Jour. Asiat. Soc. Bengal 45: 76
(Khasia Hills)

Actinodura egertoni montivaga Koels, 1954, Contrib. Inst.
Regional Exploration, No. 1: 7 (Kohima, Naga Hills)
Baker, FBI No. 322, Vol. 1: 304

LOCAL NAMES. *Nya-si, Kō-yu* (Naga).

SIZE. Bulbul +; length c. 23 cm (9 in.).

FIELD CHARACTERS. As in 1348, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Assam in the Khasi and Cachar hills, Nagaland and Manipur. Breeds between c. 1200 and 2200 m. Affects dense evergreen forest, scrub jungle and secondary growth.

GENERAL HABITS, FOOD AND VOICE. As in 1348.

BREEDING. As in 1348. Average size of 100 eggs 23.4 × 17.7 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *lewisi* (1349) in being pale and having more pronounced barring on central rectrices. Differs from *egertoni* (1348) in having the crown browner, less ashy and not so contrasting with mantle, the rufous of forehead paler and not extending to the crown; back, rump and upper tail-coverts more ochraceous; central rectrices more distinctly barred.

MEASUREMENTS. As in 1349.

Weight 3 ♂♂ 38 (3); 1 ♀ 35 g (SDR).

COLOURS OF BARE PARTS. As in 1349.

1351. Mizo Barwing. *Actinodura egertoni ripponi* Ogilvie-Grant

Actinodura ripponi Ogilvie-Grant, 1907, Ibis: 186

(Mt Victoria, Chin Hills, 6000-7000 feet)

Baker, FBI No. 323, Vol. 1: 305

LOCAL NAMES. None recorded.

SIZE. Bulbul +; length c. 23 cm (9 in.).

FIELD CHARACTERS. As in 1348, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to some vertical movements. Assam in the Mizo Hills. Altitudinal distribution undetermined here, but in the Chin Hills breeds above 1500 m and on Mt Victoria between 2000 and 2600 m; descends in winter to 1200-1800 m, some straying down to the foothills. Affects high bushes and low trees in dense, shady, primeval forest.

Extralimital. Southwestern Burma.

GENERAL HABITS AND FOOD. As in 1348.

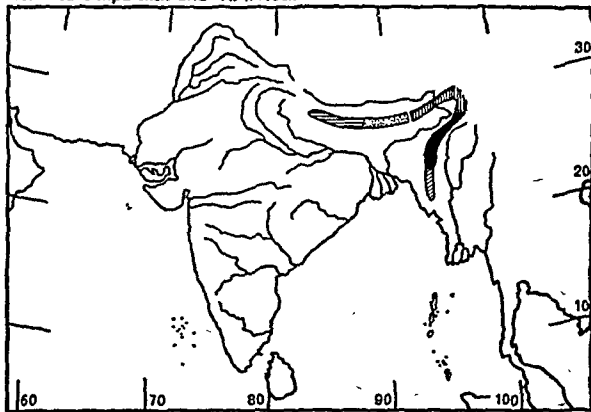
VOICE AND CALLS. The song consists of a three-noted whistle reminding one of the notes of the Grey Tit but louder and sharper, rendered as *ti-ti-ti*, the first note accentuated, the last lower (Heinrich).

BREEDING. Mostly April and May. Nest and eggs as in 1348. Average size of 30 eggs 22.6 × 17.4 mm (Baker).

MUSEUM DIAGNOSIS. Like *khasiana* (1350) but crown dark grey; back, rump and upper tail-coverts olive-brown.

BABBLERS

87

Actinodura nipalensis and *A. waldeni*

Distributional ranges

▨ *A. n. nipalensis* (1352) ▨ *A. n. vinctura* (1353) ▨ *A. w. dalensis* (1354).
▨ *A. w. waldeni* (1355) ▨ *A. w. polioptila* (1356).

FOOD. Mostly insects (beetles, caterpillars, etc.); also gastropods, berries, seeds, nectar, flower-buds and moss.

VOICE AND CALLS. A whistle *tui whee-er* very like that of the Streaked Laughing Thrush (Proud). Alarm, a loud, rapid *je-je* . . . repeated eight or ten times (Fleming).

BREEDING. Little known. Season, May and June. Nest, a neat, compact cup, rather small for the size of the bird, made of fine grass bents with some lichen and moss on the exterior, lined with rootlets. One nest was reported to be placed on a sapling. Eggs, apparently 2, pale pinky white marked with bold blotches of reddish brown and secondary blotches of inky grey, forming a well-defined ring at the large end. Two eggs measured 27.1 × 18.7 and 25.2 × 18.8 mm (Baker).

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young, as adult. Primary and tail characters of juvenal *timaliinae* not present.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	90-96	21-22	c. 31	82-84 mm
♀♀	83-97	21-22	—	77-80 mm

Weight 5 ♂♂ 44-48; 5 ♀♀ 39-45 g (GD).

COLOURS OF BARE PARTS. Iris brown. Bill dark brown. Legs and feet fleshy to greyish brown or brown.

86

TIMALIINAE

MEASUREMENTS

Wing 10 ♂♂ 86-93; 3 ♀♀ 83-90 mm (Heinrich)

Tail ♂♂ 113-122 mm (Ticehurst)

COLOURS OF BARE PARTS. Iris olive-yellow; orbital skin grey-green. Bill brown, yellow at gape. Legs and feet grey-brown.

ACTINODURA NIPALENSIS (Hodgson)

Key to the Subspecies

Black band on tail over 20 mm wide *A. n. vinctura*
Black band on tail under 20 mm wide *A. n. nipalensis*

1352. Nepal Hoary Barwing. *Actinodura nipalensis nipalensis* (Hodgson)

Cinclosoma? Nipalensis Hodgson, 1836, Asiat. Res. 19: 145

(Nepal, restricted to slopes of Kathmandu Valley, central Nepal, by Ripley)

Baker, FBI No. 326 (part), Vol. 1: 307

Plate 78, fig. 2

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. Above, forehead and loose mop-like crest dark brown with pale shaft-streaks. A pale eye-ring. Ear-coverts grey. Moustachial stripe black. Back and rump rufous-brown. Wing rufous, narrowly barred with black; a black shoulder-patch (primary-coverts) and a grey patch above it (tips to secondary-coverts). Tail graduated; central rectrices narrowly barred, terminal third and outer rectrices black, the latter tipped with white. Throat and breast grey, lower belly and under tail-coverts rufous-brown. Sexes alike.

A. waldeni is very similar but has the underparts entirely rufous-brown. *A. egertoni* is distinguished by the longer tail, rufous breast, white centre of belly, lack of grey patch on wing and lack of black on upper surface of tail.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Western and central Nepal from 1800 to 3300 m; probably does not breed at the lower levels of this zone. Not recorded below 1800 m even in winter. Affects the upper oak forest and mixed oak, conifer and rhododendron with plenty of undergrowth.

GENERAL HABITS. Arboreal. Keeps in small parties of three to ten in company with yuhinas, sivas and sibilas. Frequents mostly the upper branches of middle-sized trees, feeding chiefly on insects concealed in the mossy growth adhering to trunks and branches. May be seen hopping swiftly up a tree-trunk or feeding while clinging to it. Occasionally descends to or near the ground.

88

TIMALIINAE

1353. Eastern Hoary Barwing. *Actinodura nipalensis vinctura* Ripley

Actinodura nipalensis vinctura Ripley, 1950, Proc. Biol. Soc. Washington 63: 104

(Mangalbari, Dankuta District, east Nepal)

Baker, FBI No. 326 (part), Vol. 1: 307

LOCAL NAME. *Ramnio-pho* (Lepcha).

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1352, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Eastern Nepal from the Okhaldunga district east through Darjeeling, Sikkim and Bhutan; from 2100 to at least 3000 m at all seasons. Affects evergreen forests of oak, fir, rhododendron with dense undergrowth of ringal bamboo, *Rubus*, etc.

GENERAL HABITS, FOOD AND VOICE. As in 1352.

BREEDING. As in 1352.

MUSEUM DIAGNOSIS. Differs from the nominate race (1352) chiefly by the wider black terminal band on upper surface of tail.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂	89-94	19-21	31-34	85-88 mm
4 ♀♀	83-88	19-23	29-34	79-84 mm (SA)

18 ♂♂ 86-94 mm (Stresemann)

Weight 2 ♂♂ 44, 46; 3 ♀♀ 39-44 g (SA).

COLOURS OF BARE PARTS. As in 1352.

ACTINODURA WALDENI Godwin-Austen

Key to the Subspecies

Throat and breast grey, streaked with rufous-brown . . . *A. w. dalensis*
Throat and breast tawny brown with fulvous streaks . . . *A. w. waldeni*

1354. NEFA Barwing. *Actinodura waldeni dalensis* Godwin-Austen

Actinodura dalensis Godwin-Austen, 1875, Ann. Mag. Nat. Hist. 16: 340
(Dafia Hills, NE. Bengal)

Baker, FBI No. 329, Vol. 1: 309

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. Above, very similar to *A. nipalensis* but crown-feathers a darker brown with pale edges, giving the crown a scalloped aspect. Rest of upperparts as in *nipalensis*. Moustachial stripe and ear-coverts paler, streaked with whitish. Below, grey with rufous-brown streaks on throat and breast (*A. nipalensis* has plain grey underparts). Sexes alike.

Distinguished from *A. egertoni* by the shorter tail, black on its upper surface terminal half, and by the lack of white on belly.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to some vertical movements. NEFA from the Dafia Hills to the Mishmi Hills; from

BABBLERS

89

c. 2400 to 3300 m in summer, descending to c. 1500 m in winter. Affects mossy evergreen and mixed forest.

Extralimital. Southeastern Tibet in the Pachakshiri area.

GENERAL HABITS AND FOOD. As in 1355.

VOICE AND CALLS. As in 1355.

BREEDING. Unknown; presumably as in *nipalensis* (1352).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1355.

1355. Manipur Barwing. *Actinodura waldeni waldeni* Godwin-Austen

Actinodura waldeni Godwin-Austen, 1874, Proc. Zool. Soc. London: 46, pl. 12 (Japoo Peak, Naga Hills)

Baker, FBI No. 327, Vol. 1: 308

Plate 78, fig. 5

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1354, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, probably subject to some vertical movements. Manipur, Nagaland and adjacent north Cachar (Baker, JBNHS 8: 203); from 2200 m up in summer. Affects shady moss forest in steep valleys.

Extralimital. The subspecies *saturation* is found in northeastern Burma and northwestern Yunnan; the subspecies *poliotis* (1356) with deep rufous or maroon-brown upperparts and dark grey ear-coverts is found in the Chin Hills of Burma and may occur in the Mizo Hills.¹

GENERAL HABITS do not differ from those of *A. nipalensis* (1352). Usually seen clambering about mossy trunks, pulling the moss to pieces and feeding on the insects it harbours. Generally keeps to medium heights in trees but does not shun low bushes. Actions somewhat phlegmatic; remarkably tame and unperturbed by the presence of man.

FOOD. As in 1352.

VOICE AND CALLS. Call-note, a soft *chup, chup*; also a mewling note and a *churr* (Smythies).

BREEDING. Unknown; presumably as in *A. nipalensis* (1352).

MUSEUM DIAGNOSIS. Differs from *dafiensis* (1354) in being paler above with the chestnut brighter; underparts entirely tawny brown with paler, fulvous streaks on throat and breast.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	89-97	21	31	79 mm
♀♀	86-99	22	32	75 mm

(Wing SDR. Bill, tarsus, tail 1 ♂, 1 ♀, MD)

Weight 10 ♂♂ 39-56; 8 ♀♀ 41-53 g (SDR).

COLOURS OF BARE PARTS. Iris brownish grey. Bill dark brown. Legs and feet brown.

¹ Omitted here for want of any definite record within Indian limits. It is rare on Mt Victoria.

BABBLERS

91

branches, clinging upside down and sideways to the sprigs and working through the foliage in the manner of tits, but slower in its movements. Sometimes makes short hopping or sidling spurts along the moss-covered trunks and branches like a creeper or nuthatch; searching methodically for insects under the moss and lichen.

FOOD. Chiefly insects and their larvae; also seeds.

VOICE AND CALLS. A peculiar, rattling, shrill *tri-krō... tschitsa... tri-krō* (Heinrich). A high-pitched *ui-ui-ui*; a loud *chik* repeated seven or eight times; a frequent, high-pitched *tsi... tsi*; a high-pitched *chitititit*; a tit-like *whi-whi-te-rik-rik*; song, some loud, ringing notes: *tuiyi-tuiyuu*... (Lister; for more details see JBNHS 52: 32).

BREEDING. Little known. *Season*, May and June. *Nest*, a rather deep cup of moss and rootlets, lined with hair and rootlets, and placed in the fork of 'some bushy tree at no great height from the ground' (Hodgson). *Eggs*, 2 to 4, pale blue, marked with specks and tiny spots of black or reddish brown, generally forming a ring around the large end. Average size of 12 eggs 19.4 × 14.4 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. For details of plumages see Baker, loc. cit.

Young, like adult female but mantle slightly darker and white parts of plumage not so pure.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	63-70	12-14	20-22	52-58 mm
♀♀	59-66	12-14	19-21	51-58 mm

(SA, Rand & Fleming, Kinnear, Mayr)

Weight ♂♂ 12-16; ♀♀ 11-16 g (SDR, GD, SA). 5 ♂♂ 13-18 g (SA).

COLOURS OF BARE PARTS. Iris brown to pale yellow. Bill blackish brown, plumbeous on lower mandible. Legs, feet and claws olive-brown; soles yellow.

MINLA STRIGULA (Hodgson)

Key to the Subspecies

	Page
A Chestnut on tail restricted to basal half	
1 Crown paler..... <i>M. s. simlaensis</i>	91
2 Crown darker..... <i>M. s. strigula</i>	92
B Chestnut on tail extending to c. 20 mm or less from tip	
3 Eye-ring pale yellow..... <i>M. s. yunnanensis</i>	94
4 Eye-ring whitish..... <i>M. s. cinereigula</i>	95

1358. Western Barthroated Siva. *Minla strigula simlaensis* (Meinertzhagen)

Siva strigula simlaensis Meinertzhagen, 1926, Bull. Brit. Orn. Cl. 46: 128 (Simla)

Baker, FBI No. 333 (part), Vol. 1: 313

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 14 cm (5½ in.).

TIMALIINAE

90

Genus MINLA Hodgson

Minla Hodgson, 1837 (Apr. 13), Ind. Rev. 2 (1): 32, 44. Type,

by original designation, *Minla ignotincta* Hodgson

Siva Hodgson, 1837 (May 13), Ind. Rev. 2 (2): 88. Type,

by original designation, *Siva cyaneoptera* Hodgson

Staphida Swinhoe, 1871, Proc. Zool. Soc. London: 373. Type,

by original designation, *Siva torquata* Swinhoe

Bill slender, pointed and slightly notched. Rictal bristles well developed. Outer edge of wing and tail brightly coloured.

Key to the Species

	Page
A Edge of wing blue..... <i>M. cyaneoptera</i>	95
B Edge of wing yellow or red	
1 Throat barred..... <i>M. strigula</i>	91
2 Throat not barred..... <i>M. ignotincta</i>	90

1357. Redtailed Minla. *Minla ignotincta ignotincta* Hodgson

Minla ignotincta Hodgson, 1837, Ind. Rev. 2 (1): 32, 44

(Central and northern regions of the hills, Nepal)

Baker, FBI No. 377, Vol. 1: 355

Plate 80, fig. 12

LOCAL NAMES. *Minla* (Nepal); *Megblim-ayens*, *Megblim-adam* (Lepcha); *Pobhum dasin* (Dafia).

SIZE. Sparrow; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Male. *Above*, head black with a long, white supercilium from lores to nape. Back chocolate-brown. Wings black with white tips and crimson outer edge. Tail black with crimson outer edge and tip; a white patch at base. *Below*, chin and throat whitish, rest pale yellow.

Female, like male but back olive-brown, red on wings and tail and yellow of underparts paler. When flitting high up in tall trees, the tail looks comparatively long and narrow, reminiscent of Redheaded Tit (1819).

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to marked vertical movements. From central Nepal east through Darjeeling, Sikkim, Bhutan and NEFA; also Assam in Cachar and Khasi (?) hills, Nagaland and Manipur, south to the Chittagong region in E. Pakistan. From 1800 to 3100 m, locally up to 3400 m (Nepal—Diesslhorst) and perhaps as low as 1350 m (Sikkim—Stevens). Winters mostly below 1800 m (but recorded at 2400 m) and commonly reaches the foothills and duars (e.g. Buxa—Inglis, JBNHS 26: 990). Affects humid, dense forest, mixed, deciduous or evergreen, in the breeding season being most common in oak and arborescent rhododendron forest.

Extralimital. The species extends to southeastern Szechuan, Kwangsi and northern Vietnam.

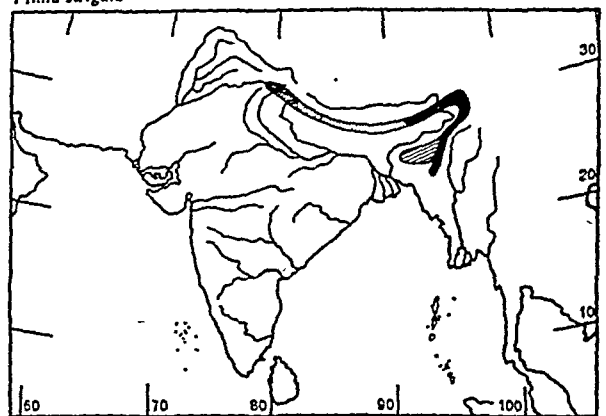
GENERAL HABITS. Arboreal, sociable, and very similar to those of its congeners. Usually found in parties, sometimes of considerable size, with yuhinas, shrike-babblers, tits, sunbirds, etc. Frequents tree-tops and higher

TIMALIINAE

92

FIELD CHARACTERS. As in 1359, q.v.

STATUS, DISTRIBUTION AND HABITAT. Fairly common resident, subject to vertical movements. The western Himalayas from Kangra to western Nepal (Fleming, *Fieldiana* 53: 175). Breeds from 2100 m (Kangra) and 2400 m

Minla strigula

simlaensis (1358).

strigula (1359).

yunnanensis (1360).

cinereigula (1361).

(Garhwal) up to 3600 m. Winters between 1300 and 2250 m. Affects open forest of birch, willow, barberry, etc., oak and rhododendron scrub or other low bushes; in winter frequents bushes in heavy jungle.

GENERAL HABITS AND FOOD. As in 1359.

VOICE AND CALLS. A distinctive, varied combination of *pip* and *peep* (HW). In the breeding season, a melancholic whistle of three notes uttered somewhat slowly and deliberately at equal intervals, the last note lower (Osmaston); see also No. 1359.

BREEDING. As in 1359. Average size of 12 eggs 20.4 × 15.3 mm (Baker).

MUSEUM DIAGNOSIS. Like *strigula* (1359) but crown paler; back with variable amount of grey; chestnut on tail confined to basal half and rather paler.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1359.

1359. Eastern Barthroated Siva. *Minla strigula strigula* (Hodgson)

Siva strigula Hodgson, 1837, Ind. Rev. 2 (2): 89 (Nepal)

Baker, FBI No. 333 (part), Vol. 1: 313

Plate 80, fig. 9

LOCAL NAME. *Megblim* (Lepcha).

SIZE. Sparrow; length c. 14 cm (5½ in.).

BABBLERS

93

FIELD CHARACTERS.



x c. 1

Above, crown orange-brown, slightly tufted. A pale yellow eye-ring and post-ocular stripe. Ear-coverts grey. Back greyish olive. Closed wing with a bright orange outer edge, a black shoulder-patch; secondaries pale ashy and black, tipped with white. Tail black, partly chestnut on the basal half, edged and tipped with bright yellow. *Below*, chin orange; throat whitish narrowly barred with black; a black malar stripe. Rest of underparts including under surface of tail yellow. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. From west-central Nepal east through Darjeeling, Sikkim and Bhutan. Breeds between 1800 and 3600 m, chiefly in the subalpine forest at timber-line. Winters mostly between 1300 and 2700 m [recorded as low as 800 m (Meinertzhagen) and as high as 3700 m (Schäfer) in Sikkim during the cold season]. In the breeding season, affects mostly subalpine oak and rhododendron forest. In winter it is met with in pine, mixed forest, bamboo and scrub jungle.

GENERAL HABITS. Arboreal. Keeps in restless parties of six to twenty individuals, usually in the mixed itinerant bird associations, often with Redtailed Minlas and Bluewinged Sivas, hunting actively in the higher bushes and crowns of medium height trees, in the same niche as *Tuhina-gularis*. The birds run or slide up branches and hanging creepers with the agility of a mouse, and 'flow' in waves from tree to tree. Sometimes they may be seen resting side by side on a twig, snuggled up in the manner of munias.

Display. 'The birds collect into flocks of fifteen to fifty birds, and these break up into pairs which all remain together in the same tree. The two birds of each pair sit very close together, tails on opposite sides of the branch and separated by at least six inches (15 cm) from the next pair. They then alternately bow and stretch their heads up to the fullest extent, the feathers of the head and neck fluffed out, all the time keeping up a continual churring note and a sweet whistle. They frequently reverse their positions on the branch, and both birds always do this at the same instant as if at a signal, so that they never both have their tails the same side of a branch even for a second. The whole performance is like an elaborate dance and will continue for an hour or more without a break. Each pair normally takes no notice of any other birds in the tree, but I have occasionally seen one bird leave its partner and commence to bow to the nearest bird of the next pair, this leading to much scuffling and disturbance. The three-noted song is not heard during this display which appears to be performed only collectively' (Proud, JBNHS 53: 59).

FOOD. In summer almost exclusively insects (caterpillars, beetles, etc.); berries and seeds are also taken in other seasons. Often visits rhododendron blossoms for nectar and insects.

VOICE and CALLS. Song, a loud, rather hoarse-sounding strophe, most often of four syllables, rendered as *ti-ti-ti-ti* (Diesselhorst) or *too-sweet-sweet*, the second note highest (Heinrich, Smythies). Another song is described

BABBLERS

95

MEASUREMENTS

	Wing	Tail
♂♂	64-73	74 (2) mm
♀♀	66-70	67-72 mm

(Heinrich, SDR, Mayr)

Weight 1 ♂ 21; 2 ♀ 17, 21 g (SDR).

COLOURS OF BARE PARTS. As in 1359.

1361. Assam Barthroated Siva. *Minla strigula cinereigenae* (Ripley)

Siva strigula cinereigenae Ripley, 1952, J. Bombay nat. Hist. Soc. 50: 500 (Mt Japvo, western Naga Hills, Assam)

Baker, FBI No. 333 (part), Vol. 1: 313

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As in 1359, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, uncommon or rare. Western Nagaland (Mt Japvo) and presumably the adjacent region of northwestern Manipur, and Assam in the Khasi Hills above 1800 m (Godwin-Austen). Affects oak and rhododendron forest, and bamboo-and-scrub jungle.

GENERAL HABITS, FOOD and VOICE. As in 1359.

BREEDING. Not recorded; probably as in 1359.

MUSEUM DIAGNOSIS. Differs from *yunnanensis* in having a whitish eye-ring and whitish supercilium; sides of cheeks grey, mottled with whitish and dusky. Differs from *strigula* in being darker, more brownish orange on the crown and more olive brownish on back and having a greater area of chestnut on tail; eye-ring, supercilium and cheeks greyish rather than suffused with yellowish; chin colour less bright.

MEASUREMENTS

	Wing	Bill	Tail
	(from feathers)		
5 ♂♂	66-71	12-13	64-73 mm
7 ♀♀	63-67	12-13	44-69 mm

(SDR)

Weight ♂♂ 18-21; ♀♀ 17-19 g (SDR).

COLOURS OF BARE PARTS. As in 1359.

1362. Bluewinged Siva. *Minla cyanouroptera cyanouroptera* (Hodgson)

Siva cyanouroptera Hodgson, 1837, Ind. Rev. 2 (2): 83 (Nepal)

Leiothrix lepida Horsfield, 1839, Proc. Zool. Soc. London: 162 ex McClelland MS. (Assam = Naga Hills, *vide* Koelz, 1954, op. cit., below: 8)

Siva cyanouroptera aglae Deignan, 1942, Notulae Naturae, Philadelphia, No. 100: 2 (Mt Victoria, 2600 metres, Chin Hills, near Pakokku, Burma)

Siva cyanouroptera thalia Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 8 (Mawphlang, Khasi Hills)

Siva cyanouroptera rama Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 8 (near Nokrek, Garo Hills)

Baker, FBI No. 335, Vol. 1: 314

Plate 80, fig. 10

LOCAL NAME. Meghlin adam (Lepcha).

94

TIMALIINAE

as a jumble of sweet notes mingled with harsh squeaks and chirps uttered continuously for a minute or more. Song period in Nepal: March to July with a resumption in October (Proud). Call-note, a mellow *pe-ra-trip* and a louder *pe-eo*.

BREEDING. Season, end of April to July. Nest, a cup of grass, bamboo leaves, moss and birch bark, held together with thread-like *Umsa* lichen, and lined with hair, rootlets, pine needles, or fern stalks. Placed in bushes, usually within three metres from the ground. Eggs, normally 3, deep blue or blue-green (fading quickly if exposed to light), lightly spotted or freckled with black or pale red at the larger end. Average size of 10 eggs, 20.4 x 15.3 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies. For details of plumage, see Baker, loc. cit. Skins fade rapidly; some old skins lose all trace of yellow. Fresh specimens are much richer yellow.

Young, like adult but crown and mantle paler. Underparts paler, throat-barn less distinct.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
		(from skull)		
♂♂	65-76	12-16	25-28	66-75 mm
♀♀	63-69	13-15	26-28	67-68 mm

(SDR, BB, Rand & Fleming, SA)

Weight 13 ♂♂ 15-21; 5 ♀♀ 18-24 g (SA, SDR, GD). 22 ♂♀ 17-20 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible greyish brown, lower greyish white. Legs and feet brownish grey.

1360. NEFA Barthroated Siva. *Minla strigula yunnanensis* (Rothschild)

Siva strigula yunnanensis Rothschild, 1921, Novit. Zool. 28: 40 (Lichiang Range, NW, Yunnan)

Siva strigula victorae Meinertzhagen, 1926, Bull. Brit. Orn. Cl. 26: 128 (Mount Victoria, Chin Hills)

Baker, FBI No. 333 (part) and 334 (part), Vol. 1: 313-14

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As in 1359, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. NEFA from the Dafa to the Mishmi hills, Nagaland and Manipur? (Whistler MS.); from 1300 (winter) to 3600 m (summer). Affects forests of oak and rhododendron, bamboo and bushes.

Extralimital. Southeastern Tibet, western and northern Burma, Yunnan and northern Vietnam; other subspecies in northwestern Thailand and the Malay Peninsula.

GENERAL HABITS, FOOD and VOICE. As in 1359.

BREEDING. As in 1359.

MUSEUM DIAGNOSIS. Darker and more slaty on upperparts than other races. Chestnut of tail extending to c. 20 mm from tip.

96

TIMALIINAE

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. *Above*, slightly tufted crown dark blue striped with whitish; supercilium and eye-ring white. Back fulvous, paler on rump. Folded wing blue with a small white spot and white tips. Upper surface of tail dark grey with blue edges, narrowly tipped with white; spread tail shows white outer rectrices edged with black: *Below*, entire underparts and ear-coverts pale vinous grey, centre of belly whitish. Under surface of tail white edged with black. Sexes alike.

Blue of head, wing and tail not noticeable except at very close range. The head appears grey, contrasting with the fulvous back. The bird appears long and thin with a flat head and very clear-cut square-ended tail—a curious, distinctive shape.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common; subject to vertical movements. The Himalayas from Naini Tal east through Nepal, Darjeeling, Sikkim, Bhutan and NEFA to the Mishmi Hills; also the hills of Assam, Nagaland and Manipur south to the Chittagong Hill Tracts of East Pakistan. Altitudinal distribution in summer not satisfactorily determined: Smythies (JBNHS 49: 514) records it as a resident above 2400 m in central Nepal while Stevens (JBNHS 29: 736) found it up to 1800 m in summer in Sikkim; its breeding zone thus probably lies between 1500 and 2500 m; most other Himalayan data are winter records. In this season it is found mostly between 1200 and 2200 m and reaches the foothills in Sikkim, Bhutan and NEFA, even entering a short distance the plains of the Brahmaputra. In Assam it appears to breed above 1800 m and up to the highest peaks, descending to 1200 m, rarely 600 m in winter (Baker, JBNHS 8: 206 and 17: 788). In Manipur it occurs above 1400 m (Hume) and on Mt Victoria between 1400 and 2600 m (Heinrich). Affects bushes in evergreen forest or mixed deciduous and evergreen secondary growth; also cultivations, pine and bamboo.

Extralimital. Western Burma. The species extends to Szechuan, Kwangsi, Vietnam and the Malay Peninsula.

GENERAL HABITS. Usually met with in parties of five to fifteen; a regular constituent of the large roving associations of yuhinas, mesias, shrike-babblers, etc. Moves through the tops of bushes and trees much like mesias. Pairs form in April.

FOOD. Mostly insects.

VOICE and CALLS. Call-note, a chick-like *cheep* or *cree-cree*. Song, a three-noted whistle, the first lowest, the second highest, the third between these two.

BREEDING. Season, May and June. Nest, cup-shaped, made of bamboo leaves, rootlets and moss, tightly held together by tendrils and creeper stems; the exterior of the nest is often completely covered with moss; lining is usually of rootlets, sometimes hair. Well hidden in bushes, with a preference for stream banks, within a couple of metres from the ground, generally under one metre. Eggs, normally 3 or 4, deep blue, marked with a few small black spots at the larger end. Average size of 24 eggs, 18.4 x 14.1 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. For details of plumage see Baker, loc. cit.

BABBLERS

97

Young, like adult but upperparts paler. Tertiaries edged grey-buff. Underparts more buffish. Primary character of juvenal timaline wing absent. Postjuvinal moult partial. Postnuptial moult completed in October.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	60-69	14-16	22-24	60-70 mm
♀♀	60-67	14-16	22-24 (once 26)	65-68 mm

(BB, SA, Rand & Fleming, Heinrich, Stresemann)

Bill ♂ 17, ♀ 16-17 mm (BB)

Weight ♂♂ 17-20; 2 ♀♀ 16, 17 g (SDR, GD, SA). 16 ♂♂ 15-20 g (SA).

COLOURS OF BARE PARTS. Iris greyish brown. Bill yellowish flesh, brownish on culmen for about one-quarter length at tip. Legs and feet brownish flesh; claws horny brown.

Genus YUHINA Hodgson

Yuhina Hodgson, 1836, *Asiat. Res.* 19: 165. Type, by subsequentdesignation (Gray, 1841), *Yuhina gularis* Hodgson*Ixulus* Hodgson, 1844, in J. E. Gray, *Zool. Misc.*, No. 3: 82.Type, by monotypy, *Yuhina? flavicollis* Hodgson*Erpornis* Hodgson, 1844, in Blyth, *Journ. Asiat. Soc. Bengal* 13: 379,

footnote. Type, by original designation and monotypy,

Erpornis xantholeuca Blyth

Bill about two-thirds or as long as the head; upper mandible well curved at tip. An erectile crest. Tail rather short and square.

Key to the Species

	Page
A Upperparts yellowish green..... <i>T. xantholeuca</i>	108
B Tips of outer rectrices white..... <i>T. castaneiceps</i>	97
C Upperparts olive-brown	
1 Chin and lores black..... <i>T. nigrimenta</i>	107
2 Chin not black	
a Outer webs of secondaries bright rufous..... <i>T. gularis</i>	104
b No rufous on wing	
i A white occipital patch..... <i>T. bakeri</i>	100
ii A rufous occipital patch..... <i>T. occipitalis</i>	106
iii Throat whitish, crown chocolate-brown..... <i>T. flavicollis</i>	101

YUHINA CASTANICEPS (Moore)

Key to the Subspecies

	Page
A Crown grey	
1 A rufous patch above posterior part of supercilium..... <i>T. c. rufigenis</i>	98
2 No rufous patch above supercilium..... <i>T. c. plumbeiceps</i>	99
B Crown mostly chestnut-brown..... <i>T. c. castaneiceps</i>	99

BABBLERS

99

1364. Mishmi Whitebrowed Yuhina. *Yuhina castaneiceps plumbeiceps* (Godwin-Austen)*Stephida plumbeiceps* Godwin-Austen, 1877, *Ann. Mag. Nat. Hist.* 20: 519

(near Sadya and Brahmakhend, Eastern Assam)

Stephida castaneiceps conjuncta Mayr, 1941, *Ibis*: 86

(Chipwi-Laukaung Road, Myitkyina district, Burma)

Baker, FBI No. 332 (part), Vol. 1: 311

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1363, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident. NEFA from the Dikrang Valley (Godwin-Austen, SF 7: 144) east to the Mishmi Hills and south to eastern Nagaland; from the foothills to 1500 m. Affects scrub and undergrowth in evergreen or light deciduous forest.

EXTRALIMITAL. Northern Burma and western Yunnan. The species extends to Vietnam, Kwangtung and Fukien; also Borneo.

GENERAL HABITS, FOOD AND VOICE. As in 1363.

BREEDING. As in 1363.

MUSEUM DIAGNOSIS. Differs from *rufigenis* by the absence of rufous patch above the posterior part of the supercilium where only a few scattered rufous feathers are found. Differs from *castaneiceps* by the grey, not rufous crown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	58-62	11	16	53-57 mm
♀♀	58-62	—	—	50-57 mm

(SDR, Mayr)

Weight 2 ♂♂ 11, 12 g (SDR).

COLOURS OF BARE PARTS. As in 1363.

1365. Chestnut-headed Yuhina. *Yuhina castaneiceps castaneiceps* (Moore)*Ixulus castaneiceps* Moore, 1854, in Horsfield & Moore,*Cat. Bds. Mus. E.I. Co.* 1: 411 (Afghanistan, *errone* = Cachar)

Baker, FBI No. 330, Vol. 1: 310

LOCAL NAME. *Dantika-ragani* (Cachar).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1363, but crown rufous-brown scalloped with pale grey on forehead.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Western Nagaland, Manipur and the hills of Assam south to the Chittagong Hill Tracts of East Pakistan, from 600 to 1500 m. Affects secondary scrub and evergreen forest.

EXTRALIMITAL. Chin Hills and Arakan Yomas.

GENERAL HABITS, FOOD AND VOICE. As in 1363.

BREEDING. As in 1363.

MUSEUM DIAGNOSIS. Differs from other races by its rufous crown. For details of plumage see Baker, loc. cit.

TIMALIINAE

98

1363. Sikkim Whitebrowed Yuhina. *Yuhina castaneiceps rufigenis* (Hume)*Ixulus rufigenis* Hume, 1877, *Stray Feathers* 5: 103

(Himalayas = Darjeeling)

Baker, FBI No. 332 (part), Vol. 1: 311

Plate 78, fig. 13

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. Above, head crested, grey scalloped with paler grey; ear-coverts rufous-brown; a narrow white supercilium. Back and wings grey-brown. Tail dark brown, rounded when spread and showing white tips of outer rectrices. Below, greyish white. Sexes alike.

The only yuhina with white in tail.

STATUS, DISTRIBUTION AND HABITAT. Resident, fairly common. The Himalayan foothills from Darjeeling and Sikkim east through Bhutan and NEFA to the Subansiri river (Stevens, JBNHS 23: 243), from c. 600 to 1500 m. Affects secondary forest with shrubby undergrowth.

GENERAL HABITS. Keeps in parties of as many as twenty or thirty birds, often in the mixed itinerant associations, hunting feverishly among the foliage of higher bushes or lower trees, and rapidly sweeping on to the next tree in disorderly 'follow-my-leader' fashion. Movements reminiscent of tits, as they cling to the leaves and branches.

Display (?). 'Has a curious habit of soaring 20 or 30 feet into the air and then sinking down with outstretched wings to the lower bushes' (Baker).

FOOD. Chiefly insects; also seeds. Visits flowers of various trees for nectar. Partial to aphid-infested trees.

VOICE AND CALLS. Flocks keep up a comparatively loud cheeping or twittering rendered as *chir-chit* . . . *chir-chit*.

BREEDING. Season, April to July, mostly April and May. Nest, a compact cup of very fine and soft shreds of grass and some silk-like vegetable material, surrounded by moss, dead leaves, roots and fibres. Placed in bee-eaters' or kingfishers' burrows, or any natural hollow in steep banks, usually in roadside cuttings. Eggs, 3 or 4, white, marked with small, brown or reddish brown blotches, more numerous at the large end. Average size of 100 eggs 16.6 × 13.3 mm (Baker). Incubation by both sexes; period c. 12 days.

MUSEUM DIAGNOSIS. Differs from *plumbeiceps* by the presence of a rufous patch above the posterior part of the supercilium.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
4 ♂♂	60-62	11-12	16-18	54-55 mm (SA)

Weight 2 ♂♂ 12, 12 g (SA).

COLOURS OF BARE PARTS. Iris reddish brown. Bill horny brown with a pinkish tinge. Legs and feet brownish yellow; claws horny brown.

TIMALIINAE

100

Young, as adult but upperparts tinged brown. Edges of secondaries and coverts browner; occipital feathers not so long.

MEASUREMENTS. As in 1364.

COLOURS OF BARE PARTS. Iris pale hazel. Bill light reddish horny, gape and base of both mandibles purplish. Legs and feet dull reddish or flesh colour.

1366. Whitenaped Yuhina. *Yuhina bakeri* Rothschild*Siva occipitalis* Blyth, 1844, *Jour. Asiat. Soc. Bengal* 13: 937 (Darjeeling)*Yuhina bakeri* Rothschild, 1926, *Novit. Zool.* 33: 276.New name for *Siva occipitalis* Blyth, 1844, preoccupied.*Yuhina occipitalis atrocinerea* Koelz, 1954, *Contrib. Inst.*

Regional Exploration, No. 1: 8 (Lailuk, Cachar)

Baker, FBI No. 344, Vol. 1: 321

Plate 78, fig. 19

LOCAL NAMES. *Temgyeng-pho*, *Turringing-pho* (Lepcha).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. A perky hair-brown tit-like bird with chestnut head and upstanding crest, conspicuous blackish lores and a white nape-patch.

Above, head, upper back and sides of neck rusty brown; crest erect, posteriorly white; ear-coverts streaked with white; lores blackish. Rest of upperparts olive-brown with inconspicuous white shaft-streaks. Below, throat white; breast vinaceous with fine dark streaks; belly olivaceous; under tail-coverts ferruginous. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. From eastern Nepal¹ (Ripley, JBNHS 49: 397, sole post-Hodgsonian record) east through Darjeeling and Jalpaiguri districts, Sikkim, Bhutan and NEFA to the Mishmi Hills; Nagaland, Manipur, Assam in the Cachar and Khasi hills, and East Pakistan in the northeastern highlands (winter). There are no records for Garhwal nor for the Chittagong Hill Tracts as given in FBI. Altitudinal distribution not satisfactorily known, especially in summer. Recorded in winter from the foothills to c. 2000 m. Gammie (*quid* Hume & Oates's *Nests and Eggs*) found a nest at about 3000 feet (900 m), this being the only Himalayan breeding record. In Assam, according to Baker (*Nidification* 1: 300) it is common between 900 and 1500 m and 'although doubtless it often breeds much higher, I never found its nest below 2500 feet' (750 m). Affects secondary jungle and evergreen forest.

EXTRALIMITAL. Northern Burma.

¹ Rand & Fleming's records of 'Chestnut-headed Ixulus' in west-central Nepal (*Fulldiens* 41: 159) do belong to *T. s. occipitalis* Hodgson, not to *T. bakeri* as reported by Birwa, JBNHS 59: 222 (confirmed by Rand, *in cit.*).

Birwa's record for Khumbu 3960 m (JBNHS 59: 222) was reported as *bakeri* because of a nomenclatural confusion. It also pertains to *T. s. occipitalis* Hodgson (confirmed by Birwa, *in cit.*).

BABLERS

101

GENERAL HABITS. Arboreal. In the non-breeding season, keeps in parties, commonly in association with other small insectivorous species, moving about in tree-tops and bushes.

FOOD. Mainly insects; also berries.

VOICE AND CALLS. A shrill *chip* and a soft chatter.

BREEDING. Season, April to July, chiefly May and June. Nest, cup-shaped or domed according to the site selected: domed when unsheltered, a deep cup when built in a hollow in a bank, low down in bushes, against a moss-covered trunk or other well-protected position. Generally made of moss more or less mixed with dead leaves, roots and bits of bracken, lined with fine rootlets. Comparatively open forest is chosen for the purpose, such as along paths, streams, clearings or forest edges. Eggs, normally 4, occasionally 3, white, marked with blotches varying from reddish brown to deep umber-brown, more numerous at the large end. Average size of 60 eggs 19.3 x 14.2 mm (Baker). Building of nest and incubation by both sexes.

MUSEUM DIAGNOSIS. See Field Characters:

Young, like adult but mantle browner, underparts paler, streaks less sharply marked, ferruginous paler. Primary and tail characters of juvenal *timalines* present, i.e. soft blunt first primary and narrow, pointed rectrices.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	62-71	12-16	20-22	50-53 mm
♀♀	65-72	11-13	20-23	46-50 mm
				(SA, SDR)

Weight 4 ♂♀ 14-21 g (SA).

COLOURS OF BARE PARTS. Iris brown, yellowish brown or reddish brown. Bill dark brown. Legs, feet and claws brown; soles yellow.

YUHINA FLAVICOLLIS Hodgson

Key to the Subspecies

		Page
A	Nuchal collar narrow, yellowish rust colour.....	<i>Y. f. albicollis</i> 101
B	Nuchal collar broader, more rufous	
a	Generally paler; sides of breast more olive.....	<i>Y. f. flavicollis</i> 102
b	Generally darker; sides of breast more rufous.....	<i>Y. f. rouxi</i> 103

1367. Western Yellownaped Yuhina. *Yuhina flavicollis albicollis* (Titchhurst & Whistler)

Ixulus flavicollis albicollis Titchhurst & Whistler, 1924, Bull. Brit. Orn. Cl. 44: 71 (Dharnasala, 4000 feet, Kangra)
Baker, FBI No. 345 (part), Vol. 1: 322

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1368 but nuchal collar less conspicuous and almost reduced to patches on the sides of neck.

BABLERS

103

FOOD. Mainly insects and their larvae; also flower-nectar, berries (*Rubus*, *Galium*, *Trema*, etc.) and small seeds (*Michelia cathartica* and others). Stanford records small snails taken on the ground.

VOICE AND CALLS. Flocks keep up a continual murmuring twitter punctuated by a harsh *chi-chi-chiu* (SA). Song rendered as *twe-tyurui-tyawi-tyawa* (Lister). Other notes described as a metallic *tse-king* (Jones) and a querulous screech followed by a pleasant warble.

BREEDING. Season, May and June. Nest, either domed or cup-shaped, made mostly of moss with some rootlets and thickly lined with the latter, sometimes with wool. Suspended to some twigs or among the moss of a branch at heights up to two, rarely four metres, or in a bank among roots or tufts of grass. Eggs, 3 or 4 similar to those of *Y. bakeri*. Average size of 28 eggs 19.8 x 14.2 mm (Baker). Building of nest and incubation by both parents; period 13 or 14 days.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. For distinction from *albicollis* and *rouxi* see 1367 and 1370 respectively. Young very similar to adult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	58-66	13-17	19-22	45-53 mm
♀♀	58-66	12-15	19-22	45-54 mm
				(SA, BB, Kinnear)

Weight 2 ♂♂ 16, 18; 3 ♀♀ 14-16; 30 ♂♂ 13-22 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible dark brown, lower light brown. Legs and feet yellowish brown or yellowish flesh.

1370. Assam Yellownaped Yuhina. *Yuhina flavicollis rouxi* (Oustalet)

Ixulus rouxi Oustalet, 1896, Bull. Mus. d'Hist. Nat. Paris 2: 184, 186 (Ly-Sien-Kiang or Black River, Yunnan)
Ixulus flavicollis harterti Harrington, 1913, Bull. Brit. Orn. Cl. 33: 62 (Sinlum, Bhamo)
Baker, FBI No. 346 and 347, Vol. 1: 323

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1368, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. NEFA in the Mishmi Hills, south through Nagaland, Manipur, the hills of Assam and the Chittagong Hill Tracts of East Pakistan. Breeding zone in NEFA probably as in 1368; in winter, from the edge of the plains to 2600 m. On Mt Victoria, breeds mostly between 2000 and 2600 m while in Assam it breeds down to c. 1000 m. Affects broad-leaved forest.

GENERAL HABITS, FOOD AND VOICE. As in 1368.

BREEDING. As in 1368.

MUSEUM DIAGNOSIS. Somewhat more richly coloured than *flavicollis* (1368), particularly in the colour of the nuchal collar and of the back; yellow wash of underparts slightly richer; crown darker; lower flanks and thighs more suffused with olive-brown.

102

TIMALIINAE

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, locally common. The western Himalayas from Chamba to west central Nepal; from c. 1700 to 3000 m in summer and from 1200 m (occasionally lower) to at least 2300 m in winter. Affects oak forest and open jungle.

GENERAL HABITS, FOOD AND VOICE. As in 1368.

BREEDING. As in 1368.

MUSEUM DIAGNOSIS. Like nominate *flavicollis* but nuchal collar narrower and much paler. Colour of back slightly less olive.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1368.

1368, 1369. Eastern Yellownaped Yuhina. *Yuhina flavicollis flavicollis* Hodgson

Yuhina? flavicollis Hodgson, 1836, Asiat. Res. 19: 167 (Nepal, restricted to central Nepal by Ripley, Synopsis: 408)
Yuhina flavicollis baileyi Baker, 1914, Bull. Brit. Orn. Cl. 35: 17 (Tembang, Drang Valley, 7000 ft)¹
Baker, FBI No. 345 (part), Vol. 1: 322
Plate 78, fig. 15

LOCAL NAME. *Srip-chong-pho* (Lepcha).

SIZE. Sparrow; length c. 13 cm (5 in.).

FIELD CHARACTERS. Above, crested head chocolate-brown, ear-coverts and nape paler; a white eye-ring, a dark brown malar stripe and a rusty yellow nuchal collar. Rest of upperparts olive-brown. Below, chin and throat white, the latter with fine dark streaks. Centre of breast and abdomen washed with yellow; flanks olivaceous with a few white streaks on sides of breast. Vent and under tail-coverts buff. Sexes alike.

The erectile crest, white eye-ring and rusty yellow nape are conspicuous characters. May be confused with *occipitalis* (1373), q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. From central Nepal east through northern Bengal (Darjeeling and Jalpaiguri districts), Sikkim, Bhutan and NEFA to the Abor-Miri hills. Intergrades with *albicollis* in west-central Nepal and with *rouxi* in NEFA. From 1800 to 3000 m in summer and from the edge of the plains to 2700 m in winter. Affects deciduous forest and secondary jungle.

GENERAL HABITS. Arboreal; similar to other yuhinas etc. Keeps in small parties, associating with tits, warblers, nuthatches, sibilas and other small babblers. Frequents bushes and lower branches of trees. Actions very tit-like. Sometimes also makes vertical aerial sallies from a bush-top after winged insects, doubling back to the perch after the capture. In pairs during the breeding season.

¹ As already pointed out by Bailey, JBNHS 24: 75, the type locality is not in the Mishmi Hills as given by Baker (loc. cit.), Ripley (*Synopsis*: 408) and Deignan (*Peter's Check-list* 10: 423). According to Bailey's itinerary, Tembang is located between Tulang La and Drang Dzong in western NEFA. In his manuscript, Whistler states that this race does not seem to be separable from typical *flavicollis*, while Ripley (JBNHS 58: 282) would include the Mishmi Hills population with *rouxi* of Assam and northern Burma. It thus appears unnecessary to retain a name for this intermediate population of a very variable species.

104

TIMALIINAE

Note. The yellow of underparts fades rapidly in museum specimens while the upperparts tend to become darker.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1368.

Weight 2 ♂♂ 15, 19; 1 ♀ 16 g (SDR).

YUHINA GULARIS Hodgson

Key to the Subspecies

Paler.....	<i>Y. g. riox</i>
Darker.....	<i>Y. g. gularis</i>

1371. Western Stripethroated Yuhina. *Yuhina gularis riox* Koelz

Yuhina gularis riox Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 8 (above Luni, Tehri, United Provinces, 10,000 feet)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As in 1372, q.v.

STATUS, DISTRIBUTION AND HABITAT. Apparently uncommon. Recorded only from Garhwal, 2250 m (Osmaston, JBNHS 28: 143), from Tehri Garhwal, 3000 m (Koelz, loc. cit.) and Mussooree 1800 m (Rand & Fleming, *Fildiana* 41: 139). Altitudinal distribution and habitat probably as in 1372.

GENERAL HABITS, FOOD AND VOICE. As in 1372.

BREEDING. Unrecorded, probably as in 1372.

MUSEUM DIAGNOSIS. Differs from *gularis* (1372) by being paler generally, especially on throat and breast.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1372.

1372. Eastern Stripethroated Yuhina. *Yuhina gularis gularis* Hodgson

Yuhina gularis Hodgson, 1836, Asiat. Res. 19: 166 (Nepal)
Yuhina yonghiensis Sharpe, 1902, Bull. Brit. Orn. Cl. 13: 12 (Yang-pi, Tali-fu road, Yunnan)
Yuhina gularis griseocincta Rothschild, 1921, Novit. Zool. 28: 42 (Shweli-Salwin Divide, Yunnan)
Baker, FBI No. 339 and 340, Vol. 1: 317, 318
Plate 78, fig. 18

LOCAL NAME. *Fupi-pho* (Lepcha).

SIZE. Sparrow; length c. 14 cm (5½ in.).

FIELD CHARACTERS. A plump active little brown bird with a well-marked erectile crest, striped throat, and orange-fulvous longitudinal bar on blackish wing. Crest brown; rest of upperparts olive-brown. Below, throat streaked

BABBLERS

105

with dark brown. Breast vinaceous brown; rest of underparts tawny olive-brown. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. From western Nepal east through Darjeeling, Jalpaiguri district (winter only), Sikkim, Bhutan and NEFA to the Mishmi Hills, then south through Nagaland, Manipur and the Chin Hills of Burma. There are no records from Assam west of Nagaland and Manipur. Occurrence in the Chittagong Hill Tracts (*vide* Rashid, 1967) needs confirming. Found in summer between 2400 and 3600 m, optimum zone 2700-3300 m, and in winter mostly between 1800 and 3000 m, rarely descending to the foothills (Jalpaiguri duars). Affects forest of oak, birch, rhododendron or mixed conifers and rhododendron, occasionally low scrub or bamboo.

Extralimital. Extends to western and northern Burma, and southwestern Szechuan; also northern Vietnam.

GENERAL HABITS. Arboreal. Usually found in small parties, by themselves or mixed with other small babblers, working through the higher bushes or lower branches of trees, sometimes in low scrub or bamboo. Movements somewhat tit-like but slower.

FOOD. Insects (beetles, wasps, etc.); also berries, flower-nectar, and seeds (*Prunus*, *Magnolia*). Regularly visits rhododendron blossoms for nectar, the forehead feathers of the birds becoming thickly coated with pollen and often giving them a startlingly new look!

VOICE AND CALLS. A quiet, rustling *shr...shr...* continually uttered and a curious and characteristic, long-drawn-out *kweeee* (Proud). A note described as 'a rather mournful tinkling call' probably refers to the same. A call-note regularly uttered is rendered as *zêi zêi* (Diesselhorst). Alarm, a sharp *cheep*.

BREEDING. Little known. *Season*, apparently May and June. *Nest* and *eggs* not well authenticated. One nest is described as a cradle of roots well interlaced, lined with finer roots, and attached to the pendent roots of plants sticking through an overhanging bank. The four eggs were dingy grey-green, speckled with dark reddish brown forming a ring or cap at the large end, rather like those of *T. nigrimenta* (1374). Size, between 17 × 12.3 and 17.5 × 12.8 mm (Baker). Other nests are described by Hodgson as large, globular structures of moss placed in a fork of a branch or between ledges of rocks.

MUSEUM DIAGNOSIS. See Field Characters; for details of plumage Baker, loc. cit. Young, as adult but rather darker rufous-brown above, especially on upper tail-coverts. Crest shorter. Primary and tail characters not present.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	70-79	17-19	21-25	56-63 mm
♀♀	68-79	16-18	21-23	53-58 mm

(BB, SA)

Weight 14 ♂♂ 19-24; 4 ♀♀ 18-22 g (GD, SDR, SA).

COLOURS OF BARE PARTS. Iris clay- or reddish brown. Bill: upper mandible dark brown, lower basally brownish yellow, distally dark brown. Legs and feet yellow, brownish yellow or orange-brown; claws dark brown.

BABBLERS

107

Weight 3 ♂♂ 12-16; 2 ♀♀ 12, 12 g (GD, SA).

COLOURS OF BARE PARTS. Iris brown. Bill pinkish or reddish brown. Legs and feet yellow-brown to orange-brown.

1374. Blackchinned Yuhina. *Yuhina nigrimenta nigrimenta* Hodgson

Yuhina nigrimenta Hodgson, 1845, in Blyth, Jour. Asiat. Soc. Bengal 14: 562 (Nepal)

Yuhina nigrimentum tiloria Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 9 (Karong, Manipur)

Baker, FBI No. 343, Vol. 1: 320

Plate 78, fig. 16

LOCAL NAME. *Turringing-pho* (Lepcha).

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. A small yuhina with erectile black crest, black lores and chin and black-and-red bill. *Above*, crest black with scale-like grey edgings. Lores black. Nape and sides of head grey. Rest of upperparts olive-brown. *Below*, chin black; throat white. Rest of underparts pale fulvous. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, uncommon to rare west of Sikkim; common eastward. The Himalayan foothills from Garhwal (Hume collection) and Kumaon (Whymper, JBNHS 14: 607) east through the Nepal duns (Biswas, JBNHS 59: 224; Fleming & Traylor, *Fieldiana* 53: 176), Darjeeling, Sikkim, Bhutan and NEFA; Nagaland, Manipur, the hills of Assam (rare in the Khasi Hills), and the Chittagong Hill Tracts of East Pakistan. From c. 300 to 1800 m; these altitudes are winter records; breeding zone within these extremes not satisfactorily determined in the Himalayas. In Assam the breeding zone is 1000 to 1800 m (Baker). Affects evergreen forest and secondary jungle, particularly in overgrown cultivation clearings.

Extralimital. The species extends to southern Szechuan and northern Vietnam; also Fukien.

GENERAL HABITS. Very gregarious, active, restless and noisy; usually seen in flocks of 15 to 20 or in mixed parties with other 'tinies', busily hunting in the canopy of lofty trees as well as in low shrubs, clinging sideways or upside-down to the sprigs to peer under the leaves for insects. Sometimes in the tall grass which grows under trees.

FOOD. Chiefly insects; also berries, seeds and flower-nectar.

VOICE AND CALLS. Birds of a party keep up a lively chorus of low cheeping twitters occasionally breaking out into louder, shriller calls.

BREEDING. *Season*, March to July. *Nest*, a compact cup of moss and moss roots lined with very fine grass stems or rootlets. It is either suspended in the lichen hanging from branches of trees within a couple of metres from the ground, or fastened to the exposed, hanging roots on banks from which earth has fallen away. *Eggs*, normally 4, either a pale sea-green profusely spotted all over with very pale brown, small blotches forming fairly well-defined broad rings at the large end, or a pale clay or clay-green with the spots numerous but smaller. Average size of 12 eggs 16.2 × 12.3 mm (Baker).

106

TIMALIINAE

1373. Slatyheaded or Rufousvented Yuhina. *Yuhina occipitalis occipitalis* Hodgson

Yuhina occipitalis Hodgson, 1836, Asiat. Res. 19: 166 (Nepal)

Baker, FBI No. 342, Vol. 1: 319

Plate 78, fig. 17

LOCAL NAME. *Turringing-pho* (Lepcha).

SIZE. Sparrow; length c. 13 cm (5 in.).

FIELD CHARACTERS. *Above*, head, ear-coverts and neck grey; the erectile crest grey in front, bright rufous posteriorly. A conspicuous pale eye-ring and a black malar stripe. *Below*, throat and breast vinaceous; belly and under tail-coverts pale rufous. Sexes alike.



× c. 1

The somewhat similar *T. flavirostris* (1368) has a brown crest and a rusty yellow neck.

STATUS, DISTRIBUTION AND HABITAT. Common resident. From west-central Nepal (Rand & Fleming, *Fieldiana* 41: 139; see footnote p. 100) east through Darjeeling, Sikkim, Bhutan and NEFA; from 2400 to 3900 m in summer and between 1500 and at least 2700 m in winter. Affects evergreen forest, especially rhododendron and oak.

Extralimital. Southeastern Tibet. The species extends to northern Burma and northwestern Yunnan.

GENERAL HABITS. In the non-breeding season keeps in parties up to fifteen individuals in company with tits, Nepal Babblers, Bluewinged Sivas, and other small babblers. Hunts in the high foliage, on moss-covered trunks and branches, and in bushes; seems to keep more to the canopy than *T. gularis* with which it often associates.

FOOD. Mostly insects in summer. Very partial to rhododendron blossoms, probing into the flowers in quest of nectar and probably also insects. Berries are also taken in winter.

VOICE AND CALLS. A deep churring conversational note; a harsh, grating series of alarm-notes; 'a gay little song'.

BREEDING. *Season*, April to June. The only nest known is described as a cup of moss and leaves, built into a large lump of moss which formed a dome over the nest. It was in the fork of a small tree about three feet (90 cm) from the ground, and well masked since similar large lumps of moss were found on practically every bush and tree in this damp area. It was lined with fine roots and contained two young, sparsely covered with long black down (Proud).

MUSEUM DIAGNOSIS. See Field Characters.

Young, like adult but crest shorter; rufous of nape paler; vinaceous of breast less marked.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	62-66	15-17	18-19	51-53 mm

(Rand & Fleming, Mayr, Stresemann, SA)

TIMALIINAE

108

MUSEUM DIAGNOSIS. See Field Characters.

Young, like adult but upperparts, edges of wing and tail browner. Crest shorter, pale edges to the feathers less clear. Primary and tail characters present; postjuvénal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	52-59	13-14	16-18	38-39 mm
♀♀	53-59	13-14	c. 16	36-39 mm

(BB, SA, Kinnear)

Weight 4 ♂♂ 9-10; 2 ♀♀ 8, 9 g (SDR, SA). 3 ♂♂ 10-11 g (SA).

COLOURS OF BARE PARTS. Iris hazel-brown. Bill: upper mandible horny brown to black, lower and gape orange-red, coral-red or pink with brownish tip; mouth bright orange-red. Legs and feet yellowish brown or orange-flesh; claws pale horny brown.

1375. Whitebellied Yuhina. *Yuhina xantholeuca xantholeuca* (Hodgson)

Erp. [ornis] xantholeuca [sic] Hodgson in Blyth, 1844, Jour. Asiat. Soc.

Bengal 13: 380 (central region of Nepal)

Baker, FBI No. 350, Vol. 1: 325

Plate 78, fig. 12

LOCAL NAME. *Dung-fu-pho* (Lepcha).

SIZE. Sparrow —; length c. 11 cm (4 in.).

FIELD CHARACTERS. *Above*, entirely olive-green, edges of tail yellow; head tufted. *Below*, and ear-coverts greyish white; under tail-coverts yellow. Sexes alike.



× c. 1

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common, subject to vertical or erratic movements. From extreme western Nepal (Fleming & Traylor, *Fieldiana* 53: 176), east through Sikkim, Bhutan and NEFA; Nagaland, Manipur, the hills of Assam (scarce or rare) and the Chittagong Hill Tracts of East Pakistan. Breeding zone not satisfactorily determined. Appears to have a wide altitudinal range, both summer and winter, remarkably so in the latter season. Biswas found it in the duns at c. 600 m in May which is the breeding season, while Fleming recorded it at 2250 m and 900 m in winter. According to Proud it is most common around 1500 m in autumn and winter. In Sikkim it is found below 1000 m *vide* Stevens while Salim Ali noted it from 360 to 2250 m in winter. Farther east it is said to be common in the duns and to extend well into the plains of north Lakhimpur in winter (Stevens) and up to 2600 m in northern Burma in the same season. In Assam it is found from the foothills to 900 m, breeding mostly between 300 and 600 m, once only as high as 1200 m (Baker). Affects rhododendron trees, secondary growth and evergreen forest, especially in open spaces such as glades, stream sides or forest edges, and light deciduous forest.

BABBLERS

109

Extralimital. Extends to Burma and western Thailand. The species ranges north to northwestern Yunnan, east to Fukien, Kwangtung and Vietnam, south through the Malay Peninsula to Sumatra and Borneo.

GENERAL HABITS. Seems to be less gregarious than other yuhinas; often found solitary, in pairs or in small parties by themselves although they also consort with tits, minlas and other small babblers, the flocks 'flowing' rapidly from tree to tree. Frequents mostly the lower canopy and higher bushes, clinging to sprigs and searching the foliage like a tit. Its sprightly and restless disposition reminds one also of *Phylloscopus* or *Zosterops*.

FOOD. Mostly insects and their larvae, particularly small caterpillars; also berries and flower-nectar.

VOICE AND CALLS. Unrecorded; a very silent species.

BREEDING. Season, from the end of March through April and May. Nest, a little cup of fine fibres, moss and rootlets, lined with fine, dark-coloured leaf-stems. Suspended between two horizontal twigs from about half a metre to 2 m above the ground, usually around one metre. Banks of streams, glades and forest edges are favourite nesting-sites. Eggs, 2 or 3, white, thinly marked with speckles and small blotches of pale pinkish red, sometimes forming an ill-defined ring at the large end. Average size of 20 eggs 16.7 × 12.7 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

Young, a dull edition of the adult; upperparts with a brownish cast. Primary and tail characters present; postjuvinal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	66-72	14-15	16-19	44-49 mm
♀♀	60-66	14-15	16-18	42-47 mm

(HW, SA, Heinrich)

Weight 4 ♂♂ 12-17; 2 ♀♀ 11, 12 g (GD, SDR). 2 oo? 8, 11 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible brown, lower whitish grey. Legs and feet whitish grey.

Genus *ALCIPPE* Blyth

Alcippe Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 370, 384. Type, by monotypy, *T. poioicephala* Jerdon

Proparus Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 938. Type, by original designation, *Pr. sinipictus*, nec *Proparus* Hodgson, 1841 (= *Minla*)

Schoeniparus Hume, 1874, Stray Feathers 2: 449. Type, by subsequent designation (Sharpe, 1883, Cat. Birds Brit. Mus. 7: 606), *Minla rufogularis* Mandelli

Fulcoetta David & Oustalet, 1877, Ois. Chine, text: 220. Type, by subsequent designation (Sharpe, 1883), *Siva cinereiceps* Verreaux

Lioparus Oates, 1889, Fauna Brit. Ind., Bds. 1: 174. Type, by original designation, *Proparus? chrysatus* = *chrysotis* Blyth

Pseudominla Oates, 1894, Ibis: 480; new name for *Sittiparus* Oates. Type, by original designation, *Minla cinerea* Blyth

Alcippeornis Oberholser, 1922, Smith. Misc. Coll. 74: 1. New name for *Alcippe* Blyth (based on type, *Alcippe cinerea* Blyth nec Eyton)

Cf. Riley, J. H., 1933, Auk 50: 363-4 (use of *Alcippe* and genotype).

BABBLERS

111

GENERAL HABITS. A confiding species met with in large parties of up to fifty birds in the non-breeding season, sometimes associated with parrotbills (*Paradoxornis nipalensis*) or other small babblers. Forages low down in thickets, 'flowing' on from bush to bush. Movements very tit-like; often seen hanging upside-down on a sprig peering under the leaves for insects.

FOOD. Insects, small berries and seeds.

VOICE AND CALLS. Utters a continual low twitter as it flits from twig to twig. Not intelligibly described.

BREEDING. Not recorded since Hodgson. Season, May and June. Nest, egg-shaped, fixed with its longest diameter perpendicular to the ground in a bamboo clump, between the small lateral shoots, a few feet from the ground; entrance on the side. Made of bamboo leaves and broad blades of grass, lined with a little grass and rootlets. Eggs, 3 or 4, pinkish white, thinly speckled and spotted with brownish red, tending to form a cap or zone at the large end. Measurements, c. 12.7 × 17.7 mm (Hodgson in Hume & Oates's *Nests and Eggs*, Vol. 1: 120).

MUSEUM DIAGNOSIS. Differs from *albilineata* in lacking the white coronal stripe. For details of plumage, see Baker loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	52-54	10 (5)	20-22	46-49 mm
♀♀	50-55			

(Kinnear, SA)

Weight 1 ♂ 5.5 g (SA).

COLOURS OF BARE PARTS. As in 1377.

1377. Assam Goldenbreasted Tit-Babbler. *Alcippe chrysotis albilineata* (Koelz)

Lioparus chrysotis albilineatus Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 7 [Karong (Sungtun), Manipur]
Baker, FBI No. 309 (part), Vol. 1: 293

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. Like 1376 but with a white coronal stripe from forehead to nape.

STATUS, DISTRIBUTION AND HABITAT. Scarce resident. Assam in the Cachar Hills, Nagaland and Manipur, from 1800 to 2700 m. Same biotope as 1376.

GENERAL HABITS, FOOD AND VOICE. As in 1376.

BREEDING. Unrecorded; probably as in 1376.

MUSEUM DIAGNOSIS. Differs from *chrysotis* (1376) in having a conspicuous white coronal stripe and a richer colour overall.

MEASUREMENTS

10 ♂♂ Wing 49-55 mm (Koelz)

COLOURS OF BARE PARTS. Iris hazel. Bill: upper mandible yellow on distal half, orange on basal half, bluish on the commissure; lower mandible blue, paler at tip. Legs and feet purple-flesh; soles tinged yellow (Koelz).

110

TIMALIINAE

Bill stout, slightly curved. Nostrils covered by a membrane. Rictal bristles well developed in most species. Wing short and rounded.

Key to the Species

A	A well-marked supercilium	Page
1	A yellow supercilium.....	<i>A. cinerea</i> 112
2	A black supercilium, no white.....	<i>A. nipalensis</i> 113
3	A white supercilium	
a	A chestnut band across throat.....	<i>A. rufogularis</i> 119
b	Throat streaked with brown.....	<i>A. sinipictus</i> 114
c	Not as a or b	
i	A black shoulder-patch.....	<i>A. castaneiceps</i> 111
ii	No black shoulder-patch.....	<i>A. brunnea</i> 121
B	No supercilium	
4	Underparts yellow.....	<i>A. chrysotis</i> 110
5	Underparts not yellow	
d	Wing edged with contrasting pale grey	
iii	Nape unstreaked.....	<i>A. cinericeps</i> 117
iv	Nape with dark streaks.....	<i>A. striaticeps</i> 118
e	Wing without contrasting outer edge.....	<i>A. poioicephala</i> 122

ALCIPPE CHRYSOTIS (Blyth)

Key to the Subspecies

A white streak through crown.....	<i>A. c. albilineata</i>
No streak through crown.....	<i>A. c. chrysotis</i>

1376. Himalayan Goldenbreasted Tit-Babbler. *Alcippe chrysotis chrysotis* (Blyth)

Pr. (oparus) chrysotis Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 938

(Himalaya = Nepal)

Baker, FBI No. 309 (part), Vol. 1: 293

Plate 80, fig. 11

LOCAL NAME. *Prong-samyer-pho* (Lepcha).

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. Above, crown and nape blackish; ear-coverts pale silver-grey. Back olive. Wing blackish with orange-yellow outer edge and an orange longitudinal patch; inner edge white; secondaries tipped with white. Tail brown, the basal two-thirds edged with orange-yellow. Below, throat grey with silvery tips. Rest of underparts yellow. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. A rather scarce resident, subject to some vertical movements. The Himalayas from eastern Nepal (Stevens, JBNHS 29: 734) east through Darjeeling, Sikkim, Bhutan and NEFA; from c. 2400 to 3000 m in summer and between 2000 and at least 2600 m in winter. Affects dense growth on steep hillsides, particularly bamboo jungle.

Extralimital. The species extends to northern Burma, southwestern Szechuan and northern Vietnam.

112

TIMALIINAE

1378. Dusky Green or Yellowthroated Tit-Babbler. *Alcippe cinerea cinerea* (Blyth)

Minla cinerea Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 449 (Darjeeling)

Alcippe delacouri Yen, 1936, L'Oiseau 6: 449. New name for

Minla cinerea Blyth, not preoccupied

Baker, FBI No. 301, Vol. 1: 287

Plate 78, fig. 7

LOCAL NAME. *Dao-pêrê kashiba* (Cachari).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Above, crown and nape yellowish green, the feathers edged with black; a black stripe on sides of crown, a conspicuous yellow supercilium from lores to nape and another black stripe from lores through eye. Rest of upperparts greyish olive. Below, yellow, olivaceous on sides and lower belly. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally distributed. The Himalayan foothills from central Nepal (Proud, JBNHS 48: 700) east through Darjeeling, Sikkim, Bhutan and NEFA; Assam (rare) in the Khasi and Cachar hills, Nagaland, Manipur, and the Chittagong Hill Tracts of East Pakistan; from c. 1000 to 2100 m at all seasons. Affects deep evergreen forest, mainly in glades or breaks such as made by streams, jungle tracks, etc.; also bamboo clumps and cut-over scrub.

Extralimital. Extends east to northern Laos.

GENERAL HABITS. Usually found in large flocks in the roving associations of small babblers, darting in and out of the undergrowth and bustling to and fro in incessant movement.

FOOD. Unrecorded. Doubtless as in other tit-babblers.

VOICE AND CALLS. A low chip-chip (Stanford) and a soft twittering while feeding.

BREEDING. Season, April to July, chiefly May and June. Nest a deep cup, sometimes domed or semi-domed, made of bamboo leaves and fern fronds, and lined with fine shreds of grass or rootlets, the materials blending well with the surroundings. Most nests are placed on the ground, some between boulders, others low down in bamboo clumps. Eggs, normally 4, uncommonly 3, pale buff to warm buff, with reddish brown stippling, coalescing to form a well-defined ring around the large end. Average size of 60 eggs 18.3 × 14.3 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	51-58	11-13	20-23	33-44 mm (Baker, SA)

Weight 2 ♀♀ 11, 11 g (SA).

COLOURS OF BARE PARTS. Iris brown (SA) or pink. Bill: upper mandible blackish, lower bone-colour. Legs, feet and claws dull yellow (Stanford).

BABBLERS

113

1379. Chestnut-headed Tit-Babbler. *Alcippe castaneiceps castaneiceps* (Hodgson)

Minla Castaneiceps Hodgson, 1837, Ind. Rev. 2 (1): 33 (Nepal, restricted to Chandragiri Pass, central Nepal, by Ripley, 1950, JBNHS 49: 397)

Minla brunneicauda Sharpe, 1883, Cat. Bds. Brit. Mus. 7: 609 (Shillong)¹

Pseudominla castaneiceps garoensis Koelz, 1951, Jour. Zool. Soc. India 3: 29 (Tura Mt, Garo Hills)²

Alcippe castaneiceps wagstaffi Wynne, 1954, North Western Naturalist, Key-List of Palaearc. and Oriental Pass. Bds., pt. 3: 397. New name for

A. brunneicauda Sharpe, preoccupied

Baker, FBI No. 302 and 303, Vol. 1: 288-9

Plate 78, fig. 6

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Above, crown chestnut streaked with white on forehead and with rufous on crown and nape. A broad white supercilium; a blackish post-ocular stripe; ear-coverts mostly white; a narrow dark malar stripe. Wing with a noticeable black shoulder-patch behind which a rufous patch, and pale outer edge. Rest of upperparts olive. Below, whitish with olive-rufous sides.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. The Himalayas from central Nepal east through Darjeeling, Sikkim, Bhutan and NEFA; the hills of Assam, Nagaland, Manipur, and the Chittagong Hill Tracts of East Pakistan. Breeds between 1500 and 3000 m, mostly above 1800 m. Noted in winter between 700 and 2400 m. Breeds somewhat lower in Assam where recorded in winter as low as 300 m. Affects heavy evergreen undergrowth at edge of forest and on abandoned clearings.

EXTRALIMITAL. Extends to central Tenasserim and northwestern Thailand. The species ranges east to Vietnam and south through the Malay Peninsula.

GENERAL HABITS. In the non-breeding season keeps in large flocks, by themselves or mixed with minlas, yuhinas, tits, leaf warblers, etc., the composition of flocks varying according to altitude and season. Behaves much like the smaller parrotbills, hunting feverishly in the foliage of dense bushes and undergrowth, the flocks 'flowing' from tree to tree. Frequently climbs up vertical trunks, clinging to the bark or moss, searching crannies and crevices.

FOOD. Insects and, on occasion, tree sap.

VOICE and CALLS. A distinctive call of three notes *tu-twee-twee* in crescendo (Smythies). A tit-like *cheep* and a rather distinctive churring *purr* which can be very soft or loud and harsh.

BREEDING. Season, April to July, chiefly May and June. Nest, usually domed, sometimes a deep cup; made mostly of green moss with some bamboo leaves, and lined with fine grass or rootlets. Placed in a tangle of creepers climbing up trees or bushes within three metres or so from the ground, among the moss covering tree-trunks or on a sloping moss- and fern-covered

¹ In view of Biswas's remarks (JBNHS 59 (1): 225) and a subsequent re-examination, we would admit the validity of *brunneicauda* (Khasi Hills) on the basis of paler head colour. *Garoensis* and *wagstaffi*, however, seem to us synonymous with nominate *castaneiceps*.

BABBLERS

115

1381. Nepal Whitebrowed Tit-Babbler. *Alcippe vinipectus vinipectus* (Hodgson)

Siva Vinipectus Hodgson, 1837, Ind. Rev. 2 (2): 89

(Nepal, restricted to central Nepal by Ripley, Synopsis: 412)

Baker, FBI No. 304 (part), Vol. 1: 290

Plate 78, fig. 14

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. Above, crown, ear-coverts and back brown; a broad white supercilium from eye to nape, above which a darker brown stripe. Rump and wings rusty, the latter (when closed) with a black line and pale outer edge. Below, throat and breast white, lower belly olive-brown. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. A high-elevation babbler, fairly common and resident, subject to vertical movements. The Himalayas in western and central Nepal, from c. 2400 to 4200 m in summer, mostly above 3000 m, and from 1500 to 3000 m in winter. Affects rhododendron and juniper scrub, light forest of pine, birch or spruce, and forest edges with clearings and plenty of undergrowth and ringal bamboo.

GENERAL HABITS. In the non-breeding season keeps in flocks of up to twenty individuals, by themselves or in mixed company, hunting in bushes, undergrowth and low trees — even when heavily shrouded in snow in winter — in acrobatic tit-like manner though somewhat slower in its movements. Confiding and inquisitive: will often approach within arm's reach of an observer to fustily investigate. Behaviour also reminiscent of *Chrysomma sinense* and *Dumetia hyperythra*. Flocks break up during the breeding season though small groups may still be observed, probably family parties.

FOOD. In the breeding season, almost exclusively insects — caterpillars being a favourite food; at other times also takes small seeds and berries.

VOICE and CALLS. A soft, high-pitched and incessant *chip, chip* (Smythies) or a clear *trid, trid* (Schäfer). A *churr* of alarm. Song, a faint *chit-it-it-or-ky* given while flicking its tail up and its head forward (Fleming).

BREEDING. Season, mid April to July. Nest, a deep cup exteriorly made of moss and grass, followed by a layer of fibres, birch bark, bamboo leaves, then a thick layer of rootlets, finally a lining of hair. Placed in a fork in a bush within a couple of metres from the ground, or suspended among the fine branchlets of a bamboo clump. Eggs, normally 3, greenish with olive fleckings (Diesselhorst), grey-blue with a few black blotches (Baker), pale green with brown blotches (Osmaston), with a few purple freckles, all markings chiefly around the large end. Unlike any other timaline eggs in appearance. Average size of 49 eggs 18.8 × 13.7 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. Differs from *chumbiensis* in having a white, unstreaked throat (intergrades are found in eastern Nepal). For distinction from *longrae*, see 1380 under Museum Diagnosis. Colour of crown varies in depth.

Young, like adult but upperparts more rusty; dark coronal stripes less distinct; no streaks on throat; flanks paler (Whistler).

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	54-62	10-11	23-24	48-55 mm
♀♀	51-60	10-11	23-24	46-54 mm

(BB, Rand & Fleming)

114

TIMALIINAE

bank, snugly hidden in clumps of ferns or orchids. Eggs 4, occasionally 3, chalky white, marked with blotches of inky black, forming a well-marked ring around the large end, with secondary markings of pale inky lavender. Average size of 28 eggs 17.7 × 13.4 mm (Baker). Incubation by both sexes; period undetermined.

MUSEUM DIAGNOSIS. See Field Characters. Young like adult.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	56-61	12-13	20-21	41-45 mm
♀♀	50-56	10-13	20-21	40-46 mm

(BB, Rand & Fleming, SA)

Weight 19 ♂ ♀ 8-12 (av. 11) g — SDR, SA.

COLOURS OF BARE PARTS. Iris brown. Bill horny brown, yellowish at base of lower mandible. Legs, feet and claws olive-brown; soles yellow.

ALCIPPE VINIPECTUS (Hodgson)

Key to the Subspecies

A	Throat white	Page
1	Head brighter, ear-coverts darker.....	<i>A. v. kangrae</i> 114
2	Head duller, ear-coverts paler.....	<i>A. v. vinipectus</i> 115
B	Throat streaked	
3	Coronal stripes dark brown.....	<i>A. v. chumbiensis</i> 116
4	Coronal stripes reddish brown.....	<i>A. v. austeni</i> 116

1380. Western Whitebrowed Tit-Babbler. *Alcippe vinipectus kangrae* (Ticehurst & Whistler)

Fulvetta vinipecta kangrae Ticehurst & Whistler, 1924, Bull. Brit. Orn. Cl.

44: 71 (Palampur, 6000 ft, Kangra)

Baker, FBI No. 304 (part), Vol. 1: 290

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. As in 1381, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common, subject to vertical movements. The western Himalayas from Dharmasala to Garhwal; from c. 2700 to over 3300 m in summer and between 1500 and at least 2700 m in winter. Affects low scrub, dwarf willow and ringal bamboo in summer, and scrub-covered hillsides and bushy nullahs in winter.

GENERAL HABITS, FOOD and VOICE. As in 1381.

BREEDING. As in 1381.

MUSEUM DIAGNOSIS. Differs from *vinipectus* (1381) by the brighter head, darker ear-coverts, more rusty lower back, rump, and edges of the primaries and their coverts, and the slightly browner abdomen (Kinnear, *Ibis* 1939: 750).

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1381.

116

TIMALIINAE

Weight 6 ♂♂ 11-13; 5 ♀♀ 11-13 g (GD).

COLOURS OF BARE PARTS. Iris variable: creamy white, biscuit colour, brown or pale greenish yellow. Bill horny brown, flesh-colour at base of lower mandible. Legs, feet and claws horny brown, somewhat lighter than bill.

1382. Eastern Whitebrowed Tit-Babbler. *Alcippe vinipectus chumbiensis* (Kinnear)

Fulvetta vinipecta chumbiensis Kinnear, 1939, *Ibis*: 751

(Yatung, Chumbi Valley)

Baker, FBI No. 304 (part), Vol. 1: 290

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. As in 1381 but throat streaked with brown.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Eastern Nepal, from the Okhaldunga district east through Darjeeling, Sikkim and Bhutan to the Rudo La, east of which it appears to be replaced by *A. cinericeps*; however it probably occurs through NEFA at suitable altitudes since the species is found again in northern Burma. Both this species and *cinericeps* occur in the same ranges south of the Brahmaputra. Altitudinal distribution and biotope as in 1381.

GENERAL HABITS, FOOD and VOICE. As in 1381.

BREEDING. As in 1381.

MUSEUM DIAGNOSIS. Differs from *vinipectus* in being generally darker and with dusky streaks on throat and upper breast.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
4 ♂♂	56-62	10-11	23-24	52-55 mm
6 ♀♀	53-62	10-11	23-25	52-55 mm

(SA)

Weight 6 ♂♂ 11-13 g (SA).

COLOURS OF BARE PARTS. As in 1381.

1383. Assam Whitebrowed Tit-Babbler. *Alcippe vinipectus austeni* (Ogilvie-Grant)

Properus austeni Ogilvie-Grant, 1895 Bull. Brit. Orn. Cl. 5: 3

(Manipur and the Naga Hills)

Baker, FBI No. 305, Vol. 1: 291

LOCAL NAME. *Deo-péi-géies* (Cachari).

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. As in 1381, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, Nagaland, Manipur and Assam in the Barail range, from 1500 to at least 2700 m in winter, probably higher in summer (since the adjoining extralimital subspecies *nipponi* is

BABBLERS

117

found from 2500 m to the highest peak on Mt Victoria). Affects stunted rhododendron and oak forests, dense reed-bamboo and scrub at the edge of forest.

Extralimital. The species extends to southeastern Szechuan and northern Vietnam.

GENERAL HABITS, FOOD AND VOICE. As in 1381.

BREEDING. Unrecorded; probably as in 1381.

MUSEUM DIAGNOSIS. Differs from *vinipictus* in having the head duller brown, the coronal stripes more reddish brown, and the throat streaked with reddish brown. For distinction from *persiata* of Burma, see JBNHS 50: 502.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1381.

Weight 2 ♂ 11, 12 g (SDR).

ALCIPPE CINEREICEPS (Verreaux)

Key to the Subspecies

- Throat white with dark streaks.....*A. c. ludlowi*
Throat smoke-grey with dark streaks.....*A. c. manipurensis*

1384. Himalayan Brownheaded Tit-Babbler. *Alcippe cinereiceps ludlowi* (Kinnear)

Fulvetta ludlowi Kinnear, 1935, Bull. Brit. Orn. Cl. 55: 134
(Sakden, eastern Bhutan, 9000 ft)

Not in Baker, FBI

Plate 78, fig. 10

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. Above, head chocolate-brown, sides of head and nape reddish brown. Rest of upperparts and underparts as in *A. vinipictus* (1381). Distinguished from the latter species by the absence of white supercilium and the dark brown line above it. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to some vertical movements. Eastern Bhutan and southeast Tibet in the Pachakshiri district and the upper Subansiri, NEFA in the Tawang area, probably occurring throughout the Agency at suitable altitudes; from 2200 m (winter; possibly also lower) to 3500 m (summer). Affects bamboo and rhododendron forest.

GENERAL HABITS, FOOD AND VOICE. As in 1385.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Differs from *manipurensis* in having a white ground colour to throat. For details of plumage see *Ibis* 1937: 38.

Young (juvenile) like adult but paler.

MEASUREMENTS

Wing, ♂ 59–64; ♀ 56–60 mm (NBK). Other measurements as in 1385.

COLOURS OF BARE PARTS. Iris brown. Bill dark horn, fleshy at base of lower mandible. Legs and feet fleshy brown (Ludlow. More details under 1385).

BABBLERS

119

FIELD CHARACTERS. Above, brown with darker streaks on head, nape and upper back; lores black; wing chestnut with a pale grey outer edge. Below, throat and breast white, conspicuously streaked with dark brown. Belly whitish grey. Sexes alike.

Distinguished from both *vinipictus* and *cinereiceps* by the dark brown streaks on upper back and the lack of rusty on rump.

STATUS, DISTRIBUTION AND HABITAT. Not recorded within our limits but it may occur in northern NEFA since it has been collected by Ludlow in many localities of southeast Tibet north of the main range, from the Tsari Valley (upper Subansiri) to Tripé (*Ibis* 1944: 81 and 1951: 556). Also obtained at Tripé by Bailey [JBNHS 24: 75, but erroneously identified as *vinipictus* by Baker, *vide* Ludlow (1944)]. Has a wide altitudinal range in summer, from 2800 to 4200 m. Replaces *vinipictus* at higher altitudes when both occur. There is presumably a withdrawal from the upper altitudes in the cold season. Affects shrubbery and is particularly fond of rhododendron and holly-oak.

Extralimital. Extends to eastern Szechuan and southwestern Kansu.

GENERAL HABITS. A gregarious, confiding but inconspicuous species. Very active.

FOOD. Unrecorded.

VOICE AND CALLS. A clear *tserrr-tserrr*, deceptive as it varies in intensity, so that one may believe the bird to be a stone's throw away while it suddenly appears within a couple of metres (Schäfer).

BREEDING. A nest found by Bailey on 15 July was made of grass, covered with moss and lichen on the outside and lined with hair. It was 'hanging in a branch of bamboo' and contained four eggs.

MUSEUM DIAGNOSIS. See Field Characters.

Young, like adult but darker above and duller below.

MEASUREMENTS

Wing 6 ♂ 61–62; 7 ♀ 58–60 mm (Kinnear)

Bill from skull c. 12; tarsus c. 23; tail c. 59 mm

COLOURS OF BARE PARTS. Iris yellowish white to lemon-yellow. Bill: upper mandible horny, lower fleshy pink. Legs and feet horny brown to fleshy brown.

ALCIPPE RUFOGULARIS (Mandelli)

Key to the Subspecies

- Darker on crown; back rufescent brown.....*A. r. collaris*
Crown paler; back brown.....*A. r. rufogularis*

1386. Himalayan Redthroated Tit-Babbler. *Alcippe rufogularis rufogularis* (Mandelli)

Minla rufogularis Mandelli, 1873, Stray Feathers 1: 416 (Bhutan Duars)

Baker, FBI No. 300 (part), Vol. 1: 286

Plate 78, fig. 8

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (4½ in.).

118

TIMALIINAE

1385. Manipur Brownheaded Tit-Babbler. *Alcippe cinereiceps manipurensis* (Ogilvie-Grant)

Proparus manipurensis Ogilvie-Grant, 1906, Bull. Brit. Orn. Cl. 16: 123
(Owenkuno Peak, Manipur Hills)
Baker, FBI No. 307, Vol. 1: 292

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. As in 1384 but ground colour of throat pale smoke-grey instead of white.

STATUS, DISTRIBUTION AND HABITAT. Resident, probably subject to some vertical movements. Nagaland, Manipur (Owenkuno Peak) and Assam in the Barail Range, from 1500 m in winter to over 2500 m in summer. Appears to occupy a slightly lower zone than *A. vinipictus* and to replace it, the two species having never been recorded in the same area. Affects secondary scrub-jungle, especially bramble, and also dense bamboo.

Extralimital. Extends through Burma (including the Chin Hills) to western Yunnan. The species ranges north to southwestern Kansu and Hopeh, and east to northern Vietnam, Fukien and Formosa.

GENERAL HABITS. Very similar to those of *A. vinipictus* (1381). In the non-breeding season keeps in parties of six to ten, often in company with other small babblers or leaf warblers. The birds scramble about in shrubs close to the ground, sometimes ascending trees. Usually very confiding.

FOOD. Chiefly insects.

VOICE AND CALLS. A rattling song of three or four notes (Stanford). Call, a tit-like *cheep* (SDR).

BREEDING. Unknown. Season, apparently beginning in April.

MUSEUM DIAGNOSIS. Differs from *ludlowi* (1384) in having the ground colour of throat pale smoke-grey instead of white. For details of fresh plumage see JBNHS 50: 503.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
2 ♂♂	55, 56	10, 10	23, 23	52, 53 mm
1 ♀	51	10	—	50 mm (SDR)

Wing ♂ ♀ 51–57; tail 49–54 mm (Mayr)

Weight 2 ♂♂ 10, 10 g (SDR).

COLOURS OF BARE PARTS. Iris variable: pale pinkish yellow or straw yellow (Stanford); ♂ yellowish brown, ♀ pale pinkish brown (SDR). Bill: ♂ black, ♀ dark brown. Legs and feet: ♂ dark brown to greyish brown, ♀ brownish flesh; claws grey or bone colour.

1385a. Streakthroated Tit-Babbler. *Alcippe striatocollis* (Verreaux)

Siva striatocollis Verreaux, 1870, Nouv. Arch. Mus. Hist. Nat. (Paris)
6: 38 (Muping)

Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 11 cm (4½ in.).

120

TIMALIINAE

FIELD CHARACTERS. Above, crown rufous-brown bordered by a broad black stripe from forehead to nape. Lores, supercilium and eye-ring white. Ear-coverts dark brown. Rest of upperparts brown. Below, chin and throat white with a wide chestnut band across the latter. Centre of belly whitish, sides olive-brown; under tail-coverts fulvous. Sexes alike.

The chestnut throat-band easily identifies this species.

STATUS, DISTRIBUTION AND HABITAT. Resident, fairly common. The Himalayan foothills from the Jalpaiguri duars east to the Dihang river, from the plains level to c. 900 m. Affects undergrowth in evergreen forest.

GENERAL HABITS, FOOD AND VOICE. As in 1387.

BREEDING. As in 1387.

MUSEUM DIAGNOSIS. See Field Characters. For distinction from *cellaris* see 1387.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1387.

1387. Assam Redthroated Tit-Babbler. *Alcippe rufogularis collaris* Walden

Alcippe collaris Walden, 1874, Ann. Mag. Nat. Hist. 14: 156
(Sadiya, upper Assam)

Baker, FBI No. 300 (part), Vol. 1: 286

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. As in 1386, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. NEFA east of the range of the nominate race (about the Dihang river) and south through the Sadiya Frontier Tract, the Patkai Range, Nagaland, Manipur, Assam in the Cachar hills, and East Pakistan in the northeastern highlands and the Chittagong Hill Tracts; from the plains level to c. 900 m. Affects bamboo jungle, scrub, secondary growth and undergrowth in evergreen forest.

Extralimital. The species extends east to Vietnam.

GENERAL HABITS. Creeps about and skulks in dense cover close to the ground, in small restless parties often mixed with *Stachyris* and other small babblers, also feeding on the ground. In pairs in the breeding season.

FOOD. Mainly insects.

VOICE AND CALLS. A musical *chip-churr* (Stanford) or cheeping *chrr-chrr* while on the move (SA).

BREEDING. Season, March to June, mostly April. Nest, domed, rather loosely made of dead leaves, grass, roots, moss and a few tendrils, lined first with rootlets with an inner layer of dead leaves. Usually placed on the ground or on fallen rubbish, rarely at the bottom of a bush or in tangles of creepers and cane, generally blending well with the surroundings. Eggs, normally 3, seldom 4, similar to those of *A. brunnea* (1388) but paler, less brown and more grey. Average size of 100 eggs 19.5 × 14.7 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *rufogularis* (1386) in being darker on the crown and rufescent on the back. Flanks more heavily washed with brown.

BABBLERS

121

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	55-60	13-14	21	46-49 mm
♀♀	55-57	13-14	21	46-47 mm (SA)

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet yellow.

1388. Rufousheaded Tit-Babbler. *Alcippe brunnea mendelli* (Godwin-Austen)*Mitla mendelli* Godwin-Austen, 1876, Anp. Mag. Nat. Hist. 18: 33 (Naga Hills, Northeast Bengal)*Schoeniparus dubius certus* Koelz, 1952, Jour. Zool. Soc. India 4: 39 (Shillong Peak, Khasi Hills)

Baker, FBI No. 293, Vol. 1: 284

Plate 78, fig. 3

LOCAL NAME. *Das-chitter* (Cachari).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. Above, crown rufous-brown, more rufous on forehead, bordered by black stripes starting above the eye and meeting on the upper back. A broad white supercilium; lores dark brown; ear-coverts umber-brown. Rest of upperparts olive-brown. Below, buffish white. Sexes alike.

Very similar to *A. rufogularis* but lacks the chestnut band on throat.

STATUS, DISTRIBUTION and HABITAT. Common resident. Assam in the Khasi and Cachar hills,

Nagaland and Manipur. Two records north of the Brahmaputra: Dafa Hills [Godwin-Austen? (Whistler's MS.)] and Kobo (Baker, 1913, *Rec. Ind. Mus.* 8: 273; from 900 m to 1800 m in Assam and from c. 1400 to 2400 m in Nagaland. Affects dense bushes, especially bracken and brambles in forest margins or light forest; in winter may be seen in bamboo jungle, scrub and secondary growth.

EXTRALIMITAL. The Chin Hills of Burma. The species extends north to Szechuan and Anhwei and east to Kiangsi, Fukien and Formosa (whence the nominate race).

GENERAL HABITS. Keeps in small parties often in company with *Stachyris*, hunting in dense undergrowth, close to or on the ground. In spite of being shy and secretive, it seldom escapes notice thanks to its restless vivacity. Keeps in pairs in the breeding season.

FOOD. Mainly insects.

VOICE and CALLS. A constant *chir-r-r-r* alternating with a sharp *chit* while hopping through cover. Also a chattering note of alarm and a distinctive *chee-chee-chee-chee-kpuri* (Smythies).

BREEDING. Season, April to June. Nest, oval-shaped with entrance near the top sometimes occupying so much of the side that the nest looks semi-domed or even a deep cup in shape. Made of bamboo leaves, grass, bracker



TIMALIINAE

122

leaves and roots, lined with rootlets with an inner layer of dead leaves. Placed on the ground or on fallen leaves and rubbish, concealed among bracken, preferably on sloping ground. Eggs, 3 or 4, occasionally 5, clay-white to deep clay-colour marked with dark brown spots and a few short lines and blotches, with secondary smudges of paler brown or grey. Average size of 200 eggs 20.8 × 15.6 mm (Baker). Building and incubation by both sexes; incubation period undetermined.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
10 ♂♂	57-61	c. 14	c. 25	c. 60 mm (Stresemann, SDR)
7 ♀♀	54-58			

Weight ♂♀ 16-19 g (SDR).

COLOURS OF BARE PARTS. Iris yellowish red, pale yellow to slaty pink. Bill dark brown to dull black. Legs and feet fleshy.

ALCIPPE POIOICEPHALA (Jerdon)

Key to the Subspecies

	Page
Paler and greyer.....	<i>A. p. brucei</i> 122
Darker and browner; underparts more fulvous.....	<i>A. p. poioicephala</i> 123
Underparts and ear-coverts more ochraceous.....	<i>A. p. fusca</i> 124

1389. Bombay Quaker Babbler. *Alcippe poioicephala brucei* Hume*Alcippe brucei* Hume, 1870, Jour. Asiat. Soc. Bengal 39: 122

(Mahabaleshwar)

Baker, FBI No. 289, Vol. 1: 278

LOCAL NAME. *Setimār. lalido* (Gujarati).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1390, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, locally very common. The hills of the Indian peninsula [except for the range of the nominate race (1390, q.v.)], south of a line running from Kathiawar and Mt Abu across southern Madhya Pradesh (Pachmarhi, Balaghat) to Parasnath (southern Bihar); from the foothills to the highest elevations. Affects wet forest of teak, mixed deciduous or evergreen as well as bamboo jungle and frequently open scrub, occasionally gardens.

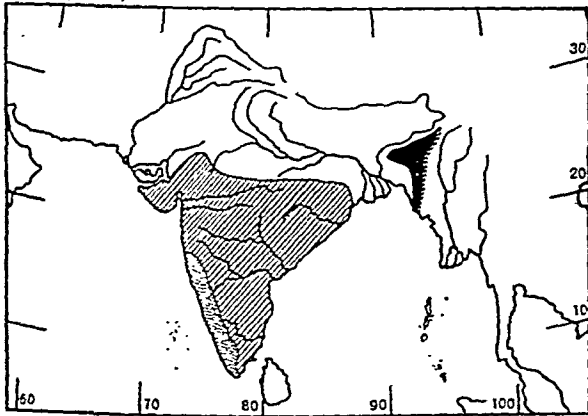
GENERAL HABITS, FOOD and VOICE. As in 1390.

BREEDING. Season, nests or birds in breeding condition have been recorded from January to November; main period appears to be January to April. Nest and eggs as in 1390. Average size of 35 eggs 20 × 15 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *poioicephala* (1390) in being paler. Crown and nape a clearer colder grey; rest of upperparts greyer, less brown. Wings and tail not so dark. Lower parts also much paler, washed with greyer brown (c. rich fulvous) Perhaps slightly larger.

BABBLERS

123

Alcippe poioicephala

Distributional ranges

▨ *brucei* (1389). ▩ *poioicephala* (1390). ■ *fusca* (1391).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	66-77	15-17	21-24	62-70 mm
♀♀	66-74	15-16	21-23	59-70 mm (HW, SA, Koelz)

Weight 14 ♂♀ 18-23 (av. 20.7) g (SA).

COLOURS OF BARE PARTS. As in 1390.

1390. Nilgiri Quaker Babbler. *Alcippe poioicephala poioicephala* (Jerdon)*Timalia poioicephala* Jerdon, 1844, Madras Jour. Lit. Sci. 13: 169

(Coonoor Ghat, Nilgiris)

Baker, FBI No. 288, Vol. 1: 277

Plate 78, fig. 11

LOCAL NAME. *Kens chilippen* (Malayalam).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. A nondescript olive-brown babbler with grey crown and nape, rusty brown on wings and tail, and pale fulvous underparts. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Common resident. Western Mysore along the Ghats south through Kerala and western Tamil Nadu (Nilgiris and Palnis). Intergrades with *brucei* in southwestern Maharashtra, Goa and the Biligirirangan Hills; from the foothills to 2100 m. Affects evergreen and moist-deciduous forest, sholas, ravines, mixed bamboo jungle and canebrakes.

TIMALIINAE

124

GENERAL HABITS. Usually seen in parties of six to ten individuals, sometimes up to twenty or more, hopping about among the undergrowth, often ascending to the canopy, flitting from sprig to sprig, clinging upside-down in acrobatic positions, continually calling to each other; often forming the nucleus of the mixed hunting parties of small insectivorous species. Behaviour very similar to that of *Macronous gularis* (1228).

FOOD. Ants and other insects. Very fond of nectar, especially of *Erythrina* spp.

VOICE and CALLS. Members of a party maintain contact by a harsh, rather subdued *chur-r-chur-r*. Song, most often heard in the first half of the year, a quavering trill of four (sometimes up to 7 or 8) sweet whistling notes of Magpie-Robin quality recalling those of the Spotted Babbler — constantly uttered (SA). See also 1391.

BREEDING. Season, not well defined; chiefly January to May but nests also found in August and October. Nest, a roughly built cup of green moss, rootlets, lichen, leaves and grass, lined with rootlets and placed in a fork or suspended from a branch, usually between one and three metres above the ground, in bushes or saplings. Eggs, usually 2, sometimes 3, pale salmon, marked with blotches and smudges of deep purple-brown with secondary markings of pale grey or pinkish grey, and in many eggs, some short lines and hieroglyphic markings. Average size of 42 eggs 20 × 15.1 mm (Baker). Incubation by both sexes; period undetermined.

MUSEUM DIAGNOSIS. More richly coloured than *brucei*; for distinction from it see 1389; for details of plumage Baker, loc. cit.

Young, similar to adult, but showing the juvenal timeline characters — soft blunt first primary, narrow, pointed rectrices.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	68-73	15-16	c. 23	60-67 mm
♀♀	65-75	15-16	c. 23	61-65 mm (SA)

COLOURS OF BARE PARTS. Adult: Iris greyish brown. Bill dark horny brown; commissure and lower mandible greyish; mouth pale flesh-colour. Legs, feet and claws greyish brown. Young: Iris slaty grey. Gape and mouth bright yellow; paler portions of bill yellowish. Legs, feet and claws as in adult.

1391. Assam Quaker Babbler. *Alcippe poioicephala fusca* Godwin-Austen*Alcippe fusca* Godwin-Austen, 1877, Jour. Asiat. Soc. Bengal 45: 197

(Naga Hills)

Baker, FBI No. 290 (part), Vol. 1: 278

LOCAL NAME. *Das-pit-gadta* (Cachari).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1390, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. East Pakistan in the northeastern highlands and the Chittagong Hill Tracts, Assam in the

BABLERS

125

Khasi and Cachar hills, Nagaland and Manipur (where it intergrades with *phayrei*); in the foothills up to 1000 m and adjacent plains. Affects deep evergreen forest, bamboo jungle and secondary growth.

Extralimital. Extends to northwestern Burma. The species ranges east to Vietnam. *A. brunneicauda* of the southern Malay Peninsula, Sumatra and Borneo and *A. pyrrhoptera* of Sumatra are considered as subspecies by De-la-cour; their ranges are complementary.

GENERAL HABITS AND FOOD. As in 1390.

VOICE AND CALLS. Has a distinctive musical *chevy-chevy-chevy-chevy-chevy* uttered quickly with each *chevy* alternately higher and lower in pitch; may be heard the whole year (Smythies). See also 1390.

BREEDING. Season, overall March to September, chiefly April to June. Nest and eggs as in 1390. Average size of 150 eggs 19.6 × 15 mm.

MUSEUM DIAGNOSIS. Like *poioicephala* but not so fulvous above; ear-coverts and sides of neck ochraceous; edges of wings and tail fulvous-olive; underparts more ochraceous.

Young, like adult but upperparts, edges of wings and tail browner. Timaline juvenal characters, i.e. soft blunt first primary and narrow, pointed rectrices present. Postjuvenal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	67-72	15-17	21-22	63-70 mm
♀♀	63-69	15-17	20-21	62-68 mm
				(HW)

COLOURS OF BARE PARTS. As in 1390.

ALCIPPE NIPALENSIS (Hodgson)

Key to the Subspecies

	Page
Crown paler, back more olive.....	<i>A. n. nipalensis</i> 125
Crown darker, back more rufous brownish.....	<i>A. n. commoda</i> 126
Paler.....	<i>A. n. stanfordi</i> 127

1392. Nepal Quaker Babbler. *Alcippe nipalensis nipalensis* (Hodgson)

Siva Nipalensis Hodgson, 1837, Ind. Rev. 2(2): 89 (Nepal)

Alcippe nipalensis turenis Koelz, 1952, Jour. Zool. Soc. India 4: 39

(Tura Mountain, Garo Hills)

Baker, FBI No. 286 (part), Vol. 1: 275

Plate 78, fig. 9

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. Above, head grey with a blackish supercilium from eye to nape, and a conspicuous white eye-ring. Rest of upperparts fulvous brown. Below, uniformly buff. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. From west-central Nepal east through Darjeeling, Sikkim,



× c. 1

BABLERS

127

FIELD CHARACTERS. As in 1392, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Common resident. NEFA from the Dafia to the Mishmi hills, the Patkai Range, Nagaland, Manipur, the hills of Assam (replaced by *nipalensis* in the Garo and western Khasi hills), and East Pakistan in the northeastern highlands and the Chittagong Hill Tracts; from the foothills to the highest summits in Assam and up to at least 2100 m in the eastern ranges and NEFA. Affects dense undergrowth in forest, bamboo jungle and secondary growth.

Extralimital. Northern Burma. Replaced by the closely related *A. morrisoniana* and *A. peracensis* in southern China and the Indochinese countries.

GENERAL HABITS, FOOD AND VOICE. As in 1392.

BREEDING. As in 1392.

MUSEUM DIAGNOSIS. Differs from nominate *nipalensis* in being more richly coloured on the back, more rufous brownish rather than olive. Crown darker. Underparts more buffy. In proportions, differs in having the tail shorter than the wing. Index: 89-98% whereas in *nipalensis* it runs from 98 to 106%. Differs from *stanfordi* (1394) by being darker.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♀	57-61	12-13	54-59 mm
			(SDR)

Weight ♂♀ 13-16 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible basally brown, distally grey; lower mandible light grey. Legs and feet yellowish brown.

1394. Chin Hills Quaker Babbler. *Alcippe nipalensis stanfordi* Ticehurst

Alcippe nipalensis stanfordi Ticehurst, 1930, Bull. Brit. Orn. Cl. 50: 84

(Taungup-Prome Cart Road, Arakan Yoma, 2900 ft)

Baker, FBI No. 286 (part), Vol. 1: 275

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. As in 1392, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The Chin Hills and Arakan Yomas of Burma, probably intergrading with *commoda* in the Mizo Hills and the Chittagong Hill Tracts; from the foothills to c. 1800 m. Biotope as in 1393.

GENERAL HABITS, FOOD AND VOICE. As in 1392.

BREEDING. As in 1392.

MUSEUM DIAGNOSIS. Differs from *commoda* in being paler.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1393.

Genus HETEROPHASIA Blyth

Heterophasia Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 186.

Type, by monotypy, *H. cuculopsis* Blyth = *Sibia picoides* Hodgson

Leioptila Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 449.

Type, by monotypy, *Leioptila annectans* [sic] Blyth

Bill shorter than head, slender and curved; nostrils covered by a membrane. Rictal bristles moderate. Tail long, well graduated.

TIMALIINAE

126

Bhutan and western NEFA in the Darrang district (where it intergrades with *commoda*), and Assam in the Garo and western Khasi hills; from the foothills to c. 1800 m in winter, and up to 2400 m (locally) in summer; lower limit of breeding zone not satisfactorily known: mostly above 1500 m in Nepal, but apparently lower down farther east. Affects moist-deciduous or evergreen forest with dense undergrowth.

GENERAL HABITS. Keeps in active, restless flocks, often in company with other small insectivorous species. Feeds mostly in the undergrowth and in the crowns of lower trees, occasionally on the ground. May be seen clinging sideways or upside-down on twigs, racing along some branch or fluttering in front of a sprig in its feverish search for food, the flocks rapidly 'flowing' from tree to tree. Pairs form in March.

FOOD. Insects and berries, the latter forming a large part of its diet in the non-breeding season; also flower-nectar.

VOICE AND CALLS. A constant twittering given while foraging — 'a shrill whinnying note' (Stanford). One call is rendered as *p-p-p-p-jet* (Fleming), others as a rapid *dzi-dzi-dzi-dzi-dzi* and a soft, high-pitched *pi-pi-pi-pi* (Lister).

BREEDING. Season, March to July. Nest, a deep cup of bamboo leaves, grasses, fern fronds, roots, bark fibre or other materials, lined with rootlets. Placed in bushes or bamboo clumps, generally between upright twigs, occasionally semi-pendent in a horizontal fork, between 30 and 150 cm above the ground. Eggs, 3 or 4, less often 5, very variable: white to pink with reddish specks, spots or blotches forming a ring or cap around the large end (for more details see Baker, *Nidification* 1: 242). Average size of 200 eggs including those of the Assam race, 18.4 × 14 mm (Baker). Building and incubation by both sexes; period about 12 days.

MUSEUM DIAGNOSIS. See Field Characters. For distinction from *commoda*, see 1393.

Young, like adult but upperparts richer fulvous, flanks and under tail-coverts more fulvous. Juvenal timaline primary and tail characters present.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	57-63	13-15	22-24	57-66 mm
♀♀	58-61	12-15	22-24	57-64 mm
				(BB, SA, Kinnear)

Weight 7 ♂♂ 14-18; 4 ♀♀ 14-16 g (GD). 6 ♂♂ 10-14 g (SA).

COLOURS OF BARE PARTS. Iris greyish brown. Bill greyish horn, brown on basal third of upper mandible. Legs, feet and claws plumbeous horny brown.

1393. Mishmi Quaker Babbler. *Alcippe nipalensis commoda* Ripley

Alcippe nipalensis commoda Ripley, 1948, Proc. Biol. Soc. Washington 61: 104

(Denig, Mishmi Hills, NE. Assam)

Alcippe nipalensis khasiensis Koelz, 1954, Contrib. Inst.

Regional Exploration, No. 1: 16 (Cherrapunji, Khasia Hills)

Baker, FBI No. 286 (part), Vol. 1: 275

LOCAL NAME. *Dao-pet-kashida* (Cachari).

SIZE. Sparrow —; length c. 12 cm (4½ in.).

TIMALIINAE

Key to the Species

	Page
A Crown black	
1 Underparts cinnamon.....	<i>H. capistrata</i> 129
2 Underparts mostly white or greyish white	
a Rump chestnut.....	<i>H. annectans</i> 128
b Rump grey.....	<i>H. gracilis</i> 132
B Crown grey or blue-grey	
3 A white patch on wing.....	<i>H. picoides</i> 134
4 No white on wing.....	<i>H. pulchella</i> 133

1395. Chestnutbacked Sibia. *Heterophasia annectans annectans* (Blyth)

Leioptila annectans [sic] Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 450

(Darjeeling)

Baker, FBI No. 317, Vol. 1: 300

Plate 80, fig. 14

LOCAL NAME. *Rubnun-pho* (Lepcha).

SIZE. Bulbul; length c. 18 cm (7 in.).

FIELD CHARACTERS. Above, crown, ear-coverts, sides of neck and sides of upper back black; hindneck streaked with white. Centre of back, rump and upper tail-coverts chestnut. Wing black with a chestnut bar, pale ashy edges to primaries and white tips to secondaries. Tail black, graduated, the rectrices tipped with white. Below, white; flanks, vent and under tail-coverts fulvous. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. A rather scarce resident except in Manipur where it is common; subject to vertical movements. From Darjeeling and Sikkim east through Bhutan and NEFA; Assam in the Khasi, Cachar and Mizo hills, Nagaland and Manipur; from c. 1200 to 2300 m in summer, straying down to the foothills in winter. Affects dense, humid evergreen forest.

Extralimital. Extends to western Burma and western Yunnan. The species ranges east to Vietnam.

GENERAL HABITS. Arboreal. Small parties keep to the canopy of tall trees. Creeps along the branches or clammers on the trunks like a nuthatch, searching amongst the moss, lichen and crevices of bark for insects.

FOOD. Beetles and other insects; also seeds.

VOICE AND CALLS. Song: 'a musical phrase of four notes, the first two on the same pitch, followed by two notes dropping in pitch, the whole sometimes preceded by an introductory grace note' (Smythies). Alarm-note *chirr-r-r* (Baker). A clear single whistle has also been recorded.

BREEDING. Season, May and June. Nest, cup-shaped, very neatly and compactly built; exteriorly of moss with a few leaves and fine grass, followed by a deep layer of grass, bamboo or other leaves and lined with fine fibres, rootlets or rhizomorphs. Usually placed on a branch of a small tree between two and six metres from the ground, generally in a fork of an outer branch, slender and difficult to reach. Eggs, normally 3, sometimes 2, exceptionally 4, very variable: the most common type is a very pale blue-grey or green-grey marked with blotches and smears of reddish brown, a few spots and

BABBLERS

129

short wavy lines of the same colour, and secondary blotches of pale lavender and pale brown. For further details see Baker, *Nidification* 1: 279. Average size of 25 eggs 22×15.5 mm (Baker). Incubation by both sexes. When disturbed from the nest, the bird's persistent alarm-notes draw attention to it.

MUSEUM DIAGNOSIS. See Field Characters; for details of plumage, Baker loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	75-84	15-16	c. 24 (Baker, Mayr)	81-87 mm

Bill from skull c. 18 mm.

COLOURS OF BARE PARTS. Iris brownish to deep crimson. Bill black, yellow at base of lower mandible. Legs and feet wax yellow; claws brownish.

1396. **Western Blackcapped Sibia.** *Heterophasia capistrata capistrata* (Vigors)

Cinclosoma capistratum Vigors, 1831, Proc. Zool. Soc. London: 56

(Himalayas; restricted to Simla by Ripley, Synopsis)

Malacia capistrata pallida Hartert, 1891, Kat. Vög. Mus. Senckenb.: 21

(northwestern India; restricted to Simla by Baker, 1921, JBNHS 27: 460)

Baker, FBI Nos. 311 (part), 312, Vol. 1: 296, 298

Plate 80, fig. 13

LOCAL NAMES. None recorded.

SIZE. Bulbul +; length c. 21 cm (c. 8 in.).

FIELD CHARACTERS. Above, ear-coverts, crown and erectile crest black. Back, rump and part of tail rufous, the middle back tinged with greyish brown. Wings slaty with paler outer edge and a black shoulder-patch; a white patch conspicuous in flight. Tail long, graduated, rufous with black outer edge and subterminal band, tipped with slaty grey. Below, entirely cinnamon. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. The western Himalayas from Murree to extreme western Nepal (Fleming & Traylor, *Feldiana* 53: 177). Breeds between 1800 and 2700 m; from October to March it is found mostly between 1200 and 2100 m but may also be seen as high as 2700 m and has strayed down to c. 100 m. Affects various types of forest but shows a preference for mixed evergreen: oak, fir, chestnut, etc.

GENERAL HABITS. Keeps in pairs or small parties according to the season. Strictly arboreal; hunts in the canopy and on moss-covered trunks and branches of tall trees, occasionally descending to the undergrowth. Very active and lively; hops swiftly from branch to branch like a laughing thrush, hanging upside-down on sprigs to peer under leaves, occasionally flying out to catch an insect on the wing; often flies up to a trunk and clings to the bark while exploring crevices. Flight rather laboured.

BABBLERS

131

Young (juvenile). Crown and sides of head brownish black with a tendency to pale shaft-lines. Rest of upperparts bright rufous, darker on upper tail-coverts and tinged with brown on mantle. Underparts paler rufous. Wing and tail much as in adult, but white on greater coverts not so extensive and tinged with buff. Outer tail-feathers narrower. Postjuvénal moult of body and probably lesser, median and greater coverts.

MEASUREMENTS

Wing 11 ♂♂ 100-110; ♀♀ 99-110 mm (Kinnear)

COLOURS OF BARE PARTS. Iris reddish brown. Bill black. Legs and feet flesh-brown.

1397. **Nepal Blackcapped Sibia.** *Heterophasia capistrata nigriceps* (Hodgson)

Sibia nigriceps Hodgson, 1839, Jour. Asiat. Soc. Bengal 8: 38

(Nepal, restricted to central Nepal by Ripley, 1950, JBNHS 49: 399)

Baker, FBI No. 311 (part), Vol. 1: 296

LOCAL NAME. *Sibya* (Nepal).

SIZE. Bulbul +; length c. 21 cm (c. 8 in.).

FIELD CHARACTERS. As in 1396, but back rufous v. greyish brown.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Nepal, meeting *capistrata* in the western extremity of its range and *bayleyi* in the eastern extremity (Fleming, JBNHS 65: 331-2). Breeds from c. 2000 to 3500 m, locally as low as 1600 m. Winters (October to March) between 1000 and 2700 m. Affects evergreen or deciduous forest in wet zone; a characteristic species of oak forest.

GENERAL HABITS, FOOD and VOICE. As in 1396.

BREEDING. Season, May to August. Nest and eggs as in 1396.

MUSEUM DIAGNOSIS. Differs from both *capistrata* and *bayleyi* in having the centre of back rufous, hardly tinged with brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	88-102	22-24	c. 28	99-106 mm
♀♀	89-93	22-24	c. 28	94-99 mm

Weight 9 ♂♂ 37-47; 4 ♀♀ 36-41 g (GD).

COLOURS OF BARE PARTS. As in 1396.

1398. **Eastern Blackcapped Sibia.** *Heterophasia capistrata bayleyi* (Kinnear)

Leiotila capistrata bayleyi Kinnear, 1939, Ibis: 752

(Takto, near Sakdan, E. Bhutan)

Baker, FBI No. 311 (part), Vol. 1: 296

LOCAL NAMES. *Sambrik-pho* (Lepcha); *Serigens* (Bhutane).

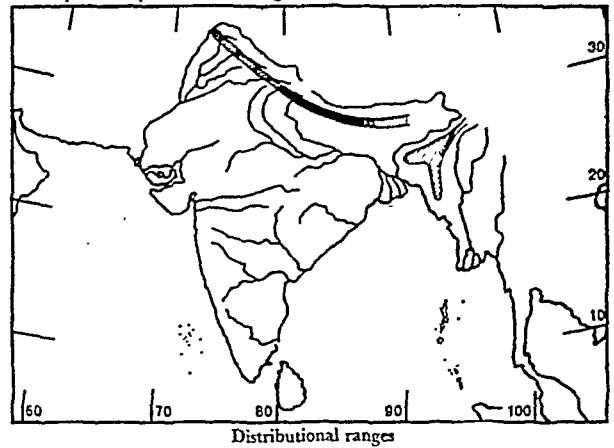
SIZE. Bulbul +; length c. 21 cm (c. 8 in.).

FIELD CHARACTERS. As in 1396, q.v. See Museum Diagnosis.

130

TIMALIINAE

Heterophasia capistrata and *H. gracilis*



H. c. capistrata (1396).
 H. c. nigriceps (1397).
 H. c. bayleyi (1398).
 H. gracilis (1399).

FOOD. Insects and berries. Often visits flowers of Silk Cotton trees and rhododendron for insects and nectar.

VOICE and CALLS. Song, a clear, flute-like, very pleasing and far-carrying *tee-dee-dee-dee-dee-o-lu*, the first five notes on the same tone, the sixth lowest and the last in between, sometimes shortened of the first two or three notes but ending always typical (Desfayes); a very characteristic sound of the forests of its zone. Alarm, a harsh, rasping *chrai-chrai-chrai-chrai-chrai* (Lister). Call-note, a loud, rapid *chi-chi* (Fleming); *tee-riri-tee-riri*, like the jingle of a silver bell, repeated every half-minute or so (SA).

BREEDING. Season, April to August, chiefly June and July. Nest, a neat cup of green moss, dry grasses and leaves, firmly interwoven and lined with rootlets, pine needles or other fine materials. Generally built on trees or bushes, often near the extremity of a branch, from two to eighteen metres above the ground, on average about seven or eight metres. Eggs, usually 3, sometimes 2, very distinctive: pale bluish grey, clouded, spotted and lined with various shades of brown. For further details see Baker, *Nidification* 1: 272-4. Average size of fifty eggs 25.5×18.3 mm (Baker). Both sexes share in nest building. Incubation apparently by female alone. The birds desert the nest on the least provocation—merely climbing the tree and peeping into the nest in some cases is enough.

MUSEUM DIAGNOSIS. Differs from *nigriceps* (1397) in being paler and having the centre of the back pale brownish grey. Also a little larger. Postnuptial moult in September-October.

132

TIMALIINAE

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Eastern Nepal from the Okhaldunga district east through Darjeeling, Sikkim, the Chumbi Valley, Bhutan, and NEFA to the Dafia Hills; from c. 1800 to at least 2500 m in summer, descending to the foothills in winter. Affects tall moist-deciduous or evergreen forest.

GENERAL HABITS, FOOD and VOICE. As in 1396.

BREEDING. As in 1397.

MUSEUM DIAGNOSIS. Differs from *nigriceps* in having the back sooty brown tinged with grey.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	88-101	22-23	28-31	102-107 mm
♀♀	83-92	21-23	27-30	90-109 mm

Weight 25 ♂♀ 28-45 (av. of 15, 39.4) g—SA.

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet brownish flesh; claws horny brown.

1399. **Grey Sibia.** *Heterophasia gracilis* (McClelland)

Hyppipetes gracilis McClelland, 1839 (1840), Proc. Zool. Soc. London: 159

(Assam, restricted to Naga Hills by Koelz, 1954, loc. cit. below;

but see Biswas, 1963, JBNHS 60: 683)

Leiotila gracilis ordanica Koelz, 1954, Contrib. Inst.

Regional Exploration, No. 1: 7 (Mawphlang, Khasi Hills)

Leiotila gracilis dorsalis Stresemann, 1940, in Stresemann & Heinrich,

Mitt. Zool. Mus. Berlin 24: 153 (Mount Victoria, Upper Burma)

Baker, FBI No. 313, Vol. 1: 298

Plate 80, fig. 17

LOCAL NAME. *Tit* (Angami Naga).

SIZE. Bulbul +; length c. 21 cm (8 in.).

FIELD CHARACTERS. Above, crown and ear-coverts black. Back and rump grey. Wing black, tertiaries grey. Tail graduated, grey with broad black outer edges and subterminal band; tip grey. Below, throat and centre of belly white; sides pale ashy; under tail-coverts buff. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Common resident. Assam in the Khasi and Cachar hills, the Patkai Range, Dibrugarh, Nagaland and Manipur, from 1200 m to the highest summits (1400 to 2800 m on Mt Victoria). Wanders down to about 900 m in the cold weather. A geographical representative of *H. capistrata*, differing from it only by the lack of any rufous pigment. Affects deciduous or evergreen primeval forest and, in the Khasi Hills, mostly pine forest.

Extremal. Western and northern Burma to western Yunnan.

GENERAL HABITS. Arboreal, active and restless. Keeps in pairs or small parties according to the season, often in mixed company. Frequent the tops of trees, hopping along the branches, sometimes momentarily cocking tail like a magpie-robin, dodging in and out of clumps of epiphytes; only occasionally descending to bushes.

BABBLERS

133

FOOD. Insects, berries and seeds; often visits the blossoms of various trees for nectar and insects.

VOICE AND CALLS. A melancholy song of four flute-like descending notes, oft-repeated at short intervals; a variation consists of the first and second notes being doubled (Heinrich); this song appears to be very similar, if not identical with that of the Blackheaded Sibia. Alarm-note, a *churr* heard especially when going to roost (Stanford). Also various notes of a conversational character.

BREEDING. *Season*, chiefly May and June, extending into August. *Nest*, a deep, compact cup of moss-roots, leaves and fibres, covered exteriorly with green moss, lined with rootlets or rhizomorphs. Usually placed in the crown of trees, especially pine, very difficult to find. *Eggs*, 2 or 3, one as often as the other, occasionally 4, pale bluish or greenish grey, lightly freckled with reddish brown or dark brown, more numerous at the large end. Average size of 60 eggs 23.9 × 17.7 mm (Baker). Building of nest, incubation and care of young by both sexes. Incubation period unknown.

MUSEUM DIAGNOSIS. See Field Characters.

Young, like adult but colours not so pure.

MEASUREMENTS

Wing ♂ ♀ 84-95; tail 101-112 mm (Stanford)

Wing 10 ♂ 89-96; 10 ♀ 87-95; tail 100-110 mm (Stresemann)

Bill from skull c. 24; tarsus c. 28 mm

Weight ♂ ♀ 34-42 g (SDR).

COLOURS OF BARE PARTS. Iris red, reddish brown to brown. Bill black. Legs and feet dark brown to black; soles yellow.

1400. Beautiful Sibia. *Heterophasia pulchella* (Godwin-Austen)

Sibia pulchella Godwin-Austen, 1874, Ann. Mag. Nat. Hist. 13: 160
(Kunho Peak, eastern Barail Range, Naga Hills)

Lioptila pulchella caeruleoflora Rothschild, 1921, Novit. Zool. 28: 38
(Shweli-Salwin Divide)

Lioptila pulchella nigraurita Kinnear, 1944, Ibis 86: 83

(Lhalung, Pachakshiri dist., SE. Tibet, 7000 ft)

Baker, FBI No. 320, Vol. 1: 302

Plate 80, fig. 15

LOCAL NAMES. None recorded.

SIZE. Bulbul +; length c. 22 cm (9 in.).

FIELD CHARACTERS. *Above*, head bluish slate; forehead, lores and line through eye black. Back and rump slaty. Wing with pale bluish outer edge and a conspicuous black shoulder-patch. Centre of tail dark brown with black edges and subterminal band; terminal band slaty. *Below*, uniformly slate-grey, paler than above. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements. NEFA from the Daffa to the Mishmi hills, Nagaland and Assam in the Cachar and Khasi hills (winter only ?); from 1200 to 2700 m in winter, breeding mostly above 2100 m and up to 3000 m. Affects mossy forest.

Extralimital. Southeastern Tibet, northern Burma and western Yunnan.

FLYCATCHERS

135

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common; some altitudinal movements with the seasons. The Himalayan foothills from Nepal (not recorded since 1879 when Scully found it 'tolerably common about Nimboatar [central dun] in winter') east through Darjeeling, Sikkim, Bhutan and NEFA to the Mishmi Hills, thence south to Nagaland; from the base of the hills to c. 900 m in winter and probably somewhat higher in summer (up to 2000 m in northern Burma). Affects forest, open scrub with large trees or clearings in evergreen forest.

Extralimital. Extends to northeastern Burma. The species ranges east to Vietnam and south to the Malay Peninsula and Sumatra.

GENERAL HABITS. Keeps in pairs or in parties according to the season, sometimes numbering up to thirty or forty individuals. Frequents mostly the tree-tops. 'A curious blend of tree-pie, drongo and fantail flycatcher, swinging their tails, cocking them up over their backs, then crouching on a branch with outspread tail, or drifting from tree to tree following one behind another' (Stanford).

FOOD. Insects, flower-buds and seeds; feeds regularly on the nectar of *Salmalia*, *Erythrina*, *Prunus* and other flowers in company with drongos and Black Buleuls, the forehead often becoming so thickly coated with whitish pollen as to give the bird an intriguingly novel look.

VOICE AND CALLS. Song, a rich, whistling six-note phrase of thrush-like quality ending in *wheet-wheet*, reminiscent in cadence of *Alcippe poioicephala* but much louder (SA). Call-note, a high-pitched but not loud *trip-trip-trip* uttered rapidly (Smythies).

BREEDING. Known only from a few nests found by Stevens. *Season*, April to June. *Nest*, a deep cup made mostly of moss, lined with rootlets or rhizomorphs and placed high up in pines on a horizontal branch, carefully hidden. *Eggs*, very similar to those of *H. gracilis*, pale grey-green marked with very small blotches of reddish brown, more numerous at the large end. Clutch size not given. Average size of 5 eggs 24.5 × 18.1 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	109-125	24-26	30-31	205-220 mm (Baker, SA)

Tail 1 ♂ 199; 1 ♀ 188 mm (Mayr).

COLOURS OF BARE PARTS. Iris red or crimson, sometimes brown. Bill black. Legs and feet dusky grey; claws horny brown.

Subfamily MUSCICAPINAE: Flycatchers

For description see Van Tyne, J. & Berger, A. J., 1959: 526 (Family Muscicapidae)

Cf. Mayr, E., in Delacour, J. & Mayr, E., 1945, *Zoologica* 30 (3): 113

Delacour, J., 1946, *Zoologica* 31 (1): 4

Deignan, H. G., 1947, *Proc. Biol. Soc. Washington* 60: 165-8

Vaurie, C., 1953, *Bull. Amer. Mus. Nat. Hist.* 100: 491-521 (Muscicapinae)

Ripley, S. D., 1955, *Auk* 72: 86-8 (Muscicapinae)

134

TIMALIINAE

GENERAL HABITS. Keeps in pairs or small parties according to the season, sometimes in company with Hoary Barwings or other babblers. Frequents tall trees, feeding mostly on the lichen- and moss-grown trunks and branches, hopping actively along the big boughs, stopping abruptly at intervals, or moving about slowly on the outer branches. On a fleeting glimpse the quick jerky movements may be easily mistaken for a squirrel's. Often sits up in the top branches of a dead tree.

FOOD. Insects and their larvae, seeds and other vegetable matter. Regularly probes into the blossoms of rhododendron, *Prunus*, *Magnolia*, etc. for nectar and insects, its forehead and breast sometimes becoming so thickly plastered with pollen as to make it look like a different species.

VOICE AND CALLS. 'Often very silent but at times bursts into a bewildering variety of notes, one in particular resembling the jingling of a bunch of keys' (Stanford). Song likened to the call of a Redshank with three other notes added (Granbrook); also described as a musical phrase of six notes in pairs, with a drop in pitch after each pair and also a drop after the first note (Smythies).

BREEDING. Known only from one nest taken in May, built on a horizontal branch of a small tree; it was cup-shaped, made of moss, lined with rootlets and placed nearly at the end of the branch (Field *apud* Baker, *Nidification* 1: 281). The single egg was a pale blue, unspotted, and measured 23.8 × 17.9 mm. This egg may not have been typical.

MUSEUM DIAGNOSIS. See Field Characters. Ear-coverts may be slaty or brown to black.

Young, like adult but slightly duller.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	101-115	25	c. 30	113-118 mm
♀ ♀	92-100	—	—	100-108 mm (SA, SDR, Mayr)

Weight ♂ ♀ 35-47 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet brown; soles yellow.

1401. Longtailed Sibia. *Heterophasia picaoides picaoides* (Hodgson)

Sibia picaoides Hodgson, 1839, Jour. Asiat. Soc. Bengal 8: 38 (Nepal)
Baker, FBI No. 310, Vol. 1: 295

Plate 80, fig. 16

LOCAL NAME. *Matheo-pho* (Lepcha).

SIZE. Bulbul, with a long tail; length c. 30 cm (12 in.).

FIELD CHARACTERS. *Above*, dark slate-grey; wings blackish brown with a white patch. Tail very long and graduated, tipped with whitish. *Below*, uniformly grey, paler than back and still paler on belly. Under surface of closed tail appears barred black and grey. Sexes alike.

The slaty colour, extremely long graduated white-tipped tail and white patch on blackish wing make the bird easy to identify.

136

MUSCICAPINAE



Paradise Flycatcher (1461)

Key to the Genera

	Page
A Tail longer than wing.....	<i>Rhipidura</i> 205
B Tail shorter than wing	
1 Rectal bristles very long	
a Bill well hooked at tip.....	<i>Rhinomyias</i> 136
b Bill not hooked.....	<i>Culicicapa</i> 202
2 Rectal bristles short	
c Bill wide at base.....	<i>Muscicapa</i> 137
d Bill narrow and weak.....	<i>Muscicapella</i> 201

Genus RHINOMYIAS Sharpe

Rhinomyias Sharpe, 1879, Cat. Bds. Brit. Mus. 4: 367. Type, by subsequent

designation, *Alcippe pectoralis* Salvadori = *Rhinomyias umbratilis* (Strickland)

Olyeris Baker, 1930, Fauna Brit. Ind., Bds. 7: 137.

Type, by original designation, *Cyornis olivacea* Hume

Cf. Vaurie, C., 1932, *Amer. Mus. Novit.*, No. 1570: 1-36

A rather heavily set flycatcher. Tarsus booted or with a vague trace of one or possibly two anterior scutes. Bill well ridged, notched and hooked at tip. Rectal bristles well developed.

FLYCATCHERS

137

1402. Olive Flycatcher. *Rhinomyias brunneata nicobarica* Richmond

Rhinomyias nicobarica Richmond, 1902, Proc. U.S. Nat. Mus. 25: 295
(Great Nicobar)
Baker, FBI No. 631a, Vol. 8: 627
Plate 81, fig. 13

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 14 cm (6 in.).

FIELD CHARACTERS. A brown flycatcher of low shrubbery. Above, entirely brown; tail more rufous-brown; a pale eye-ring. Below, chin, throat and belly whitish; a pale brown band across breast; flanks brown. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. So far known only as a common winter visitor to the Great and Little Nicobar Islands. Not known to occur north of Little Nicobar, but may be expected in the Andamans (see Butler, JBNHS 12: 401). Affects forest, sometimes gardens.

EXTRALIMITAL. Winter range outside the Nicobars unknown. A migrant has been taken in the Strait of Malacca on 1 November. Breeding range unknown. The species as a whole breeds in eastern China (Kwangsi to Chekiang) and winters, so far as known, in the southern Malay Peninsula. This subspecies has a more rounded wing than the nominate race, suggesting that it may be less of a long-range migrant.

MIGRATION. All specimens from the Nicobars have been taken in March (but see 'Extralimital' above).

GENERAL HABITS. Keeps close to the ground, usually within three metres, in low bushes in heavy forest.

FOOD. Insects.

VOICE and CALLS. Song similar to the opening portion of that of Fantail Flycatcher, *Rhipidura a. albogularis*, but without the ending *to-lea, to-lea, to-lea* (Abdulali).

MUSEUM DIAGNOSIS. See Field Characters.

Specimens taken in March still show some ochraceous spotting of the immature on the sides of nape, tips of tertiaries and secondary coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	74-80	18	17	54-59 mm
♀♀	74-75	18-19	18	52-54 mm (MD)

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible black, lower yellowish flesh. Legs and feet yellowish flesh.

Genus MUSCICAPA Brisson

Muscicapa Brisson, 1760, Orn. 1: 32; 2: 357. Type, by tautonymy, '*Muscicapa*', i.e. *Muscicapa striata*, ibid.*Niltava* Hodgson, 1837, Ind. Rev. 1 (12): 650. Type, by original designation, *Niltava Sundara* Hodgson*Siphia* Hodgson, 1837, Ind. Rev. 1 (12): 651. Type, by monotypy, *Siphia strophiala* Hodgson

FLYCATCHERS

139

Page

- 8 Throat entirely blue
- g A white patch on tail
 - o¹ White almost reaching tip of rectrices..... *M. concreta* ♂ 183
 - o² White restricted to basal half..... *M. albicaudata* ♂ 199
 - h No white on tail
 - o³ Whole plumage including belly verdigris or turquoise..... *M. thelaxina* ♂ ♀ 198
 - o⁴ Belly whitish
 - a¹ Under tail-coverts barred..... *M. unicolor* ♂ 189
 - a² Under tail-coverts white
 - b¹ Blue parts indigo; 4th primary equal to 5th *M. pallipes* ♂ 184
 - b² Blue parts with a greyish green tinge; 4th primary shorter than 5th..... *M. sordida* ♂ ♀ 196
- VIII Upper plumage mostly brown (of various shades)
- A A blue patch on side of neck
 - i Size small, wing under 70 mm..... *M. macgrigoriae* ♀ 178
 - ii Larger, wing over 70 mm
 - 1 A white throat-patch..... *M. sundara* ♀ 179
 - 2 No white on throat..... *M. grandis* ♀ 176
 - B No blue patch on side of neck
 - iii A white patch on tail
 - 3 No throat-patch; whole plumage tinged with blue *M. albicaudata* ♀ 199
 - 4 A well-defined white throat-patch; white of tail reaching almost to tip..... *M. concreta* ♀ 183
 - 5 White of throat less pure, less well defined; white of tail more restricted
 - a Above paler brown; 2nd primary equal to 6th..... *M. parva* ♀ 154
 - b Above darker brown; 2nd primary shorter than 6th..... *M. subrubra* ♀ 157
 - 6 Throat rufous
 - c Throat orange-rufous bordered with ashy..... *M. parva* ♂ 154
 - d Throat rufous-chestnut bordered with black..... *M. subrubra* ♂ 157
 - iv No white on tail
 - 7 Underparts largely rufous or ochraceous
 - e Throat whitish or buffish
 - a¹ Throat white, tail rusty..... *M. ferruginea* ♂ ♀ 152
 - a² Throat whitish, belly washed with ochraceous
 - b¹ Tail rufous-brown..... *M. p. poligenys* ♂ ♀ 186
 - b² Tail washed with blue..... *M. p. verreyi* ♂ 183
 - a³ Throat ochraceous, belly and under tail-coverts white..... *M. rubeculoides* ♀ 190
 - f Throat orange-rufous like breast
 - a¹ Tail blue..... *M. tickelliae* ♀ 193
 - a² Size small, wing under 70 mm
 - b¹ Upper tail-coverts rusty..... *M. sapphirina* ♀ 173
 - b² Upper tail-coverts olive-brown..... *M. hyperythra* ♀ 163
 - a³ Size medium, wing over 70 mm
 - b¹ No grey on breast, tail brown..... *M. banyumas* ♀ 192
 - b² Some grey on lower breast, tail chestnut..... *M. pallipes* ♀ 184

MUSCICAPINAE

138

Muscicapula Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 939. Type, by subsequent designation, Gray, 1855: 52, '*Muscicapa sapphirina* Tickell = Blyth

Cyornis Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 940. Type, by subsequent designation, Gray, 1855: 53, '*Phoenicurus rubeculoides* Vigors

Hemichelidon Hodgson, 1845, Proc. Zool. Soc. London: 32, ex Zool. Misc. 1844: 84, nom. nud. Type, by original designation, *Hemichelidon fuliginosa* Hodgson

Anthipes Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 122. Type, by monotypy, *Anthipes gularis* Blyth = *A. moniliger* Hodgson

Ochromela Blyth, 1847, Jour. Asiat. Soc. Bengal 16, pl. 1: 121. Type, by monotypy, *Saxicola nigrorufa* Jerdon

Alcedinax Cabanis, 1851, Mus. Hein. 1: 52. Type, by original designation, *Muscicapa undulata* Vieillot

Euryias Cabanis, 1851, Mus. Hein. 1: 53. Type, by monotypy, *Muscicapa indigo* Horsfield

Bill depressed, wide at base. Rictal bristles usually well developed. Tarsus short. Young of all species with characteristic ochraceous spotting.

Key to the Species

- | | | Page |
|----------------|--|-------------------------------|
| I | Plumage black and white..... | <i>M. westermanni</i> ♂ 165 |
| II | Plumage slaty above; throat and breast rufous..... | <i>M. hodgsonii</i> ♂ 164 |
| III | Back, rump and tail bright orange-rufous..... | <i>M. nigrorufa</i> ♂ ♀ 175 |
| IV | Throat and breast slaty with a rufous gorget..... | <i>M. strophiala</i> ♂ ♀ 159 |
| V | Throat white bordered with black..... | <i>M. moniliger</i> ♂ ♀ 161 |
| VI | Plumage mostly brown..... | VIII |
| VII | Upper plumage mostly blue (of various shades) | |
| A | Some rufous colour below | |
| i | Throat blue or blackish blue | |
| 1 | Rufous restricted to breast..... | <i>M. rubeculoides</i> ♂ 190 |
| 2 | Rufous extending to under tail-coverts | |
| a | Entire throat blackish blue..... | <i>M. sundara</i> ♂ 179 |
| b | Chin and sides of throat blue; rufous of breast extending as a wedge to centre of throat..... | <i>M. virida</i> ♂ 182 |
| ii | Throat rufous | |
| 3 | A white supercilium..... | <i>M. hyperythra</i> ♂ 163 |
| 4 | No white supercilium | |
| c | Upper tail-coverts brilliant ultramarine blue..... | <i>M. sapphirina</i> ♂ 173 |
| d | Upper tail-coverts dull indigo blue | |
| o ¹ | Blue of upperparts deeper, indigo..... | <i>M. tickelliae</i> ♂ 193 |
| o ² | Blue of upperparts paler, more glaucous..... | <i>M. banyumas</i> ♂ 192 |
| B | No rufous on underparts | |
| iii | A blue patch on side of neck | |
| 5 | Size large, wing over 90 mm..... | <i>M. grandis</i> ♂ 176 |
| 6 | Size small, wing under 80 mm..... | <i>M. uncinigoriae</i> ♂ 178 |
| iv | No blue patch on side of neck | |
| 7 | Centre of throat white | |
| e | Upperparts slaty blue, 3rd primary shorter than 4th..... | |
|  | ..... | <i>M. leucomelanura</i> ♂ 170 |
| f | Upperparts cerulean blue, usually at least a trace of white supercilium; 3rd primary equal to 4th..... | <i>M. supercilialis</i> ♂ 168 |

MUSCICAPINAE

140

Page

- 8 No rusty or rufous on underparts
- g Underparts olive-brown, throat ochraceous.....
 M. virida ♀ 182 |
- h Tail bright rufous
 - a¹ Size small, wing under 70 mm.....
 M. leucomelanura ♀ 170 |
 - a² Size medium, wing over 70 mm.....
 M. ruficauda ♂ ♀ 150 |
- i Tail brown or rufous-brown
 - a² Forehead and breast streaked.....
 M. striata ♂ ♀ 140 |
 - a³ Throat olive-buff.....
 M. hodgsonii ♀ 164 |
- a⁴ Throat more or less whitish
 - b¹ Throat, pure white.....
 M. mutui ♂ ♀ 148 |
 - b² Size small, wing under 65 mm
 - c¹ Upper tail-coverts rusty.....
 M. westermanni ♀ 165 |
 - c² Upper tail-coverts grey-brown.....
 M. supercilialis ♀ 168 |
- b³ Size medium, wing over 65 mm
 - c³ Bill over 16 mm.....
 M. unicolor ♀ 189 |
 - c⁴ Bill under 16 mm
 - d¹ Underparts mostly brown; inner webs of tertiaries pinkish buff.....
 M. sibirica ♂ ♀ 142 |
 - d² Underparts mostly whitish; inner webs of tertiaries cream-buff.....
 M. latirostris ♂ ♀ 145 |

1403, 1404. Spotted Flycatcher. *Muscicapa striata sarudnyi* Snigirewskij

Muscicapa striata sarudnyi Snigirewskij, 1928, Jour. f. Orn. 76: 595, new name for *Batalis griseola* var. *pallida* Zarudny, 1903, nec *Muscicapa pallida* Müller (Eastern Iran and Transcaucasia)

Baker, FBI No. 631, Vol. 2: 202 (= *westermanni*)

Plate 81, fig. 5

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 13 cm (5 in.).

FIELD CHARACTERS. A pale greyish brown, characteristically upright-sitting flycatcher. Both in flight and at perch mistakable in the distance for Yellowthroated Sparrow (*Petronia xanthocollis*, 1949). A slight fork in the tail enhances the resemblance.

Above, drab brown, tail and wings darker; crown noticeably streaked with pale and dark brown. A whitish ring round eye. Below, whitish with dark streaks on throat and breast. Sexes alike.

M. sibirica is much darker, sooty grey on breast; *M. latirostris* has a more distinct whitish eye-ring and lores, and *M. ruficauda* has a rufous tail; none of these have a streaked crown.

¹ According to Dunajewski (in *spit.* to Whistler) a specimen from Gilgit is typical *sarudnyi* while two others are almost identical with *striata*. Since *sarudnyi* is the form breeding in adjacent Afghanistan and Turkistan (while *sarudnyi* breeds in western Siberia) it appears more logical, pending examination of more material, to consider the western Himalayan breeding form as belonging to *sarudnyi*.

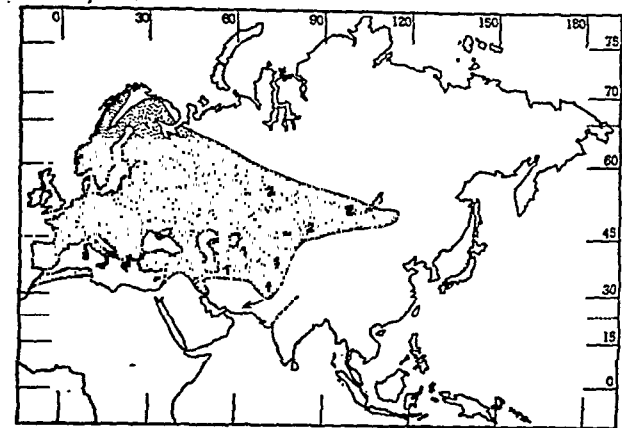
The subspecies *sarudnyi* may occur in West Pakistan on autumn migration. It differs from *sarudnyi* by lacking any yellowish rusty wash on belly.

FLYCATCHERS

141

STATUS, DISTRIBUTION and HABITAT. Common summer (breeding) visitor in the mountains of West Pakistan, from Astor, Baltistan, Gilgit and Chitral south to northern Baluchistan (Ziarat); from c. 2100 m to 3300 m. Affects open forest, especially pine. Also passage migrant (chiefly autumn) in some areas (see below).
Extralimital. Extends to Iran, Afghanistan, Transcaspia and Turkestan. The species ranges from western Europe to Mongolia.

Muscicapa striata



Distributional range
Broken line autumn passage extension
1 *sarudnyi* (1404).
2 *neumanni* (1403).

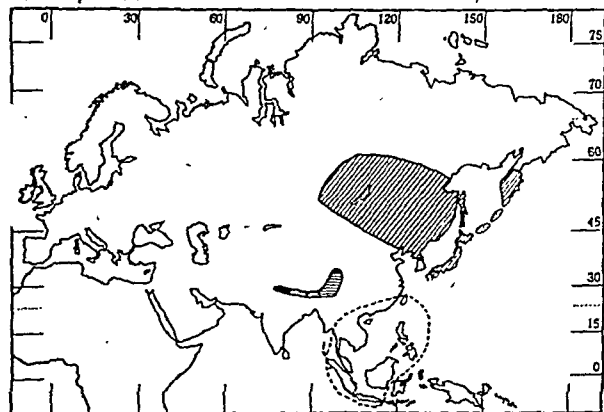
MIGRATION. Winters in east Africa. Recorded on migration as high as 4200 m (Sughet Pass, Kunlun Range) and in the plains of West Pakistan (Sind, Baluchistan — Chagai, central and coastal Makran) and north-western India as far east as Simla, western Rajasthan, northern Gujarat (Deesa), Kutch and the Kathiawar peninsula. Spring passage migration takes place at the end of April and May (but mostly, if not entirely, west of the Indus, by-passing northwestern India). Arrives on the breeding grounds in the first week of May, leaves in late August and early September. Autumn passage occurs through above areas from the last part of August till October. At this time, affects large trees, and open babool (*Acacia*) and kandi (*Prosopis*) jungle.
GENERAL HABITS. A quiet, solitary bird, usually perching on the lower branches of trees, seldom near top; makes typical sallies with rapid swerves and twists as it pursues a gnat; often returns to the same perch, or to another nearby. Frequently descends to the ground to pick up a crawling insect. Sits upright, head somewhat sunk between shoulders, tail slightly depressed like a bush chat's, and similarly switched loosely up and down from time to time, accompanied by flicks of the wings.

FLYCATCHERS

143

M. striata adult is almost entirely white below. *M. latirostris* is almost identical with *sibirica* above, but tips of its closed wings are about 15 mm shorter than tail (*v.* reaching tip of tail in *sibirica*) and its throat and chin are entirely white. *M. mutua* is distinguished by the same characters but has a diffuse dusky breast-band and rufous-brown tail. In *M. ruficauda* the tail is a richer rufous. *M. poliolegens* and *M. ferruginea* have ochraceous underparts.
STATUS, DISTRIBUTION and HABITAT. An altitudinal migrant, generally common. From Tank Zam Valley, S. Waziristan (Hudson, JBNHS 27: 402), the Safed Koh, Kohat, Chitral and Gilgit east through Kashmir (very

Muscicapa sibirica



Distributional ranges
gulmergi (1405).
cacabata (1406).
rothschildi (RE).
sibirica (RE).
Broken line: Winter range of *M. s. sibirica*

common and abundant), Spiti and Dhaola Dhar to Garhwal; from c. 2100 to timber-line (c. 3300 m), locally down to 1500 m (Kulu — Whistler, JBNHS 31: 468); optimum zone 2400-3000 m. Affects open forest of pine, deodar, fir and birch, or oak and conifers.
MIGRATION. One of the latest migrants; arrives on its breeding ground in the first half of May and leaves in September. A few birds leave their summer zone immediately after the nesting period and appear at lower levels (c. 1200 m) already in the first week of July. Passage at mid-altitudes takes place mostly in April-May and September-October. Recorded as a migrant or straggler as high as 3900 m (Lahul). Winter quarters very imperfectly known (records from November to March are totally lacking); presumably in the foothills below c. 1200 m.

142

MUSCICAPINAE

FOOD. Insects, chiefly Diptera.
VOICE and CALLS. Not recorded for this subspecies. Call-note of nominate race is a thin, shrill *tzee*; alarm-note *tzee-tzee*. Song infrequently heard, half-a-dozen squeaky notes *sip, sip, sree, sreeti, sree, sip* and variants, with pause between each note (Witherby).
BREEDING. Within our limits (Chitral, N. Baluchistan — Ziarat, Quetta), season May and June. Nest, a bunch of grass, moss and roots, lined with hair and rootlets. Placed on the branch of a tree or against the trunk, sometimes in crevices of stumps, a couple of metres from the ground. Eggs, 4 or 5, pale sea-green heavily blotched with pale reddish brown; variable (for further details see Baker, *Nidification* 2: 174). Average size of 100 eggs 18.3 x 14.2 mm (Baker). Building, incubation and care of young by both sexes.
MUSEUM DIAGNOSIS. See Field Characters. For details of plumage see Baker, loc. cit. Differs from *neumanni* in having a yellowish rusty wash on belly. See footnote p. 140.
Young, spotted with buff; much paler than young of *M. sibirica*.
MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	82-92	14-18	14-16	60-65 mm
♀♀	82-92	14-18	15-16	59-65 mm

(HW, SA)
Weight 4 ♂♂ 13-16; 1 ♀ 14 g (Paludan — Afghanistan).
COLOURS OF BARE PARTS. Iris brown. Bill black, brownish flesh at base of lower mandible. Legs and feet blackish.

MUSCICAPA SIBIRICA Gmelin

Key to the Subspecies

- Paler, more grey. *M. s. gulmergi*
Darker, more brown. *M. s. cacabata*

1405. Kashmir Sooty Flycatcher. *Muscicapa sibirica gulmergi* (Baker)

Hemichelidon sibirica gulmergi Baker, 1923, Bull. Brit. Orn. Cl. 43: 155 (Gulmerg, Kashmir)
Baker, FBI No. 633, Vol. 2: 205

LOCAL NAMES. None recorded.
SIZE. Sparrow —; length c. 13 cm (5 in.).
FIELD CHARACTERS. A dark sooty-brown flycatcher, hawking midges etc. by characteristic looping aerial sallies, often returning to the same perch and sitting bolt upright.
Adult. Above, entirely grey-brown with noticeably large eyes and a pale eye-ring. Below, grey-brown with a whitish throat-patch and centre of belly. Sexes alike.
Young, sooty-brown spotted with buff and whitish, much darker than *M. striata* of corresponding age. Immatures of other flycatchers cannot be told apart except in certain cases by their behaviour.

144

MUSCICAPINAE

GENERAL HABITS. Very similar to those of the Spotted Flycatcher, but it is more of a forest bird. Particularly fond of forest glades and clearings littered with tangled brushwood, with gaunt tree-trunks and stumps standing here and there to serve as hunting bases. Felled or storm-blown trees likewise afford favourite perches. From the tip of a vertical dead branch or upturned root (now telegraph wires where available) the bird flies out in all directions to take a midge — maybe from as much as ten metres away — by agile twists and turns and circles back, sometimes diverting to seize a second victim before regaining its base. Also launches vertical sorties skyward after the quarry, tumbling back to the perch after each capture. These quick-repeated forays continue throughout the day and often well into the dusk, frequently 3 or 4 individuals hawking within a restricted clearing. May often be seen hunting close to the ground especially after rain, when it has been observed taking food from the ground.
FOOD. Insects, mostly Diptera.
VOICE and CALLS. Usually very silent. Song, very high-pitched, thin, reedy, usually of three notes *tzee-tee-tee* in descending scale in half- or quarter-tones, with occasional variations; not unlike a thin edition of the song of a Greywinged Blackbird (Lister). Call-note unrecorded.
BREEDING. Season, May to July. Nest, a compact cup c. 8 cm across and nearly as deep, composed almost entirely of moss with lichen on the outside, consolidated with cobweb and lined with fine grass, fur or hair, with an occasional feather. Usually placed on a horizontal branch of a large spruce or Silver Fir where the leafy portion commences. Often in very exposed situations; sometimes against the trunk, tucked behind the out flaking bark of a birch or similar tree; height above ground varies from two to eighteen metres. Often three or four occupied nests within a 50-metre radius. Eggs, 3 or 4, pale green, densely freckled with pale reddish especially around the large end. Average size 16 x 12.1 mm (Baker, Osmaston). Incubating female fed at nest by male whilst hovering momentarily against it. Both sexes share in tending the young; male's share in incubation, and incubation period, unrecorded.
MUSEUM DIAGNOSIS. See Field Characters. For distinction from *cacabata* see 1406.
Young (juvenile). Upperparts, wing-coverts and sides of head as in adult, but crown with central terminal ochraceous streaks; spots elsewhere. Underparts whitish with black margins, obsolete on throat and belly. Under tail-coverts pale ochraceous. Tertiaries with fulvous edges and tip. Tip of tail fulvous. Postjuvinal moult of body-feathers, lesser and median coverts, but here and there juvenal feathers are retained, with ochraceous spots faded to white.
First-year birds recognized by ochraceous tips of greater and primary coverts, fulvous edges of tertiaries and tip of tail.
MEASUREMENTS and COLOURS OF BARE PARTS. As in 1406.
1406. Nepal Sooty Flycatcher. *Muscicapa sibirica cacabata* Penard
Muscicapa sibirica cacabata Penard, 1919, Proc. New Eng. Zool. Cl. 7: 22. New name for *Hemichelidon fuliginosa* Hodgson, 1844 (Nepal), preoccupied in *Muscicapa* by *M. fuliginosa* Sparrman, 1787, and *M. fuliginosa* Gmelin, 1789
Baker, FBI No. 632, Vol. 2: 204
Plate 81, fig. 7
LOCAL NAME. Deng-chin-pa-pa (Lepcha).

FLYCATCHERS

145

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1405, q.v.

STATUS, DISTRIBUTION AND HABITAT. An altitudinal migrant, locally common. From western Nepal east through Darjeeling, Sikkim to eastern Bhutan (Sakden) and western NEFA (Mago district — Ludlow, *Ibis* 1937: 279). Eastern limit unknown; probably occurs throughout NEFA. Breeds from 2400 to 3300 m in Nepal and up to 3600 in southeast Tibet; recorded at 3900 m at Thangu in Sikkim (Schäfer). Affects open conifer forest or clearings in oak forest.

EXTRALIMITAL. The species ranges through western China to the Altai, Kamchatka and Japan and winters in the Indochinese countries and southern China (see map, p. 143).

MIGRATION. Arrives on its breeding grounds in the first half of May, leaves in September. Spring passage takes place from the last week of March till May, return in September–October. As for *gulgmergi*, winter quarters are poorly known. Winter visitor to the Jalpaiguri district and, according to Rashid (1967), recorded in northern and northeastern East Pakistan and in the Chittagong region; there are no precise data. Has been obtained in the Khasi Hills, Shillong and Cachar Hills (Godwin-Austen) and near Aimole, Manipur at 1800 m (Hume).

GENERAL HABITS, FOOD AND VOICE. As in 1405.

BREEDING. As in 1405, but nest also found in holes in trees. Average size of six eggs 17.1 × 12.2 mm (Baker).

MUSEUM DIAGNOSIS. Like *gulgmergi* but rather darker brown; not well differentiated and not every specimen can be separated (HW).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	70–76	11–12	10–12	45–51 mm
♀♀	70–76	11–12	10–12	47–52 mm

(BB, SA)

Weight 14 ♂ 8.5–11.5 (av. 9.6) g — SA. 3 ♂ 9–11; 3 ♀ 9–11 g (GD).

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs, feet and claws black; soles grey.

1407. Brown Flycatcher. *Muscicapa latirostris* Raffles

Muscicapa latirostris Raffles, 1822, Trans. Linn. Soc. London 13: 312 (Sumatra)

Muscicapa grisola var. *daurica* Pallas, 1811, Zoogr. Rosso-Asiat. 1: 461 (Dauria)

Muscicapa Poonensis Sykes, 1832, Proc. Zool. Soc. London: 85 (Poona)

Butalis terricolor Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 120, ex Hodgson MS. (Nepal)

Baker, FBI Nos. 674, 675, Vol. 2: 248, 249

Plate 81, fig. 11

LOCAL NAMES. *Zakki* (Hindi); *Tāvitupākhi* (Malayalam).

SIZE. Sparrow ±; length c. 14 cm (5½ in.).

FLYCATCHERS

147

(JBNHS 55: 160) and Cardamom Hills (Sparrow, in *epist.* to Whistler; Jackson, 1971, JBNHS 68: 112–13). The resident breeding population is augmented by winter visitors. May breed also in the Chitteri Range (Eastern Ghats) where it has been obtained in June (Whistler, JBNHS 36: 85) and in the Biligirirangan Hills, obtained in July (Salim Ali, JBNHS 43: 334).

Winters erratically but sparsely over most of the Peninsula but mainly in the Ghats of the southern Peninsula, from the lowlands to c. 1500 m (stragglers recorded in Kathiawar and Kutch). Also Ceylon (all zones) up to 1300 m where it is most common from October to March. Post-breeding dispersal of southern birds already takes place in August. According to Wright (JBNHS 54: 635) it is a winter visitor to the foothills of Dehra Dun from October to February. Winters also in the Andaman Islands (common), on Car Nicobar and Camorta (Abdulali, JBNHS 64: 183); apparently very scarce in Manipur (Hume), the Cachar Hills (Baker, JBNHS 9: 126) and the Garo Hills (Godwin-Austen). Recorded in winter from all parts of East Pakistan *vide* Rashid (1967, p. 101).

Affects open, mixed deciduous forest, teak plantations, groves about villages and cultivation, margins of jungle, overgrown nullahs, edges of sholas, bamboo jungle, shady gardens and coffee plantations; partial to the vicinity of streams.

MIGRATION. Arrives on its Himalayan breeding grounds in April, departs in September. May be seen on passage, mainly in September and October, in northern India east of Punjab (Ludhiana) and Gujarat (Sasan and the Gir Forest). Has occurred as a straggler south of Chimre (Ladakh) in September.

EXTRALIMITAL. Also breeds in southern Siberia from the Yenisey to Sakhalin, Japan and Korea; winters in southeast Asia, the Philippines and Indonesia.

GENERAL HABITS. Closely resembles the Sooty Flycatcher in dress and habits; frequents mostly the lower branches of trees. Makes aerial sallies for insects from a dead branch, often returning to the same perch. Perches upright; flicks wings and depresses tail. More crepuscular than most flycatchers, a habit obviously correlated with its abnormally large eyes (SA). Usually solitary, quiet and very unobtrusive, therefore doubtless often overlooked.

FOOD. Chiefly dipterous insects.

VOICE AND CALLS. A feeble *chi-chir-ri-ri-ri* (SA) or *chik, chik-r-r* (Henry). Three or four *chiks* in rapid succession and a small shrill squeak; a weak sub-song full of trills and squeaks heard in winter (Nichols). Primary song: a single, plaintive note slowly repeated; song period in Nepal: mid April till end of June with a resumption in September (Proud). 'Has a loud note of 3 or 4 syllables and a short song freely uttered' (Whistler).

BREEDING. Season, May to July in the north, April to June in the south. Single-brooded. Nest, a compact cup made principally of moss, decorated with lichen and lined with rootlets, fine fibres and some feathers. Usually built on a bare, thick branch, some distance from the trunk, at heights varying from two to nine metres, on average about six metres from the ground. Eggs, normally 4, very similar to those of *M. ruberuloides* (1440) but more olive-grey, heavily stippled with sienna-brown. Average size of 40 eggs

146

MUSCICAPINAE

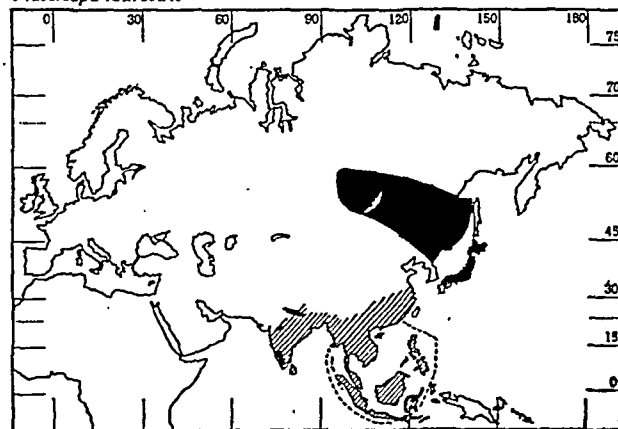
FIELD CHARACTERS. An ashy brown flycatcher with a conspicuous white ring around the strikingly large eye. Below, sullied white, tinged with grey on breast and flanks, and faintly streaked with ashy brown. Throat conspicuously white. In the gloaming, when perched within the dark foliage canopy, glistening white throat often gives the only indication of its position. Sexes alike.

× c. 1

M. striata has distinctly streaked throat and crown. *M. sibirica* is much darker below and has the white on throat reduced to a patch. *M. muttui* is very similar but has a diffuse dusky breast-band, rufous-brown tail, and yellow legs (v. dark brown); also its tertiaries are edged with rusty (v. whitish plus a thin whitish wing-bar).

STATUS, DISTRIBUTION AND HABITAT. A partial migrant having a disjunct breeding range. Movements imperfectly understood.

Himalayas: Fairly common summer visitor to the western foothills in Chamba, Dharmasala, Dhaola Dhar and Kulu between 900 and 1800 m. Much scarcer east of these localities where it has been recorded from April to July in Mussooree, Ranikhet, Naini Tal (breeding at Thal, c. 1900 m, Almora dist., mid May 1945 — SA), Nepal Valley, Jalpaiguri duars and Bhutan foothills. Said by Ward (JBNHS 17: 480) to be rare in Kishtwar (southwestern Kashmir) and 'probably not to be found west of the Chandra-Bhaga (river)'.

Muscicapa latirostris

Breeding range

Winter

Vindhya Range: A common breeder in the hills around Sehore and Mhow. The breeding population appears to be of summer visitors only.

The Ghats: A scarce breeder in the southern part of the Western Ghats at about 900 m in north Kanara (Davidson), Coorg (Betts), the Palnis

148

MUSCICAPINAE

17.4 × 13.1 mm (Baker). Incubation probably by female only (Dementiev), who is fed on the nest by the male. Incubation period undetermined.

MUSEUM DIAGNOSIS. See Field Characters. For details of plumage and moults see JBNHS 38: 298.

Young (juvenile). Upperparts and sides of head with very bold ochraceous white spots; underparts dull white on belly and under tail-coverts and spangled with dark brown margins elsewhere, heaviest on breast. Lesser and median coverts grey-brown with large ochraceous white tips. Greater coverts and tertials with fulvous white outer edges and tips. Tips of tail narrowly fulvous white. Postjuvenile moult of body, lesser and median coverts. First-year birds distinguished by fulvous white margins and tips of greater coverts. Juvenal plumage not distinguishable from that of *M. striata* (HW).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	69–76	13–15	13–15	46–54 mm
♀♀	66–73	12–15	13–14	46–51 mm

(SA, HW, Koelz)

Weight 50 ♂ 9 (October) 9–14 (once 16) g — SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill horny brown, base of lower mandible fleshy yellow, or cream colour to chrome-yellow; mouth pale yellow or pale yellowish pink. Legs, feet and claws horny brown.

1408. Brownbreasted Flycatcher. *Muscicapa muttui muttui* (Layard)

Butalis muttui Layard, 1854, Ann. Mag. Nat. Hist. 13: 127

(Pt. Pedro, Ceylon)

Alstonax muttui *honoris* Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 14 (Aijal, Lushai Hills)

Baker, FBI No. 677, Vol. 2: 251

Plate 81, fig. 6

LOCAL NAME. *Muttipilla* (Malayalam).

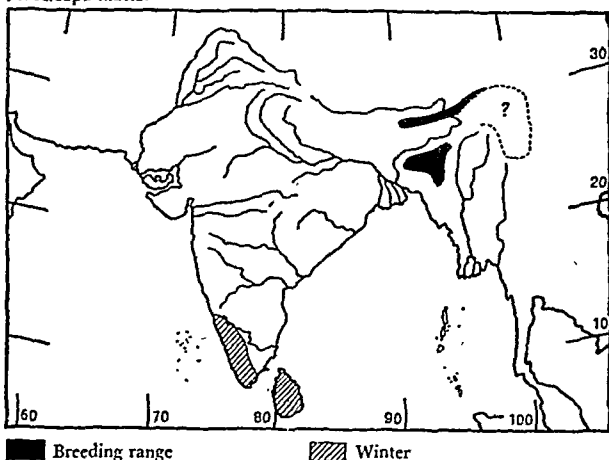
SIZE. Sparrow ±; length c. 13 cm (5 in.).

FIELD CHARACTERS. Largely as of Brown Flycatcher (1407) but with a diffuse brownish gorget or breast-band rendering white throat even more prominent by contrast. Legs yellow (v. horny brown). Above, olive-brown becoming rufous-brown on lower rump and tail. Wing-feathers with rusty edges. Lores and ring around the large eye white. Below, throat and centre of belly white; breast and sides pale brown. Sexes alike.

M. latirostris is very similar but is greyer both above and on breast, lacks the rusty edges on wing, and has dark legs (not yellow); the lower mandible is brown at tip (largely yellow in *muttui*). *M. sibirica* has a very dark breast. *M. ruficauda* has a rufous tail and lacks the white throat. *M. poliopteryx* and *M. ferruginea* have ochraceous underparts.

STATUS, DISTRIBUTION AND HABITAT. Breeding range poorly known both in India and outside. Breeds in Assam in the Khasi and Cachar hills from 1200 m upwards, mostly above 1500 m (Baker). Obtained in Manipur in April (Hume), in the Garo and Mizo hills in March, and in Nagaland

Muscicapa muttui



(Koelz). May be expected to breed in the eastern Himalayas: recorded in Sikkim from August to November (Mandelli, 1875, not noted since). Affects dense evergreen forest.

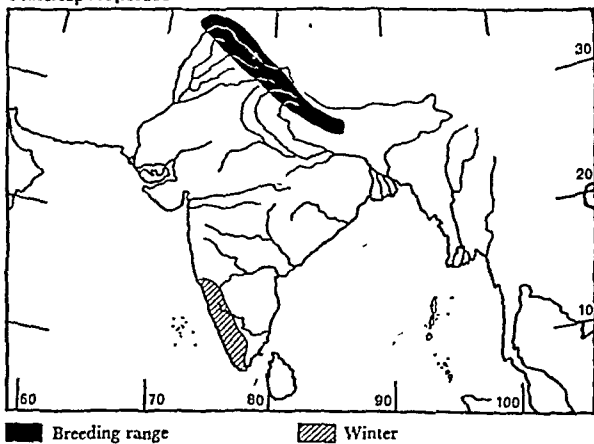
WINTER RANGE AND MIGRATION. A population of this species winters in southwestern India from Londa south through the hills of Mysore and Kerala, from the low country to c. 1000, commonest above 300 m, and in Ceylon in all zones up to c. 1500 m (scarce). In this season affects evergreen forest, frequenting dense scrub and liana tangles, preferably on the fringe of jungle, cardamom clearings and overgrown rocky streams. Arrives in its winter quarters in October and leaves in March-April, some individuals possibly staying till May (once end May in Kerala at c. 1700 m — Primrose, JBNHS 40: 502). Recorded on passage (September and October) at Madhupur (eastern Bihar), Nagpur (eastern Maharashtra) and in Andhra Pradesh (passage only?). Rashid (1967) lists it as a passage migrant in most parts of East Pakistan.

Extralimital. Northern Burma, northern Thailand, Yunnan and Szechuan; probably breeds above 1500 m in N. Burma.

GENERAL HABITS. A very quiet and secretive flycatcher, thus easily overlooked, frequenting the low vegetation, mostly within a couple of metres above the ground. Affects denser forest than *latirostris*. Often sits motionless in the lowest branches of trees or tangles in shady recesses, every now and then making sallies after winged insects, returning to the same perch or a neighbouring one; occasionally descends to the ground. Usually solitary, but frequently in loose association with other flycatcher species. Appears very territorial and paroichial; has been observed hunting in the same spot half an hour at a time. Like the Brown Flycatcher, it is also crepuscular, often hunting till late into the dusk.

2100 and 3600 m, optimum zone 2400-3300 m. Affects mixed conifer and deciduous forest, fir or deodar forest, pine and birch.

Muscicapa ruficauda



Extralimital. Russian Turkistan and adjacent Afghanistan.

WINTER RANGE AND MIGRATION. Arrives on its summer grounds in early May, departs in August or September. A specimen obtained at Sholapur (Maharashtra) in July (Davidson & Wendon, SF 7: 81). Winters (October to April) in southwestern India from north Kanara through the hills of Mysore and Kerala, from lowlands to c. 1000 m. Two records from Cachar (Baker), and listed by Rashid (authority?) as occurring in the northeast highlands and the Chittagong region of East Pakistan. In this season, frequents evergreen forest, especially along the margins, tracks and in clearings. During autumn migration (September and October) is frequently observed in the Himalayan foothills and has been recorded in southeastern Punjab, Mt Abu, Nagpur and along the Western Ghats. On spring passage in April, recorded at Raipur (eastern M.P.), Madhupur (eastern Bihar) and along the Himalayan foothills. Also obtained at Nellore (no date).

GENERAL HABITS. Solitary and very unobtrusive. Wanders about the crowns of large trees hunting mostly within the canopy rather than by sallies in pursuit outside; insect prey snapped up while flitting restlessly from one perch to another, or while fluttering about amongst the foliage and boughs. Sometimes descends to bushes. Flicks wings and bobs its body forward, thus reminding one of a chat. Frequents the edge of forest and does not seem to penetrate far into the woods.

FOOD. Insects, chiefly Diptera.

VOICE AND CALLS. Song, three or four loud clear notes repeated at short intervals, varied from time to time in several ways, reminding one of the

FOOD. Chiefly dipterous insects.

VOICE AND CALLS. 'In the breeding season it often gives vent to a soft low note, at the same time puffing out its feathers and rapidly vibrating its half-opened wings. Has a pleasant but rather feeble little song, very seldom uttered' (Baker).

BREEDING. The only records of nesting for the species in its entire range are by Baker (N. Cachar, c. 1500 m and above). Season, from the end of April till June. Nest, a very neat, compact cup made entirely of green moss and lined with fine moss-roots. Placed in bushes, creepers or other tangles of vegetation, not far from the ground. Eggs, 4 or 5, similar to those of the Brown Flycatcher: pinky brown or grey-blue stippled very closely with reddish brown. Average size of 28 eggs 16.9 x 13.8 mm. Incubation by both sexes; period undetermined.

MUSEUM DIAGNOSIS. See Field Characters. For details of plumage see Baker, loc. cit.

Young (juvenile). Upperparts covered with elongated ochraceous spots, very narrow and pointed on crown. Tips of wing-coverts, upper tail-coverts and edges of tertiaries and secondaries more rusty ochraceous. Throat and belly whitish; breast spotted like back but less distinctly so. Under tail-coverts buff. First-year birds recognized by rusty spots of greater coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	72-75	16-17	13-14	49-56 mm
♀♀	67-76	16-17	13-14	48-55 mm
				(HW, SA)

Weight 13 ♂♀ (October, in winter quarters) 10-14 (av. 12) g — SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill dark horny brown, lower mandible fleshy with dusky tip; mouth pale lemon-yellow. Legs and feet pale yellowish flesh or yellow, claws dusky.

1409. *Rufostailed Flycatcher. Muscicapa ruficauda* Swainson

Muscicapa ruficauda Swainson, 1838, Nat. Library, Flycatchers: 251

(India = Kashmir)

Baker, FBI No. 676, Vol. 2: 250

Plate 81, fig. 8

LOCAL NAME. *Chempucalanpakki* (Malayalam).

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. A drab brown flycatcher with rufous tail. A noticeable pale eye-ring. Below, throat and breast grey-brown; belly whitish. Sexes alike.

Distinguished from *muttui* and *latirostris* by the lack of white on throat; from the other brown flycatchers by its rufous tail.

STATUS, DISTRIBUTION AND HABITAT. A summer (breeding) visitor, common at suitable altitudes in the western Himalayas; from the Safed Koh, Kohat and Chitral east through Gilgit, Astor, the Indus Valley and Kashmir to Lahul and Kulu; much more scarce to the east: Garhwal and Kumaon (breeding), Nepal as far as the Kathmandu Valley [summer records by Lowndes (1955) and Rahd & Fleming (1957)]. Breeds between

song of *Monticola cinclorhynchus* (Osmaston); some phrases rendered by Magrath as *tyee-trirr, trirr-tee* or *weelitlew, ee-willu-willu* and *choi-choi* with an occasional, loud, finch-like *twoink-twoink*; all notes rapidly repeated and with a ventriloquial effect. Usually uttered from high up in leafy trees. While singing, the bird rarely stays in one spot for more than a few seconds. Alarm-note, a plaintive *peup* ceaselessly repeated and followed by a soft *churr* and sometimes a double *te-peup* when excited, as when an intruder approaches the nest (Bates & Lowther).

BREEDING. Season, May to July. Nest, a solid cup almost entirely made of moss with some bits of bark skin, liberally coated on the outside with lichen and cobweb, and lined with hair and a few feathers. The species is very versatile as to the site; the nest may be placed in bushes between one and two metres from the ground or in trees up to nine metres or more (generally under four metres); it may be built across a horizontal fork in the smaller branches, against the trunk, or in stumps of pollarded trees. It may also be found on the ground, particularly on very steep hillsides where it is sometimes placed at the foot of a small bush or in a depression in a nearly vertical bank (Bates). Eggs, 3 or 4, pale sea-green, densely freckled all over with reddish, chiefly at the broad end. Average size of 50 eggs 17.3 x 13.2 mm (Baker). The birds easily desert their nest. Their territory is very large, the male having been heard singing three or four hundred metres from the nest.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young (juvenile). Upperparts grey-brown with ochraceous white spots; streaked on crown. Upper tail-coverts paler than in adults. Underparts and sides of head greyish white with blackish fringes, obsolete on throat and belly. Under tail-coverts buff. Median and lesser coverts with indistinct pale tips which are more marked on the greater coverts. Postjuvénal moult of body, lesser and median coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	73-77	14-16	c. 17	57-60 mm
♀♀	75-77	14-16	c. 17	55-58 mm
				(SA)

Weight 13 ♂♀ (Apr.-May, in summer quarters) 12-16 (av. 13.3) g — SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible brown, lower pale flesh-colour; mouth yellow and pink. Legs and feet brownish plumbeous; claws horny brown.

1410. *Ferruginous Flycatcher. Muscicapa ferruginea* (Hodgson)

Hemichelidon ferruginea Hodgson, 1845, Proc. Zool. Soc. London: 32 (Nepal)

Hemichelidon rufilata Swinhoe, 1860, Ibis: 57 (Amoy, Fukien, China)

Hemichelidon ferruginea rufata Koels, 1954, Contrib. Inst.

Regional Exploration, No. 1: 13 (Kohima, Naga Hills)

Baker, FBI No. 635, Vol. 2: 206

Plate 81, fig. 9

LOCAL NAME. *Dang-chim-pa-tho* (Lep.-ha).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FLYCATCHERS

153

FIELD CHARACTERS. *Above*, head blackish brown with a conspicuous whitish eye-ring. Back rusty brown. Lower rump ferruginous. Tail chestnut. Wings blackish brown, margins of tertials and tips of greater coverts conspicuous pale rufous. *Below*, chin, throat and centre of belly white. Breast olive-brown with dark centres to the feathers giving a spotted effect. Rest of underparts ochraceous. Sexes alike.

Distinguished from all other brown flycatchers except *M. poliogenys* (1436) by its rusty belly. The latter has an olive-brown back and tail, no rufous edges on wing, a whitish belly, a pale ochraceous breast and a less noticeable pale grey eye-ring.

STATUS, DISTRIBUTION AND HABITAT. Probably only a summer visitor or altitudinal migrant in the central and eastern Himalayas from April to October; generally scarce, only noted as common (and breeding) by Osmaston in the Darjeeling district. Occurs from central Nepal (Sheopuri ridge, 2400 m — Proud, JBNHS 61: 534; Bigu, 3300 m east-central Nepal — Diesselhorst, 1968: 253) east through Darjeeling, Sikkim, Bhutan and NEFA (Upper Subansiri — Ludlow, *Ibis* 1944: 193) from 1800 to 3300 m, mostly above 2400 m. Also Assam in the Khasi and Cachar hills breeding mostly between 1200 and 1800 m (Baker), the Dibrugarh district (Cripps, SF 11: 106), the Mizo Hills and Nagaland near Kohima (Koelz, loc. cit. above) and Manipur near Aimole, 1800 m (Hume). Winter status unclear. According to Baker, apparently a resident in Assam while 'other birds scatter far and wide during the winter'; these may well be visitors from the Himalayas or extralimital regions. Obtained by Meinertzhagen at c. 1350 m in the Sikkim foothills in winter. Affects forest of fir or oak (Himalayas), humid stunted oak forest and dense mixed jungle (Assam).

Extralimital. Southeast Tibet, northern Burma and western China, wintering in the Indochinese countries; Burma, Malaysia and Indonesia.

MIGRATION. No data. Arrives on its breeding grounds in April. Obtained at Nellore in March, probably a straggler.

GENERAL HABITS. Typical of the brown flycatchers; frequents mostly the lower parts of the tall tree canopy, making sallies for insects from a bare branch returning to the same perch; sometimes doing this for hours. Very quiet, retiring and crepuscular.

FOOD. Chiefly dipterous insects.

VOICE AND CALLS. Unrecorded. Very silent.

BREEDING. *Season*, June to July. *Nest*, a neat cup of moss and lichen, lined with rootlets; placed on projections, natural or caused by broken branches, near the trunk of a tree, or on a branch, between three and fifteen metres above the ground; very difficult to find as they are generally placed in or on the moss with which they are built. *Eggs*, 2 or 3, very much like those of *M. sibirica* (1405). Average size of nine eggs 17.9 × 13.6 mm (Baker). Incubation by both sexes; period undetermined.

MUSEUM DIAGNOSIS. See Field Characters. For details of plumage see Baker, loc. cit.

Young, upperparts brown with ochraceous spots; head more dusky with paler streaks. Underparts ochraceous with dark margins on breast; throat whitish with dark margins.

MEASUREMENTS

Wing ♂♂ 69-72; ♀♀ 63-70 mm (Koelz)

FLYCATCHERS

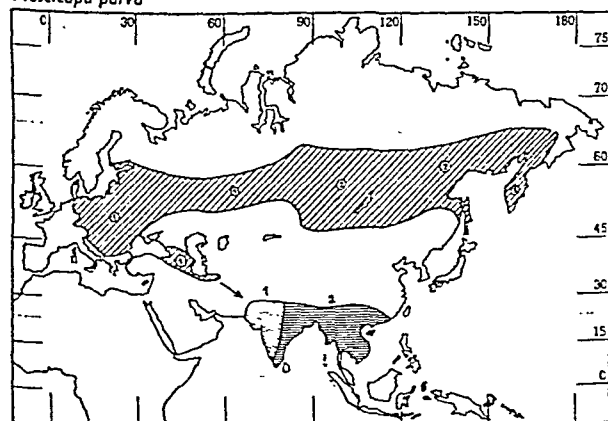
155

Male *M. p. albicilla* (1412) has a smaller throat-patch separated from the cream-coloured belly by a grey breast. Female and first-winter male not distinguishable in the field.

In adult male Kashmir Redbreasted Flycatcher (1413) throat and breast bordered with black; adult female and young male darker above, but not separable from those of *M. p. albicilla* in the field.

STATUS, DISTRIBUTION AND HABITAT. A widespread winter visitor and passage migrant. Winters from the western Himalayan foothills (Chitral and Kohat to Dehra Dun) south to Baluchistan, Sind, through Gujarat (including Kathiawar and Kutch), Maharashtra and Mysore; more common

Muscicapa parva



1 Breeding range 1, 2 2 Winter 1 3 Winter 2
1 *parva* (1411). 2 *albicilla* (1412).

in the western and central Peninsula but has been recorded in West Bengal, western East Pakistan (Rashid) and has straggled to the Jalpaiguri duars. In northern India and West Pakistan it is more common as a passage migrant and has been recorded only as such in Ladakh, Kashmir and northern Baluchistan. Affects groves, forest plantations, orchards, urban gardens with large trees, etc. May be seen in scrub on migration.

Extralimital. Breeds in eastern Europe and Russia to the Urals and the southern Caspian region. On passage migration through Afghanistan in autumn and spring.

MIGRATION. Arrives in the northwest at the end of August but the bulk of autumn passage takes place in September and October and may last till November. Spring passage starts in March, reaches its peak in April, some individuals still being seen in May. Adult males are the first to leave, females and immatures following two or three weeks later.

154

MUSCICAPINAE

Bill from skull 11; tarsus 12; tail 47 mm (MD)

Weight 1 ♀ 12 g (GD).

COLOURS OF BARE PARTS. Iris brown. Bill blackish brown, flesh to yellow at base of lower mandible. Legs and feet pale flesh.

[The Pied Flycatcher *Muscicapa hypoleuca tomentosa* Johansen may be a scarce migrant in West Pakistan. According to Briggs (JBNHS 32: 749) 'a few birds indistinguishable from the British species pass through Peshawar almost every spring. Earliest and latest dates seen February 18 and March 30. The only year I have seen the species in autumn was in 1925 when a pair fed in my compound almost every day from October 31 till I left Peshawar on January 11.' No specimen has ever been obtained within our limits.

This subspecies breeds in western Siberia from the Urals to the Yenisey and migrates through southwestern Asia to tropical Africa.

FIELD CHARACTERS. Male in spring: *above* black with a white forehead and a large white wing-patch. *Below* entirely white.

In the field can be told at a glance from male of Little Pied Flycatcher (1419) by its conspicuous white forehead and absence of broad white superciliary stripe.

Female and male in autumn: very similar to *M. parva* (1411) female, but distinguished by the conspicuous wing-patch. Call-note almost constantly uttered on migration, a sharp *whit*.]

MUSCICAPA PARVA Bechstein

Key to the Subspecies

A Throat orange-rufous

1 Rufous of throat meeting white of belly.....*M. p. parva* ♂

2 Rufous of throat separated from buff belly by ashy breast *M. p. albicilla* ♂

B Throat whitish

3 Breast pale brown.....*M. p. albicilla* ♀

4 Breast buffish.....*M. p. parva* ♀

1411. Western Redbreasted Flycatcher. *Muscicapa parva parva* Bechstein

Muscicapa parva Bechstein, 1794, Allg. über Vög. 2: 356 (Thüringerwald)

Baker, FBI No. 638, Vol. 2: 210

Plate 81, fig. 2

LOCAL NAMES. *Tarra* (Hindi); *Tepidippān* (Tamil).

SIZE. Sparrow —; 13 cm (5 in.).

FIELD CHARACTERS. Male (adult): pale brown above, with white patches at either side of basal half of black tail prominently displayed by frequent upward flicks of tail; chin and throat orange-rufous, rest of underparts white. Tail usually carried erect like a robin's, with the wings partly drooping at the sides.

Female has a whitish throat and buffy breast.

156

MUSCICAPINAE

GENERAL HABITS. Usually keeps singly, sometimes in company with other species. Makes short darts for insects from the lower branches of trees and flits from bough to bough, sometimes hovering momentarily before a flower or sprig. Frequently descends to the ground from an overhanging branch and with a couple of smart upward flicks of the cocked tail picks up an insect and flits back to its perch. Partially crepuscular, often hawking well into the dusk.

FOOD. Insects, chiefly mosquitoes and midges.

VOICE AND CALLS. A double *tick-tick* or *click-click* uttered with a jerking of the tail and twitching of wings; a harsh, jarring alarm-note, and a plaintive *phwee-phwee-phwee* or *weeit, weeit, weeit* as of an unrolled bicycle wheel.

BREEDING. Extralimital; largely as in 1413.

MUSEUM DIAGNOSIS. Adult male differs from *albicilla* in having darker and more extensive rufous on throat. Female distinguished mainly by the dark brown, r. black tail.

First-winter male and female have brown ear-coverts; chin and throat whitish, breast and flanks greyish buff. Some first-summer males are similar to females while some have a variable amount of rufous on throat. Young in autumn differs from adult female by buff spots on wing.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	64-72	12-14	17-18	47-54 mm
♀♀	64-71	12-13	c. 17	48-54 mm
				(HW, SA)

Weight 3 oo? (October) 10-10.5 g (SA). 5 ♂♂ (spring) 10-13 g (Paludan, Afghanistan).

COLOURS OF BARE PARTS. Iris brown. Bill brown, paler at base of lower mandible. Legs and feet dark brown.

1412. Eastern Redbreasted Flycatcher. *Muscicapa parva albicilla* Pallas

Muscicapa Albicilla Pallas, 1811, Zoogr. Rosso-Asiat. 1: 462, Aves, pl. 1

(Dauria)

Baker, FBI No. 639, Vol. 2: 211

Plate 81, fig. 3

LOCAL NAMES. *Tarra* (Hindi); *Chetki* (Bengali); *Tarra eda pitta* (Telugu); *Pisuk kūrīti*, *Chidippinetta kūrīti* (Malayalam, Tamil).

SIZE. Sparrow —; 13 cm (5 in.).

FIELD CHARACTERS. As in 1411 but rufous restricted to throat; breast grey; tail black, also with white patches on either side of basal half. Female and young male not distinguishable.

Male Rustybreasted Flycatcher (1418) is slaty above; its female has the tail pale brown, nearly concolorous with the back, and lacks any white. Female Little Pied (1419) is similar but smaller, and also without any white on base of tail.

STATUS, DISTRIBUTION AND HABITAT. A widespread winter visitor and passage migrant. Common in NEFA (Abo, Miri and Dafa hills), Bhutan and Sikkim foothills, Nepal up to c. 1500 m; Assam, Nagaland, Manipur,

FLYCATCHERS

157

East Pakistan, West Bengal, Bihar, Orissa, eastern Madhya Pradesh, Andhra Pradesh, becoming scarcer farther south and west: recorded in Tamil Nadu, Rameswaram Island, Kerala (up to 2100 m), Mysore, Western Ghats in Maharashtra, Uttar Pradesh and, as a straggler, in the Kangra district. Has bred in the Dachgam Valley (Ladakh, 1800 m) according to Ward (JBNS 17: 480). Affects groves, orchards, bush-and-scrub jungle.

Extralimital. Breeds from the Urals to Kamchatka. Winters in Burma, Thailand, and the Indochinese countries.

MIGRATION. Migrates mostly through China though some birds may migrate west of central Asia, as it has been recorded in Afghanistan. Arrives in its winter quarters in September, leaves in April; some belated migrants may still be seen in May.

GENERAL HABITS AND FOOD. As in 1411.

VOICE AND CALLS. As in 1411; a long, somewhat squeaky sub-song may be heard in winter (Nichols).

BREEDING. Said to have nested in Ladakh (Ward, above). The reported nest, taken on 28 May, was a tiny cup of green dry moss, lined with soft hair and placed beside a stone, half hidden in a shallow hollow in a stone wall. Eggs, pale sea-green or pale pink more or less profusely covered with pinkish brown. Size, c. 17.5 × 12.8 mm.

MUSEUM DIAGNOSIS. Male differs from *parva* (1411) in having the rufous of throat pale and more restricted; breast ashy, belly buff. Females and first-winter males are distinguished from those of *parva* by the colder, greyer brown of the upperparts, and the black (v. dark brown) upper tail-coverts and tail; underparts whiter suffused with grey on breast, instead of creamy white suffused with buff.

Postjuvinal moult does not include tertiaries, greater and primary coverts, and wing-quills which remain from juvenile dress. This feature distinguishes juvenile from adult female (HW).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	66-72	13-14	c. 17	50-53 mm
♀♀	67-71	13-14	c. 17	48-53 mm
				(HW)

Weight 1 juv. ♂? (Sept.) 11.5; 1 ♂ 9 g (SDR).

COLOURS OF BARE PARTS. Iris hazel-brown. Bill brownish black, lower mandible paler; mouth lemon-yellow and pink. Legs and feet blackish brown.

1413. Kashmir Redbreasted Flycatcher. *Muscicapa subrubra* Hartert & Steinbacher¹

Muscicapa parva subrubra Hartert & Steinbacher, 1934, Vög. pal.

Fauna, Ergänzungsband: 233. New name for *Siphia hyperythra* Cabanis, 1866, Jour. f. Orn. 14: 391 (Ceylon) nec *Muscicapa hyperythra* Blyth Baker, FBI No. 140, Vol. 2: 212

Plate 81, fig. 4

LOCAL NAME. *Turra* (Hindi).

¹ We agree with Whistler (1932, JBNS 36: 81) that the characters of *subrubra* are sufficiently distinct from *parva* to separate the two as species. Deshayes points out (pers. comm.) that the situation is comparable to the species *Prinella immaculata* v. *P. modularis*, or *Erithacus pectoralis* v. *E. cailliepe* and deserves placing in a superspecies rather than being relegated to subspecific rank.

FLYCATCHERS

159

recorded at Darbhanga (Bihar), Kathmandu (Nepal — Proud) and near Mussooree. Obtained at Chakrata (Dehra Dun district) on 17 June (Meinertzhagen).

GENERAL HABITS. Very similar to those of *M. parva*. Takes a great part of its food when flitting from one perch to another under the shade of leafy foliage, mostly within about six metres from the ground. Appears to visit the ground more often in its winter quarters, hopping about in search of insects. Jerks its tail well above the back, at the same time flicking the wings and uttering a curious little creaking rattle.

FOOD. Insects.

VOICE AND CALLS. A sharp *chack* while flitting about; a subdued but harsh *purr* accompanying the flicking of wings and tail. Full song in breeding season, sweet, loud and robin-like but short (Bates); in its winter quarters, in Ceylon described as consisting of a single whistled note *chip-chip-chip* followed by a rattling note, uttered quite freely (Henry).

BREEDING. Season, second half of May and June. Nest, made of dead leaves, moss and strips of bark, and lined with hair and a few feathers; placed in holes. Little holes in small trees, often only about one metre above the ground, are most favoured; other nests may be found up to twelve metres. Eggs, 4 or 5, sometimes 3, very pale green, speckled with pale reddish brown, mostly around the large end. Average size of 50 eggs 16.1 × 12.3 mm (Baker) and of 36 eggs 16.6 × 12.5 mm (Osmaston).

MUSEUM DIAGNOSIS. Adult male differs from that of *parva* not merely in the darker colour of upperparts and deeper chestnut of the breast with its black border, but also in the sequence of plumages and wing formula: 2nd primary (as.) equal to or usually shorter than 7th instead of always longer. First-winter female resembles adult male rather than female as in *parva* and *albicilla*. The young female likewise agrees in resembling the adult by having much rufous wash on the breast.

Young, much darker brown than in *parva*, but similarly spotted with buff; tail blackish instead of brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
7 ♂♂	65-70	12-13	18-19	49-54 mm
1 ♀	67	13	18	50 mm
				(HW)

Weight 15 ♂♂ (Apr.-May) 9-12 (av. 10.4) g — SA.

COLOURS OF BARE PARTS. Male. Iris brown. Bill brown, lower mandible yellow; mouth yellow. Legs and feet sooty brown; soles dull olive. Female. Bill dark brown, basal half of lower mandible yellowish. Legs and feet black (HW).

1414. Orange-gorgeted Flycatcher. *Muscicapa strophliata strophliata* (Hodgson)

Siphia Strophliata Hodgson, 1837, Ind. Rev. 1 (12): 651-2 (Nepal)

Muscicapa strophliata rufonota Koelz, 1939, Proc. Biol. Soc. Washington 52: 67

(Kulu, Kangra Dt, Punjab)

Baker, FBI No. 636, Vol. 1: 208

Plate 81, fig. 12

LOCAL NAMES. *Siphia* (Nepal); *Phatt-tigrak-pho* (Lepcha).

SIZE. Sparrow; length c. 13 cm (5 in.).

158

MUSCICAPINAE

SIZE. Sparrow —; length c. 13 cm (5 in.).

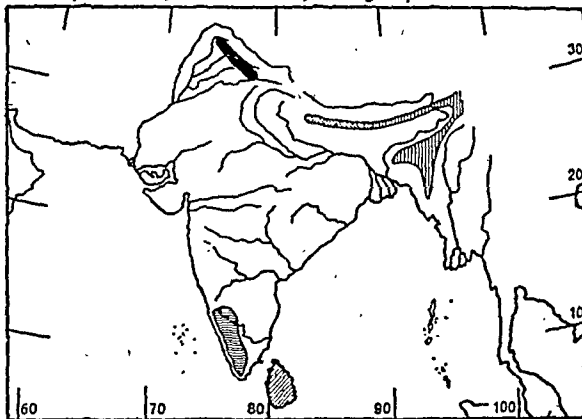
FIELD CHARACTERS. Male (adult). Above, dark grey-brown; tail blackish brown, white on either side of basal half, this feature rendered conspicuous by constant flicking of the cocked tail. Below, throat, breast and upper belly deep rufous-chestnut edged with black; lower belly white.

Female (adult) darker than that of *M. parva* and with a variable amount of rufous on breast.

The black-edged rufous-chestnut underparts identifies the male. Female distinguished from that of other flycatchers by the blackish brown tail, darker than back, with white on sides of basal half.

STATUS, DISTRIBUTION AND HABITAT. Breeds commonly in NW. Himalayas in summer, in Kashmir and the Pir Panjal range between c. 1800 to 2400 m; breeding recorded as high as 2700 m (Bates). Affects temperate mixed

Muscicapa subrubra, *M. westermanni*, *M. nigrorufa*



Distributional ranges

- *M. subrubra* (1413), breeding.
- *M. subrubra* (1413), winter.
- *M. w. collini* (1419).
- *M. w. australorientis* (1420).
- *M. nigrorufa* (1427).

forest of hazel, walnut, cherry, willow, etc. especially where there is a dense growth of *Perrottia*. Winters in Ceylon from October to March throughout the hills above c. 750 m. Here it frequents gardens, tea estates, borders of forest, etc.

MIGRATION. Arrives on its breeding grounds in the second half of April, leaves in September. Migrates through the Peninsula in September and October, but very few records: Kangra district (Punjab), Dhulla (north-western Maharashtra) and Secunderabad (Andhra). On spring passage,

160

MUSCICAPINAE

FIELD CHARACTERS. Male (adult). Above, forehead white; upperparts olive-brown. Tail black, white on either side of basal half. Below, an orange-rufous patch on lower throat surrounded by dark slaty on breast, sides of neck and head, and by black on upper throat and chin. Belly ashy, gradually becoming white on vent; flanks olive-brown.

Female (adult), frequently wears a plumage identical with that of male; in true female dress, has a paler and smaller gorget; chin and throat ashy.

Similar tail pattern to *parva* (1411) misleading at a flashing glimpse, but combined with white forehead always diagnostic.

STATUS, DISTRIBUTION AND HABITAT. Resident, altitudinal and partial migrant, uncommon west of Nepal. The Himalayas from Kangra and the upper Indus Valley (Rupshu) east through Nepal, Sikkim, Bhutan and NEFA, then south through Nagaland and Manipur. Observed in May and June in the Barail Range around 1800 m. Breeds between 2400 and 3600 m in the western Himalayas, possibly higher in Nepal (recorded at 3950 m by Dieselselhorst); from 2700 and 3700 m in Bhutan, and between 2500 and 3000 m in the eastern ranges south to Mt Victoria. Winters from the foothills to 2400 m and spreads out sparingly in the hills south of the Brahmaputra to the Chittagong Hill Tracts. Affects forest of oak, rhododendron, conifers, birch and mixed species; may be seen in high forest with little undergrowth, as well as thick brushwood in open forest. In winter frequents shady forest, especially along the edges, by tracks and in clearings.

Extralimital. Western and northern Burma, N. Thailand and south-western China; another subspecies in central Vietnam. Winters in the Indochinese subregion.

GENERAL HABITS. Found solitary or in pairs, usually flitting from bush to bush or launching aerial sallies from a bare branch or a fallen log. At times may be seen high up in trees or descending to the ground after an insect. Flight and habits likened to a robin's; also very similar to those of Redbreasted Flycatcher (1411, 1412). Constantly jerks up its cocked tail and flicks it open, flashing the conspicuous black-and-white pattern.

FOOD. Insects.

VOICE AND CALLS. Alarm-note, a croaking *churr*. Call-note a low *tik-tik* or a single *pink* constantly uttered. Song, short, spirited, typically flycatcher — 'a triple noted *tin-ti-ti*, the first syllable metallic and far carrying, the two others soft and audible only a few yards' (Proud).

BREEDING. Season, from the beginning of April (Mt Victoria) through May and June. Nest, a loose cup of moss and rootlets, lined with finer rootlets, papery bark, and a few feathers. May be placed on the ground on a sloping bank, or in a hole or crevice of a tree up to about three metres,

FLYCATCHERS

165

female is smaller and has a rufous tail. *M. westermanni* has a whitish throat and grey back. *M. poliogenys* has a whitish throat and fulvous breast.

STATUS, DISTRIBUTION AND HABITAT. Altitudinal migrant, locally common. From central Nepal (Proud, Biswas) east through Darjeeling, Sikkim, Bhutan, NEFA to the Mishmi Hills, Nagaland, Manipur, and Assam in the Khasi Hills; breeds between 2100 and 3900 m, mostly 2400-3600 m; in the Khasi Hills above 1200 m. Winters (October to April) in the foothills up to c. 2000 m and apparently in the plains of East Pakistan *vide* Rashid. In the breeding season affects mostly pine or fir forest; in Assam, oak and rhododendron; in the non-breeding season keeps to dense forest, thick scrub, forest of large bamboo and tall trees, etc.

Extralimital. Extends to southwestern China and Thailand.

GENERAL HABITS. A quiet and shy flycatcher. Catches most of its food in the air, circling out for insects from the canopy of trees; occasionally or rarely descends to the ground. Perches fairly upright.

FOOD. Insects.

VOICE AND CALLS. Has a clear, pleasant, robin-like song (Schäfer); described by Ludlow as 'a constant ripple of whistling notes'.

BREEDING. Season, mid April till July. *Nest*, a cup of green moss mixed with a few dead leaves, scraps of roots and lichen, and lined with fine rootlets or musk-deer hair. Usually placed in hollows between rocks or stones on steep banks covered with moss and ferns, sometimes low down in a moss-covered dead stump, or on the ground under some exposed root. As in *M. hyperythra*, it has also been found within a lump of moss hanging from a branch. *Eggs*, normally 4, rarely 5, pale green to warm buff, stippled all over with light reddish. Average size of 40 eggs 17.8 × 13.4 mm (Baker). Incubation by both sexes; period undetermined.

MUSEUM DIAGNOSIS. See Field Characters.

Young. Above, dark brown with elongated ochraceous spots. Below, dull ochraceous with dark edges to the feathers, especially on breast; throat dingy white.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	68-74	c. 12	c. 16	56-58 mm
♀♀	66-68	c. 12	c. 16	50-54 mm

(BB, Kinnear, Stevens)

Weight (one bird in brown plumage) 9 g (SDR). 1 ♂ 11 g (SA).
COLOURS OF BARE PARTS. Iris deep brown. Bill black. Legs and feet dark brown (yellow in juvenile).

MUSCICAPA WESTERMANNI (Sharpe)

Key to the Subspecies
(Males not distinguishable)

- Rump and edges of rectrices greyish..... *M. w. collini* ♀
- Rump and edges of rectrices more reddish..... *M. w. australorientis* ♀

LYCATCHERS

167

COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet black.

1420. Eastern Little Pied Flycatcher. *Muscicapa westermanni australorientis* Ripley

- Muscicapa westermanni australorientis* Ripley, 1952, Proc. Biol. Soc. Washington 65: 72 (Phou Kobo, Laos)
- Muscicapa westermanni indochinensis* Ripley, 1952, Jour. Bombay Nat. Hist. Soc. 50: 507. *Nom. nud.* (cf. JBNHS 51: 272)
- Cyornis westermanni exquisitus* Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 14 (Karong, Manipur)
- Baker, FBI No. 650, Vol. 2: 224

LOCAL NAME. Dao-but-ti-ti (Cachari).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1419, q.v.

STATUS, DISTRIBUTION AND HABITAT. Altitudinal and short-range migrant, locally common. Bhutan, NEFA, the Patkai Range, Nagaland, Manipur and Assam in the Cachar and Khasi hills. Breeds between 1200 and 2400 m. Arrives on its summer grounds in March. Winters in the foothills and in the plains of Assam and East Pakistan south to Dacca and the Chittagong region (see map, p. 158). Affects dense evergreen forest; in winter also frequents lightly wooded open country, cultivation and orchards.

Extralimital. Extends east to Yunnan and northern Vietnam. The species ranges throughout the Indochinese subregion, the Indonesian islands and the Philippines.

GENERAL HABITS. In the non-breeding season may be seen singly, in pairs or in small parties, often in company with other small insectivorous species. Keeps mostly among the crowns of trees, ever on the move from tree to tree, making little fluttering flights from one branch to another, catching most of its food on the wing but making few sorties outside the canopy; also takes insects from the crevices of bark and from the leaves. Flight easy but less agile than that of many flycatchers.

FOOD. Insects.

VOICE AND CALLS. (Song, a thin, high pi-pi-pi-pi followed by a low rattle churr-r-r-r-r or pi-churr-r-r-r-pi-pi-pi (Smythies). The song may be heard even in winter (Baker). A sub-song is described as 'very soft warbling notes interspersed fairly frequently by equally quiet grating notes' (Lister). Call-note, a single, mellow tweet.

BREEDING. Season, April to June. *Nest*, a small cup of moss, moss-roots and stems of maidenhair ferns, compactly interwoven, the moss only showing outside, lined with very fine hair-like rootlets. Placed on the ground, in hollows between stones, or under a rock on steep hillsides or in holes among exposed roots of trees. *Eggs*, 3 or 4, warm buff, so densely covered with minute specks of dark reddish brown that the ground colour can hardly be seen. Average size of 30 eggs 15.1 × 11.9 mm (Baker). Incubation by both sexes; period unrecorded.

MUSEUM DIAGNOSIS. Female compared with ♀ *collini*, less tinged with hazel on the lores and forehead, and lacking any of this colour on throat and upper breast.

166

MUSCICAPINAE

1419. Western Little Pied Flycatcher. *Muscicapa westermanni collini* Rothschild

Muscicapa collini Rothschild, 1925, Bull. Brit. Orn. Cl. 45: 90, substitute name for *Muscicapa blythi* Rothschild, 1921, Novit. Zool. 28: 48, *nee* *Muscicapa blythi* Giebel, 1875. New name for *Muscicapula melanoleuca* Blyth, 1843, Jour. Asiatic Soc. Bengal 12: 940 (Nepal, Darjeeling), *nee* *Muscicapa melanoleuca* Forster, 1817, or *Muscicapa melanoleuca* Gildenstädt, 1775

Baker, FBI No. 649 (part), Vol. 2: 224
Plate 81, fig. 14

LOCAL NAME. Turi-ti-ti (Lepcha).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. A striking black and white, small flycatcher.

Male (adult). Above, black with a conspicuous white supercilium from lores to nape, a large white wing-patch, and white basal sides of tail.

Female. Above, olive-brown; a pale wing-bar. Upper tail-coverts bright rufous-brown. Below, throat whitish, rest smoky white.

A passable miniature of *M. ruficauda* (1409). Very similar to female *M. leucomelanura* (1424) which has a rufous tail, buffish breast and no wing-bar. Easily confused also with female *M. supercilialis* (1421) which is distinguished only by the grey upperparts and upper tail-coverts, and lack of wing-bar. Female *M. parva* (1411) has a blackish tail, white at base, and is a winter guest or passage migrant.

STATUS, DISTRIBUTION AND HABITAT. Altitudinal and short-range migrant, not common. The Himalayas from central Nepal to Sikkim and Darjeeling. Breeds between 1200 and 2500 m, locally up to 2700 m (Langtang Valley, Nepal—Polunin), optimum zone probably around 2000 m. Winters (October to March) in the foothills up to c. 1800 m, and over the plains as far as Surguja (northeastern M.P.), Manbhum (southern Bihar), Midnapore (West Bengal) and East Pakistan mostly west of the Jamuna and Ganges (see map, p. 158). Affects deciduous or evergreen forest on steep hillsides. In winter frequents the vicinity of well-wooded streams.

GENERAL HABITS, FOOD AND VOICE. As in 1420.

BREEDING. Unrecorded. Probably as in 1420.

MUSEUM DIAGNOSIS. Male not distinguishable from that of *australorientis* (1420). Female tends to have a hazel-coloured shading on the forehead, lores and around the eye, merging into the brownish grey of the crown, nape and upper back. Rump and edges of rectrices greyish drab, lacking the rufescent tones of the eastern race.

Young. Above, with large, pale ochraceous spots. Wing-coverts brown with ochraceous tips, darker in male than in female; edges and tips of tertials fulvous white. Rest of wing and tail as in adult of corresponding sex. Below, white, the feathers fringed with black; belly and under tail-coverts white.

Postjuvinal moult includes body and all coverts except primary. First-year birds usually not distinguishable from adults unless there are a few unmoulted greater coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	53-61	12-14	14-16	38-47 mm
♀♀	53-60	12-13	14-16	40-43 mm

(BB, SA)

MUSCICAPINAE

168

Head and nape darker, dark mouse-grey in tone; back washed with light tawny-olive. Rump and outer edges of rectrices vary from russet to chocolate-brown, distinctly brighter and more reddish than *collini*.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1419.
Weight 5 ♂♂ 5-7; 3 ♀♀ 5-8 g (SA). 1 ♂ 10 g (SDR).

MUSCICAPA SUPERCILIARIS Jerdon

Key to the Subspecies

- Base of tail white..... *M. s. supercilialis*
- No white in tail..... *M. s. aestigma*

1421. Whitebrowed Blue Flycatcher. *Muscicapa supercilialis supercilialis* Jerdon

M. (Muscicapa) supercilialis Jerdon, 1840, Madras Jour. Lit. Sci. 11: 16 (Ajunta, N. Ghats)
Baker, FBI No. 647, Vol. 2: 221
Plate 81, fig. 15

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Male (adult). Above, deep blue with a white supercilium from eye to nape, and a white patch on either side of basal half of tail. Below, sides of head and neck deep blue; centre of throat, breast and whole belly white, the glistening white throat especially arresting.

Distinguished from the Slaty Blue Flycatcher (1423) by deeper blue upperparts, the blue on sides of breast forming a broken pectoral band, and — in the western Himalayas — by the conspicuous white supercilium.

Female. Above, mouse-grey; tail blackish, edged with blue. Below, sides of neck and breast greyish white; centre of throat, breast and whole belly glistening white.

Distinguished from the very similar females of *westermanni* (1419) and *leucomelanura* (1423) by the grey, not olive-brown back; the latter has a rufous, not blackish tail.

STATUS, DISTRIBUTION AND HABITAT. Common summer visitor to the western Himalayas; from Kohat (Kurram Valley, but not recorded north of the Kabul river in N.W.F.P.) east through the Murree hills, Kashmir (south of the main range) to Kumaon. Intergrades with *aestigma* in Nepal. Breeds between 1800 and 3000 m, optimum zone 2100-2500 m. Affects open, mixed forests of oak, rhododendron, pine, fir, etc., occasionally orchards. Winters in central India from Delhi south to northern Maharashtra, southeastern Mysore, northwestern Andhra Pradesh, Orissa, West Bengal and Bihar. Winter visitors to the last three States mentioned may well be, all or in part, from Nepal or Sikkim since a good percentage of this population also have a white supercilium and white basal portion of tail. A few birds winter in the Himalayan foothills. Also obtained at Bahawalpur, W. Pakistan (no date). In winter frequents various types of open deciduous forest, village groves, gardens and orchards.



× c. 1

FLYCATCHERS

169

MIGRATION. Arrives on its summer grounds in March and April, departs in September though some birds may still be seen in October while others leave at the end of August. Leaves its winter quarters in March.

GENERAL HABITS. Usually singly, in winter often in the mixed hunting parties. Keeps largely to the middle story of the forest (low trees and bushes) feeding mostly among the foliage canopy, not venturing much into the open. Occasionally descends to the ground. Constantly jerks up its tail, often accompanied by fluffing of head feathers and *trrr* note, especially in proximity of nest.

FOOD. Insects.

VOICE AND CALLS. Song, an oft-repeated *che-chi-purr* (Bates). Call-note, a soft, repeated *tick*. Alarm-note, a soft *trrr*.

BREEDING. *Season*, middle of April to early July. *Nest*, a soft structure mainly of fine moss with some strips of bark or fine grass, lined with hair and rootlets; placed in holes or clefts in trees, often ivy-covered, at heights up to seven metres, or in a depression in a steep bank. One pair was found to have appropriated a nest of *Troglodytes*. Readily takes to nest-boxes in hill-station gardens. *Eggs*, 3 to 5, usually 4, olive greenish to dull stone-buff, densely freckled all over with reddish brown or, in another type, mostly around the large end, forming a cap. Average size of 100 eggs 16 × 12.2 mm (Baker). Building of nest and incubation by both sexes; period unrecorded.

MUSEUM DIAGNOSIS. Distinguished from the eastern population *aestigma* mainly by presence of white supercilium and white patches in the base of outer tail-feathers. See also 1422, under Museum Diagnosis. Owing to much intergrading single winter specimens of females of the two subspecies cannot be separated with certainty.

Y O U N G. *Above*, with large fulvous white spots. Wing-coverts blackish tinged with blue (♂) or brownish (♀), with fulvous white tips and edges of tertials. Wing and tail as in adult of corresponding sex. *Below*, whitish tinged with cream on breast, all feathers edged with black, producing a squamated effect.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1422.

Weight 1 ♂, 1 ♀ (Apr.-May) 8, 8 g — SA.

1422. Little Blue-and-White Flycatcher. *Muscicapa supercilialis aestigma* Gray

Muscicapa aestigma Gray, 1846, Cat. Mamms. Bds. Nepal: 90, 155. Ex Hodgson in Gray, *Muscicapa Astigma* [sic], 1844, Zool. Misc.: 84, nom. nud. (Nepal)

Cyornis supercilialis dela Koelz, 1954, Contrib. Inst.

Regional Exploration, No. 1: 14 (Mawphlang, Khasi Hills)

Baker, FBI No. 648, Vol. 2: 223

LOCAL NAME. *Turi-ti-ti* (Lepcha).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1421 but lacks white supercilium and white base of tail; however, Nepal and Sikkim birds and those wintering south of these regions are intermediate and may or may not have any supercilium or white on tail. Males may be found breeding before acquiring full adult plumage.

FLYCATCHERS

171

FIELD CHARACTERS. Male (adult). *Above*, slaty blue, brighter on forehead. Tail black, conspicuously white on either side of base, displayed by constant flicking. *Below*, sides of head and throat dark slaty, almost black; throat white, rest of underparts greyish white.

Distinguished from *westerni* by slaty blue (v. black) upperparts and absence of broad white supercilium.

Female. *Above*, olive-brown; tail rufous. *Below*, buffish.

Separable from the very similar females of *westerni* and *superciliaris* by the rufous tail. *M. ruficauda* is larger and does not flick its tail. Male often breeds in 'female' dress.

STATUS, DISTRIBUTION AND HABITAT. Common altitudinal migrant. Western Himalayas from the Indus river east to central Nepal. West of the Indus river there is a March record from Kohat. Breeds between 1800 and 3300 m, winters in the foothills below 1200 m. Affects mixed forest and well-wooded areas with plenty of undergrowth.

MIGRATION. Passage at mid-elevations is leisurely and takes place from the middle of February till the end of April; in autumn from the end of July till the end of November.

GENERAL HABITS. More secretive and restless than most flycatchers; usually seen singly or in pairs, frequenting low undergrowth and lower branches of trees; takes much of its food on the ground. Both its demeanour and notes are reminiscent of the English Robin. Perches with wings drooping and often flicks its tail upwards.

FOOD. Insects.

VOICE AND CALLS. A characteristic *ee-tick* of alarm is a good indication of its presence in undergrowth; also a rapid *ee-tick-tick-tick-tick*, each note accompanied by a tail-flicking. For description of song see 1425.

BREEDING. *Season*, May to July. *Nest*, a small cup of moss well lined with rootlets, hair and an occasional feather; placed in a depression in a bank, in crevices in boulders and trees, in a rift of bark, in a hole in a trunk or wall, occasionally against trunks; when not on the ground, usually within a couple of metres from it, rarely up to six metres. *Eggs*, 3 or 4, pale pinkish cream, minutely but densely speckled with pinkish red, sometimes forming a ring or cap around the large end. Average size of 52 eggs 15.6 × 12.1 mm (Ormarston) and of 100 eggs 15.8 × 12.1 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. For distinction from the eastern race see 1424 under Museum Diagnosis.

Young (juvenile). *Above*, olive-brown with pale ochraceous streaks. Upper tail-coverts rusty. Wing-coverts, except primary, with ochraceous tips. *Below*, dull creamy white with black margins, fainter on throat and belly. Postjuvinal moult takes place in August. First-year birds recognized by fulvous tips of coverts. First-year male resembles female.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	57-63	c. 13	c. 18	49-56 mm
♀♀	54-60	c. 13	c. 18	43-55 mm

(BB, Vaurie)

Weight 13 ♂♂ (Apr.-May) 7.5-10 (av. 9.1); 11 ♀♀ (Apr.-May) 7-8 (av. 7.5)

SA

MUSCICAPINAE

170

STATUS, DISTRIBUTION AND HABITAT. Uncommon summer visitor. Nepal, Sikkim, Bhutan and NEFA, from c. 2000 to 2700 m, locally up to 3200 m (Diesselhorst, 1968; Bailey, JBNHS 24: 75); also Assam in the Khasi and Cachar hills, Nagaland and Manipur, breeding mostly above 1500 m. Affects fairly open forest (oak and rhododendron, pine, etc.), and open, bush-covered areas, with or without trees. Himalayan birds winter in the plains as far as southern Bihar, West Bengal and all parts of East Pakistan (Rashid); a specimen has been obtained from Darjeeling in January. Movements of Assam populations unknown; probably also descend to the plains.

Extralimital. Extends to southeastern Tibet, Szechuan and Yunnan.

MIGRATION. No data. Probably as in 1421.

GENERAL HABITS, FOOD AND VOICE. As in 1421.

BREEDING. As in 1421.

MUSEUM DIAGNOSIS. Adult male separable from the western race (1421) by the absence of white supercilium and white patches in the base of outer tail-feathers. However, there is intergradation over a wide range (the whole of Nepal and Sikkim), and birds from these areas may or may not have any white in tail. Moreover, most males from the Himalayas have at least traces of a white supercilium. Eastern birds are a little darker and particularly duller blue. Birds from Assam (Khasi Hills) show no trace of supercilium and no white in tail.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	60-66	12-14	15-17	42-48 mm
♀♀	59-64	12-13	15-16	42-45 mm

(BB, SA)

COLOURS OF BARE PARTS. Iris dark brown. Bill black; mouth pinkish grey. Legs and feet brownish black; claws black.

MUSCICAPA LEUCOMELANURA (Hodgson)

Key to the Subspecies

		Page
A	Underparts white and grey.....	<i>M. l. leucomelanura</i> 170
B	Underparts tinged with rufous	
1	Female darker above, more fulvous below.....	<i>M. l. cerviniventris</i> 172
2	Female paler above, less fulvous below.....	<i>M. l. minuta</i> 172

1423. Western Slaty Blue Flycatcher. *Muscicapa leucomelanura leucomelanura* (Hodgson)

Digenes leucomelanura Hodgson, 1845, Proc. Zool. Soc. London: 26 (Nepal = central hills of Nepal according to Gray & Gray, 1846, and Biswas, 1962, JBNHS 59: 812)

D. (igenes) tricolor Hodgson, 1845, Proc. Zool. Soc. London: 26 (Nepal). Preoccupied by *Muscicapa tricolor* Hartlaub, 1845, and *Muscicapa tricolor* Vieillot, 1818

Cyornis tricolor notatus Whistler, 1930, Bull. Brit. Orn. Cl. 50: 70

(Gund, Kashmir). [See Biswas, loc. cit. above.]

Baker, FBI No. 645 (part), Vol. 1: 219

Plate 81, fig. 17

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

MUSCICAPINAE

172

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet blackish brown.

1424. Eastern Slaty Blue Flycatcher. *Muscicapa leucomelanura minuta* (Hume)

Siphia minuta Hume, 1872, Ibis: 109 (Mount Tonglloo, Sikkim)

Baker, FBI No. 645 (part), Vol. 2: 219

Plate 81, fig. 18

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1423, q.v.

STATUS, DISTRIBUTION AND HABITAT. Altitudinal migrant, locally common. Eastern Nepal through Sikkim, Bhutan and NEFA between 2700 and 4000 m, and the Khasi Hills above 1500 m. Winters in the foothills (up to 2100 m in central Nepal) and in the plains of the Brahmaputra from the Jalpaiguri district to Sadiya. Khasi Hills population appears to be mostly resident or subject to short vertical movements. Affects forest with plenty of undergrowth. In Nepal it is the only flycatcher to occur regularly in the subalpine *Abies-Betula* forest and occupies a higher zone than *M. supercilialis*. The two species appear to be mutually exclusive in their vertical distribution (Diesselhorst). In the Khasi Hills it affects dense, wet forest of oak and rhododendron, or pine forest if undergrowth is sufficient. In winter often frequents thickets of reeds.

Extralimital. Southeastern Tibet, northern Burma to southwestern Szechuan. The species ranges east to northern Yunnan, north Kansu and Shensi; also Indonesia. Chinese populations winter south to northern Indochinese countries.

GENERAL HABITS, FOOD AND VOICE. As in 1423.

BREEDING. As in 1423. *Eggs*, normally 3. Average size of 20 eggs 15.8 × 12 mm (Baker).

MUSEUM DIAGNOSIS. Differs from the western race (1423) in being more saturated and having the underparts tinged with rufous or olive (v. white and pure grey). Eastern Nepal population is intermediate. *Cerviniventris* is still darker above and much darker fulvous below.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	59-64	12-13	19-20	47-54 mm
♀♀	55-60	12-13	19-20	45-49 mm

(Vaurie, SA)

Weight 4 ♂♂ 6.8; 7 ♀♀ 7.8; 1 juv. 9 g (SA, GD).

COLOURS OF BARE PARTS. As in 1423.

1425. Manipur Slaty Blue Flycatcher. *Muscicapa leucomelanura cerviniventris* (Sharpe)

Digenes cerviniventris Sharpe, 1879, Cat. Bds. Brit. Mus. 4: 460 (Manipur)

Baker, FBI No. 646, Vol. 2: 220

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FLYCATCHERS

173

FIELD CHARACTERS. As in 1423, q.v.

STATUS, DISTRIBUTION AND HABITAT. Altitudinal migrant, locally common. Assam in the Cachar Hills, Nagaland, Manipur and the Chin Hills of Burma. Said to have been found breeding at c. 1500 m in the Chin Hills (Mackenzie *apud* Baker); however, like the Himalayan subspecies, it is probably a bird of higher altitudes since on Mt Victoria Heinrich found it only above 2500 m and up to over 3000 m in the breeding season. Winters in the foothills and adjacent plains. Affects low bushes along forest edges, especially dense reed-bamboo.

GENERAL HABITS AND FOOD. As in 1423.

VOICE AND CALLS. Song, a short, unmelodious strophe of three whistled notes, something like *zich-ti-ziet* (Heinrich). See also 1423.

BREEDING. As in 1423.

MUSEUM DIAGNOSIS. Male hardly distinguishable from *minuta* though averaging darker fulvous below. Female darker above and on sides of head, and more fulvous below.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	55-59	11-12	46-51 mm
♀♀	52-54	11-12	44-49 mm

(Vauric, Stresemann)

COLOURS OF BARE PARTS. As in 1423.

1426. Sapphireheaded Flycatcher. *Muscicapa sapphira* (Blyth)

Muscicapula sapphira Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 939

(Darjeeling)

Cyornis sapphira coelicolor Koeltz, 1932, Jour. Zool. Soc. India 4: 42

(Tura, Garo Hills)

Baker, FBI No. 651, Vol. 2: 225

Plate 82, fig. 2

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. Male (adult). Above, forehead, crown, nape, lower rump and tail bright ultramarine blue. Lores and a line through eye black. Sides of head and back deep purplish blue. Below, chin, throat and upper breast orange-rufous; an interrupted breast-band deep blue. Belly ashy.

Male, first-year. Like adult but crown, back and sides of neck and breast dark olive-brown. Lores and eye-ring ochraceous. No breast band. Also breeds in this plumage.

Female. Above, rufescent olive-brown, upper tail-coverts rufous-brown. Lores and eye-ring ochraceous. Below, chin and throat orange-rufous. Sides of neck and breast olive-brown. Belly whitish, washed with fulvous.

The orange-rufous throat distinguishes the female from all other brown-backed flycatchers except the female of *M. hyperythra* which has a short, fulvous supercilium and the rufous of throat extending to breast. The

♂ First-year male.

FLYCATCHERS

175

MUSEUM DIAGNOSIS. According to Ticehurst (*Ibis* 1939: 753) the males are dimorphic, one phase being that described as 'First-year male' under Field Characters. Males in this plumage appear to be more common than those in full dress.

Young (juvenile) male. Above, with ochraceous spots; upper tail-coverts bluish with ochraceous tips; greater coverts edged with blue and tipped with ochraceous. Postjuvinal moult includes body, lesser and median coverts. First-winter birds recognized by ochraceous tips of greater coverts. According to Whistler (MS.) some juveniles moult straight to adult plumage, others to the 'retarded' dress.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	59-65	12-13	16-17	44-51 mm
♀♀	57-61	12-13	16-17	40-44 mm

(SA, Kinnear)

Weight 2 ♂♂ 7.5, 8 g (SA, SDR).

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs, feet and claws brownish black.

1427. Black-and-Orange Flycatcher. *Muscicapa nigrorufa* (Jerdon)

Saxicola nigrorufa Jerdon, 1839, Madras Jour. Lit. Sci. 10: 266

(Nilgiris)

Baker, FBI No. 678, Vol. 2: 253

Plate 81, fig. 10

LOCAL NAME. *Ménippikhi* (Malayalam).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. Male (adult). A striking orange-rufous flycatcher with slaty black crown, nape and sides of head, and wings.

Female similar but head dark olive-brown or olive-slaty with ochraceous lores and eye-ring.

STATUS, DISTRIBUTION AND HABITAT. Resident, fairly common, but patchily distributed and evidently also moving about locally. The southern section of the Western Ghats and associated hills — Nilgiris, Palnis, Anaimalais, and others — from the Wynad and the Biligirirangans south to the Ashambu hills; from 700 m to the highest summits, more common above 1500 m (see map p. 158). Affects dense, evergreen sholas with a plentiful undergrowth of *Strobilanthes* or *etla* bamboo (*Ochlandra*), cardamom and edges of coffee plantations and rattan brakes in dank ravines.

GENERAL HABITS. Found singly or in pairs, hopping about amongst the seedlings and shady undergrowth, seldom far above the ground; or perches on a low branch or fallen log, making short sallies after insects, occasionally descending to the ground. Actions and behaviour distinctly reminiscent of a small babbler. Usually tame and easy to observe.

FOOD. Insects.

VOICE AND CALLS. Alarm-note *zit-zit*; call-note, a melancholy low *pee* (Betts). Song, a somewhat metallic, high-pitched *chiki-riki-chiki* very insect-like, or *chee-ri-ri-ri* uttered every few seconds (SA).



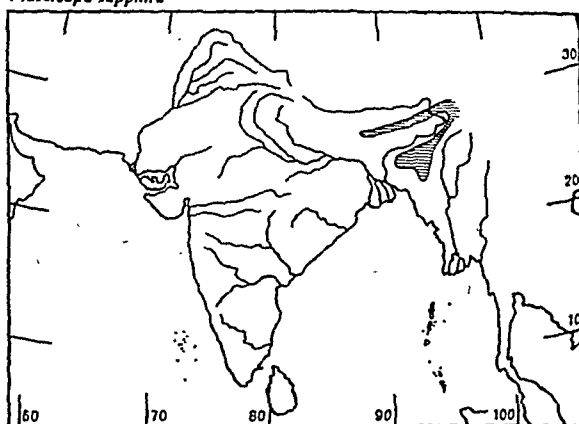
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174

MUSCICAPINAE

male of *M. parva albicilla* also has a rufous throat, but ashy breast and black tail with white on base.

STATUS, DISTRIBUTION AND HABITAT. Fairly common altitudinal migrant. Nepal east of the Arun Kosi, Darjeeling, Sikkim, Bhutan, (NEFA?), Nagaland, Manipur, Meghalaya and Assam in the Cachar, Khasi and Garo hills.

Muscicapa sapphira

Distributional range

Vertical distribution little known. Appears to breed between 2100 m (Nepal) and 2600 m (Nagaland — Ripley). Winters in the foothills up to 1700 m chiefly under 800 m. In Assam, breeds from 1400 m up, mostly above 1800 m. Affects evergreen forest.

Extralimital. Extends to Yunnan and northern Laos.

GENERAL HABITS. Found singly or in pairs in high undergrowth and lower branches of trees. Hunts mostly within the foliage canopy, making sallies for insects. Occasionally descends to the ground. Droops wings at sides and flicks up tail from time to time.

FOOD. Insects.

VOICE AND CALLS. Only record is a tick-tick accompanied by tail-flicking (SA).

BREEDING. Described only by Baker. Season, end of April to June. Nest, placed in hollows in tree-stumps, sometimes in banks, rather bulky for the size of the bird, being sometimes as much as 75 or 100 mm in depth. Material principally moss mixed with some roots, lichen, fern-stems, etc., the nest cup within being made of finer moss, moss-roots and a few feathers. Eggs, 4, very variable: pale yellowish grey to warm buff; either faintly or densely stippled with reddish brown, sometimes so thickly as to make the egg look all of this colour. Average size of 16 eggs 15.4 × 11.8 mm. Incubation by both sexes; period unrecorded.

MUSCICAPINAE

176

BREEDING. Season, March to July. Nest, a loose, untidy ball of dead *etla* leaves or coarse grass, sometimes lined with fine grass, sometimes unlined, very similar to that of *Rhopocichla atriceps* (1224). Usually placed in bushes, ferns or other plants within a metre from the ground, sometimes up to a couple of metres. Eggs, normally 2, pale greyish white or buffy white, faintly but profusely freckled all over with pale pinky grey or reddish; resembling those of the Verditer Flycatcher more than any others of the family. Average size of 30 eggs 18.4 × 13.1 mm (Baker). In one case observed, the female did all the collection of material but the male was in close attendance (Betts).

MUSEUM DIAGNOSIS. See Field Characters.

Young, never been collected but fledglings described from field observation by Dewar (JBNHS 16: 154) and Betts (JBNHS 50: 42): wings black; rump and tail russet as in adult; head, back and underparts speckled light and dark brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	60-63	13-14	19-20	47-51 mm
♀♀	55-59	13-14	19-20	41-46 mm

(SA)

Weight 5 ♂♂ 0.35-0.4 oz. (c. 10-11 g); 5 ♀♀ 0.25-0.35 oz. (c. 7-10 g) — Davison.

COLOURS OF BARE PARTS. Iris brown. Bill blackish brown; mouth pale pink or brownish pink. Legs, feet and claws greyish flesh or greyish brown.

1428. Large Niltava. *Muscicapa grandis grandis* (Blyth)

Chaitaris grandis Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 189

(Darjeeling)

Niltava grandis panghai Koeltz, 1954, Contrib. Inst.

Regional-Exploration, No. 1: 14 (Sangau, Lushai Hills)

Baker, FBI No. 682, Vol. 2: 257

Plate 81, fig. 19

LOCAL NAME. *Margong* (Lepcha).

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. Male (adult). A large, rather sluggish, black-looking flycatcher. Above, forehead, lores and sides of head black; crown, rump and a patch on either side of neck brilliant cobalt blue, but seldom noticeable in the dark shade in which it is usually seen. Rest of upperparts deep purplish blue. Below, throat and breast black; belly purplish blue.

Distinguished from all blue flycatchers by its black throat and breast, and lack of any rufous.

Female. Above, forehead, sides of head and back fulvous-brown. Crown, nape and sides of head olive-brown; a pale blue patch on either side of neck. Wings and tail rufous-brown. Below, throat fulvous; rest fulvous-brown.

The similar female of *M. sundara* is smaller and has a white throat-patch. All species and both sexes of niltava flycatchers are readily diagnosed by the pale blue patch on sides of neck — the hall-mark of the group, as it were.



x c. 1

FLYCATCHERS

177

STATUS, DISTRIBUTION and HABITAT. Fairly common resident, subject to vertical movements. From central Nepal east through Darjeeling, Sikkim, Bhutan and NEFA to the Mishmi Hills, thence south through Nagaland, Manipur, and Assam in the Cachar, Garo, Khasi and Mizo hills (Koelz); generally breeds between 1800 and 2700 m (Himalayas and eastern ranges south to Mt Victoria). Winters from the foothills to at least 2000 m. In the hills of Assam, breeds from 900 m to the highest summits. Affects dense, humid forest and secondary jungle on steep hillsides and ravines, especially in the vicinity of streams.

Extremal. Extends east to the Indochinese countries and south through the Malay Peninsula. Another subspecies in Sumatra.

GENERAL HABITS. Found singly or in pairs in low undergrowth in the thickest and darkest patches of the forest where sunlight rarely filters through. Flits and skulks among low bushes and often feeds on the ground; occasionally takes insects on the wing, but it is less agile than most flycatchers and this is not its common practice.

FOOD. Insects and berries.

VOICE and CALLS. Song: a distinctive, rather mournful, ascending whistle of three or four notes ending interrogatively, thus *whew-whew-wip?* or *tee-ti-tree?* or *tee-ti-tree?*, repeated unhurriedly and monotonously for several minutes (once timed seven) at a stretch (SA). Fleming considers this bird a beautiful singer and renders its song as *more time to eat* (do, re, re, mi) with other notes like *right here, t-z-z-z-t, ha-ha-ha-ha*.

BREEDING. Season, April to July. *Nest*, placed in crevices or holes and conforms to their shape; rather bulky, made chiefly of green moss; the neat cup within is lined with rootlets. Most nests built in among boulders, among the long moss growing on the face of rocks flanking streams and waterfalls, against the trunk or among the buttress roots of large trees; occasionally in holes in dead stumps. Situated almost invariably in shady, evergreen forest. Eggs, usually 4, sometimes 5 or 3, very similar to those of *Cinclidium leucum* (1681) but pale buff instead of pale pink, often with a finely speckled pattern of darker buff and a faint indication of a coronal ring on some eggs. Average size of 38 eggs 24.7 × 18 mm (Harrison & Parker, 1966, Bull. B.O.C. 86: 71-3). Individual eggs in the same clutch very variable in coloration (D'Abreu). Share of the sexes in the domestic chores, and incubation period, undetermined. Brood-parasitism on it by cuckoo, presumably *Cuculus canorus*, reported (D'Abreu, JBNHS 27: 405).

MUSEUM DIAGNOSIS. See Field Characters.

Young. Above, upperparts and sides of head with ochraceous spots and bold black margins to the feathers; lesser and median coverts with ochraceous terminal spot; greater coverts black (edged with blue in male) with tiny ochraceous shaft-streaks at tips; primary coverts dull black. Below, squamated with large brownish yellow spots and narrow black margins.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	100-112	18-20	23-26	87-100 mm
♀♀	97-105	17-20	23-25	86-91 mm
			(BB, SA, Stresemann)	

FLYCATCHERS

179

1430. Eastern Small Niltava. *Muscicapa macgrigorae signata* (Horsfield)

Leiothrix signata Horsfield, 1840, Proc. Zool. Soc. London: 162 (Assam)

Baker, FBI No. 685 (part), Vol. 2: 260

LOCAL NAME. *Phak-tagrak-pho* (Lepcha).

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. As in 1429, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Sikkim (intergrading with nominate race), Bhutan and NEFA, thence south through the Patkai Range, Nagaland, Manipur, and Assam in the Cachar, Khasi and Garo hills. Breeds from c. 900 to at least 2000 m; in the Cachar, Khasi and Garo hills. Breeds from c. 900 to at least 2000 m; winters from c. 1400 m down to the foothills and in the plains of the Brahmaputra. Affects bushes along streams, shady glades and tracks in evergreen forest, and secondary scrub in forest clearings. In the plains, in winter, partial to mixed heavy reed and grass jungle interspersed with trees.

GENERAL HABITS. A retiring flycatcher, usually difficult to observe. Solitary in winter. Very sprightly and active, feeding almost entirely on the wing in typical flycatcher style among the upper bushes or undergrowth. More active in the early mornings and about dusk.

FOOD. Insects (ants, beetles, etc.); also berries in the non-breeding season.

VOICE and CALLS. Song, a four-noted strophe, very high-pitched and remarkably thin *tree-tweet-ee-tweet* rising in pitch to the second note, then falling (Smythies). Sub-song described as a curious little subdued grating song (Proud). Call-note, a very high-pitched *see-see*, the second note a quarter-tone lower (Lister).

BREEDING. Season, end of April to early July. *Nest*, usually placed in clefts in rocks well covered by vegetation, on the banks of streams; made of moss, the inner cup lined with moss and rootlets. Eggs, normally 4, sometimes 5 or 3, creamy white to pale greyish yellow, blotched or freckled more or less densely, more so at the larger end where forming an indefinite ring or cap. Average size of 100 eggs 18.1 × 13.6 mm (Baker). Both sexes take part in building though male seems to do little more than bring the materials. Incubation by both sexes; period about 12 days. Brood-parasitized by the cuckoos *Cuculus poliocephalus*, *C. sparterioides* and *C. fugax* (Baker, JBNHS 17: 353, 363, 368).

MUSEUM DIAGNOSIS. See Field Characters. Differs from the nominate race (1429) in having the breast and abdomen greyer, less whitish.

Young. Above, rufescent brown with ochraceous spots. Lesser, median and greater coverts with ochraceous tips. Below, fulvous brown with ochraceous spots; more whitish on abdomen. Postjuvinal moult of body-feathers and wing-coverts (except primary).

MEASUREMENTS and COLOURS of BARE PARTS. As in 1429. Weight ♂ 9 11-13 g (SDR, SA).

MUSCICAPA SUNDARA (Hodgson)

Key to the Subspecies

Male paler below, female paler above.....*M. s. whistleri*

178

MUSCICAPINAE

Weight 6 ♂♂ 35-40; 2 ♀♀ 35, 38 g (SA).

COLOURS of BARE PARTS. Iris dark brown. Bill, legs, feet and claws black; soles greyish flesh.

MUSCICAPA MACGRIGORIAE (Burton)

Key to the Subspecies

Underparts darker, more grey.....*M. m. signata*
Underparts paler, more whitish on abdomen.....*M. m. macgrigorae*

1429. Western Small Niltava. *Muscicapa macgrigorae macgrigorae* (Burton)

Phoenicurus macgrigorae Burton, 1835, Proc. Zool. Soc. London: 152 (Himalayas, restricted to western Himalayas by Rand & Fleming, 1957, Fieldiana 41: 178)

Baker, FBI No. 685 (part), Vol. 2: 260

Plate 81, fig. 16

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. Male (adult). Above, forecrown, rump and a patch on either side of neck brilliant ultramarine blue. Forehead and lores black. Rest of upperparts deep purplish blue. Below, throat deep purplish blue; rest of underparts ashy, whitish on belly.

Female. Above, rufescent olive-brown. Wings and tail rusty brown. A pale blue patch on either side of neck. Below, throat fulvous; rest of underparts fulvous olive-brown.

Small size and blue patches on sides of neck distinguish both sexes.

STATUS, DISTRIBUTION and HABITAT. Fairly common resident, subject to vertical movements. Himalayas from Mussooree through Nepal and Darjeeling (where it intergrades with *signata*); from c. 1000 to 2100 m in summer and from the foothills to c. 1400 m in winter. Affects bushes near streams, in shady glades or alongside roads and tracks through forest, generally not far from water.

GENERAL HABITS and FOOD. As in 1430.

VOICE and CALLS. A sub-song, described as a curious little grating song uttered *sotto voce*, heard from March to May (Proud). See also 1430.

BREEDING. As in 1430.

MUSEUM DIAGNOSIS. Underparts paler and belly more whitish than *signata* (1430).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	62-67	c. 12	c. 18	49-54 mm
♀♀	61-65	c. 12	c. 18	46-55 mm
				(BB, SA)

Weight 3 ♂♂ 11-13; 3 ♀♀ 12-13 g (GD).

COLOURS of BARE PARTS. Iris brown. Bill black. Legs and feet brownish plumbeous; soles hoary.

MUSCICAPINAE

180

1431. Western Rufousbellied Niltava. *Muscicapa sundara whistleri* (Ticehurst)

Niltava sundara whistleri Ticehurst, 1926, Bull. Brit. Orn. Cl. 46: 113

(Murree)

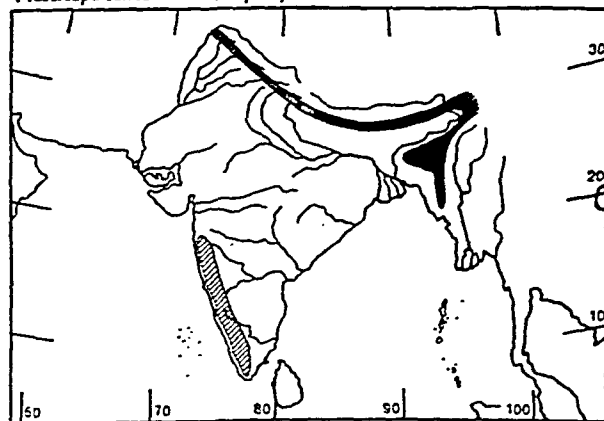
Baker, FBI No. 684 (part), Vol. 1: 259

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1432, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Fairly common resident, subject to vertical movements. The western Himalayas from the Murree hills to Kumaon. Breeds between 1600 and 2700 m, optimum zone 1800-2400 m.

Muscicapa sundara and *M. pallipes*

□ *M. s. whistleri* (1431)

■ *M. s. sundara* (1432)

▨ *M. pallipes* (1435)

Affects undergrowth in dense forest (chestnut, fir, etc.), jungle, and along nullahs. Found in winter from c. 650 m down to the foothills and adjacent plains (Hoshiarpur, Ambala and Rawalpindi). In this season frequents bushes near water and along roads in more open areas.

GENERAL HABITS. Usually keeps singly; in winter frequently with the mixed hunting parties. Bobs its body forward and flicks and spreads its tail every few seconds. Hunts in low undergrowth close to the ground, freely descending to it for food. Both Magrath (JBNHS 19: 148) and Whistler (Ibis 1930: 95) note its very Blue Chat-like habits.

FOOD. Insects (ants and beetles recorded). Also berries, especially in the non-breeding season.

FLYCATCHERS

181

VOICE and CALLS. Song described as squeaky and grating (Proud). A call (or song?) is rendered as *s-i-i-i-f cha chuck* (Fleming). Alarm-note, a harsh, scolding *tr-r-r-ichik* (SA), and a long-drawn squeak in the neighbourhood of the nest (HW). Other notes, a soft *cha . . . cha* low-pitched and insistent, and a soft, falling *pea . . . pea* (Lister). Also a high-pitched *tzi, tzi, tzi* (Loke).

BREEDING. Season April to July, chiefly May and June. Young in nest have been found as late as August. Nest, usually placed in a hole in a bank or roadside cutting, in clefts or crevices of rocks, or in cavities in dead stumps, close to the ground. Made mostly of moss, the inner cup lined with rootlets. Eggs, normally 4, very similar to those of *M. grandis* (1428). Both nest and eggs are very reminiscent of a Robin's. Average size of 14 eggs 20.7 × 15.9 mm (Baker). Building and incubation by both sexes; period 12 or 13 days. Brood-parasitized by *Cuculus canorus*, *C. saturatus* and *C. fugax* (D'Abreu, JBNHS 27: 405).

MUSEUM DIAGNOSIS. Male differs from *sundara* (1432) in having the orange-rufous of underparts paler. Female is paler and more olive-grey above; tail paler chestnut; underparts more greyish olive.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1432.

1432. **Eastern Rufousbellied Niltava.** *Muscicapa sundara sundara* (Hodgson)

Niltava Sundara Hodgson, 1837, Ind. Rev. 1 (12): 650 (Nepal)
Cyanecula fastuosa Lesson, 1840, Rev. Zool.: 266 (Mont. Himal., restricted to Murree by Baker, 1930, Fauna Brit. India, Bds. 8: 632, re-restricted to NE. Himalayas by Titchhurst, 1931, Ibis: 351)
 Baker, FBI No. 684 (part), Vol. 2: 259
 Plate 82, fig. 14

LOCAL NAMES. *Niltava* (Nepal); *Margong* (Lepcha).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult). Above, forehead black; crown, rump, shoulders and a patch on either side of neck bright ultramarine blue. Sides of head and back dark purplish blue looking practically black. Below, throat as back; rest of underparts orange-rufous.

May be confused with the very similar *M. vivida* which lacks the well-defined blue patch (the niltava hall-mark) on sides of neck; other differences not apparent in the field.

Female. Above, olive-brown tinged with ochraceous on rump. A pale eye-ring. A blue patch on either side of neck. Wings fulvous-brown. Tail rusty brown. Below, chin and upper throat fulvous-olive. Lower throat white; rest of underparts olive-brown.

The combination of a white throat-patch and the characteristic blue spot on each side of neck identifies the female.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Nepal, Darjeeling, Sikkim, Bhutan, NEFA, the Patkai Range, Nagaland, Manipur, and Assam in the Cachar and Khasi hills. Breeds between c. 1800 and 3200 m (Diesselhorst) in the Himalayas and the eastern

FLYCATCHERS

183

(Hume, SF 11: 111), and presumably Nagaland. Obtained in summer from 2100 to 2700 m (NEFA, Sikkim and Mt Victoria); recorded in winter from 1500 to 2000 m in Burma. Affects dense brushwood in evergreen forest.

EXTRALIMITAL. Extends to Szechuan and northern Vietnam. The species ranges to Formosa, the Malay Peninsula and Sumatra.

GENERAL HABITS. Found singly or in pairs, skulking in brushwood from which it makes sallies after insects. Behaviour and habitat preference much as in Large Niltava (1428).

FOOD. Insects.

VOICE and CALLS. 'A clear whistle' (Robinson).

BREEDING. Unknown.

MUSEUM DIAGNOSIS. See Field Characters. For details of plumages see Baker, loc. cit. Young undescribed.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
7 ♂♂	94-102	c. 16	c. 18	74-86 mm
2 ♀♀	93, 94	c. 16	c. 18	— mm

(Kinnear, Stresemann)

Weight 2 ♂♂ 1 ♀ 1.7-1.2 oz. (c. 33 g) — Hume.

COLOURS OF BARE PARTS. Iris brown to reddish chocolate. Bill black. Legs and feet dark blackish brown; soles yellowish.

1434. **Whitetailed Blue Flycatcher.** *Muscicapa concreta cyanea* (Hume)

Muscitrea cyanea Hume, 1877 (June), Stray Feathers 5: 101 (Muleyit)
 Baker, FBI No. 641, Vol. 2: 215
 Plate 82, fig. 15

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 18 cm (7½ in.).

FIELD CHARACTERS. Male (adult). Above, deep blue, crown brighter. Tail dull blue with a large amount of white on all but the central rectrices. Below, throat and breast dark blue fading to ashy on lower breast and flanks, and to white on lower belly and under tail-coverts.

Distinguishable from all dark blue flycatchers by large size (nearly same as of Large Niltava) and by the large amount of white in tail.

Female. Above, rufescent brown; a fulvous eye-ring. Tail like male's but brown, also with much white in it.

Below, rufescent brown with a conspicuous white patch on lower throat. Flanks olive-brown; belly white.

Recognizable by the well-defined white throat-patch and extensive white in tail. Female *sundara* (1432) has blue patches on either side of white throat-patch and no white in tail. *M. moniliger* (1415) also has no white in tail, but its white throat-patch is bordered with black.

STATUS, DISTRIBUTION and HABITAT. Little known. Breeds in the Patkai Range at or above 1500 m (exact altitude unknown). Obtained in winter



× c. 1

182

MUSCICAPINAE

range south to Mt Victoria, and in Assam from 900 m to the highest summits. Found in winter (November to March) from c. 2300 m down to the foothills, in the plains of the Brahmaputra and in the Chittagong region of East Pakistan. Affects dense undergrowth in more open forest than *M. grandis*, secondary growth and brush-covered hillsides.

EXTRALIMITAL. Extends east to Yunnan and northern Laos.

GENERAL HABITS, FOOD and VOICE. As in 1431.

BREEDING. As in 1431.

MUSEUM DIAGNOSIS. For distinction from *whistleri*, see 1431.

Young, male and female similar to those of *M. grandis* respectively, but with a pale ochraceous patch on lower throat. First-winter birds recognizable by ochraceous tips of greater coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	78-87	16-17	21-22	65-73 mm
♀♀	76-83	16-17	21-23	60-68 mm

(BB, SA, Stresemann)

Weight 21 ♂♂ 20-24 (av. 21); 7 ♀♀ 19-24 (av. 21.5) g — SA.

COLOURS OF BARE PARTS. Iris brown. Bill: ♂ black, ♀ blackish brown; inside of mouth fleshy. Legs and feet plumbeous brown.

1433. **Rufousbellied Blue Flycatcher.** *Muscicapa virida oatesi* (Salvadori)

Niltava oatesi Salvadori, 1887, Ann. Mus. Civ. Stor.
 Nat. Genoa 5 (2): 514 (Muleyit)
 Baker, FBI No. 652, Vol. 2: 226
 Plate 82, fig. 16

LOCAL NAMES. None recorded.

SIZE. Sparrow +; length c. 18 cm (7 in.).

FIELD CHARACTERS. Male (adult). Above, forehead and lores black. Crown and rump ultramarine blue. Back and tail dark purplish blue. Below, chin, upper throat, sides of head, neck and breast nearly black. Rest of underparts rufous.

Resembles *M. sundara* but lacks the niltava hall-mark — the well-defined blue patch on sides of neck. *M. rubiculoides* also has a dark blue throat but a white belly.

Female. Above, crown grey-brown; a fulvous eye-ring. Rest of upperparts dark olive-brown. Below, throat fulvous, rest olive-brown.

Distinguished from female *M. sundara* and *M. grandis* by lack of the distinctive blue neck-patches; from *unicolor* by fulvous throat and olive-brown breast (v. whitish and grey respectively). Females of *rubiculoides* and *banyumas* both have a rufous breast and white belly; female *concreta* has a white throat-patch. Both sexes of *M. poliolegys* have a whitish throat and rufous breast.

STATUS, DISTRIBUTION and HABITAT. Apparently rare. NEFA in the Pachakshi area (Ludlow, Ibis 1944: 194); Assam in north Cachar (one April record — Baker, JBNHS 9: 124); the highest eastern ranges of Manipur



× c. 1

MUSCICAPINAE

184

at low altitude in the Margherita-Dibrugarh area (common). Affects deep forest.

EXTRALIMITAL. Burma. The species extends east to northern Vietnam and south through the Malay Peninsula to Sumatra and Borneo.

GENERAL HABITS. More sluggish and inactive than most flycatchers. Frequents the lower branches of big trees in dense jungle, searching the leaves and branches for insects; also catches them on the wing but does not descend to the ground (Robinson). Frequently expands its tail laterally, showing the white. Females appear to be much less numerous, or perhaps shyer than males, as they are much scarcer in collections.

FOOD. Insects.

VOICE and CALLS. 'A low whistling song of three notes, in addition to the ordinary twitter' (Robinson).

BREEDING. Little known. A nest brought to Dr H. N. Coltart by Patkai Nagas on 25 June (over 50 years ago) is the only record. It was made of moss and said to have been wedged into a hole in a rocky bank of a ravine running through dense forest. The single egg looked like a very large egg of *M. rubiculoides* (1440): pale buff-stone, stippled all over with dark reddish, forming an ill-defined cap at the large end; it measured 23.9 × 18 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. Young, spotted as in other closely related species.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	91-93	c. 18-19	c. 23-24	66-72 mm (Baker)
1♂	90	(from skull) 21	22	67 mm (MD)

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet fleshy brown.

1435. **Whitebellied Blue Flycatcher.** *Muscicapa pallipes* Jerdon

Muscicapa pallipes Jerdon, 1840, Madras Jour. Lit. Sci. 11: 15 (Coonoor Ghat)
 Baker, FBI No. 653, Vol. 2: 228
 Plate 82, fig. 9

LOCAL NAME. *Küttuneli* (Malayalam).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult). Above, uniformly indigo-blue, forehead and supercilium brighter blue, lores black. Below, throat and breast indigo-blue; belly white.

Combination of last two characters identifies it. The Whitebellied Short-wing (1638) is slaty blue rather than indigo-blue, has a paler, bluish white forehead and supercilium, and is more terrestrial with longer legs.

Female. Above, rufescent olive-brown; lores white; tail chestnut. Below, throat and upper breast orange-rufous; breast greyish fading to white on belly.

FLYCATCHERS

185

Distinguished from female *M. rubiculoides* (1440) by larger size and chestnut tail. Both sexes of *M. parva* have a black-and-white tail. Female *M. tickelliae* (1442) is greyish above and has a blue tail.

STATUS, DISTRIBUTION and HABITAT. Fairly common resident. The Sahyadris (Western Ghats) and associated hills of southwestern India (Nilgiris, Palnis, High Wavys and others) from c. 19°N. (Bhimashanker) to southern Kerala; from the foothills to c. 1500 m; in the Nilgiris up to 1700 m (see map p. 180). Affects undergrowth of lanky seedlings in evergreen forest, sholas, *Strobilanthes* and 'channa' patches on hillsides, and cardamom ravines.

GENERAL HABITS. Found singly or in pairs, often in company with roving bands of insectivorous species. Rather sluggish. Flits unobtrusively among the undergrowth and lower trees, catching insects on the wing in typical flycatcher fashion or dropping to the ground now and again to pick up a morsel. 'When perched on a branch, bolt upright, has a peculiar way of spreading its tail and screwing it from side to side, reminiscent of the Thick-billed Flowerpecker (*Dicaeum agile*)'—SA. Its quiet and retiring habits make it seem rarer than it is. Recent mist-netting, for instance, has shown it to be quite common and breeding at Mahableshwar (c. 18°N.) whence not recorded previously.

FOOD. Chiefly insects; occasionally also berries.

VOICE and CALLS. A low *tik-tik* (Betts). A double call of two soft, tremulous notes, the second slightly lower in pitch, a little like the nasal call of the Paradise Flycatcher. Song, high-pitched, sweet and rich though 'a little squeaky, divided into phrases of as many as nine notes' (Nichols).

BREEDING. Season, February to September, but chiefly during the monsoon. Nest, a rough untidy structure mainly of green moss, the neat inner cup lined with lichen, fine grass or rootlets; generally placed on a ledge of a mossy rock, or in a hole in a dead stump or bank, not far from the ground, in humid forest. Eggs, almost invariably 4, resembling those of *Copsychus*: pale sea-green to warm yellowish stone profusely blotched all over with dark brown, more so at the large end. Average size of 45 eggs 20.2 × 15.5 mm (Baker). Other details of breeding biology not recorded.

MUSEUM DIAGNOSIS. See Field Characters. For details of plumage, see Baker loc. cit.

Young. Above, olive-brown with ochraceous streaks on head and small spots with dark margins on mantle. Lesser, median, greater coverts and tertials with ochraceous tips. Below, ochraceous, breast with dark margins, throat paler, belly whitish. Wings and tail as in adult of corresponding sex. First-winter birds recognized by pale tips of unmoulted greater coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	73-81	16-18	18-19	57-64 mm
♀♀	72-76	16-17	18-19	54-62 mm
				(SA)

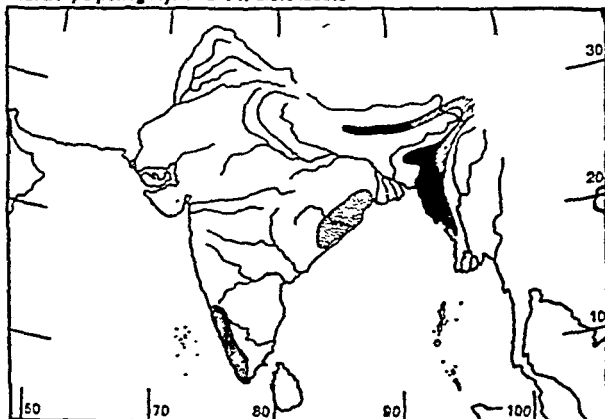
Wing of 15 ♂♂ 75-80 (av. 73.5); 16 ♀♀ 70-74 mm (Koele)

Weight 10 ♂♂ (Apr.-May) 14-20 (av. 18); 11 ♀♀ (Apr.-May) 17-23 (av. 19.9) g—SA.

FLYCATCHERS

187

Muscicapa poliogenys and *M. albicaudata*



Distributional ranges

- M. p. poliogenys* (1436).
 M. p. cachariensis (1437).
 M. p. vernayi (1438).
 M. albicaudata (1445).

FOOD. Insects.

VOICE and CALLS. Alarm-notes *tik-tik-tik-tik*. Song, a pleasing trill (Stevens); mellow and varied, rendered as 'doe-doe-chi-cha, su-wa-si-su-wa, su-wa-si-do-dee' (Fleming).

BREEDING. Season, middle of April till end of June. Nest, a compact cup mostly of green moss mixed with some dead leaves and fine grass, lined with rootlets; placed in a hollow in a bank or among boulders, or in a hole in some dead stump, within a metre from the ground. Eggs, 3 to 5, pale olive-green or olive-buff, so densely covered with reddish or red-brown specks as to appear uniformly reddish brown. Average size of 40 eggs 18.5 × 14.6 mm (Baker). Incubation by both sexes; period unrecorded.

MUSEUM DIAGNOSIS. For distinction from *cachariensis* and *vernayi* see 1437 and 1438 respectively (under Museum Diagnosis).

Young similar to that of *M. rubiculoides*.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	72-79	15-17	c. 18	60-65 mm
♀♀	71-78	15-16	c. 18	56-62 mm
				(BB, Rand & Fleming)

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet pale greyish pink to pale fleshy.

186

MUSCICAPINAE

COLOURS OF BARE PARTS. Iris brown. Bill brownish black; mouth greyish pink or slaty pink. Legs and feet pale horny brown tinged with purplish.

MUSCICAPA POLIOGENYS (Brooks)

Key to the Subspecies

	Page
A Paler. Upperparts more greyish; crown darker than back.....	186
B Darker. Upperparts more brownish; crown and back concolorous.....	188
C Upperparts greyer than A, distinctly washed with blue in ♂.....	188

1436. Western Brooks's Flycatcher. *Muscicapa poliogenys poliogenys* (Brooks)

Cyornis poliogenys Brooks, 1879, Stray Feathers 8: 469

(Salbari, Sikkim Terai)

Baker, FBI No. 673 (part), Vol. 2: 247

Plate 82, fig. 8

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Above, olive-brown, greyer on crown and sides of head. A pale eye-ring. Tail rufous-brown. Below, throat whitish or buff, rest of underparts fulvous, darker on breast. Sexes alike.

This nondescript species may be confused with several other female flycatchers with more or less rufous underparts; these species may be eliminated as follows: *M. hypertythra* has a rufous throat and rufous-brown sides of head. *M. tickelliae* has an orange-rufous throat and blue tail. *M. hodgsonii* has an olive-buff throat and lacks any fulvous on breast and belly. *M. ferruginea* has a more rusty tail, rufous lower belly and a very prominent white eye-ring. *M. rubiculoides* has a less whitish throat, a pure white belly and under tail-coverts. *M. monileger* has a white throat with a well-defined black gorget bordering it. *M. banyumas* has a bright rufous throat and breast.

Female Blue Chat (*Eritacus brunneus*) differs only in having the sides of head olive-brown, not dark grey, and in being more terrestrial with longer legs.

STATUS, DISTRIBUTION and HABITAT. Common resident. From central Nepal through Sikkim, Darjeeling, the Jalpaiguri duars and Bhutan foothills (probably intergrading here with *cachariensis*); also the Garo, Khasi and Mizo hills of Assam, and adjacent hills of East Pakistan to the Chitragong region; from the edge of the plains to c. 1500 m. Affects evergreen and deciduous forest, more open country in winter.

GENERAL HABITS. Little recorded. Affects bushes and undergrowth though generally keeps higher up among trees. Hops over and about fallen stumps and brushwood in forest like a chat (Stevens). See also 1438.

188

MUSCICAPINAE

1437. Eastern Brooks's Flycatcher. *Muscicapa poliogenys cachariensis* (Madarász)

Siphia cachariensis Madarász, 1884, Zeitschr. Ges. Orn.: 52, pl. 1, fig. 2

(Dhilkusha, Cachar)

Cyornis poliogenys saturatior Robinson & Kinnear, 1927, Bull. Brit.

Orn. Cl. 48: 43 (Dibrugarh, Assam)

Baker, FBI No. 673 (part), Vol. 2: 247

LOCAL NAME. Deo-putti (Cachar).

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As in 1436 but throat fulvous as breast.

STATUS, DISTRIBUTION and HABITAT. Common resident. NEFA south through Nagaland, Assam in the Cachar hills, and Manipur. From the edge of the plains to c. 1500 m. Affects various kinds of jungle as well as wet tropical forest.

Extrelimited. Adjacent hills of Burma.

GENERAL HABITS, FOOD and VOICE. As in 1436.

BREEDING. As in 1436.

MUSEUM DIAGNOSIS. Differs from nominate race (1436) in being darker and having the ochraceous of breast almost reaching the chin. Above browner, less greyish, the crown not differentiated from the back.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1436.

1438. Peninsular Brooks's Flycatcher. *Muscicapa poliogenys vernayi* (Whistler)

Cyornis poliogenys vernayi Whistler, 1931, Bull. Brit. Orn. Cl. 52: 23

(Sankrametta, 3500 ft, Vizagapatam dist., Eastern Ghats)

Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As in 1436 but male has a bluish wash on upperparts. Looks very like Quaker Babbler, *Alcippe pinicephala* (1389) but keeps singly, not in flocks.

STATUS, DISTRIBUTION and HABITAT. Common resident. The Eastern Ghats from northern Orissa (Mayurbhanj) and northeastern Andhra Pradesh (Vishakhapatnam district); from the plains to 1000 m. Affects secondary deciduous and evergreen forest.

GENERAL HABITS. Characteristically flycatcher, but frequently descends to the ground and hops about among the debris and undergrowth looking confusingly like a female shortwing or blue chat.

FOOD and VOICE. As in 1436.

BREEDING. Unrecorded. Probably as in 1436.

MUSEUM DIAGNOSIS. Female and first-year male differ from *poliogenys* in the greyer tint of the upperparts. Adult male distinguished by a bluish wash over the whole of the upperparts, more pronounced on the head and nape, becoming a definite bright blue on the longer upper tail-coverts and outer webs of the rectrices. Males breed in both stages of plumage.

FLYCATCHERS

189

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	73-78	15-16	18-20	60-68 mm
♀♀	70-74	14-16	18-20	55-60 mm

COLOURS OF BARE PARTS. As in 1436.

1439. **Pale Blue Flycatcher.** *Muscicapa unicolor unicolor* (Blyth)
Cyornis unicolor Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 1007 (Darjeeling)
 Baker, FBI No. 655, Vol. 2: 230
 Plate 82, fig. 11

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 16 cm (6½ in.).

FIELD CHARACTERS. Male (adult). Above, blue, brighter on forehead, supercilium and shoulder, deeper on tail. Below, throat pale blue, breast blue changing to whitish on belly. Under tail-coverts scalloped grey and white.

May only be confused with the Verditer Flycatcher (1445), which is more blue-green and lacks the whitish on belly.

Female. Above, olive-brown, wings and tail browner; pale lores and eye-ring. Below, pale grey-brown.

May be confused with female *M. hodgsonii* which is smaller, has an olive-buff throat and whitish belly. Female of *M. vivida* is darker olive below and has a fulvous throat.

STATUS, DISTRIBUTION AND HABITAT. Imperfectly known. Uncommon in the western part of its range, common but locally distributed in the east. Garhwal (A. E. Osmaston, JBNHS 28: 148), Nepal (Biswas, JBNHS 59: 815), Sikkim, Bhutan, NEFA, Nagaland, Manipur, Assam in the Cachar, Khasi and Garo hills, and East Pakistan in the Chittagong Hill Tracts (Rashid); from the foothills in winter to at least 1800 m in summer; optimum breeding altitude about 1500 m. Affects dense forest, secondary and bamboo jungle, and humid forest on steep hillsides.

Extralimital. Extends east to Laos. Another subspecies in the Malay Peninsula, Sumatra, Java and Borneo.

GENERAL HABITS. Frequents undergrowth as well as high trees. Makes sallies for insects but does not use regular perches. Twitches up its tail half-cocked between the drooping wings.

FOOD. Insects.

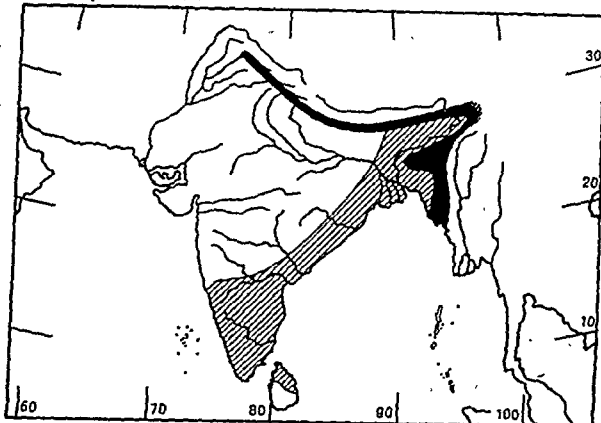
VOICE AND CALLS. A characteristic tr-r-r (of alarm ?) as it twitches its tail (SA). Song described as beautiful, 'arresting and characteristic' (Smythies) and richer than that of most flycatchers (Baker).

BREEDING. Little known. Season, April to June. Nest, described mostly from material brought in by locals. Said to have been placed in holes between boulders in ravines and stream banks, or in holes in tree-trunks; made mostly of moss and lichen, the inner cup lined with rootlets. Eggs, normally 4, deep yellow-buff so densely freckled as to appear uniformly chocolate-brown. Average size of 14 eggs 23.1 × 17.5 mm (Baker).

FLYCATCHERS

191

Muscicapa rubeculoides



■ Breeding range

▨ Winter

Extralimital. Adjacent Burma. The species extends to Szechuan, Hupeh and Vietnam.

MIGRATION. A summer (breeding) visitor to the Himalayas, arriving in March, leaving in September. Has been recorded in Sikkim at c. 1100 m in winter. A resident or altitudinal migrant in Assam. Winters scatteredly in the hills of southern India (low country to c. 900 m) from Belgaum southwards, Tamil Nadu, the Eastern Ghats, West Bengal (common) and in the plains and foothills of East Pakistan and Assam. Also the northern part of Ceylon where it arrives in October, up to c. 1000 m in the hills. In this season, affects well-wooded country, secondary and bamboo jungle.

GENERAL HABITS. Keeps to undergrowth of bushes and low trees; makes sallies for insects but rarely returns to the same perch or even the same tree. Frequently drops to the ground momentarily to pick up a morsel, sometimes jerking open and flicking forward the wings to stampede a cricket or grasshopper lurking amongst the mulch. Flicks up partially cocked tail from time to time while uttering its call- or alarm-note.

FOOD. Insects and grubs.

VOICE AND CALLS. Alarm-note chr-r, chr-r; call-note click, click or chik, chik (SA). Song, a clear but short phrase or metallic trill similar in pattern to that of Tickell's Flycatcher (1442) but somewhat richer; a song heard in winter has been rendered as ciccy-ciccy-ciccy-ciccy-see, the first two ciccy higher in pitch (Smythies). Often given from the low limb of a tree when sitting quietly. Song period in Nepal, mid April to mid July (Proud). Also sings sporadically in winter.

90

MUSCICAPINAE

MUSEUM DIAGNOSIS. See Field Characters.

Young. Above, spotted with rich ochraceous. Ear-coverts fulvous with darker tips. Greater coverts and tertials with ochraceous tips. Wing and tail as in adult, sex for sex. Below, dull ochraceous, paler on belly, with faint dark margins on belly and throat, well marked on breast. First-winter birds recognized by pale tips of tertials.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	80-85	17-18	17-19	70-76 mm
♀♀	76-84	17-18	17-19	67-72 mm

Weight 1 ♂ 21; 1 ♀ 21 g (SA).

COLOURS OF BARE PARTS. Iris dark brown. Bill black, base of lower mandible grey. Legs and feet dark brown.

1440. **Bluethroated Flycatcher.** *Muscicapa rubeculoides rubeculoides* (Vigors)
Phoenicurus rubeculoides Vigors, 1831; Proc. Zool. Soc. London: 35 (Darjeeling)
 Baker, FBI No. 657, Vol. 2: 231
 Plate 82, fig. 6

LOCAL NAMES. Ghatki (Bengali); Manzil pho (Lepcha); Nrelachenpan (Malayalam).

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Male (adult). Above, dull ultramarine blue, brighter on forehead and supercilium. Lores black. Below, throat dark blue; breast rufous; belly and under tail-coverts white washed with buff.

Dark blue throat in conjunction with rufous breast and white belly identifies the male.

Female. Above, olive-brown tinged with rufous on rump. Pale lores and eye-ring. Below, throat buff; breast ochraceous, rest of underparts white.

Several other flycatchers, mostly females, have a rufous breast and are very similar. They may be eliminated as follows: *M. parva* and *rubra* have white tail-bases; *M. hyperythra*, *poliogenys* and *sapphira* a more or less ochraceous belly, not white; *M. tickelliae* has a bluish tail; *M. hodgsonii* has a buffish olive throat and breast; *M. banyumas* has both throat and breast rufous, and belly washed with buff, less pure white; *M. pallipes* has a chestnut tail and is larger. *M. poliogenys* is almost identical but has a whiter throat, and an ochraceous wash on belly.

STATUS, DISTRIBUTION AND HABITAT. A partial migrant, generally common on its breeding grounds, but very widely scattered in winter. Breeds in the Himalayas from Kashmir (specimens in Brit. Mus.) and Chamba to NEFA; also Nagaland, Manipur and the hills of Assam and East Pakistan south to the Chittagong Hill Tracts; from the foothills normally to c. 1500 m, locally to 1800 m and even 2100 m (Nepal, Diesselhorst). Affects forest with plenty of undergrowth, wooded nullahs, well-wooded gardens and secondary forest.

192

MUSCICAPINAE

BREEDING. Season, April to August. Double-brooded in Assam but apparently single-brooded in the Himalayas. Nest, placed in a hollow in a mossy bank or crevices in rocks on stream banks and ravines, holes in dead stumps, holes and clefts in tree-trunks or in hollow bamboo, occasionally among thick clumps of ferns and orchids growing on the trunk of a moss-covered tree; made mostly of green moss, sometimes mixed with some dead leaves, grass bents and lichen, lined with fine rootlets. Eggs, normally 4, rarely 5, occasionally 3, pale olive or yellowish stone very densely stippled with olive-brown or reddish olive-brown. Average size of 60 eggs 18.7 × 14.3 mm (Baker). Both sexes share incubation and care of young. Incubation period either eleven or twelve days.

MUSEUM DIAGNOSIS. See Field Characters. For details of plumages see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	65-77	14-16	15-18	50-60 mm
♀♀	66-74	14-15	15-18	49-55 mm

Weight 3 ♂♂ (March) 12-18; 14 ♂♂ (October, in winter quarters) 13-19 (av. 14.9); 14 ♀♀ (ditto) 10-16 (av. 13.6) g — SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill brownish black; mouth greyish pink or slaty pink. Legs and feet greyish brown (yellowish fleshy in juvenile).

1441. **Largebilled Blue Flycatcher.** *Muscicapa banyumas magnirostris* (Blyth)

Cyornis magnirostris Blyth, 1849, Jour. Asiat. Soc. Bengal 18: 814 (Darjeeling)
 Baker, FBI No. 663, Vol. 2: 236
 Plate 82, fig. 7

LOCAL NAME. Daogatang (Cachari).

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Male (adult). Above, indigo-blue, brighter on forehead and shoulders; lores black. Below, throat and breast and flanks orange-rufous; belly and under tail-coverts white.

May be confused with *M. sapphira* which is more brilliant ultramarine blue on crown and rump and has a more greyish belly. *M. hodgsonii* is slaty above and has white in tail. The nearly identical *tickelliae* is not likely to occur in the range of *banyumas*.

Female. Above, olive-brown; a fulvous eye-ring. Below, throat and breast orange-rufous; belly white washed with buff.

M. sapphira is smaller, more rufescent above and has the breast tinged with olive. *M. poliogenys* has greyer sides of head and whitish throat. *M. rubeculoides* has a buff throat, paler than breast and a purer white belly. See also 1440 under Field Characters.

STATUS, DISTRIBUTION AND HABITAT. A rare and little-known species. Central Nepal (one recent record: Lowndes, JBNHS 53: 33, 1955), Sikkim (no recent records), NEFA (obtained in the Miri Hills by Godwin-Austen), the Sadiya frontier tract, Assam in the Cachar and Khasi hills (Baker),

FLYCATCHERS

193.

Nagaland (Stevens), Manipur (Hume), and possibly the Chittagong region of East Pakistan. Altitudinal distribution little known. The Nepal specimen was collected at c. 2600 m in August; in Assam, breeds between 750 and 1800 m, mostly above 1200 m, while in the Margherita area it is found as low as 300 m in summer. Himalayan population appears to winter in Burma (southern Shan States and Tenasserim) while Assam birds spread over the adjacent plains in winter. Affects shady ravines and dense, humid forest with plentiful undergrowth.

Extralimital. The species extends to Yunnan, the Indochinese countries, Java, Borneo and Palawan.

GENERAL HABITS. Unrecorded.

FOOD. Insects.

VOICE AND CALLS. 'A cheerful little song.' A song heard by Lister near Darjeeling (JBNHS 52: 43) may belong to this species; it is rendered as *tee-sea-si-e-e-e-e*.

BREEDING. *Season*, end of April to June. *Nest*, made of moss and lined with moss-roots, usually placed on the ground in some hollow among plants on a bank or between the roots of a tree, sometimes in a hole in a dead stump, or well hidden against a moss-covered trunk, quite low down. *Eggs*, 4 or 5, pale sea-green or buff-stone with small blotches of pale brown or chocolate-brown forming a broad zone at the larger end. Average size of 40 eggs 19.1 × 14.6 mm (Baker). No other details recorded.

MUSEUM DIAGNOSIS. See Field Characters.

Young. *Above*, brown with ochraceous spots. *Below*, breast ochraceous with dark margins, belly paler. First-winter birds recognized by unmoulted greater coverts.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	76-83	c. 15	c. 19	55-61 mm (Baker)

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet pale fleshy white to light hornny brown.

MUSCICAPA TICKELLIAE (Blyth)

Key to the Subspecies

- Deeper blue above.....*M. t. jerdoni*
Lighter blue above.....*M. t. tickelliae*

1442. Tickell's Redbreasted Blue Flycatcher. *Muscicapa tickelliae tickelliae* (Blyth)

C. (jerdoni) Tickelliae Blyth, 1843, Jour. Asiatic Soc. Bengal 12: 941
(Central India = Borabhum)
Baker, FBI No. 660, Vol. 2: 234
Plate 82, fig. 1

LOCAL NAME. *Adhārāṅḍā* (Gujarati); *Nelakkūrūri* (Malayalam, Tamil).

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FLYCATCHERS

195

GENERAL HABITS. Keeps singly, often in mixed hunting parties. Perches bolt upright a couple of metres from the ground, flicking its tail and uttering a sharp *tick, tick* from time to time. Flits about in scrub and undergrowth, catching most of its food in the air, sometimes hovering at a flower or sprig to take an insect.

Display. The male, while leaning on one side, raises the feathers of his head and back and vibrates them as if to attract the female, keeping the body immobile, the tail slightly spread and bent a little sideways (Dharmakumarsinhji).

FOOD. Insects, chiefly diptera.

VOICE AND CALLS. Song, a short, metallic trill of six to ten notes, the first half descending, the second ascending the scale (Bates). Unmistakable and often the first indication of the bird's presence; uttered throughout the year, but chiefly in April-May. Call-note *tick-tick*.

BREEDING. *Season* April to August, chiefly May and June. *Nest*, placed in crevices or on ledges of rock, holes in trees or in crevices formed by the twisting aerial roots of large, parasitic fig trees; in the latter case it may be well up above the ground, but usually it is placed within a couple of metres from it. Nests have been found in walls and on window-ledges of disused houses; also under a prickly pear root in a bank and in a rubbish heap of dry leaves (Betham, JBNHS 14: 398). Main material is green moss, loosely packed, often mixed with some dead leaves or grass bents, the inner cup usually lined with fine rootlets. In drier regions, dry bamboo leaves and fine grass are used. *Eggs*, 3 or 4, occasionally 5, similar to those of *M. rubiculoides* (1440). Average size of 80 eggs 18.4 × 14.2 mm (Baker).

MUSEUM DIAGNOSIS. Male differs from the very similar *banyumas* (1441) in being a darker blue above, with the orange-rufous of breast not extending quite as far down on upper abdomen. Some males have extreme point of chin blue-black. Wing of *banyumas* averages somewhat longer.

Female very similar to male *M. poliopteryx remeyi* (1438) but blue of upper tail-coverts a little brighter and blue of forehead and supercilium somewhat more pronounced.

There is no spring moult, and the complete autumn moult takes place from the end of August to October.

Young (juvenile) shows characteristic spotting but upperparts have a dark bluish tinge; wings and tail blue in both sexes: brighter in male, duller and greyer in female.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	70-77	14-16	17-20	56-68 mm
♀ ♀	68-73	14-16	16-19	54-57 mm (SA, HW)

Weight 7 ♂♂ 14-16; 3 ♀♀ 12-16 g. 19 (unsexed, in ♀ plumage) 12-17 (av. 14.6) g — SA.

COLOURS OF BARE PARTS. Iris brown. Bill brownish black; mouth blackish pink, greyish pink or yellowish pink. Legs and feet greyish brown or pinkish slate.

194

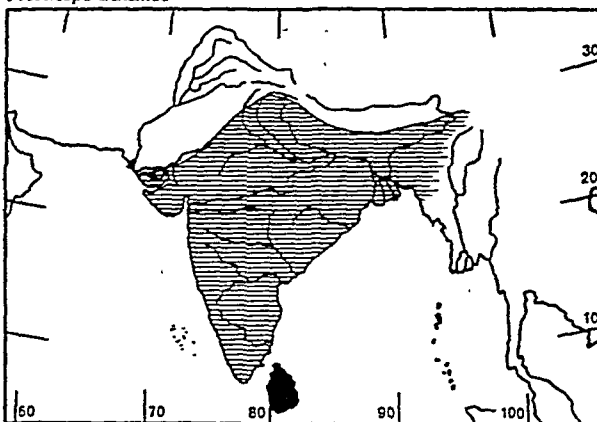
MUSCICAPINAE

FIELD CHARACTERS. Male (adult). *Above*, indigo-blue, brighter (azure blue) on forehead, supercilium and shoulders. *Below*, throat and breast orange-rufous; belly white.

Almost identical with *M. banyumas*; *M. rubiculoides* is very similar but has a blue throat.

Female. Like male but duller and greyer above; lores dull bluish or whitish. Rufous of breast paler. Easily confused with *M. poliopteryx remeyi* (1438) but which has a whitish throat (v. orange-rufous concolorous with breast).

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to local movements. The Indian Peninsula from Uttar Pradesh (Dehra Dun and

Muscicapa tickelliae

Distributional ranges

▨ *tickelliae* (1442).

■ *jerdoni* (1443).

the Siwalik foothills [Osmaston], Gonda and Gorakhpur, southern Bihar and southwestern West Bengal, south to the Cardamom Hills (Kerala) and west to a line from Kutch, Mt Abu, Sambhar Lake and Mussooree; thence east through E. Pakistan (Rashid) and Assam (N. Cachar, Baker, JBNHS 9: 124). Nesting reported from Murree (Buchanan in Whistler's MS.). Breeds mostly in more broken country and hills (in southern India up to c. 1500 m) and spreads out over the plains in winter (October to May). Affects thick bushes in or near forest and streams, deciduous scrub and bamboo jungle, overgrown nullahs, village groves, wooded gardens, and orchards. Prefers a drier facies than the Bluethroated Flycatcher.

Extralimital. Extends through Burma, the Indochinese countries, Malaysia, Indonesia and the Philippines.

196

MUSCICAPINAE

1443. Ceylon Tickell's Flycatcher. *Muscicapa tickelliae jerdoni* (Holdsworth)

Cyornis jerdoni 'G. R. Gray' = Holdsworth, 1872, Proc. Zool. Soc. London: 442 (few miles from Colombo, Ceylon)

Cyornis tickelliae nesaea Oberholser, 1920, Proc. Biol. Soc. Washington 33: 86

(Walgama, Ceylon)
Baker, FBI No. 662, Vol. 2: 236

LOCAL NAMES. *Kepi-kurullā*, *Mārāwā* (Sinhala); *Kepi kūrūri* (Tamu).

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As in 1442, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, widely distributed and moderately plentiful. Ceylon, from the lowlands to c. 1300 m, occasionally higher. Affects forests and well-wooded areas.

GENERAL HABITS, FOOD AND VOICE. As in 1442.

BREEDING. *Season*, March to June, occasionally starting in late February in the low country. One nest recorded in October. *Nest* and *eggs* as in 1442; clutch size normally 3. Average size of 11 eggs 19.5 × 14.8 mm (Phillips).

MUSEUM DIAGNOSIS. Male differs from ♂ *tickelliae* (1442) in being a darker, deeper blue above and slightly more rufous on breast, showing less white on abdomen. Female slightly paler. In both sexes the bills average slightly larger and stronger.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
13 ♂♂	71-76	15-17	16-18	56-63 mm
3 ♀♀	70-75	15-16	16-18	54-61 mm (HW)

Weight 1 ♂ 18 g (SDR).

COLOURS OF BARE PARTS. As in 1442.

1444. Dusky Blue Flycatcher. *Muscicapa serdida* (Walden)

Glaucopis serdida Walden, 1870, Ann. Mag. Nat. Hist. 5: 218

(Ceylon)

Baker, FBI No. 667, Vol. 2: 241

Plate 82, fig. 12

LOCAL NAME. *Giri-kurullā* (Sinhala).

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. A dark bluish grey flycatcher with cerulean blue forehead, black lores and whitish belly. Sexes virtually alike; female very slightly duller.

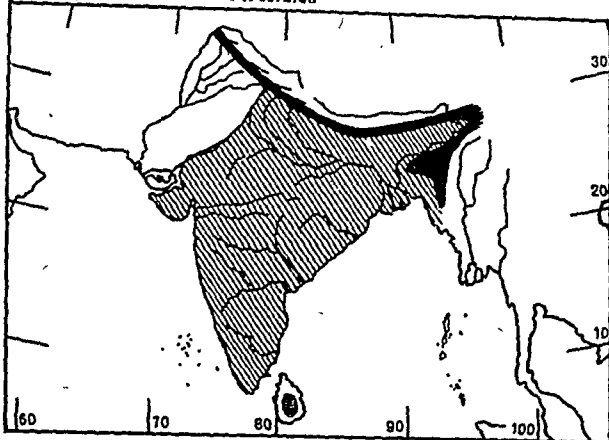
Could be easily confused with ♂ Pale Blue (1439), but for allopatry. Ranges of the two widely junct.

STATUS, DISTRIBUTION AND HABITAT. Resident, moderately plentiful; Ceylon. Confined to the Hill zone from 900 to over 2100 m, occasionally as low as 450 m in the Rattota district. Affects forest and well-wooded ravines.

FLYCATCHERS

197

Muscicapa thalassina and *M. sordida*



Distributional ranges

■ *M. t. thalassina* (1445), breeding. ▨ Winter
▨ *M. sordida* (1444).

GENERAL HABITS. Generally perches on low branches, logs or rocks close to the ground.

FOOD. Beetles, caterpillars and flying insects; also berries (*Rubus*, *Lantana*, etc.).

VOICE and CALLS. A sweet, rather loud song consisting of five or six notes, constantly repeated, uttered from a fairly high perch in a tree during the courting season. Also a subdued sub-song with the same notes and cadence (Henry). Call-note a soft, low chip-chip.

BREEDING. Season, late February to early June; above c. 1500 m nesting takes place again in August and September. Nest, placed on ledges and in crevices in moss-covered banks and vertical rock faces in heavy forest, or in cavities in tree-trunks, usually below three metres but sometimes as high as six metres in a hollow branch; made entirely of green moss, the inner cup lined with fine rootlets. Exceptionally a nest may be placed in a low fork; in this case it is a compact, well-built cup of green moss, tendrils and bits of dead leaves, lined with rootlets. Eggs, generally 2, exceptionally 3, pale creamy pink to warm salmon-pink, lightly and thinly freckled with pale reddish, the markings forming a ring or a cap around the large end. Average size of 60 eggs 20 × 14.8 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. For details of plumages see Baker, loc. cit. Postnuptial moult takes place between August and December.

Young. Above, dull olive-brown, each feather with an elongated fulvous apical spot and indistinctly edged with blackish. Below, chin and throat fulvous gradually growing paler on breast and white on flanks, abdomen and under tail-coverts, the

FLYCATCHERS

199

GENERAL HABITS. Keeps in pairs in the breeding season; at other times, it may be seen singly or in pairs (sometimes several pairs), often in company with *Monarcha*, *Terpsiphone* and other flycatchers, ioras (*Aegintha*), leaf warblers and drongos, etc. Perches upright; flicks tail. Makes short aerial sallies for insects from the tips of tall trees as well as bushes, seldom returning to the same perch but flying from branch to branch and tree to tree. Also flutters at flower clusters and leaf sprigs to stampede insects lurking within and occasionally descends to the ground to pick up a morsel.

FOOD. Chiefly tiny winged insects.

VOICE and CALLS. Call-note *tee-ju-jui*. Also a very soft *p'p'pwe*... *p'p'pwe* before giving the song. Song, a pleasant warble rendered as *pe-tititi-wu-pititi-wu* uttered frequently at intervals of several minutes, sometimes in groups of two or three repetitions. Reminiscent of the song of *Prunella modularis* (Lister). A pleasant jingling trill, very like the White-eye's (*Zosterops*) in pattern, slightly louder. It begins almost inaudibly, waxes louder, and soon fades out as it began (SA). Often delivered from tree-tops or other exposed stances. Song period in Nepal mid March to early July with a resumption in August-October (Proud). Very silent in its winter quarters.

BREEDING. Season, April to August. Probably double-brooded. Nest, a flat thick-sided cup placed in banks, crevices of rocks, under bridges, sometimes in holes in walls, under the eaves of an occupied hill-station bungalow or rafters of a veranda; sometimes in a hollow among moss or ferns growing on a tree-trunk up to 6 m or so up. Made mostly of green moss, occasionally mixed with other materials, the neat inner cup lined with rootlets, sometimes dry grass. Eggs, normally 4, sometimes 3, rarely 5, pale creamy pink or white with a ring of tiny reddish blotches around the large end. Average size of 200 eggs 19.3 × 14.6 mm (Baker). Building, incubation and tending young by both sexes; incubation period undetermined.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit. Postnuptial moult completed by October.

Young. Grey-brown, more or less tinged with green and spotted with fulvous; he spots smaller above larger below, the edges of the feathers being darker. Spots in head and nape almost white.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	80-90	13-15	16-19	65-75 mm
♀♀	78-84	13-15	16-19	60-71 mm

Weight 20 ♂♂ 15-20 (av. 18.25); 7 ♀♀ 16-20 (av. 18.0) g (SA).
COLOURS OF BARE PARTS. Iris dark brown. Bill, legs, feet and claws black. Mouth yellowish pink.

1446. Nilgiri Verditer Flycatcher. *Muscicapa albicaudata* Jerdon

Muscicapa albicaudata Jerdon, 1840, Madras Jour. Lit. Sci. 11: 16 (Nilgiris)
Baker, FBI No. 668, Vol. 2: 242
Plate 82, fig. 13

LOCAL NAME. Neelakkili (Malayalam).

198

MUSCICAPINAE

feathers edged with sooty black. These edges most conspicuous on breast and disappearing on chin and vent and under tail-coverts (Whistler).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
6 ♂♂	77-82	16-17	18-19	62-65 mm
4 ♀♀	71-79	16-17	18-19	57-63 mm

COLOURS OF BARE PARTS. Iris red-brown or brown. Bill black. Legs and feet dark lead colour (Wait).

1445. Verditer Flycatcher. *Muscicapa thalassina thalassina* Swainson

Muscicapa thalassina Swainson, 1838, Nat. Library, Flycatchers 21: 252 (India)
Muscicapa melanops Vigors, 1832, Proc. Zool. Soc. London: 172,
nec *M. melanops* Vieillot, 1818
Baker, FBI No. 665, Vol. 2: 239
Plate 82, fig. 10

LOCAL NAMES. Puthir chitta, Nil-kātkātia (Bengali); Sibyll-pho (Lepcha); Dactishā lili gadaba (Cachari); Neelamēni (Malayalam).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult). Entirely blue-green or verdigris (colour of oxidized copper), brighter on head and throat, darker on wings and tail; a black patch in front of eyes (lores) very prominent. Female duller and greyer but without accompanying male to compare with, difficult to sex.

STATUS, DISTRIBUTION and HABITAT. Common summer (breeding) visitor to the Himalayas, wintering widely spread over the whole Indian Peninsula, Assam and East Pakistan.

Breeds from the Indus Valley and Kashmir east through NEFA, thence south through Nagaland, Manipur and Assam in the Cachar and Khasi hills; from 1200 to 2700 m, locally up to 3000 m, optimum zone 1500-2400 m (see map, p. 197). Affects light forest (with a preference for broad-leaved) and bushes along streams; also evergreen and coniferous but avoids dense and tall forest.

EXTRALIMITAL. Extends east to western China and Viet Nam. Another subspecies in Sumatra and Borneo.

MIGRATION. Arrives on its summer (breeding) grounds in early March and April keeping there until October, although a downward movement already starts in July. Abundant in the lower hills in August and September. Winters from the Himalayan foothills (up to c. 750 m) south through the Indian Peninsula east of a line Sambhar Lake—Dwarka [Kutch (JBNS 61: 449), Kathiawar (JBNS 60: 456)] south to the hills of southern Kerala, and east to and including the foothills of Assam and East Pakistan to the Chittagong Hill Tracts. Keeps more to broken country and hilly regions up to c. 1000 m. Frequents edges of forest, glades, wooded compounds, groves and gardens. In both summer and winter quarters, telephone wires where available provide favourite perches. May be seen in southern India from October to February; in the more northern parts from September to March.

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult), greenish indigo-blue with bright blue forehead and supercilium, black lores, a white patch at base of outer tail-feathers, and whitish under tail-coverts.

Distinguished from the wintering Verditer Flycatcher by its much darker blue coloration and the white patch at base of tail.

Female, dull grey-brown washed with greenish blue. The white patch at base of tail identifies it.

STATUS, DISTRIBUTION and HABITAT. Common resident. The southern section of the Sahyadris (Western Ghats) from the Bababudan and the Biligirirangan hills of Mysore south through the Nilgiris, Palnis, and the associated ranges of Kerala to the Ashambu Hills; from c. 600 m to the highest summits, mostly above 1200 m (see map, p. 187). Affects overgrown streams, cardamom plantations, coffee shade, glades and edges of forest, sholas, even gardens and trees near houses. May be geographical representative of *M. unicolor* along with *M. sordida* of Ceylon.

GENERAL HABITS. Usually met with singly, often side by side with *Culicicapa ceylonensis*, *M. multii* and other flycatchers. Frequents bushes and lower branches of large trees, sometimes also the canopy where it makes short aerial sallies after winged insects. Perches somewhat upright and twitches its tail up and down while calling.

FOOD. Insects, perhaps also some berries.

VOICE and CALLS. General pattern of song that of Verditer Flycatcher; reminiscent also of Pied Bush Chat (SA); 'a sweet phrase of six to eight notes, often with a glide in each note that gives it a somewhat mournful effect' (Nichols); a sweet warble up and down the scale (Betts). Delivered from an exposed perch for long periods at a time. Call-note, a series of four or five sharp chips (Nichols). A female also recorded singing (SA).

BREEDING. Season, February to June, chiefly March and April. Nest a substantial cup of green moss, the inner cup lined with rootlets and rhizomorphs; placed in banks, holes or cracks in trees or among hanging roots; sometimes in walls, under bridges or under the eaves of a house, even an occupied one. Often the same site is used in subsequent years. Eggs, usually 3, sometimes 2, pale creamy pink sparsely freckled all over with reddish, more densely at the larger end where the markings tend to form a ring. Average size of 60 eggs 20 × 14.8 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. For details of plumages see Baker, loc. cit.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	75-82	14-15	18-19	59-67 mm
♀♀	74-78	13-15	18-19	56-61 mm

Weight 10 ♂♂ (March-Apr.) 12-18 (av. 15.9); 4 ♀♀ (March-Apr.) 16-12 (av. 17.5) g—SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill horny black; mouth greyish pink or brownish pink. Legs, feet and claws blackish brown.

FLYCATCHERS

201

Genus MUSCICAPELLA Bianchi

Muscicapella Bianchi, 1907, Ann. Mus. Zool. Acad. Imp. Sci. St. Petersburg 12: 14, 43, new name for *Nitidula Blyth*, nec *Nitidula Fabricius*, 1775
Nitidula Blyth, 1861, Proc. Zool. Soc. London: 201.
 Type, by monotypy, *N. campbelli* Blyth = *Nemura hodgsoni* Moore
 Distinguished by its small size and narrow, slender bill with well-developed hairs over the nostrils.

1447. Pygmy Blue Flycatcher. *Muscicapella hodgsoni hodgsoni* (Moore)

Nemura Hodgsoni Moore, 1854, in Horsfield & Moore, Cat.
 Bds. Mus. E. I. Co. 1: 300 (Nepal)
 Baker, FBI No. 664. Vol. 2: 237
 Plate 82, fig. 3

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 8 cm (3 in.).

FIELD CHARACTERS. A diminutive, blue-and-orange flycatcher.

Male (adult). Above, dark cyan blue, brighter on crown; forehead, lores and sides of head blue-black. Below, orange-yellow.
 Female. Above, olive-brown, more rufous on rump and upper tail-coverts; below, pale yellow.

STATUS, DISTRIBUTION AND HABITAT. A scarce resident, subject to vertical movements. From central Nepal east through Darjeeling, Sikkim, Bhutan and NEFA, thence south through the Patkai Range, Nagaland and Assam in the Cachar Hills. Recorded in summer from 2100 to 3000 m (Proud, Rand & Fleming), and in winter from 1800 m (Ripley) down to the foothills. Affects dense, tall forest and secondary scrub at the edge of clearings or along hill streams.

Extralimital. Extends to Yunnan and northern Thailand. The species ranges south through the Malay Peninsula, Sumatra and Borneo.

GENERAL HABITS. A very small, lively and restless flycatcher perhaps less scarce than it appears to be but unobtrusive and often overlooked. Keeps singly, sometimes in mixed flocks with *Phylloscopi*, moving slowly from tree to tree. Frequents dense thickets and shrubs as well as tall trees, searching the leaves for insects, sometimes making short sallies within the canopy in their pursuit or fluttering before a sprig to stampede them. Fleming observed them in the tops of tall oaks, fifteen metres or more from the ground. It also descends to the ground to pick up an insect, twitching up and cocking the tail from time to time between half-drooping wings in typical flycatcher style, then looking rather like a shortwing (SA).

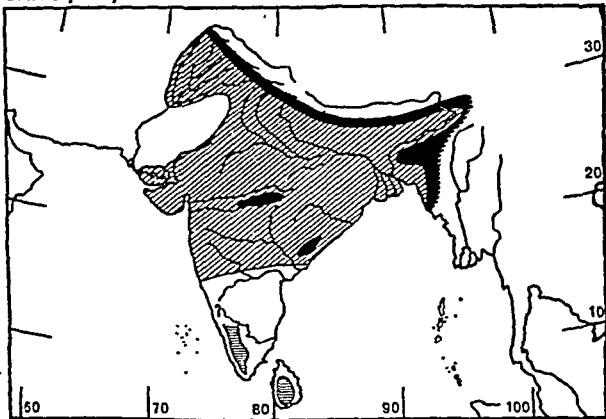
FOOD. Small insects.

VOICE AND CALLS. A distinctive, high-pitched song *tzit che che chee* (do, do, te, la, te) (Fleming). Call-note, a feeble *trip* (Stevens).

BREEDING. The only record is a nest taken in Nagaland (altitude ?) by Masson (*opud* Baker) on 20 July. It was a tiny saucer of green moss, lined with rootlets, wedged among the thick stems of a creeper growing over an old stump. The young were old enough to escape.

FLYCATCHERS

203

Culicicapa ceylonensis

Distributional ranges

■ *calochrysa* (breeding). ▨ Winter ■ *ceylonensis* (1449).

(Betul and Pachmarhi) but nesting not substantiated, and almost certainly the Eastern Ghats (Vishakhapatnam district) but summer data entirely wanting. Affects open wooded country.

Extralimital. Burma. The species extends to central western China, the Indochinese countries, Palawan, Borneo and the Sunda islands to Timor. A closely related species in the Philippines to Celebes.

MIGRATION. Mostly a summer visitor to the Himalayas above 1500 m from early March till September. Winters in the foothills (up to c. 1000 m in the Western Himalayas, to 1800 m in the Eastern) and in the plains west to Peshawar and Bannu, south in the plain of the Indus to Rajanpur, and over most of the Indian Peninsula west to Kutch, south to about the Krishna river. In this season affects forests and groves.

GENERAL HABITS. A lively and confiding bird. Keeps in pairs in the breeding season, in family parties thereafter. In winter usually seen singly or in separated twos and threes in the mixed hunting parties of tits, nuthatches, leaf warblers and other small birds, acting as outriders and snapping up any winged insects escaping from the main body. Frequents forest glades, wooded ravines, village groves, upcountry gardens with large trees, etc. Keeps to the lower and middle strata, generally between two and four metres above the ground. Hunts among the inner branches, actively flitting from bough to bough, turning this way and that on its perch, loosely flicking the tail. Makes agile acrobatic dashes after insects which it seizes with a loud snap of the bill, twisting and looping in the air and returning to the same base again and again, all the while uttering its distinctive, sharp twittering note. Telegraph wires through wooded country provide favourite hunting places. Body erect.

202

MUSCICAPINAE

MUSEUM DIAGNOSIS. For details of plumages see Baker, loc. cit.

Young unknown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	47-51	c. 11	16-17	34-35 mm
			(SA, SDR, Rand & Fleming)	

COLOURS OF BARE PARTS. Iris brown. Bill brown. Legs and feet bluish grey.

Genus CULICICAPA Swinhoe

Culicicapa Swinhoe, 1871, Proc. Zool. Soc. London: 381.Type, by monotypy, *Platyrrhynchus ceylonensis* Swainson

Bill very wide at base. Rictal bristles numerous and long. First primary (as.) short. Tail square. Young not spotted.

CULICICAPA CEYLONENSIS (Swainson)

Key to the Subspecies

Below, both grey and yellow darker.....*C. c. ceylonensis*
 Below, both grey and yellow paler.....*C. c. calochrysa*

1448. Northern Greyheaded Flycatcher. *Culicicapa ceylonensis calochrysa* Oberholser'*Cryptolopha cinerocapilla* (Vieillot)' Hutton, 1848, Jour. Asiat. Soc.Bengal 17: 689 (Himalayas). *Nom. nud.**Culicicapa ceylonensis calochrysa* Oberholser, 1923, Smith. Misc. Coll. 76: 8

(Quaymoo Choung = Left bank of Thaungyin River, lat. 17°15'N.

Amherst Dist., Tenasserim)

Culicicapa ceylonensis orientalis Baker, 1923, Bull. Brit. Orn. Cl. 44: 11

(Szechwan Prov., China)

Culicicapa ceylonensis pallidior Ticehurst, 1927, Bull. Brit. Orn. Cl. 47: 108

(Simla)

Baker, FBI No. 679 (part), Vol. 2: 254

Plate 87, fig. 8

LOCAL NAME. Zārd-phūtki (Bengali).

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. Head, neck, throat and breast ashy grey, darker on crown. Back yellowish green, rump yellow. Belly bright yellow. Wings and tail brown edged with yellow. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common summer visitor or resident in the hills, spreading widely over the plains in winter. The Himalayas from the Indus Valley and Kashmir (scarce) east to the Mishmi Hills, thence south through Nagaland, Manipur and the hills of Assam and East Pakistan south to the Chittagong Hill Tracts. Breeds chiefly between 1500 and 2400 m, locally up to 2700 m or even 3000 m (Nepal); in the eastern Himalayas and in Assam breeds down to the foothills. Also the central Satpuras above 900 m

204

MUSCICAPINAE

Display. A bird of a pair would keep flying without ceasing for nearly ten minutes, going round and round in a rough circle of some thirty metres in diameter, flying deliberately in front of a perched bird, presumably the female, turning and flying out again, then hovering for a moment on rapidly vibrating wings; about this time, the presumed female would fly straight at the male, then return to a perch. All the while both birds called continuously. The performance was repeated at least fifteen to twenty times (Lister).

FOOD. Tiny winged insects.

VOICE AND CALLS. Song, a surprisingly loud and lively high-pitched trill heard nearly the whole year—an interrogative *chik*... *whichee-whichee*? constantly uttered; this usually followed after a second or so by *whi-chichi*, like question and answer. In breeding season these repeated at quick and regular intervals for long periods (once timed 25 minutes at dawn) from the same stance (SA). Some variations of the song rendered as *tee-tata-tee*, *tyisi-a-tyi*, etc. (for more details see Lister, JBNHS 52: 43). Call-notes (by same observer): A very soft *pit*... *pit*... *pit* while foraging; a frequent, clear *kitwik*... *kitwik* (high-low); and a series of *kū-whi-whi* (rising-low-low); a quiet *chichitrrrr* with variations.

BREEDING. Season, April to June. Nest, a half cup of moss and lichen bound with cobweb, usually unlined, fastened against a moss- or lichen-covered trunk or rock at heights varying from near the ground to about twelve metres; generally composed of the same materials as the substrate, thus remarkably obliterated in its surroundings. Eggs, 3 or 4, pale buff, marked with grey blotches and specks, forming a ring around the large end. Average size of 40 eggs 15 × 12 mm (Baker). Share of the sexes in the domestic chores, and incubation period, unrecorded.

MUSEUM DIAGNOSIS. For distinction from *ceylonensis* see 1449.

Young, a slightly duller and paler replica of adult; no spotting.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	63-68	12-14	13-14	51-60 mm
♀♀	57-66	12-14	13-14	50-58 mm
			(BB, SA, HW)	

Weight 20 ♂♀ 7-9 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill brown, lower mandible paler or pinkish flesh. Legs and feet yellowish brown.

1449. Southern Greyheaded Flycatcher. *Culicicapa ceylonensis ceylonensis* (Swainson)*Platyrrhynchus ceylonensis* Swainson, 1820, Zool. Ill. 1, No. 3, pl. 13 and text

(Ceylon)

Cryptolopha piceocephala Swainson, 1838, in Nat. Library, Flycatchers 21: 200.New name for *P. ceylonensis* Swainson

Baker, FBI No. 679 (part), Vol. 2: 254

LOCAL NAME. Nārāyāṇpāṭiki (Malayalam).

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FLYCATCHERS

205

FIELD CHARACTERS. As in 1448, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident, wandering to lower elevations in winter. The hills of southwestern India from southern Mysore to the Ashambu Hills (including the Nilgiris and Palnis), from c. 900 m to the highest summits. May also breed farther north in the Western Ghats, but summer data lacking. Also Ceylon, generally above 900 m, but down to the foothills in the southwestern Wet zone. Affects evergreen forest, sholas, bamboo facies, wooded ravines, secondary and mixed bamboo forest especially in the vicinity of streams, coffee plantations, and gardens.

GENERAL HABITS, FOOD and VOICE. As in 1448.

BREEDING. Season, March to June, mostly April in the Peninsula, and February to May, mostly March in Ceylon. Nest and eggs as in 1448. Clutch size normally 3 in the Peninsula, 3 or often 2 in Ceylon. Average size of 100 eggs 15.1 × 12 mm (Baker). Building of nest recorded as by female only.

MUSEUM DIAGNOSIS. Differs from *calochrysa* (1448) in being darker. Birds from the Peninsula are intermediate between those from Ceylon and the Himalayas.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	58-66	12-14	12-13	49-59 mm
♀♀	59-63	12-13	12-13	50-54 mm
				(SA, HW)

Weight 6 ♂♂ 6-7 g (SA). 1 ♀ 9 g (SDR).

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible horny brown, lower pale yellowish horn; mouth yellow. Legs and feet brownish orange; claws horny brown; soles bright orange.

Genus RHIPIDURA Vigors & Horsfield

Rhipidura Vigors & Horsfield, 1827, Trans. Linn. Soc. London 15: 246.Type, by subsequent designation, *Muscivora flabellifera* Gmelin*Leucocircia* Swainson, 1838, Nat. Library, Flycatchers 21: 126.Type, by monotypy, *Turdus leucophys* Latham*Chelidonyx* 'Hodgson' = Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 930, 936 footnote. Type, by monotypy, *Rhipidura hypoxantha* Blyth

Bill large, about twice as long as wide at base. Rictal bristles numerous and long. Tail longer than wing, graduated. Young not spotted but feathers fringed with rufous.

Key to the Species

	Page
A Underparts yellow..... <i>R. hypoxantha</i>	206
B Underparts not yellow	
1 Breast and belly white..... <i>R. aureola</i>	207
2 Breast slaty; belly uniformly slaty, or buffish..... <i>R. albicollis</i>	211

FLYCATCHERS

207

BREEDING. Season, May (in Assam) to June and July (Himalayas). Nest, a deep, thick-walled cup of moss, compactly matted together, plastered with cobweb and lichen, lined with fruit-stems of moss, hair or feathers; placed on a horizontal branch at least as thick as the diameter of the nest making it difficult to spot from below; usually between three and six metres from the ground. Eggs, normally 3, cream or pinkish cream, marked with reddish stippling which tends to form a zone around the large end. Average size of 24 eggs 14.4 × 11.3 mm (Baker).

MUSEUM DIAGNOSIS. Female differs from male in having the lores, ocular area and ear-coverts dark olive instead of black.

Young resembles female but has no yellow on forehead. Supercilium and underparts dull pale yellow. Back more grey.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	53-58	9-10	14-15	56-58 mm
♀♀	53-58	9-10	14-15	50-58 mm
				(BB, SA)

Weight 8 ♂♂ 5-6; 2 ♀♀ 5, 6 g (GD, SDR, SA).

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible dark brown, lower yellowish brown. Legs and feet horny brown with a yellowish tinge; claws horny brown.

RHIPIDURA AUREOLA Lesson

Key to the Subspecies

	Page
A White on outer pair of rectrices not reaching under tail-coverts..... <i>R. a. compressirostris</i>	209
B White on outer pair of rectrices reaching under tail-coverts	
1 Darker above, crown blacker than back..... <i>R. a. aureola</i>	207
2 Paler above, crown nearly concolorous with back..... <i>R. a. burmanica</i>	210

1451. Northern Whitebrowed Fantail Flycatcher. *Rhipidura aureola* Lesson*Rhipidura aureola* Lesson, 1830, Traité d'Orn.: 290 (Bengal)

Baker, FBI No. 700 (part), Vol. 2: 277

Plate 66, fig. 4

LOCAL NAMES. Shamchiri (Urdu); Machharya, Nūchān, Chakkil (Hindi); Nūchān (Gujarati).

SIZE. Bulbul —; length c. 17 cm (6½ in.).

FIELD CHARACTERS. A cheery restless fan-tailed smoke-brown flycatcher with broad white forehead and white underparts.

Above, crown and ear-coverts black. Forehead and conspicuous broad supercilium white. Back and wings dark grey-brown, the latter with two rows of white spots. Tail blackish, outer rectrices white, others, except central pair, tipped with white. Below, throat black, chin and sides of throat whitish. Sides of breast black. Breast and belly white. Sexes alike, but female slightly paler and browner on head.

206

MUSCICAPINAE

1450. Yellowbellied Fantail Flycatcher. *Rhipidura hypoxantha* Blyth*Rhipidura hypoxantha* Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 930, 935 (Darjeeling)*Chelidonyx hypoxantha* nos Koels, 1939, Proc. Biol. Soc. Washington 52: 68 (Naggar, Kulu)

Baker, FBI No. 699, Vol. 2: 275

Plate 87, fig. 1

LOCAL NAMES. Sittē kloon (Lepcha); Pongking-ls, Bang-ho-go (Naga).

SIZE. Sparrow —; length c. 8 cm (3 in.).



FIELD CHARACTERS. A restless, diminutive fantail flycatcher. Above, dark greyish olive. Forehead and supercilium yellow. A broad black band from lores through eye and ear-coverts. Tail brown with conspicuously white shafts and white tips. Below, bright yellow. Female differs only in having the eye-band blackish olive-brown (v. black).

x c. 1

STATUS, DISTRIBUTION and HABITAT. Common altitudinal migrant. The Himalayas from the Chenab river eastward through Nepal, Sikkim and Bhutan to the Mishmi Hills; thence south through the Patkai Range, Nagaland, Manipur, Assam in the Cachar and Khasi hills (scarce), and East Pakistan in the Chittagong Hill Tracts. Breeds up to tree-line (generally about 3600 m, but in north-central Nepal near 4000 m); lower limit in the western Himalayas not clear, probably about 2400 m; in Bhutan down to 1800 m. In Assam breeds down to c. 1000 m (Baker) and on Mt Victoria between 2000 and 2800 m. Winters (October to March) from c. 1800 m down to the Himalayan foothills and adjacent plains; in Assam and hill ranges to the east, does not appear to descend as low. Affects various kinds of forest and secondary jungle but prefers moist-evergreen biotope. In the breeding season, mostly mixed coniferous and birch or rhododendron forests.

Extralimital. Extends to southeastern Tibet, Yunnan and the Indo-chinese countries.

GENERAL HABITS. An extremely lively and restless little flycatcher usually met with singly or in pairs, almost invariably in the mixed hunting parties of small insectivorous birds during the non-breeding season. Frequents the lower canopy and higher shrubs, but often hunts from low bushes as well as the canopy of tall trees up to thirty metres or more. Flits and prances among the branches and foliage, pirouettes incessantly with fanned-out tail and partly drooping wings uttering its distinctive *sip, sip* note. Searches for insects in the foliage by fluttering against the sprigs in the manner of a *Phylloscopus*, and launches sprightly twisting and looping sallies after gnats, often springing up and returning to its perch perpendicularly.

FOOD. Tiny winged insects.

VOICE and CALLS. A very thin and high *sip, sip* constantly uttered while foraging. Song, a quick repetition of the call-note (Heinrich), described as 'a feeble little goldfinch-like trill' (Jones). Song period in Nepal, February to at least July (Proud).

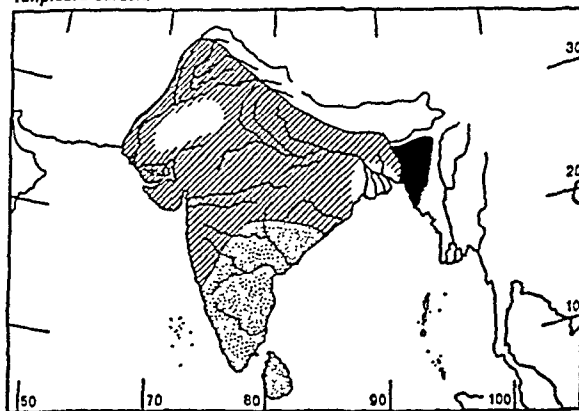
¹ Position of tail wrongly shown. Characteristically it is carried erect and fully fanned out, exhibiting prominently the glistening white shafts and white tips of the feathers. The wings droop on either side of it.

208

MUSCICAPINAE

Distinguished from *R. albicollis* (1455) by its broad supercilium extending to nape and by its pure white belly and breast.

STATUS, DISTRIBUTION and HABITAT. Common and widespread resident, subject to local movements in winter. West Pakistan and India from the Indus river east along the Himalayan foothills (up to c. 600, locally 1000 m) to the Jalpaiguri duars in northern W. Bengal, and East Pakistan, including the lowlands east of the Brahmaputra. South in Sind to Karachi, and through Gujarat to southwestern and central Maharashtra (where it intergrades with *compressirostris*); eastward to Orissa. Absent from the Thar

Rhipidura aureola

Distributional ranges

aureola (1451).*compressirostris* (1452).*burmanica* (1453).

Desert, lower West Bengal and coastal East Pakistan. Affects forest, groves of mango, babool, etc., tamarisks along canals, fallow land with sparse scattered bushes and, especially in winter, wooded compounds and gardens. Prefers more open and drier country than *R. a. albigularis* (1458), but the two are sometimes found side by side in intermediate habitats.

GENERAL HABITS. Generally met with singly or in pairs or family parties, often joining the mixed hunting parties of *Turdoides*, *Dumetia*, *Prinia*, *Phylloscopus*, etc. Frequents the lower bushes and undergrowth usually near the ground, occasionally descending to the ground. Flits tirelessly from branch to branch, prancing and pirouetting with fanned, erect tail and half-drooping wings, making graceful looping sallies after winged insects which it catches with an audible snap of the mandibles. Sometimes attends grazing cattle, snapping up the tiny insects disturbed by the animal, riding momentarily on the backs of the goats and cows, using them as mobile

FLYCATCHERS

209

hunting bases. Often prances lightly in twists and turns up tree-trunks and boughs. From time to time suddenly flicks open wings and tail to stampede winged insects lurking in the crevices of the bark. Makes short aerial darts in their pursuit the moment they attempt to flee, snapping them up in its bill. Usually unafraid of man, but aggressive in mobbing predators such as cats and crows trespassing into proximity of nest, uttering harsh shriek-like 'war-cries'.

FOOD. Insects, chiefly diptera and hemiptera. The jassid mango-hoppers *Idiocerus elypealis* and *I. niveosparus* identified in stomach contents.

VOICE AND CALLS. Song, a delightful clear but rather thin human-like whistle of six to eight tinkling notes, the first part rising, the last falling, often stopping abruptly in the middle of the scale and left unfinished; rendered as *chee-chee-cheweechee-ri* (Dharmakumarsinhji). Normal call-notes a harsh *chuck-chuck* (SA). Alarm-note given as *ch'uch*.

BREEDING. Season, February to August, chiefly March to June. Nest, a neat compact cup, usually rounded off at the bottom and lacking the untidy 'tail' dangling below that of *albicollis*; inner diameter of cup c. 5 cm, depth c. 2.5 cm. Made of fine fibres and grasses, profusely plastered exteriorly with cobweb, and lined within with grass fibres. Attached to the upper surface of a small outthrusting branch, often in a horizontal fork; usually placed much higher than that of *albicollis*, seldom under a couple of metres and often up to twelve. The same site is commonly used year after year. Eggs, normally 3, cream to buff, with a zone of greyish brown specks and spots at the larger end. Average size of 100 eggs 16.8 x 12.8 mm (Baker). Building, incubation and care of young by both sexes. Incubation period undetermined.

MUSEUM DIAGNOSIS. For distinction from *compressirostris* and *burmanica* see 1452 and 1453 respectively.

Young, like adult but upperparts and wing-coverts tipped with rufous. Post-juvenile moult of body-feathers and all coverts except primary.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	79-90	14-16	18-20	84-100 mm
♀♀	72-84	13-16	18-19	83-98 mm
			(HW, SA, BB)	

Weight 1 ♂ 12; 2 ♀♀ 10, 10 g (BB, Roonwal).

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet brownish black; soles dirty white.

1452. Southern Whitebrowed Fantail Flycatcher. *Rhipidura aureola compressirostris* (Blyth)

Leucocerca compressirostris Blyth, 1849, Jour. Asiat. Soc. Bengal 18: 815 (Ceylon)

Baker, FBI No. 700 (part) and 702, Vol. 2: 277, 279

LOCAL NAMES. *Attakkārān* (Malayalam); *Dārāni-pitta* (Telugu); *Visiri-rāli* (Tamil); *Vali-marittan* (Ceylon Tamil); *Endāra-kurullā*, *Mārāwā*, *Nātānā-kurullā* (Sinhala).

FLYCATCHERS

211

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	83-90	14-15	17-18	95-102 mm
♀♀	81-84	14-15	17-18	88-95 mm
			(HW)	

COLOURS OF BARE PARTS. As in 1451.

RHIPIDURA ALBICOLLIS (Vieillot)

Key to the Subspecies

A	Breast unspotted	Page
a	Abdomen slaty	
1	Paler, more ashy.....	<i>R. a. canescens</i> 211
2	Darker, more mouse-grey.....	<i>R. a. albicollis</i> 213
3	Still darker, more slaty.....	<i>R. a. stanleyi</i> 213
b	Abdomen with a small patch of buff.....	<i>R. a. orissae</i> 214
B	Breast spotted, belly buff	
c	Buff restricted to belly, flanks grey.....	<i>R. a. vernayi</i> 215
d	Abdomen and flanks buff.....	<i>R. a. albogularis</i> 214

1454. Western Whitethroated Fantail Flycatcher. *Rhipidura albicollis canescens* (Koelz)

Leucocerca albicollis canescens Koelz, 1939, Proc. Biol. Soc. Washington 52: 68 (Bhadwar, Punjab)

Baker, FBI No. 703 (part), Vol. 2: 279

LOCAL NAMES. *Machharya*, *Chakdil* (Hindi).

SIZE. Bulbul —; length c. 17 cm (6½ in.).

FIELD CHARACTERS. A dark, slaty brown fan-tailed flycatcher with a prominent white band or semi-collar across the throat and short white supercilia; outer rectrices tipped with whitish. Sexes alike.

Distinguished from other members of the genus by its entirely dark belly.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The Himalayan foothills from Murree and Kashmir to western Nepal. Breeds commonly from the foothills to 1500 m, more sparsely up to 2000 m; a June record at 3000 m in Lahul (Alexander, JBNHS 49: 610). Winters in the foothills and adjacent plains. Affects shady places in forest (pine, deciduous, evergreen, etc.), wooded nullahs, gardens, groves and secondary scrub.

GENERAL HABITS. Keeps singly or in pairs, often as outriders of the mixed hunting parties of small insectivorous birds, frequenting undergrowth and middle story. Flits tirelessly among the branches — tail fanned out and partly erect, wings drooping at the sides — usually close to the main trunk, working up or down the trunk, often moving rapidly out along a bough by a series of rapid, jerky twists and turns, continually flicking open the wings and flitting the tail purposefully. Makes sprightly looping sallies after winged insects thus disturbed, occasionally launching short sorties beyond

210

MUSCICAPINAE

SIZE. Bulbul —; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in 1451, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to local movements in winter. Southern India south of the range of the nominate race (1451); in the plains and hills up to 1000 m. Also Ceylon in the lowlands and hills up to c. 1500 m. Affects deciduous forest, groves, wooded compounds, orchards, gardens and, to a lesser extent, light and secondary scrub jungle.

GENERAL HABITS, FOOD AND VOICE. As in 1451.

BREEDING. Season, January to July, chiefly April and May. Nest and eggs as in 1451.

MUSEUM DIAGNOSIS. Differs from *aureola* (1451) in having two central pairs of rectrices black without white tips (v. one pair). White tips of outer pair of rectrices less extensive, only about half the length of the feather and not reaching the under tail-coverts (v. three-quarters in *aureola*). Upper plumage slightly darker, more sooty when freshly moulted. Tail a little shorter. There are of course complete intergrades and individual variations.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	80-87	15-16	17-18	80-92 mm
♀♀	76-85	14-15	17-18	80-90 mm
				(HW, SA)

Weight 4 ♂♂ 11-13 g (SA).

COLOURS OF BARE PARTS. As in 1451.

1453. Eastern Whitebrowed Fantail Flycatcher. *Rhipidura aureola burmanica* (Hume)

Leucocerca burmanica Hume, 1880, Stray Feathers 9: 175, footnote (Thoungyeen valley)

Baker, FBI No. 701, Vol. 2: 278

LOCAL NAME. *Dao-phari* (Cachari).

SIZE. Bulbul —; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in 1451, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Assam and East Pakistan (east of the range of *aureola*) in the plains and hills up to 1500 m. Affects dry, open country, parkland, scrub and bamboo jungle.

EXTRALIMITAL. Burma. The species extends east to the southern Indo-Chinese countries.

GENERAL HABITS, FOOD AND VOICE. As in 1451.

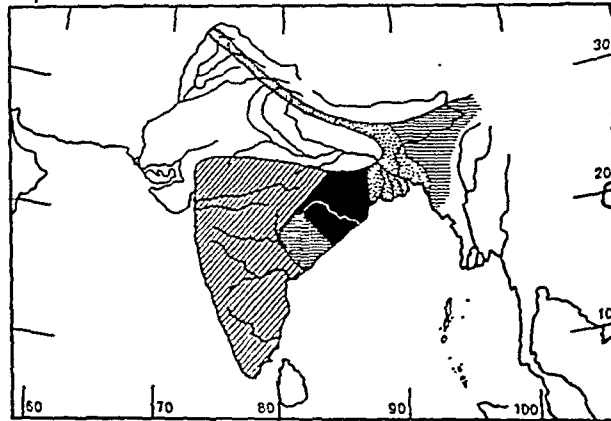
BREEDING. Season, April to July, chiefly May. Nest and eggs as in 1451. Average size of 100 eggs 17.2 x 12.8 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *aureola* in being paler above; crown not so black, more concolorous with back. Spots on coverts smaller. White on outer rectrices on average less extensive.

212

MUSCICAPINAE

Rhipidura albicollis



Distributional ranges	
	<i>canescens</i> (1454).
	<i>albicollis</i> (1455).
	<i>stanleyi</i> (1456).
	<i>orissae</i> (1457).
	<i>vernayi</i> (1459).
	<i>albogularis</i> (1458).

the canopy. Also hunts near the tops and outside of bushes, tumbling about them as it turns this way and that. Flight from one tree to another fairly direct and slightly dipping, with tail often fanned out.

FOOD. Insects (gnats, flies, etc.).

VOICE AND CALLS. Normal note a harsh *chuck* or *chuck-r*. Song, a group of about five thin whistling quarter-notes on a descending scale, rather feeble and jerky, rendered as *tri-riri-riri*, very reminiscent of song of *Phylloscopus magnirostris* (SA).

BREEDING. Season, March to August; double-brooded. Nest, neat, cup-shaped, rather like an inverted cone, of fine grass stems bound together by a thick external coating of cobwebs; usually without any special lining, and with an untidy 'tail' of strips of nest material dangling below. This feature usually distinguishes it from nest of *R. aureola* (1451). Built in the horizontal fork or elbow of a twig, seldom more than 3 metres from the ground, usually under two. Eggs, normally 3, varying from white to a dingy cream colour marked with grey-brown spots and specks almost invariably confined to a zone around the large end; very similar to those of *R. aureola*. Average size of 100 eggs (including those of subspecies *albicollis* and *stanleyi*) 17.3 x 13 mm (Baker). Building of nest and incubation by both sexes. Incubation period 12-13 days; young leave nest on 13th to 15th day.

MUSEUM DIAGNOSIS. Differs from *albicollis* (1455) in being paler, more ashy on back, breast and belly.

FLYCATCHERS

213

Young, like adult but body-feathers, all wing-coverts and tertials tipped with rufous. White of throat less pure and more diffuse. Postjuvinal moult of body-feathers and all coverts except primary.

MEASUREMENTS

Wing: 6 ♂♂ 77-81; 4 ♀♀ 74-76 mm (Koelz)
COLOURS OF BARE PARTS. As in *albicollis* (1455).

1455. Eastern Whitethroated Fantail Flycatcher. *Rhipidura albicollis albicollis* (Vieillot)

Platyrhynchus albicollis Vieillot, 1818, Nouv. Dict. d'Hist. Nat. 27: 13 (Bengale)

Baker, FBI No. 703 (part), Vol. 2: 279
Plate 66, fig. 5

LOCAL NAMES. *Naklaychaya* (Paharia); *Nam-dit-nom* (Leptha); *Dumchitri* ('spread-tail'), *Chak-dayal*, *Chak-dil* (Bengali).

SIZE. Bulbul —; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in 1454, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Western Nepal (where it intergrades with *canescens*) east to Sikkim, Darjeeling and the Jalpaiguri district, and south through the plains of East Pakistan and lower West Bengal (but in the west not south of Nepal terai). Breeds from the terai up to 1700 m, locally to 2300 m, and in the plains of East Pakistan and West Bengal to the Sunderbans.

GENERAL HABITS, FOOD and VOICE. As in 1454.
BREEDING. As in 1454.

MUSEUM DIAGNOSIS. Differs from *canescens* (1454) in being darker; from *stanleyi* in being paler, less slaty; from *orissae* in being mouse-grey on back (v. olive-brown).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	75-84	14-16	19-20	96-109 mm
♀♀	72-80	14-16	19-20	93-102 mm

(SA, BB, Rand & Fleming)

COLOURS OF BARE PARTS. Iris brown. Bill brownish black. Legs, feet and claws horny brown.

1456. NEFA Whitethroated Fantail Flycatcher. *Rhipidura albicollis stanleyi* Baker

Rhipidura albicollis stanleyi Baker, 1916, Bull. Brit. Orn. Cl. 36: 81. New name for *R. albicollis kempi* Baker, 1913 (Sept.), Rec. Ind. Mus. 8: 275 (Abor Hills), preoccupied by *R. flabellifera kempi* Mathews & Iredale, 1913 (July)
Baker, FBI No. 703 (part), Vol. 2: 279

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in 1454, q.v.

FLYCATCHERS

215

SIZE. Sparrow with a long tail; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in 1454 but entire belly buff; a slaty breast-band spotted with white. Tail sooty brown with the lateral feathers only diffusing to narrow whitish tips (v. broadly tipped with pure white).

R. aureola (1451) has a pure white belly and a large amount of white in its tail.

STATUS, DISTRIBUTION and HABITAT. Common resident, unevenly distributed, subject to restricted local movements. The Indian Peninsula (except for the ranges of *vernayi* and *orissae*) from Mt Abu and the Vindhya Range southward to Kerala — coastal plain, central plateau, Western and Eastern Ghats and their associated hills up to c. 2000 m (Nilgiris). Affects well-wooded areas — secondary jungle, groves and gardens, even in cities. Prefers more broken country and more humid facies than *R. aureola*, although both species may often be found in the same area.

GENERAL HABITS and FOOD. As in 1454.

VOICE and CALLS. Song of the same general pattern as those of White-browed and Whitethroated Fantails (1451 and 1454): a lively clear whistling of several tinkling notes rising and falling in scale, constantly warbled as the bird waltzes and pirouettes on low branches and brushwood. Also has the normal harsh *chuck* or *chuck-r* calls.

BREEDING. Season, March to July occasionally extending into September; often two broods. Nest and eggs as in 1454. Average size of 50 eggs 16.2 × 12.7 mm (Baker). Both sexes take part in all the domestic chores. Incubation period 12-13 days.

MUSEUM DIAGNOSIS. For distinction from *vernayi* see 1459.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	72-79	14-15	18-19	86-98 mm
♀♀	69-74	13-14	17-19	86-94 mm

(SA, HW)

Weight 6 ♂♂ 9-10 g (SA).

COLOURS OF BARE PARTS. Iris dark brown. Bill black; mouth pale flesh (mouth and gape yellow in the nestling). Legs and feet slaty brown.

1459. Dandakaranya Whitespotted Fantail Flycatcher. *Rhipidura albicollis vernayi* (Whistler)

Leucocircia pectoralis vernayi Whistler, 1931, Bull. Brit. Orn. Cl. 52: 40 (Jeypore Agency)

Baker, FBI No. 705 (part), Vol. 2: 282

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in 1458, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. The upper Eastern Ghats (Dandakaranya area) from southern Orissa to the Godavari river. Habitat as in 1458.

GENERAL HABITS, FOOD and VOICE. As in 1454 and 1458.

214

MUSCICAPINAE

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical or local movements. Bhutan and NEFA south through the plains and hills of Assam, Nagaland and Manipur to the Chittagong region of East Pakistan. In the Himalayas breeds up to 2700 m, but most plentiful between 900 and 1500 m; in the Assam hills south of Brahmaputra R. breeds up to 1500 m. Affects various kinds of forest (humid evergreen, deciduous, dry pine, etc.), as well as secondary jungle and gardens.

Extralimital. Burma. The species extends to Szechuan, Vietnam, Sumatra and Borneo.

GENERAL HABITS, FOOD and VOICE. As in 1454.

BREEDING. As in 1454.

MUSEUM DIAGNOSIS. Differs from *albicollis* (1455) in being darker, more slaty.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1455.

Weight 6 ♂♂ 9-13 g (SDR, SA).

1457. Orissa Whitethroated Fantail Flycatcher. *Rhipidura albicollis orissae* Ripley

Rhipidura albicollis orissae Ripley, 1955, Proc. Biol. Soc. Washington 68: 42 (Toda, Bonai, Orissa)

Baker, FBI No. 703 (part), Vol. 2: 279

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in 1454 but with a patch of buff in centre of belly.

STATUS, DISTRIBUTION and HABITAT. Common resident. Southern Bihar, Orissa and eastern Madhya Pradesh. This population is intermediate between *albicollis* and *vernayi*, and intergrades with the latter. Affects forest, groves, gardens and shrubbery.

GENERAL HABITS, FOOD and VOICE. As in 1454.

BREEDING. As in 1454.

MUSEUM DIAGNOSIS. Differs from *albicollis* in being dark olive-brown above, well demarcated from the black crown, and by the buff patch in centre of belly; from *vernayi* in lacking the pectoral spotting and in having a more reduced buff area on abdomen; however, intermediates commonly occur.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1455.

1458. Whitespotted Fantail Flycatcher. *Rhipidura albicollis albogularis* (Lesson)¹

Muscicapa (Muscylea) albogularis Lesson, 1832, in Bélanger, Voy. Ind.-Orient., Zool.: 264 (le continent de l'Inde et les environs de Pondichéry = Salem district, Madras)

Leucocircia pectoralis Jerdon, 1847, Ill. Ind. Orn., text to plate 2

(Nilgiris)

Baker, FBI No. 705 (part), Vol. 2: 282

Plate 66, fig. 3

LOCAL NAMES. *Mādhāryā* ('mosquito-catcher', Hindi); *Nāchān* ('dancer', Marathi); *Dādāri pītā* (Telugu).

¹ Rand & Fleming have shown (*Fulldiana*, Zoology 35: 539-40) that *albicollis* and *albogularis* intergrade in the northeastern Peninsula. Their suggestion that they should be treated as subspecies is followed here.

216

MONARCHINAE

BREEDING. As in 1458.

MUSEUM DIAGNOSIS. Differs from *albogularis* (1458) by the broader pectoral band continued as a dark wash on the flanks. Pectoral spots reduced in size and number. *Orissae* (1457) lacks any spotting on breast and has a still more reduced pale area on abdomen.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂♂	72-81	14-15	18-19	93-104 mm
3 ♀♀	70-74	13-14	18-19	88-96 mm

Weight 7 ♂♂ 11-13 g (SA).

COLOURS OF BARE PARTS. As in 1458.

Subfamily MONARCHINAE: Monarch Flycatchers

Key to the Genera

Tail longer than wing; head crested.....*Terpsiphone*
Tail about equal to wing; head not crested.....*Monarcha*

Genus TERPSIPHONE Gloger

Terpsiphone Gloger, 1827, in Froriep's Notizen 16, col. 278. Type, by subsequent designation, *Corvus paradisi* Linnaeus

Tehina Lesson, 1830, Traité d'Orn.: 386. Type, by subsequent designation, *Corvus paradisi* Linnaeus

Bill very large, depressed and swollen at base. Rictal bristles long, coarse and numerous. Tarsus short but fairly stout. Central pair of rectrices greatly elongated in male. Young not spotted.

TERPSIPHONE PARADISI Linnaeus

Key to the Subspecies

		Page
A	Male not assuming white plumage.....	<i>T. p. ceylonensis</i> 221
B	Male assuming white plumage	
1	Rufous male with greyish throat.....	<i>T. p. saturator</i> 221
2	Rufous male with metallic black throat	
a	Back with a strong olive wash.....	<i>T. p. nicobarica</i> 222
b	Back cinnamon	
i	Paler.....	<i>T. p. leucogaster</i> 216
ii	Darker.....	<i>T. p. paradisi</i> 218

1460. West Himalayan Paradise Flycatcher. *Terpsiphone paradisi leucogaster* (Swainson)

Muscipeta leucogaster Swainson, 1838, Nat. Library, Flycatchers 21: 205 (Simla, *vide* Kinnear, 1929, Ibis: 131)

Baker, FBI No. 690, Vol. 2: 268

LOCAL NAMES. *Fhāmbāsr* = 'cotton flake' (♂), *Rāngē bālbāl* (♀), *Lābz* (Loish) (Kashmir); *Taklat* (Urdu); Peninsular names as in 1461.

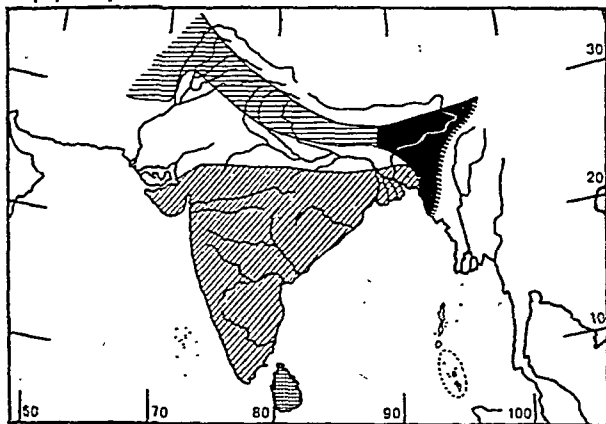
MONARCH FLYCATCHERS

217

SIZE. Bulbul \pm ; male with very long tail-streamers. Length c. 20 cm (8 in.); with streamers up to c. 50 cm (20 in.).

FIELD CHARACTERS. As in 1461, q.v.

STATUS, DISTRIBUTION and HABITAT. Common summer (breeding) visitor. Northern Baluchistan, N.W.F.P. north to Chitral, east through the Salt Range, Kashmir, Punjab, Himachal Pradesh, Uttar Pradesh and Nepal. Breeds in the northern plains (sparingly south to Delhi, Lucknow and

Terpsiphone paradisi

Distributional ranges

leucogaster (1460), breeding only. paradisi (1461).
ceylonensis (1462). saturator (1463).
nicobarica (1464).

Ghazipur), and in the hills up to c. 1800 m (abundantly in Kashmir), occasionally up to 2100 or even 2400 m. A June record at 3100 m in Lahul (HW). Affects open forest, wooded nullahs, bushes, gardens and groves, especially in the neighbourhood of lakes and streams, e.g. Kashmir Valley.

Extralimital. Turkestan and Afghanistan.

MIGRATION. Arrives on its summer grounds usually singly in late March (mostly April in the hills); departs in September-October. Appears to prefer night migration. Winters over most of the Peninsula, from the Gangetic plain and from lower Sind, Kutch and Kathiawar south to Kerala and Tamil Nadu; also the plains of East Pakistan (Rashid). Movements difficult to elucidate because of the presence of the very similar peninsular race. May not be present in the same area every winter especially in the more northern parts. Recorded in Gilgit as a migrant (April, May and August).

GENERAL HABITS, FOOD and VOICE. As in 1461.

MONARCH FLYCATCHERS

219

breast. Intermediate individuals with more or less white in plumage, or white with rusty traces, frequently seen.

Female and first-winter male: crown bluish black with a shorter crest than adult male. Rest of upperparts rufous. Throat, sides of head and nuchal collar ashy. Belly white. No streamers. General effect of a bulbul.

STATUS, DISTRIBUTION and HABITAT. Common but unevenly distributed. The Indian Peninsula from Kathiawar (Gir forest), western Rajasthan, Madhya Pradesh (Neemuch, Jhansi) south to the hills of Kerala and the Chittur range, and east through lower West Bengal and the lowlands of East Pakistan. There are only spring records in Bihar and Orissa but presumably also breeds there. Rare and very sporadic in the Deccan. Southern populations resident, subject to local movements; northern populations mostly migratory but probably replaced in part by wintering Himalayan birds. Breeds mostly in broken foothills country and peninsular hills, up to the highest summits. Affects well-watered and shady forest, bamboo-clad nullahs, plantations and village groves, spreading in winter to gardens and scrub.

MIGRATION and winter movements little understood. It is known to winter in Ceylon from October to May. Large numbers pass through Pt Calimere (Tamil Nadu) en route in October. Two individuals have been recorded on a ship 25 km off the coast of Malabar and the species has been sighted in the Maldives. Northern birds are probably more migratory, and southern birds prone to erratic winter movements. These populations, however, are greatly increased by wintering Himalayan birds.

GENERAL HABITS. Usually seen in pairs, by themselves or with the roving mixed hunting parties. Frequents shady trees, keeping mostly to the higher branches perched upright or flitting gracefully from bough to bough or tree to tree. Makes short aerial sallies after insects, looping back after the capture to the same tree or flying on to another. Occasionally also descends close to the ground to flutter and dislodge insects from the low herbage. Flight swift and undulating, the long streamers of the male floating gracefully behind. In the nimble aerial contortions after insect prey these looping fluttering 'ribbons' present a spectacle of exquisite charm. When perched the male often flirts his tail, opening and shutting the feathers in a scissors-like movement, making play with the long ribbons. Bathes regularly by splashing at the surface of a pool or stream from a bush on the bank, spinning round abruptly on touching the water, raising a spray, then regaining perch to shuffle the plumage and preen. This repeated quickly 3 or 4 times.

Display. During the breeding season, male sings and courts with wings beating, tail raised and streamers arching gracefully. May also be seen singing in flight, 'fluttering his wing pugnaciously' (Dharmakumarsinhji). Nuptial flight is thus described by Baker: the male launches himself very slowly from some high twig, rises and drops every few yards with slowly beating wings, his long tail undulating with each rise and fall as he flies round in small circles before alighting on the perch he just left.

FOOD. Chiefly winged insects. Recorded items include flies and gnats, dragonflies, jassid hoppers, small bugs and beetles. Commonly butterflies and moths; occasionally spiders.

218

MONARCHINAE

BREEDING. Season, April to August. Nest and eggs as in 1461. Average size of 50 eggs 20.1×14.9 mm (Baker) and of 10 eggs 20.8×15.4 mm (Osmaston). Favourite nest-site: in Kashmir are willow and mulberry groves around lakes and inundations, orchards, and chenar (*Platanus*) trees near habitations.

MUSEUM DIAGNOSIS. White males with streamers not distinguishable from nominate *paradisi* but *leucogaster* tends to have a narrower bill.

Rufous males with streamers paler above than nominate *paradisi* (1461); in about 80 per cent of individuals white of lower parts extends right up to black throat contrasting and clear cut, without any intermediate grey area on breast; wings largely but irregularly variegated with white on primaries and secondaries.

Females and immature males also paler on upperparts; dark portions of vanes of primaries and secondaries usually far more extensive; tertiaries usually have a dark shaft-streak.

MEASUREMENTS

		Wing	Bill (from skull)	Tarsus	Tail	Streamers (from base of tail)
White	♂♂	88-101	23-26	16-18	104-125	316-412 mm
Rufous	♂♂	93-100	24-26	16-18	82-116	267-332 mm
	♀♀	82-92	22-25	15-18	88-106	— mm
						(HW)

Weight 3 ♂♂ (Apr.-May, in summer quarters) 18-22; 2 ♀♀ (ditto) 18, 20 g—SA.

COLOURS OF BARE PARTS. Iris dark brown; eye-rim blue of various shades. Bill dark bluish; mouth bright greenish yellow. Legs and feet bluish grey; claws dusky.

1461. Peninsular Indian Paradise Flycatcher. *Terpsiphone paradisi paradisi* (Linnaeus)

Corvus paradisi Linnaeus, 1758, Syst. Nat., ed. 10, 1: 107

(in India = Chandernagor, see Stresemann, 1952, Ibis 94: 517)

Baker, FBI No. 688 (part), Vol. 2: 264

Plate 66, fig. 2

LOCAL NAMES. Rufous plumage: *Shah bulbul*, *Husaini bulbul*. White plumage: *Sultan bulbul* (Hindi); *Dudhrāj*, *Tarwario* ('swordsmen') [Gujarati]; *Toka pigilipittā* ('long-tailed bird', Telugu); *Wāl kōndā lāthi* ('=tail crest shaker'), *Vāl kūrāi* (Tamil, Malayalam).

SIZE. Bulbul \pm ; male with very long tail-streamers. Length c. 20 cm (8 in.); with streamers up to c. 50 cm (20 in.).

FIELD CHARACTERS. Old male (4 years or more): entire head and throat black with a conspicuous crest (at close range a metallic blue-black). Bill and a narrow eye-rim blue. Wings black and white. Rest of plumage silvery white, the tail-feathers with black outer webs and black shaft-streaks.

The black head with upstanding crest, glistening white plumage and extremely elongated central pair of rectrices ('ribbons') render the bird unmistakable.

Young male (up to 3 years): as in adult but back, tail and streamers rufous (these however are not fully assumed until second autumn moult). First-year birds have ashy



x c. 1

MONARCHINAE

220

VOICE and CALLS. Ordinary call-note, a nasal grating *chē* or *chēchwē* (SA) or *quenk* (Nichols), not unlike the *pench* of a snipe, uttered by both sexes. Alarm, a harsh *ist* and some harsh mobbing notes rendered as *weep poor willie weep* — *poor willie* (B. T. Phillips). Song, a low and pleasant warble of six to eight bulbul-like notes descending the scale, then running up at the end, rendered as *peety-to-whit* . . . repeated three or four times in quick succession (Dharmakumarsinhji, Magrath).

BREEDING. Season, March to August, chiefly May and June. Nest, a neat, deep, inverted cone of grasses, fine roots, bast fibre and a few leaves compactly bound together with cobweb and so thickly plastered on the outside with the last mixed with spiders' egg-bags etc. as to appear quite white; lined with rootlets and silky vegetable down. Placed in horizontal, occasionally upright, forks of trees or saplings from one to fifteen metres above the ground, often in a bare fork of a down-sloping branch. Has a predilection for the vicinity of streams, and frequently builds in partly submerged bushes or on branches overhanging water. Eggs, generally 4, often 3, especially in the south, pink to nearly white, marked with reddish brown specks and small spots, usually forming a well-defined ring around the large end, usually with secondary marks of lavender. Average size of 100 eggs 20.2×15.1 mm (Baker). Building, incubation and care of young, by both sexes; even the conspicuous white male may be seen sitting on the nest though most of incubation as well as construction is done by female. Period of incubation 15-16 days; young leave the nest about 12 days after hatching. No second brood if first is successful. Male often breeds in rufous plumage and even before acquiring the streamers. He is very intolerant of intruders and often gives away the position of a nest by his excited calls as he dashes at all comers in his characteristic, wobbly flight.

MUSEUM DIAGNOSIS. White-plumaged and rufous-plumaged males about equal in numbers. For details of plumages see Baker, loc. cit. Young, not spotted but showing obsolete pale centres and dark fringes on breast-feathers. For distinction from *leucogaster* and *saturator* see Key to the Subspecies; also 1460 and 1463 respectively.

MEASUREMENTS

		Wing	Bill (from skull)	Tarsus	Tail	Streamers (from base of tail)
White	♂♂	90-99	23-27	16-18	94-146	290-412 mm
Rufous	♂♂	92-99	22-26	16-18	100-118	299-405 mm
	♀♀	85-92	22-24	16-17	86-110	— mm
						(HW)

Weight 5 ♂♂ 20-22; 5 ♀♀ 16-22; 50 ♂♀ (October, on passage) 16-21 (av. 18.5) g—SA.

COLOURS OF BARE PARTS. Iris brown; bare fleshy eye-rim slaty blue. Bill very dark greyish blue, blackish at tip. Gape slaty blue; mouth sulphur-yellow or bright yellow. Legs and feet greyish blue; claws brown.

MONARCH FLYCATCHERS 221

1462. **Ceylon Paradise Flycatcher.** *Terpsiphone paradisi ceylonensis* (Zarudny & Härmä)
Tchitrea paradisi ceylonensis Zarudny & Härmä, 1912,
Orn. Monatsb. 20: 60 (Ceylon)
Baker, FBI No. 688 (part), Vol. 2: 264

LOCAL NAMES. White-plumaged: *Redi-horā* ('cotton thief'), *Lānu-horā*, *Kadda-horā*. Rufous-plumaged: *Gini-horā* ('fire thief') [Sinhala]; *Pirāmana-kūrūni*, *Vedi-vāt-kūrūni* (Tamil).

SIZE. Bulbul ±; male with very long tail-streamers. Length c. 20 cm (8 in.); with streamers up to c. 35 cm (16 in.).

FIELD CHARACTERS. As in 1461. Males of the Ceylon subspecies never assume white plumage. Breast of Ceylon males paler ashy than in immature Indian males. The white males seen in Ceylon are wintering birds from India.

STATUS, DISTRIBUTION and HABITAT. Plentiful resident, subject to local movements. Ceylon in the low-country Dry zone and lower hills up to c. 900 m. In the northeast monsoon may be seen anywhere in the well-wooded areas of the lowlands including the Wet zone, and in the hills occasionally up to 1500 m. A familiar bird of the country roadsides, gardens, surroundings of irrigation reservoirs, rivers and watercourses.

GENERAL HABITS, FOOD and VOICE. As in 1461.

BREEDING. *Season*, April to July, chiefly May. *Nest*, as in 1461. *Eggs*, normally 3, sometimes 2, exceptionally 5; colour as in 1461. Average size of 10 eggs 20.2 × 15.3 mm (Baker). Nesting behaviour as in 1461.

MUSEUM DIAGNOSIS. Differs from the Indian subspecies only by the fact that males never assume a white plumage, and by slightly paler breast.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail	Streamers (from base of tail)
10 ♂♂	92-96	25-26	16-17	97-115	245-313 mm
1 ♀	92	25	16	116	— mm

(HW)

COLOURS OF BARE PARTS. As in 1461.

1463. **East Himalayan Paradise Flycatcher.** *Terpsiphone paradisi saturator* (Salomonsen)
Tchitrea affinis saturator Salomonsen, 1933, Ibis: 732
(Buxa Duars, Bhutan)
Baker, FBI No. 689, Vol. 2: 267

LOCAL NAME. *Dao-rajah-gophu* (Cachari).

SIZE. Bulbul ±; male with very long tail-streamers. Length c. 20 cm (8 in.); with streamers up to 50 cm (20 in.).

FIELD CHARACTERS. As in 1461 but crest more rounded. Chestnut males and females have greyish throat and breast. White males have feathers of upperparts with fine black shaft-streaks.

MONARCH FLYCATCHERS 223

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail	Streamers (from base of tail)
White ♂♂	88-96	20-24	14-16	92-108	140-358 mm
Rufous ♂♂	88-94	20-25	—	92-102	165-253 mm

(HW)

Black-chinned ♂♂ (tail) 93-106 mm
Grey-chinned ♀♀ (tail) 82-88 mm (Abdulali)

COLOURS OF BARE PARTS. Unrecorded.

Genus MONARCHA Vigors & Horsfield

Monarcha Vigors & Horsfield, 1827, Trans. Linn. Soc. London 15: 254. Type, by monotypy, *Muscipeta carinata* Swainson = *Muscipeta melanopsis* Vigors

Hypothymis Boie, 1826, Isis, col. 973. Type, by monotypy, *Muscipeta caerulea* Gmelin = *M. azurea* Boddaert

Bill as in *Terpsiphone* but smaller, densely covered with plumules at base. Rictal bristles numerous and long. Sexes dissimilar. Young not spotted.

MONARCHA AZUREA (Boddaert)
Key to the Subspecies

	Page
A No throat-bar..... <i>M. a. ceylonensis</i>	226
B A black bar across throat	
1 Abdomen white..... <i>M. a. styani</i>	223
2 Abdomen blue..... <i>M. a. tyleri</i>	226
3 Abdomen white, tinged with blue	
a Larger; wing averaging more than 70 mm..... <i>M. a. idiochroa</i>	227
b Smaller; wing averaging less than 70 mm..... <i>M. a. nicobarica</i>	227

1465. **Indian Blacknaped Monarch Flycatcher.** *Monarcha azurea styani* (Hartlaub)
Siphia styani Hartlaub, 1898, Abh. Nat. Ver. Bremen 16: 248
(Harhow, Hainan)

Hypothymis azurea styani Baker, 1920, Bull. Brit. Orn. Cl. 41: 8. New name for *Muscipeta caeruleocephala* Sykes, 1832, nec *M. caeruleocephala* Scopoli, 1786

Hypothymis azurea similis Koelz, 1939, Proc. Biol. Soc. Washington 52: 68 (Londa, Bombay Presidency)

Baker, FBI Nos. 692 and 693, Vol. 2: 270, 271
Plate 66, fig. 1

LOCAL NAMES. *Kālā kātkātā*, *Kālā mātha kātkātā* (Bengali); *Terpidippān* (Tamil); *Vil-neeli* (Malayalam).

SIZE. Sparrow; length c. 16 cm (6 in.).

FIELD CHARACTERS. Male. A partially fan-tailed azure-blue flycatcher,

222 MONARCHINAE

STATUS, DISTRIBUTION and HABITAT. A partial migrant or resident subject to local movements, locally common. Sikkim, Darjeeling and Jalpaiguri districts, east through Bhutan and NEFA, south through Nagaland, Manipur, the hills of Assam and East Pakistan to the Chittagong region. Most plentiful along the base of the Himalayan foothills, scarce in the plains of the Brahmaputra and in Nagaland and Manipur. Breeds up to c. 800 m, occasionally 1000 m. Affects thin forest, secondary growth, gardens, bamboo and scrub jungle.

Extralimital. Northern Burma. The species in many geographical races extends from Turkestan and Afghanistan, east to the Indochinese countries, north to Mongolia and Manchuria, and south to the Lesser Sunda Islands.

MIGRATION. Unclear. Himalayan population appears to leave the area almost entirely in winter, returning in March-April. Birds of this subspecies are known to winter in Burma from the southern Shan States to Tenasserim, but some may also come from Yunnan. Also winters in the lowlands of East Pakistan.

GENERAL HABITS, FOOD and VOICE. As in 1461.

BREEDING. As in 1461.

MUSEUM DIAGNOSIS. White-plumaged males predominate (80-86 per cent). Rufous males and females have a distinct olive wash on upperparts, giving the back a brownish appearance. Rump, and edges of remiges and rectrices bright cinnamon. Abdomen yellowish; under tail-coverts pale chestnut. Males have a greyish throat and breast, and lack the sharply defined metallic black of other Indian subspecies.

MEASUREMENTS

	Wing	Streamers (White birds)
♂♂	89-96	224-390 mm
♀♀	87-92	— mm

(Salomonsen)

COLOURS OF BARE PARTS. As in 1461.

1464. **Nicobar Paradise Flycatcher.** *Terpsiphone paradisi nicobarica* Oates
Terpsiphone nicobarica Oates, 1890, Fauna Brit. Ind., Bds. 2: 48 (Nicobars)
Baker, FBI No. 691, Vol. 2: 269

LOCAL NAMES. None recorded.

SIZE. Bulbul ±; male with very long tail-streamers. Length c. 20 cm (8 in.); with streamers up to c. 50 cm (20 in.).

FIELD CHARACTERS. As in 1461, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident (and winter visitor ?) in the Nicobar Islands. Rare in the South Andaman Islands and perhaps only a winter visitor (Abdulali, JBNHS 64: 183-4, and footnote).

GENERAL HABITS, FOOD and VOICE. As in 1461.

BREEDING. Unrecorded.

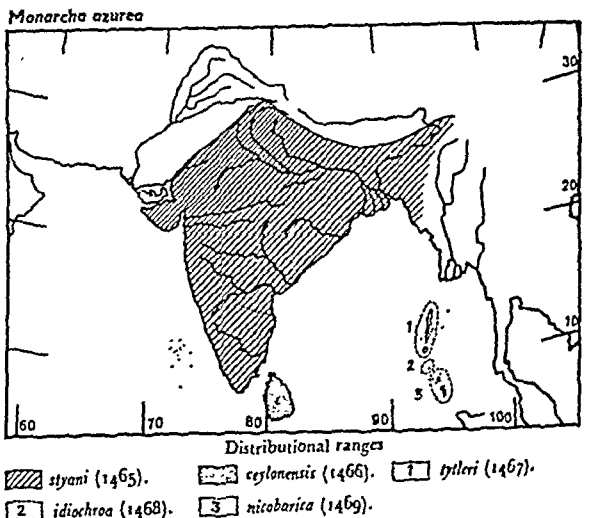
MUSEUM DIAGNOSIS. Adult males have a glossy bluish black throat (c. greyish in *saturator*), abdomen darker, buff-coloured; under tail-coverts a darker chestnut. Upperparts also darker, the back more olive, the rump brown rather than cinnamon. Size smaller. Abdulali (loc. cit. p. 184) suggests that the resident Nicobar population may not assume a white plumage and that white birds may be winter visitors.

224 MONARCHINAE

duller on the wings, with a velvety black patch on nape and thin black crescent across throat. Belly whitish.

Female. Above, crown blue, rest of upperparts brown; below, ashy blue fading to whitish on belly. No black nape-patch or necklet.

STATUS, DISTRIBUTION and HABITAT. Widespread resident, subject to erratic local and winter movements. India south and east of a line running from the Gulf of Kutch to Gorakhpur (eastern U.P.), south to Kerala and Tamil Nadu (including the Palnis — JBNHS 55: 159); east through East Pakistan, Assam, Nagaland?, and Manipur, and north along the Himalayan foothills west to Dehra Dun (Osmaston, 1935) and east through Nepal,



Sikkim and Bhutan to NEFA including the Sadiya frontier tract. In the hills generally up to c. 900 m, less often 1200 m (Assam), 1300 m (Sikkim) or 1500 m (Kerala, Maharashtra). More widespread in winter and has straggled to Lucknow, Kutch and Karachi. Affects well-wooded country, evergreen or mixed deciduous forest, secondary jungle, cultivation, coffee,

MONARCH FLYCATCHERS

225

cardamom and teak plantations, etc.; partial to bamboo facies. In drier areas prefers heavy foliage, usually along streams.

Extralimital. Ranges east through southern China and the Indochinese countries to Hainan. The species extends to the Philippines and Indonesia.

GENERAL HABITS. Keeps singly or in pairs, often in company with *Muscicapa tickelliae*, *Rhipidura albicollis*, *Hemipus picatus*, etc. As a rule, keeps to taller trees than other flycatchers but also frequents undergrowth. A very active species, always on the move, pivoting on its perch from side to side, prancing and flitting about, wings drooping and tail partly fanned out and cocked, after the manner of *Rhipidura* though to a less degree. Makes agile looping sallies after winged insects, sometimes flutters in front of a sprig to disturb those hiding within and occasionally descends to the ground to pick up one. Under excitement, the black nape-tuft is erected to a point.

FOOD. Winged insects, including butterflies, moths, cicadas, small beetles and bugs. If prey too big to swallow, held under foot and torn piecemeal.

VOICE AND CALLS. On the whole a silent bird but commonly utters a distinctive high-pitched rasping, interrogative *sweech-which?* (*sweech-which-which?* when alarmed) or *chi-chue?* much like that of the Paradise Flycatcher; reminiscent also of *Aethopyga siparaja* or *Parus major* (SA). No song as such.

BREEDING. Season, March to August. *Nest*, a neat, conical cup of *Rhipidura* pattern though a little more massive; sometimes also with an untidy 'tail' of loose material dangling below. Made of grass stems and shreds of bark, lined with finer grass, coated with green moss when available, and so thickly plastered on the outside with cobweb and spiders' egg-cases as to appear quite white; firmly bound into position with cobwebs in a slender fork or elbow of outer branches of trees; also built in saplings, coffee bushes, bamboo clumps, etc., sometimes in fully exposed situations. Usually placed between three and five metres above ground; recorded as low as 60 cm and as high as nine metres. Eggs, normally 3 in southern India and Assam, often 4 in the north; very similar to those of *Terpsiphone* (1461) though smaller, and with the same range of colour variations. Average size of 110 eggs 17.4 × 13.3 mm (Baker). Female does most of the nest-building though male accompanies her closely. Incubation and care of young by both sexes; incubation period c. 12 days.

MUSEUM DIAGNOSIS. See Key to the Subspecies. For chick (in down) see Biswas, JBNS 59: 807.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	64-75	14-17	16-18	65-76 mm
♀♀	66-76	14-17	16-18	65-74 mm

(HW, SA, BB)

Weight 16 ♂♂ 10-14; 16 ♀♀ 9-13 g (SA).

COLOURS OF BARE PARTS. Iris brown; bare eye-rim blue. Bill: adult ♂ dark greyish blue, black at tip; ♀ horny brown; mouth (both sexes) greenish or sulphur-yellow. Legs and feet: ♂ slaty blue; ♀ greyish brown; claws dark brown.

MONARCH FLYCATCHERS

227

BREEDING. Season, April to June. *Nest* and eggs, as in 1465. Clutch size usually 3, sometimes 2. Average size of 54 eggs 18.3 × 16.9 mm (Baker).

MUSEUM DIAGNOSIS. Like the Indian *styani* (1465) but underparts bluer and extending to vent. Axillaries blue.

MEASUREMENTS

	Wing	Tail
3 ♂♂	71-75	70-73 mm
2 ♀♀	71-73	69-72 mm

(Abdulali)

COLOURS OF BARE PARTS. Unrecorded.

1468. Car Nicobar Blacknaped Monarch Flycatcher. *Monarcha azurea idiochroa* (Oberholser)

Hypothymis azurea idiochroa Oberholser, 1911, Proc. U.S. Nat. Mus.

39: 604 (Car Nicobar)

Baker, FBI No. 697, Vol. 2: 274

LOCAL NAME. *Kalong tesa* (Car Nicobar).

SIZE. Sparrow; length c. 16 cm (6 in.).

FIELD CHARACTERS. As in 1465, q.v.

STATUS, DISTRIBUTION AND HABITAT. Restricted to Car Nicobar.

GENERAL HABITS, FOOD AND VOICE. As in 1465.

BREEDING. As in 1467.

MUSEUM DIAGNOSIS. As in the Andaman *tyleri* but belly white. Differs from *styani* (1465) in having the axillaries light blue (v. white).

MEASUREMENTS

	Wing	Tail
1 ♂	76	72 mm
3 ♀♀	72-77	68-70 mm

(Abdulali)

COLOURS OF BARE PARTS. Iris blackish brown. Bill blue, tip blackish. Legs and feet dull blue.

1469. Nicobar Blacknaped Monarch Flycatcher. *Monarcha azurea nicobarica* (Bianchi)

Hypothymis azurea nicobarica Bianchi, 1907, Ann. Mus. Zool. St. Petersburg

12: 76 (Nicobars = Nancowry)

Hypothymis azurea calocera Oberholser, 1911, Proc. U.S. Nat. Mus. 39: 610

(Nankauri I., Nicobar Is.)

Baker, FBI No. 696, Vol. 2: 273

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 16 cm (6 in.).

FIELD CHARACTERS. As in 1465, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Nicobar Islands except Car Nicobar.

GENERAL HABITS, FOOD AND VOICE. As in 1465 and other races.

BREEDING. As in 1467.

226

MONARCHINAE

1466. Ceylon Blacknaped Monarch Flycatcher. *Monarcha azurea ceylonensis* (Sharpe)

Hypothymis ceylonensis Sharpe, 1879, Cat. Bds. Brit. Mus. 4: 277

(Cotta, Ceylon)

Baker, FBI No. 694, Vol. 2: 272

LOCAL NAMES. *Nil-kurullā*, *Mārāwā* (Sinhala).

SIZE. Sparrow; length c. 16 cm (6 in.).

FIELD CHARACTERS. As in 1465 but black collar absent and nuchal spot indistinct.

STATUS, DISTRIBUTION AND HABITAT. Resident, moderately plentiful. Ceylon in the lowlands and lower hills to c. 900 m, occasionally to 1600 m in the drier Uva hills. Affects evergreen forests, well-wooded ravines, etc.

GENERAL HABITS, FOOD AND VOICE. As in 1465.

BREEDING. Season, March to May in the hills; also recorded in September in the low-country Wet zone. *Nest*, as in 1465. Eggs, 2 or 3, similar to those of *Terpsiphone* (1461) but smaller. Average size of 13 eggs 17.2 × 13.2 mm (Baker). When sitting on nest, if uneasy or slightly alarmed, has a curious habit of bending back the head and pointing the bill straight up; this habit also noted in the Paradise Flycatcher (Phillips).

MUSEUM DIAGNOSIS. Differs from the Indian race (1465) in lacking the black crescent on throat (sometimes present but obsolete). Nuchal patch reduced; general coloration a little darker, more purplish.

Female differs in having the head, neck and breast a brighter and purer blue; brown of upperparts more leaden brown and more washed with blue. Postnuptial moult about August-September.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
9 ♂♂	70-74	14-16	15-16	67-73 mm
7 ♀♀	67-71	14-15	15-16	65-70 mm

(HW)

Weight 1 ♀ 12 g (SDR).

COLOURS OF BARE PARTS. Iris black. Bill: ♂ light plumbeous blue, inner surface chartreuse green; ♀ dull plumbeous. Legs and feet light plumbeous; soles yellow.

1467. Andaman Blacknaped Monarch Flycatcher. *Monarcha azurea tyleri* (Beavan)

Myiagra tyleri Beavan, 1867, Ibis: 324 (Port Blair, Andamans)

Baker, FBI No. 695, Vol. 2: 273

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 16 cm (6 in.).

FIELD CHARACTERS. As in 1465 but blue on underparts extending to vent.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Andaman Islands including Great and Little Coco Islands. Affects wooded areas.

GENERAL HABITS, FOOD AND VOICE. As in 1465.

228

PACHYCEPHALINAE

MUSEUM DIAGNOSIS. Male, like the Andaman *tyleri* (1467) but slightly smaller, axillaries white, and more white on belly.

Female differs from *idiochroa* of Car Nicobar in being slightly smaller, browner and less grey above; blue of head darker, clear-cut from back and not grading into it.

MEASUREMENTS

	Wing	Tail
15 ♂♂	63-73	56-78 mm
9 ♀♀	65-70	57-67 mm

(Abdulali)

COLOURS OF BARE PARTS. As in 1468.

Subfamily PACHYCEPHALINAE: Thickheads or Shrikebilled Flycatchers

Genus PACHYCEPHALA Vigors

Pachycephala Vigors, 1825, Trans. Linn. Soc. London 14: 444.

Type, by original designation, *Muscicapa pectoralis* Latham

Muscitra Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 121.

Type, by monotypy, *Muscitra cinerea* Blyth

Bill strong, laterally compressed, notched at tip. Three strong rictal bristles, numerous smaller ones overhanging nostril. Wing long. Young not spotted.

1470. Grey Thickhead or Mangrove Whistler. *Pachycephala grisola* (Blyth)

Tephrodornis grisola Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 180. Female described under *Tephrodornis superciliosus* Swainson, v. *Lanius Kroula* Hardwicke & Gray (nom. nud.), 1842, Jour. Asiat. Soc. Bengal 11: 799 (Neighbourhood of Calcutta).

Cf. Mukherjee A. K., 1970, Jour. Bombay nat. Hist. Soc. 67: 112

M. (uscitra) cinerea Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 122

(Island of Ramree, Arracan)

Baker, FBI No. 887, Vol. 2: 484

Plate 81, fig. 1

LOCAL NAMES. None recorded.

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. General aspect very like woodshrike (*Tephrodornis pondicerianus*) but lacking whitish supercilium and white in the tail-feathers.



× c. 1

Above, olive-brown, more ashy on crown. Underparts white with a darker, very pale grey-brown pectoral band. Sexes alike.

THICKHEADS

229

STATUS, DISTRIBUTION and HABITAT. Resident. The Sundarbans of West Bengal and East Pakistan eastward from the Calcutta neighbourhood and down the Chittagong coast. Andaman Islands. Confined to a narrow zone fringing the shores. Affects mangroves and other small trees.

Extralimital. Extends along the eastern coast and islands of the Bay of Bengal, east to Vietnam and south through the Malay Peninsula. Other subspecies in Indonesia and the Philippines.

GENERAL HABITS. A quiet and unobtrusive bird usually seen alone or in pairs. Catches insects on the wing as well as on the branches and trunks of trees. May be seen among the roots of mangroves and higher up in trees.

FOOD. Insects.

VOICE and CALLS. Song, a loud and clear whistle, repeated three or four times in a rising scale, or prolonged and drawn out, followed suddenly by a higher or lower note, somewhat reminiscent of the call of *Aegithina tiphia* (Osmaston).

BREEDING. Season, April to July. *Nest*, a thin, flimsy, cup-shaped structure attached by means of cobwebs to the twigs supporting it. Placed in small trees between one and four metres above the ground. *Eggs*, 2, creamy buff or pale *café-au-lait* marked with small spots ranging from sepia to blackish brown, and secondary spots of lavender, forming a zone around the large end, sparse elsewhere. Average size of 26 eggs 21.7 × 15.7 mm (Baker).

MUSEUM DIAGNOSIS. For details of plumages see Baker, loc. cit. Nestling. Back and wings warm reddish brown; breast pure white, spotless (Osmaston, JBNHS 17: 159).

MEASUREMENTS

	Wing	Tarsus	Tail
♂ ♀	81-89	c. 23	55-61 mm (Baker)

Bill from skull c. 18 mm

Weight 1 ♂ 0.75 oz. (21 g); 3 ♀ 0.75+ oz. (21+ g) — Hume.

COLOURS OF BARE PARTS. Iris dark reddish brown. Bill blackish brown. Legs and feet slate or greyish brown.

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Order PASSERIFORMES (cont.)

Family MUSCICAPIDAE (cont.)

Subfamily SYLVIINAE: Warblers

For description and morphological details see Baker, E. C. S., 1924, FBI 2: 382-5 (Family Sylviidae); Van Tyne, J. & Berger, A. J., 1959: 525; Voous, K. H., 1964, article 'Warbler' in Thomson, A. L. (ed.), *A New Dictionary of Birds*, London & New York.

Genus *TESIA* Hodgson

Tesia Hodgson, 1837, Jour. Asiat. Soc. Bengal 6: 101. Type, by subsequent designation, Gray, 1840, List Gen. Bds.: 27, *T. cyaniventris* = *T. cyaniventer* Hodgson. *Oligura* Hodgson, 1844, in Gray, Zool. Misc.: 82. Type, by subsequent designation, Zimmer & Vaurie, 1954, Bull. Brit. Orn. Cl. 74: 41, *Tesia flaviventer* Hodgson. *Choroteria* [sic] Delacour, 1942, Ibis: 515 = *Chloroteria*, 1943, Ibis 85: 125. Type, by monotypy, *Sylvia? castaneocoronata* Burton.

Bill equal to or a little longer than half the length of head, broad at base compressed at tip. Rictal bristles short. Tarsus very long. Wing very short and rounded. Tail extremely short.

Key to the Species

	Page
A Underparts yellow..... <i>T. castaneocoronata</i>	4
B Underparts not yellow	
1 Underparts slate-colour; crown yellowish green, different from back..... <i>T. olivea</i>	3
2 Underparts ashy grey; crown olive, concolorous with back..... <i>T. cyaniventer</i>	1

1471. Yellowbrowed Ground Warbler. *Tesia cyaniventer* Hodgson

Tesia cyaniventer Hodgson, 1837, Jour. Asiat. Soc. Bengal 6: 101 (Nepal)

Baker, FBI No. 475 (part), Vol. 1: 463

Plate 87, fig. 15

LOCAL NAMES. *Tisi* (Nepal); *Samtit-tammong* (Lepcha); *Ting-lirui bermai-ga* (Kacha Naga).

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. A tiny, tailless, dark coloured, wren-like terrestrial bird. Above, olive-green; a long yellowish green supercilium. A noticeable black, post-ocular stripe between the yellowish supercilium and the grey sides of head. Below, ashy grey. Sexes alike.

The very similar *T. olivea* has dark slate-coloured underparts, much less prominent post-ocular stripe, and orange-red or deep orange base of lower mandible (v. yellow or orange in this species).

STATUS, DISTRIBUTION AND HABITAT. Fairly common resident subject to seasonal vertical movements; from Garhwal (?) and western Nepal

1

1

WARBLERS

3

1472. Slatybellied Ground Warbler. *Tesia olivea* (McClelland)

Saxicola? olivea McClelland, 1839 (1840), in Horsfield,

Proc. Zool. Soc. London: 161 (Assam)

Baker, FBI No. 475 (part), Vol. 1: 463

Plate 87, fig. 16

LOCAL NAMES. *Samtit-tammong* (Lepcha); *Ting-lirui bermai-ga* (Kacha Naga).

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. A tiny, tailless, dark-coloured, wren-like bird, very similar to 1471. Above, back dark olive-green, crown yellowish green, but contrast not appreciable except at very close range. A dark post-ocular stripe, hardly noticeable in the field. Below, dark slaty. Sexes alike.

T. cyaniventer (1471) has paler, ashy grey underparts and its black, post-ocular stripe is very distinct; its lower mandible is orange-yellow or yellow (v. bright orange-red or deep orange in *olivea*).

STATUS, DISTRIBUTION AND HABITAT. Fairly common, resident subject to seasonal vertical movements. Darjeeling, Sikkim, Bhutan, Arunachal Pradesh, Nagaland, Khasi Hills (specimen in Koelz Coll.) and Manipur. Altitudinal distribution little known. There are no summer records for our territory; in Burma the species has been recorded at 1500 and 2000 m. It evidently breeds in a lower zone than *T. cyaniventer*. Winters from at least 1000 m down to the foothills, sparingly entering the plains. Affects dense undergrowth of ferns, nettles and weeds in humid, tropical forest.

Extralimital. Extends to Yunnan and Vietnam.

GENERAL HABITS. Solitary. Keeps near the ground, extremely restless, never still. Hops about so lightly among the rootstocks that hardly a leaf stirs to betray its position though its insistent ventriloquistic *chirik-chirik* may proclaim its presence only a few metres away. Has an amusing habit of jumping back and forth along the same branch like a clockwork toy; also of clapping its wings up over its back every now and then.

FOOD. Insects and spiders.

VOICE AND CALLS. A sharp *chirik-chirik* (SDR); distinctive and rather ventriloquial. Specific description of song as compared with that of 1471 very desirable.

BREEDING. Unrecorded or confused with that of *T. cyaniventer*.

MUSEUM DIAGNOSIS. See Field Characters. Young undescribed.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	47-51	13-14	21-24	16-21 mm
♀♀	45-48			

(NBK, SA, MD)

Weight 1 ♂ 6 g (Hume); 2 ♀♀, 1 ♂ 6-9 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible blackish, lower orange-red or deep orange yellowish towards tip. Legs and feet brown; soles olive-yellow.

2

SYLVIINAE

east through Darjeeling, Sikkim, Bhutan and Arunachal Pradesh, thence south through Nagaland, Manipur, Meghalaya and Bangladesh to the Chittagong Hill Tracts. Breeds between 1500 and 2550 m, mostly above 1800 m, generally in a higher zone than *T. olivea*; winters from c. 1800 m down to the foothills, sparingly entering the plains of the Brahmaputra. In the breeding season affects bamboo and dense shady forest near small streams in wet ravines with tangled undergrowth of ferns and nettles. In winter may be seen in evergreen and secondary jungle, shady deciduous and sal forest.

Extralimital. Southeastern Tibet south of the main range and east to Yunnan and the Indochinese countries. A closely allied species in Java.

GENERAL HABITS. Usually seen singly but sometimes joins mixed itinerant parties of insectivorous birds. Keeps on or near the ground, skulking in dense undergrowth, bamboo, large nettles and ferns up to three metres high. Extremely inquisitive and restless; dances ceaselessly among the stalks, now clambering up one, now hopping to the next or jumping up and down the same stem like some clockwork toy; may occasionally ascend trees up to about six metres.

FOOD. Ants and other insects; spiders.

VOICE AND CALLS. A sharp, characteristic *chirik* identical to that of *T. olivea* (SDR) and a sharp *tsik* or a rapid *tsik tsik tsik tsik*... of alarm (Heinrich). Also a *churr, churr*... (Fleming). Song, a short, clear phrase consisting of a soft, twittering introduction of two or three syllables somewhat hesitatingly linked together, followed by three trilled notes in quick succession and ending on a short lower note: *tsiti-tjütjütjü tjö* (Heinrich), also rendered as a clear rippling whistled 'pip-pip-pip, pippety-pip' (Stanford). The song, surprisingly loud for so tiny a creature, is uttered as the bird hops about close to the ground. Another distinctive utterance consists of three high-pitched descending notes with a pause of one to two seconds between each note (Smythies). Both call and song deceptively ventriloquial. Song period chiefly April and May.

BREEDING. Season, May to July. Nest, a ball of green moss, some 10 to 12 cm in diameter, lined with moss roots or fine moss and with a circular entrance-hole c. 4 cm across, near the top; placed 30 cm or so up in low bushes, in creepers or in long streamers of moss growing against tree-trunks, less often against rocks. Eggs, 3 to 5, usually 4, bright, pale pink profusely stippled with tiny specks of bright brick-red. Average size of 50 eggs 17.4 × 12.9 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

Young, above browner, less green than adult. Underparts entirely greyish olive.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	47-54	13-15	22-25	18-20 mm
♀♀	44-50	13-15	22-25	17-19 mm

(BB, SA, NBK, Stres., MD)

Weight 4 ♂♂ 8.6-9.5; 1 ♀ 8.4 g (Hume, Cripps); 3 ♂♀ 10-12 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible blackish horny, lower yellow to dull orange; inside gape reddish orange. Legs and feet dark olivaceous.

4

SYLVIINAE

1473. Chestnut-headed Ground Warbler. *Tesia castaneocoronata*

castaneocoronata (Burton)

Sylvia castaneo-coronata Burton, 1836, Proc. Zool. Soc. London: 152

(Himalayas, restricted to Nepal by Ripley, Synopsis: 441)

Tesia castaneocoronata regia Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 11 (Blue Mountain, Lushai Hills)

Baker, FBI No. 476, Vol. 1: 465

Plate 87, fig. 17

LOCAL NAMES. *Tisi* (Nepal); *Samtit-pho* (Lepcha).

SIZE. Sparrow —; length c. 8 cm (3 in.).

FIELD CHARACTERS. A tiny, wren-like bird with bright yellow underparts and extremely short tail. Above, forehead, crown and nape bright chestnut, rest of upperparts olive-green. Below, throat bright lemon-yellow; breast and belly yellow washed with olive; flanks olive. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Fairly common resident, subject to seasonal vertical movements; from Kangra (Kulu and Parbati valleys) east along the Himalayas to the Mishmi Hills, (Nagaland and Manipur?), Meghalaya and Mizo hills (Koelz); also to the Chittagong Hill Tracts of Bangladesh (Rashid). Breeds between 1800 and 3300 m, more commonly above 2400 m and locally up to 3900 m (central Nepal—Polunin, JBNHS 52: 890). Winters from c. 1800 m down to the foothills, entering the adjacent plains in the Brahmaputra Valley. Affects undergrowth in high, rather open forest, whether light brushwood, ferns, nettles, dense bushes or impenetrable dwarf bamboo, especially in dank ravines and in the vicinity of streamlets. In winter (October to March) may be seen in dense scrub along shady nullahs and in secondary forest.

Extralimital. Burma. The species extends to Szechuan and northern Vietnam.

GENERAL HABITS. Solitary or sometimes in company with *T. cyaniventer*; in pairs during the breeding season. Though shy and elusive, it is not quite as difficult to see and not as restless as the latter or *T. olivea*. It is also less of a ground bird though it generally keeps within a metre or so from the ground, hopping about in cover or sometimes among moss-covered boulders or fallen logs.

Display. 'Two birds were in the same bush one keeping mostly to the upper branches where it ran or rather strutted backwards and forwards with wings drooping, bill turned straight upwards, yellow throat puffed out, tiny tail held bolt upright, uttering a continual, rapid *tsik tsik tsik*... The second bird behaved in exactly the same way in the lower part of the bush. Every now and again the two birds would approach each other, the excitement rising to fever pitch, but when about two inches apart they would turn away and resume their initial positions. This was repeated again and again for an hour until I was obliged to leave and never discovered if they were a pair in courtship display or two males challenging each other' (Desirée Proud, JBNHS 55: 349).

WARBLERS

5

FOOD. Insects and spiders.

VOICE AND CALLS. A chattering *chirik-chirik* like that of 1472 (SA). A single, loud and piercing *teeet* sometimes repeated twice in alarm (various authors). A single, distinctive *wee* repeated at intervals of several seconds (SDR). The body is jerked when the call-note is uttered. A very loud song of four shrill notes, not unlike that of *Culicicapa* (Osmaston), reminiscent of that of *Tesia gyariventer* but thinner and more twittering (Heinrich); rendered by Smythies as *sip, sip-it-up*. Song period in Nepal March to June (Proud).

BREEDING. Season, May to July. Nest, a neat but rather flimsy ball of moss lined with rootlets and feathers woven into and suspended from a small branch within a couple of metres of the ground. Eggs, 2, uniform dark terracotta or dull chestnut with a faint cap of mottlings at the large end. Average size of 18 eggs 17.4 × 12.9 mm (Baker). Incubation by both sexes; period undetermined. Brood-parasitism by *Cuculus poliocephalus* reported by Baker (JBNHS 17: 353; locality corrected p. 841).

MUSEUM DIAGNOSIS. See Field Characters.

Young very distinctive: above (including crown), dark olive-green with a brownish tinge; below chestnut.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	47-53	11-12	21-24	26-29 mm
♀♀	45-50	11-12	21-24	22-26 mm

Weight ♂♀ 8-10 g (GD, SDR, SA).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible horny brown, lower yellowish to orange at base, brown at tip. Legs and feet olive-brown or greenish yellow.

Genus CETTIA Bonaparte

Cettia Bonaparte, 1834, Icon. Fauna Italica I, text to pl. 29. Type, by original designation, *Sylvia Cetti* Marmora

Horreites Hodgson, 1845, Proc. Zool. Soc. London: 30. Type, by subsequent designation, *H. pollicaris* = *brunneifrons* Hodgson

Neornis Blyth, 1845, Jour. Asiat. Soc. Bengal 14: 590. Type, by monotypy, *N. flavolivacea* Blyth

Homachlamys Salvadori, 1870, Atti R. Acad. Sci. Torino 5: 510. Type, by monotypy, *H. luscini* Salvadori = *Arundinax canturians* Swinhoe

Urosphena Swinhoe, 1877, Ibis: 204, 205. Type, by monotypy, *Tribuna squamiceps* Swinhoe

Urophleps Stejneger, 1892, Proc. U.S. Nat. Mus. 15: 341. New name for *Urosphena* Swinhoe, not preoccupied

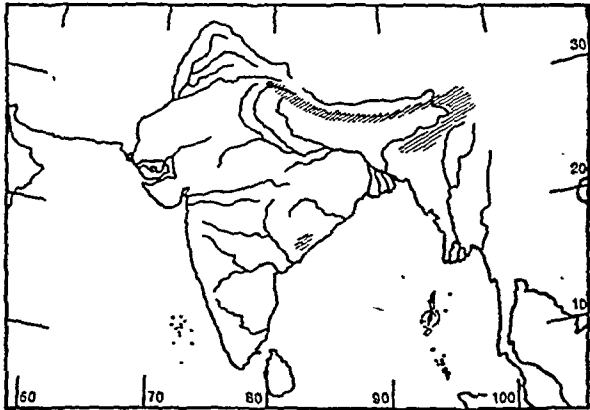
Cf. Delacour, J., 1942, Ibis: 509-19; 1943, 85: 27-31

Bill thin, narrow and pointed; some short and fine rictal bristles. Tail rounded, of ten broad and soft rectrices; laterals shorter than middle pair. Eggs characteristic, dark terracotta.

WARBLERS

7

Cettia pallidipes



edge of sal forest, secondary jungle, and glades in evergreen or in pine forest.

EXTRALIMITAL. Northern Burma. The species extends to Laos, northern Vietnam and southern China. Also Andaman Islands.

GENERAL HABITS. An adept skulker, often heard, rarely seen. When disturbed, will flutter through the grass to the farther edge of a thicket and scuttle to the next cluster just off the ground, scarcely allowing a glimpse of itself.

FOOD. Insects.

VOICE AND CALLS. A most characteristic peculiar song, loud and persistent, rendered as *rip...rip-chick-a-chuck*. Also a fast-repeated *paree-choop* and *riti-jee* (Fleming). Alarm-note *chick-chick* (Osmaston).

BREEDING. Season, May to July. Nest, a rather untidy ball of grass lined with feathers, and placed in bushes overgrown with grass. Eggs, probably 4, deep mahogany-red, not distinguishable from those of *C. f. fortipes* (1478) and *pallidus* (1477). Average size of 40 eggs 17.1 × 13.1 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Species; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	47-55	c. 14	19-20	45-52 mm
♀♀	52-57	c. 14	19-20	41-43 mm

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible dark brown, lower flesh-colour. Legs and feet flesh-colour.

6

SYLVIINAE

Key to the Species

		Page
I	Abdomen pale yellow.....	<i>C. acanthizoides</i> 15
II	Abdomen buffish or whitish	
A	Crown differently coloured from back	
1	Tarsus over 20 mm.....	<i>C. major</i> 12
2	Tarsus under 20 mm.....	<i>C. brunneifrons</i> 16
B	Crown not contrastingly different from back	
3	Upperparts and tail rufous brown.....	<i>C. cetti</i> 19
4	Upperparts olive-brown	
a	Tarsus 20 mm or less; under tail-coverts cream-buff.....	<i>C. pallidipes</i> 6
b	Tarsus over 20 mm; under tail-coverts olive-buff	
i	Throat and breast greyish; no band across breast.....	<i>C. flavolivacea</i> 13
ii	Throat and breast fulvous; a slightly darker band across breast	
o	Tarsus 23 mm or over.....	<i>C. diphone</i> 8
oo	Tarsus under 23 mm.....	<i>C. fortipes</i> 9

CETTIA PALLIDIPES (Blanford)

Key to the Subspecies

More olive above; belly tinged with buff.....	<i>C. p. pallidipes</i>
Richer, more rufous above; centre of belly a purer white.....	<i>C. p. osmastonii</i>

1474. Indian Palefooted Bush Warbler. *Cettia pallidipes pallidipes* (Blanford)

Phylloscopus pallidipes Blanford, 1872, Jour. Asiat. Soc. Bengal 41: 162 (Sikkim)

Baker, FBI No. 913, Vol. 2: 508

Plate 83, fig. 1

LOCAL NAME. *Daotisha gashim* (Cachar).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. A small warbler of the foothills. Above, brown with a pale supercilium and a noticeable dark stripe through eye. Below, cream-coloured, with pale yellowish legs. Sexes alike. As for most bush warblers, recognized mostly by its song (q.v.), which is characteristic.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements; on the whole scarce and probably often overlooked, but locally common. The Himalayan foothills from Dehra Dun (Osmaston, JBNHS 26: 426) east through Nepal, Darjeeling, Sikkim, Bhutan, Arunachal Pradesh (Ali & Ripley, JBNHS 48: 31) and Meghalaya (Cachar and Khasi hills). No records from Nagaland or Manipur though it occurs in northern Burma. Breeding zone not satisfactorily known, most records lying between December and April. In the west, appears to breed in the duns and has been recorded in the terai until May. Said to breed around Darjeeling and in Sikkim at c. 1200-1500 m (Baker, *Nidification* 2: 461). In Meghalaya, breeds above c. 1000 m (Baker, loc. cit.). May also breed in the Eastern Ghats: a specimen collected at Sankrametta, 1000 m (Vishakhapatnam dist.) on 12 April. Winters in the foothills, terai, duars and adjacent plains (northern Bengal); Rashid (1967) lists it as a winter visitor to the Bangladesh foothills and the Chittagong region. Affects grass-and-bush jungle on the

8

SYLVIINAE

1475. Andaman Palefooted Bush Warbler. *Cettia pallidipes osmastonii* (Hartert)

Horreites pallidipes osmastonii Hartert, 1908, Bull. Brit. Orn. CL 21: 107 (Andaman Is.)

Baker, FBI No. 914, Vol. 2: 509

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1474, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, common but localized. South Andaman Island (Mr Hartert). Affects dense undergrowth in high or secondary forest.

GENERAL HABITS AND FOOD. Probably as in 1474.

VOICE AND CALLS. Described as 'most characteristic and peculiar, of 3 or 4 notes only, loud for the size of the bird, and insistent' (Osmaston, JBNHS 35: 892-3).

BREEDING. Season, May to July. Nest, a deep cup of dry bamboo leaves very loosely put together, lined with fine flowering grass-heads or rootlets and supported by the stems and leaf stalks of a plant, near the ground. Eggs, 4, bright chestnut, mottled all over, especially at the large end with a deeper shade of chestnut. Average size of 8 eggs 17 × 13.6 mm (Baker).

MUSEUM DIAGNOSIS. Differs from the nominate race (1474) in being a darker, richer brown above, more rufous, less olive. Flanks and sides of breast washed with richer, more ochre brown. Centre of abdomen a purer white.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	51-53	c. 12	c. 21	36-37 mm (Baker)

COLOURS OF BARE PARTS. Not recorded.

1476. Chinese Bush Warbler. *Cettia diphone canturians* (Swinhoe)

Arundinax canturians Swinhoe, 1860, Ibis: 52 (Amoy in winter, Shanghai in summer)

Baker, FBI No. 916, Vol. 2: 511

Plate 83, fig. 2

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length ♂ c. 16; ♀ c. 14 cm (5½-6½ in.).

FIELD CHARACTERS. The largest bush warbler, superficially very similar to and confusable with Thickbilled Warbler [*Phragmaticola arda* (1543)]. Above, russet brown, browner on head. A pale supercilium and a dark stripe through eye. Below, dull white washed with fulvous on breast and belly. Flanks fulvous. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Accidental winter visitor. Two records from Cachar (Meghalaya) [Hume, SF 11: 202-4 (1 Jan. 1881) and Baker, FBI 2: 511]. Affects thick brushwood and reeds.

EXTRALIMITAL. Breeds in northern China; winters in Formosa, the Philippines, southern China and the Indochinese countries. The species extends from southeastern Siberia to Japan and the Philippines.

WARBLERS

9

GENERAL HABITS. Skulks in dense bushes like other bush warblers. In winter may be seen in large banyan trees, exploring quite openly the boughs of these trees (La Touche). 'If hard pressed quietly slips out of the other side of the bush and flits to a further cover' (Swinhoe).

FOOD. Insects. Diptera and larvae in gizzard of a specimen collected.

VOICE AND CALLS. Alarm, a harsh *charr*. Call-note, a discreet though fairly loud *chak-chak* (La Touche). The abrupt song not given in winter.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Key to the Species.

MEASUREMENTS. (Note the great difference in size of the sexes.)

	Wing	Tarsus	Tail
♂♂	72-79	28-30	68-79 mm
♀♀	59-64	23-25	57-59 mm

(La Touche).

Bill from skull ♂ c. 17-18; ♀ 15-16 mm

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible brown, lower mandible and edge of upper greyish pink. Legs and feet pinkish grey.

CETTIA FORTIPES (Hodgson)¹

Key to the Subspecies

- More rufous above.....*C. f. fortipes*
More olive above.....*C. f. pallidus*

1477. Pale Strongfooted Bush Warbler, *Cettia fortipes pallidus* (Brooks)

Horreites pallidus Brooks, 1872, Jour. Asiat. Soc. Bengal 41: 78 (Kashmir)
Baker, FBI No. 912, Vol. 2: 507

LOCAL NAME. *Defa pich* (Kashmir).

SIZE. Sparrow —; length c. 11 cm (4 in.).

FIELD CHARACTERS. As in 1478. See Museum Diagnosis. Better identified by its striking song (q.v.).

STATUS, DISTRIBUTION AND HABITAT. Common altitudinal migrant. The western Himalayas from the Indus Valley east to western Nepal (Fleming & Traylor, *Fieldiana* 53: 178). Breeds above 1800 m, mostly between 2100 and 3000 m. Winters (end of October to April) from c. 1800 m down to the foothills, seldom venturing into adjacent plains (Peshawar, Campbellpore). Affects bush-covered hillsides, mixed cultivation and bushes or rank herbage, open mixed forest with plenty of undergrowth and bushes along nullahs; noted in winter in *sarpal* grass.

GENERAL HABITS. As in 1478.

FOOD. Insects.

VOICE AND CALLS. A single harsh *pick* or *tehuk* while skulking through shrubbery, reminiscent of *Phylloscopus griseolus* (1581). A peculiar, unmistakable song, remarkably loud and far-carrying, consisting of two phrases, each starting with a high-pitched long-drawn-out whistle of over

¹ For discussion on use of *montana* versus *fortipes*, see JBNHS 65: 223 and 224.

WARBLERS

11

From Nepal (Ilam district, Fleming & Traylor, *Fieldiana* 35: 540) east through Darjeeling, Sikkim, Bhutan and Arunachal Pradesh, thence south through Nagaland, Manipur, Meghalaya, the Mizo Hills and the Chittagong Hill Tracts. Breeds between 2000 and 3300 m (in Meghalaya from 1200 to 2000 m); winters from c. 2100 down to the foothills and, less commonly, the adjacent plains of the Brahmaputra and northern Bengal. Affects bush jungle, tea-gardens, open forest with dense undergrowth, bamboo and bramble thickets, and lush vegetation on swampy ground. Its absence from most of Nepal may be correlated with the lack of temperate dry forest (see map of climatic types, Vol. 1, after p. xlv).
Extralimital. Northern Burma. The species extends east to Formosa and south through the Sunda Islands to Timor and Borneo.

GENERAL HABITS. An arrant skulker often heard but extremely difficult to see although it may sneak around almost within arm's length. Solitary; keeps close to the ground, hopping among bushes in search of food, seldom ascending trees.

FOOD. Insects.

VOICE AND CALLS. A loud, staccato *tyit-tyu-tyu*, a soft churring alarm-note, and a single *trik* or *chuk*. Song, a thin, prolonged and rising whistle *wheteeeee* (c. 1 second) followed by a loud and quickly uttered (explosive), short phrase *chiuiyou*, thus: *wheteeeee . . . chiuiyou* (SA). The phrases, with some variations, are alternately given in high and low pitches. Song period, March to August. See also 1477.

BREEDING. Season, May to July. Nest, rather untidy, varying from a deep cup to a domed or globular structure with a large entrance near the top; made of broad-leaved grasses and copiously lined with feathers. Placed in dense, low bushes within 50 cm from the ground, seldom higher. Eggs, 3 to 5, usually 4, deep chestnut with a cloudy ring of deeper colour at the large end. Average size of 60 eggs 17.3 × 13.4 mm (Baker). Incubation by both sexes; period undetermined.

MUSEUM DIAGNOSIS. Differs from *pallidus* (1477) in being more rufous above, and darker, more brownish below. For details of plumage see Baker, loc. cit.



Wing, × c. 1

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	50-58	13-15	21-22	49-58 mm
♀♀	47-56	c. 14	20-22	44-53 mm

(Mayr, HW, Stevens, NBK, SA)

Weight 1 ♂ 10; 2 ♀♀ 8, 9 g (SDR); 10 ♂♂ 8-11.5 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill dark brown, base of lower mandible pinkish horn. Legs and feet brownish flesh or yellowish brown.

10

SYLVIINAE

one second, immediately followed by a few quick, explosive notes, well rendered by Osmaston as

You . . . mixed-it-so-quick

He'll . . . beat-you

each phrase given alternately on a high and low key. See also 1478 for more renderings and other notes. Song period March till end of August.

BREEDING. Season, May to August, chiefly June and July. May be double-brooded. Nest and eggs as in 1478. Average size of 80 eggs 17.4 × 13.1 mm (Baker, Osmaston).

MUSEUM DIAGNOSIS. Differs from nominate *fortipes* (1478) in being less rufous more olive above, and paler, more greyish olive below. For details of plumage see Baker, loc. cit.

Young. Upperparts, ear-coverts and sides of head more olivaceous than in adult; supercilium dull yellow. Underparts dull yellow washed with olive on flanks and across breast.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	c. 57	c. 14	c. 21	50-53 mm
♀♀	56-57	c. 14	21-22	c. 52 mm (HW)

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible dark brown, lower paler, dark at tip. Legs and feet brownish or fleshy brown.

1478. Strongfooted Bush Warbler, *Cettia fortipes fortipes* (Hodgson)

Horornis fortipes Hodgson, 1845, Proc. Zool. Soc. London: 31 (The Cachar, Nepal)
Homochlamys fortipes manis Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 18 (Mawphlang, Khasi Hills)
Homochlamys fortipes mizorum Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 18 (Sangau, Lushai Hills)
Baker, FBI No. 910, Vol. 2: 506

Plate 83, fig. 3

LOCAL NAME. *Daotisha gashim* (Cachar).

SIZE. Sparrow —; length c. 11 cm (4 in.).

FIELD CHARACTERS. A small, skulking bush warbler better identified (in season) by its distinctive whistled, explosive song (q.v.). Above, dark rufous olive-brown; a narrow buff supercilium to nape; a brown line from lores through eye. Below, dull whitish washed with olive-brown on sides of breast and fulvous on flanks. Sexes alike.

The smaller *C. pallidipes* (1474) may be distinguished by its pale flesh-coloured or yellowish legs (v. brownish in *fortipes*).

STATUS, DISTRIBUTION AND HABITAT. An altitudinal migrant, common except in Nepal where it appears to be mostly replaced by *C. brunifrons*.



× c. 1

12

SYLVIINAE

CETTIA MAJOR (Moore)

Key to the Subspecies

- Browner, less olive.....*C. m. rafer*
Paler, more olive.....*C. m. major*

1479. Himalayan Large Bush Warbler, *Cettia major major* (Moore)

Horreites major Moore, in Horsfield & Moore, 1854, Cat. Bds. Mus. E.I. Co. 1: 323 (Nepal)

Baker, FBI No. 915, Vol. 2: 510

Plate 83, fig. 6

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. A dark olive-brown bird with chestnut forehead and crown. A long supercilium, rusty on lores, whitish beyond eye. Underparts dull whitish. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, probably subject to vertical movements. Garhwal and Kumaon (Koelz, *Contrib. Inst. Regional Exploration*, No. 1: 18), Nepal (not recorded since Hodgson's days), Sikkim, Bhutan and Arunachal Pradesh (upper Subansiri). The highest-altitude bush warbler; found in summer between 3300 and 4000 m (Ludlow). Winter data entirely lacking; recorded at 3900 and 2400 m in October. Affects dense rhododendron jungle in silver fir forest at timber-line, or dwarf rhododendron thickets beyond.

Extralimital. Extends to southeastern Tibet, Yunnan and Szechuan.

GENERAL HABITS. Nothing recorded except that it is a skulker.

FOOD. Insects.

VOICE AND CALLS. Unrecorded.

BREEDING. Known only from a single nest sent to Baker from Sikkim, said to have been taken on the Singalila Ridge at 'over 16,000 ft' (4880 + m). It was globular, loosely made of grass and bamboo leaves outside, fine grass and roots inside and lined with soft feathers; placed in scrub at the edge of dense forest on a steep hillside. No date given but a bird with a yolk egg has been collected on 10 June. Eggs, similar to those of *C. fortipes*. Size 18.3 × 13.9 mm (Baker). See also 1480, Breeding.

MUSEUM DIAGNOSIS. For details of plumage see Baker, loc. cit.

Young. Above, olive-brown. Below, throat greenish white with faint dusky marks; breast greenish grey; belly whitish. Younger birds are more washed with yellowish on underparts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	63 (one)	14	23-24	44-51 mm
♀♀	59, 61 (two)	14	—	— mm

(Wing by NBK, bill by MD, tarsus and tail by Baker)

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible brown, lower yellow.

WARBLERS

13

1480. Assam Large Bush Warbler. *Cettia major vafra* (Koelz)

Homochlamys major vafra Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 18 (Phulbari, Garo Hills)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1479.

STATUS, DISTRIBUTION and HABITAT. Scarce resident, subject to vertical movements. Nagaland (Dimapur, Koelz, loc. cit.), Meghalaya in the Garo (Koelz) and Cachar hills, 'confined to the highest peaks about Hungrum' (Baker, JBNHS 9: 22). Altitude in summer c. 1800 m; habitat undescribed. See 1479.

GENERAL HABITS, FOOD and VOICE. Unrecorded.

BREEDING. No dates given. Nest, a very deep cup of fine grasses and a few bamboo leaves outside, shreds of fine grass inside, lined with feathers. Of three nests, one contained 3 eggs and two contained 2 each. Eggs similar in colour to those of *C. fortipes* (Baker, JBNHS 9: 22). These records perhaps dubious as not included subsequently in *Nidification*.

MUSEUM DIAGNOSIS. Differs from *major* in being more saturated, browner, less olive on back, crown more chestnut, less ferruginous (Koelz).

MEASUREMENTS. As in 1479.

COLOURS OF BARE PARTS. Iris brown. Bill pale yellowish brown, culmen and tip darker. Legs and feet reddish flesh (Baker).

CETTIA FLAVOLIVACEA (Hodgson)

Key to the Subspecies

	Page
A Paler above..... <i>C. f. flavolivacea</i>	13
B Darker above	
1 Olive-green above..... <i>C. f. stresemanni</i>	14
2 Olive-brown above..... <i>C. f. alexanderi</i>	15

1481. Himalayan Aberrant Bush Warbler. *Cettia flavolivacea flavolivacea* (Hodgson)

N. (ornis) flavolivacea Hodgson, 1845, in Blyth, Jour. Asiat. Soc. Bengal 14: 590 (Nepal)

Baker, FBI No. 906, Vol. 2: 502

Plate 83, fig. 4

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. Superficially like a leaf warbler (*Phylloscopus*) with yellowish underparts and no wing-bars. Above, olive-brown. A pale yellowish supercilium and a dark line through eye. Sides of head mottled yellow and brown. Below, dull fulvous yellow tinged with olive on throat and flanks. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. The Himalayas from Garhwal east through Nepal, Sikkim,

WARBLERS

15

with grey. Differs from *alexanderi* in being olive-green, not olive-brown, above; more citrine, without strong orange-buff wash, below.

MEASUREMENTS

	Wing	Tail
7 ♂♂	51-58	52-58 mm
5 ♀♀	51-57	51-59 mm

(Koelz)

COLOURS OF BARE PARTS. As in 1483.

1483. Manipur Aberrant Bush Warbler. *Cettia flavolivacea alexanderi* Ripley

Cettia flavolivacea alexanderi Ripley, 1951, Postilla, Yale Peabody Mus., No. 6: 6 (Phek-Meluri Road, 60 miles east of Kohima, Naga Hills)

Baker, FBI No. 907 (part), Vol. 2: 503

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1481, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements. Nagaland, Manipur and Mizo Hills, from 1100 m in winter to 2900 m in summer. Affects tall grass and light, second-growth scrub.

Extralimital. The species extends to northern Vietnam and Fukien.

GENERAL HABITS and FOOD. As in 1481.

VOICE and CALLS. A short grating song (SDR). A short, extremely high and thin whistled strophe (Heinrich).

BREEDING. As in 1481.

MUSEUM DIAGNOSIS. Differs from *flavolivacea* (1481) in being darker below, more olive-buff with dark buffy breast and flanks; from *stresemanni* (1482) in being olive-brown above, not olive-green, and less yellow below with an orange-buff wash.

MEASUREMENTS

	Wing	Tail
2 ♂♂	52, 52	56, 57 mm
3 ♀♀	48-51	53-54 mm

(Koelz, SDR)

Weight 2 ♀♀ 6, 7 g (SDR):

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible black; lower mandible yellowish, brown at tip, pinkish horn at base. Legs and feet flesh to pale brown.

1484. Hume's Bush Warbler. *Cettia acanthizoides brunescens* (Hume)

Horreiter brunescens Hume, 1872, Ibis: 109 (neighbourhood of Darjeeling)

Baker, FBI No. 909, Vol. 2: 505

Plate 83, fig. 7

LOCAL NAMES. None recorded.

14

SYLVIINAE

Bhutan and Arunachal Pradesh in the Pachakshiri area (and probably throughout the State at suitable altitudes). Breeds between 2400 and 3600 m; recorded in winter between c. 700 and 2700 m. Affects long grass and thick scrub, bamboo and ferns. In winter may be seen in dense bushes and undergrowth of forest.

GENERAL HABITS. Usually difficult to see as it skulks in dense cover, but sometimes inquisitive and not shy.

FOOD. Insects.

VOICE and CALLS. A harsh, grating alarm-note and a *tick* call. Song, see 1483.

BREEDING. Season, May to August. Nest, domed with a side entrance, made of grass and bamboo leaves, lined with feathers, usually placed at the base of thick clumps of grass. Eggs, 3 or 4, varying from pink to dark terracotta, with a darker crown at the large end. Average size of 11 eggs 17.2 × 12.6 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Species and Subspecies, and Field Characters; for details of plumage Baker, loc. cit.

Young, like adults but edges of wings and tail darker. Underparts paler yellow, not so buffish.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	53-57	c. 14	22-23	47-57 mm
♀♀	50-60	13-14	21-23	50-59 mm

(BB, Rand & Fleming, SA)

(Bill by Rand & Fleming: 1 ♂ 15; 4 ♀♀ 14-17 mm)

Weight 1 ♂ 9 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill brown, paler yellowish brown on lower mandible. Legs and feet pale yellowish brown.

1482. Assam Aberrant Bush Warbler. *Cettia flavolivacea stresemanni* (Koelz)

Neornis flavolivaceus stresemanni Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 17 (Mawryngkneng, Khasi Hills)

Neornis flavolivaceus circumspetus Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 18 (Mawphlang, Khasi Hills)
Baker, FBI No. 907 (part), Vol. 2: 503

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1481, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements. Meghalaya in the Garo and Khasi hills, from c. 1200 m to the summits. Reaches the foothills in winter (arriving in December). Affects long grass and scrub, and bushes in pine forest.

GENERAL HABITS, FOOD and VOICE. As in 1481.

BREEDING. As in 1481.

MUSEUM DIAGNOSIS. Differs from *flavolivacea* in being darker above, dark greyish olive instead of brownish olive. Underparts greenish yellow, but flanks washed

16

SYLVIINAE

STATUS, DISTRIBUTION and HABITAT. Uncommon or local resident, subject to vertical movements. The Himalayas from Garhwal through Nepal, Darjeeling, Sikkim, Bhutan and Arunachal Pradesh; from 2400 to 3300 m (up to 3750 m in SE. Tibet). Recorded in winter at 1350 m (Garhwal) and c. 2100 m (Tibet), and in October at 2700 m (Tibet). Affects mostly dense ringal bamboo (*Arundinaria*) in pure stands or in open forest.

Extralimital. The species extends east through southern China to Formosa.

GENERAL HABITS. A warbler of the dense ringal bamboo on hillsides. A great skulker, very difficult to observe.

FOOD. Insects.

VOICE and CALLS. Song described by observers variously as 'most amazing', 'extraordinary', 'striking', and 'peculiar': a series of three or four long-drawn-out, thin whistles each lasting about two seconds, uttered slowly and deliberately in ascending scale, followed by several quick-repeated up and down *chee* notes resembling call of Upland Pipit (*Anthus sylvanus*, 1873) (Ludlow, Osmaston). Alarm-note a quick *birr*. *Cw* note *tik, tik, tik* (Ludlow).

BREEDING. Season, May and June. Nest, a domed structure of grass and bamboo leaves, copiously lined with feathers, the entrance near the top; placed low down in bushes in thick ringal undergrowth, c. 50 cm from the ground. Eggs, 2 or 3, deep terracotta with a ring or cap of darker tint at the large end. Average size of 20 eggs 17 × 12.8 mm (Baker).

MUSEUM DIAGNOSIS. Exposed portions of wings and tail brighter rufous than rest of upperparts; lores and behind eye dark brown; cheeks and ear-coverts mottled brown and yellowish. Underparts greyish buff, browner on flanks.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	52-56	12-13	21-22	40-49 mm
♀♀	47-50	11-12	—	— mm

(NBK, Baker)

COLOURS OF BARE PARTS. Iris brown. Bill brown, lower mandible fleshy brown. Legs and feet fleshy or yellowish brown.

CETTIA BRUNNIFRONS (Hodgson)

Key to the Subspecies

	Page
A Palest, less rufous on back..... <i>C. b. whistleri</i>	17
B Darker, more rufous on back..... <i>C. b. brunifrons</i>	17
C Darkest, more richly coloured..... <i>C. b. muridors</i>	18

WARBLERS

17

1485. Western Rufouscapped Bush Warbler. *Cettia brunifrons whistleri* (Ticehurst)

Horreus brunifrons whistleri Ticehurst, 1923, Bull. Brit. Orn. Cl. 44: 28 (Simla)
Baker, FBI No. 918, Vol. 2: 513

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1486, q.v.

STATUS, DISTRIBUTION and HABITAT. Common vertical migrant. The western Himalayas from the Pir Panjal range east to Mussooree (where it intergrades with *brunifrons*). Breeds between 3000 and 3600 m; winters between 1000 and 2100 m, probably reaching the foothills locally. Movements take place in April and October. Affects stunted juniper and furze on stony hillsides at or above tree-line, and bushes around open margs. In winter frequents bush-clad hillsides and undergrowth in open forest.

GENERAL HABITS, FOOD and VOICE. As in 1486.

BREEDING. As in 1486.

MUSEUM DIAGNOSIS. Differs from *brunifrons* (1486) in being paler on head, paler and less rufous on back and edges of wings, and in having paler under tail-coverts and thighs.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1486.

1486. Eastern Rufouscapped Bush Warbler. *Cettia brunifrons brunifrons* (Hodgson)

Prinia brunifrons Hodgson, 1845, Proc. Zool. Soc. London: 29 (Northern region of hills near snows, Nepal)
Baker, FBI No. 917 (part), Vol. 2: 512
Plate 83, fig. 5

LOCAL NAME. *Lik-lik-pha* (Lepcha).

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. *Above*, rufous olive-brown with a rufous-chestnut crown, long buff supercilium and dark stripe from lores through eye, all noticeable in the field. *Below*, throat and belly white; breast and sides grey; flanks and vent olive-brown. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Common vertical migrant. The Himalayas from Mussooree, east through Nepal, Darjeeling, Sikkim and Bhutan. Breeds between c. 2700 and 4000 m; winters from c. 2200 m down to the foothills. Affects dwarf rhododendron, *Barberis*, bamboo clumps and other bushes in forest clearings and margins, and thickets in open coniferous forest up to the limit of bracken growth. In winter frequents dense undergrowth in open forest, tea-gardens, bushes and high grass in shady areas.

GENERAL HABITS. Generally a skulker difficult to observe, but at times very inquisitive and forthcoming. Will perch on the top of a bush or rock to utter its song within a few metres of the observer. Usually feeds among the bushes but has been observed creeping on the ground in and out of crevices. When forced to break cover, seldom rises much above the ground or flies far, promptly diving into the nearest shrubbery, hardly giving a glimpse of itself.

FOOD. Insects.

WARBLERS

19

1488. Cetti's Warbler. *Cettia cetti albiventris* Severtzov

Cettia albiventris Severtzov, 1872, Vertik. Turkest. Zhivotn.: 131 (Kara Tau)
Cettia Cettioides Hume, 1873, Stray Feathers 1: 194 (Sind)
Baker, FBI No. 920, Vol. 2: 514
Plate 83, fig. 11

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 12 cm (5 in.).

FIELD CHARACTERS. *Above*, entirely rufous brown. A short supercilium and eye-ring whitish. *Below*, centre of throat, breast and belly nearly white, flanks and vent greyish brown. Sexes alike. The ruddy brown colour and longish round tail are diagnostic.

STATUS, DISTRIBUTION and HABITAT. Winter visitor to the plains of the Indus (Peshawar, Bahawalpur and Sind); possibly Baluchistan, though reported occurrence at Quetta and Sibi not yet confirmed (CBT). Very local. Affects partially submerged bulrushes, reeds, high grass and tamarisks, in *dhand*s and at the edge of inundated tamarisk jungle.

Extralimital. Breeds from Iran and the Caspian east to Russian Turkestan; winters south to southern Iran and Afghanistan. The species ranges west through the Mediterranean countries to the Iberian Peninsula and Morocco. For details see Vaurie, 1959, 1: 227.

Migration. Arrives in its winter quarters in October, leaves in March. Recorded as common on migration (March) in Kohat. At this time may be seen in reed-beds, gardens and dense cover near water.

GENERAL HABITS. A great skulker, usually detected only by its loud clicking note. Creeps about in very dense cover, seldom if at all showing itself or flying.

FOOD. Insects.

VOICE and CALLS. A rather loud *click* or *chey* repeated at intervals. Bursts of its loud, clear song may be heard before spring departure.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	68-73	11-12	25-26	52-65 mm
♀♀	60-69			

(Wing CBT, rest Baker)

COLOURS OF BARE PARTS. Iris brown. Bill brown above, paler and yellowish below. Legs and feet brownish flesh.

Genus BRADYPTERUS Swainson

Bradypterus Swainson, 1837, Classif. Bds. 2: 241. Type, by monotypy, *Bradypterus palustris* Swainson = *Sylvia brachyptera* Vieillot (= *S. baboreala* Vieillot)

Triturus Hodgson, 1845, Proc. Zool. Soc. London: 30. Type, by original designation, *T. lateralis* Hodgson

Horreus Hodgson, 1845, Proc. Zool. Soc. London: 31. Type, by subsequent designation, Gray, 1855, Cat. Gen. Subgen. Bds.: 351, *H. fasciatus* Hodgson = *T. lateralis* Hodgson

18

SYLVIINAE

VOICE and CALLS. Alarm-note, a shrill piercing whistle and a rasping scolding note (Ludlow). Call-note a soft *trik* . . . *trik*. Song, very characteristic and peculiar: a loud *sip-ti-ti-sip* uttered continuously, often followed by an extraordinary sound, rather like that produced by somebody blowing through a comb (Proud); 'a curious grating mouse-like sound, twice repeated and of a ventriloquial nature' (Osmaston). Song period mid April to early August with a resumption in September-October.

BREEDING. Season, May to early July. Nest, domed, made of grass, lined with feathers and placed in low shrubs about 50 cm from the ground. Eggs, usually 4, sometimes 3 or 5, varying from pale to dark terracotta with a cap of deeper colour at the large end. Average size of 30 eggs 17.9 × 13 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies.

Young, head same colour as back which is slightly duller than that of adult. Underparts greenish brown not grey, with a tinge of yellow. Supercilium light brown not whitish.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	42-51	11-12	18-20	43-45 mm
♀♀	43-47	11-12	18-19	41-47 mm

(BB, Stevens, Stresemann, SA)

Weight 6 ♂♂ 8.9; 2 ♀♀ 8.9 g (May-Oct.) — GD. 8 ♂♂ 6-8 g (Oct.-March) — SA.

COLOURS OF BARE PARTS. Iris hazel. Bill: upper mandible dark brown, lower pale yellowish, darker at tip. Legs and feet pale brownish or greyish brown.

1487. Arunachal Rufouscapped Bush Warbler. *Cettia brunifrons murivides* (Koelz)

Horreus brunifrons murivides Koelz, 1934, Contrib. Inst. Regional Exploration, No. 1: 18 (Bamanigaon, Assam)
Baker, FBI No. 917 (part), Vol. 2: 512

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1486, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements: Arunachal Pradesh and adjacent Tibet from 3000 to 4000 m. Habitat as in 1486. Winters from at least 1200 m down to the foothills and over the plains of the Brahmaputra, arriving in September; in the latter area frequents bracken and grass, especially along rivers. Not known to breed south of the Brahmaputra but recorded at the edge of the Garo-Khasi foothills in winter (Koelz, loc. cit.). Obtained in the Chin Hills of Burma (season ?).

Extralimital. The species extends to northern Yunnan.

GENERAL HABITS, FOOD and VOICE. As in 1486.

BREEDING. As in 1486.

MUSEUM DIAGNOSIS. Differs from *brunifrons* (1486) in being darker and richer coloured above.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1486.

20

SYLVIINAE

Elaphornis Legge, 1879, Bds. Ceylon: 514. Type, by monotypy, *Brachypteryx ? palliseri* Blyth

Bill slender and straight. Rictal bristles minute and inconspicuous. Tail much rounded, about equal to wing or longer; rectrices rather pointed.

Key to the Species

	Page
A Lower throat distinctly spotted	
1. Breast grey	<i>B. thoracicus</i> 20
2. Breast buff	
a. Bill from skull over 16 mm	<i>B. major</i> 22
b. Bill from skull under 16 mm	<i>B. taczanowskii</i> 24
B Throat not spotted (or sometimes with faint specks)	
3. Throat ochraceous buff contrasting with rest of underparts	<i>B. palliseri</i> 26
4. Throat colour not contrasting with rest of underparts	<i>B. lutescentis</i> 25

BRADYPTERUS THORACICUS (Blyth)

Key to the Subspecies

Flanks paler	<i>B. t. przewalskii</i>
Flanks darker	<i>B. t. thoracicus</i>

1489. Western Spotted Bush Warbler. *Bradypterus thoracicus przewalskii* (Sushkin)

Dumeticola thoracica przewalskii Sushkin, 1925, Proc. Boston Soc. Nat. Hist. 38: 41 (Dhachar Mts, upper Hwangho)

Dumeticola thoracica kaschmirensis Sushkin, 1925, Proc. Boston Soc. Nat. Hist. 38: 42 (northwestern Himalaya)

Baker, FBI No. 810 (part), Vol. 2: 405

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1490, q.v. See Museum Diagnosis.

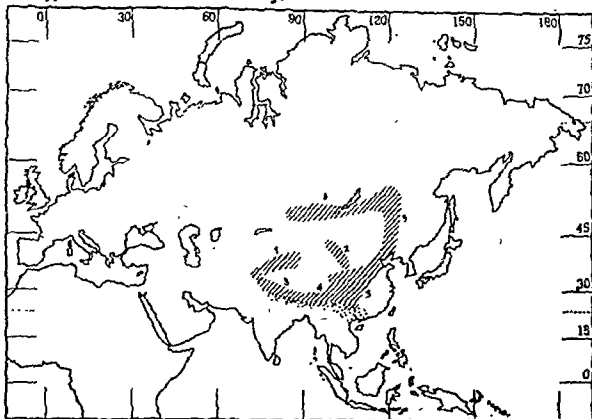
STATUS, DISTRIBUTION and HABITAT. Fairly common vertical migrant. The western Himalayas in Kashmir (specimens in Brit. Mus.), Garhwal and Kumaon. Breeds between 3000 and 4000 m mainly around 3600 m. There are no winter records for this race; the eastern race is known to descend to the foothills in the cold season. Affects open grassy places, especially rank grass and *Rumex* growing on well-manured soil where cattle are temporarily quartered; occasionally also low shrubs and dwarf junipers.

Extralimital. 'Shensi (Tungling Range) westward through Kansu and Szechuan to eastern Tsinghai north to eastern Nan Shan, south through eastern and central Sikang to northern Yunnan, and possibly northern Burma' (Vaurie).

GENERAL HABITS and FOOD. As in 1490.

WARBLERS

21

Bradypterus thoracicus and *B. major*

Distributional ranges

- Breeding
 Winter (species *thoracicus* only)
 1 *B. m. major* (1491). 2 *B. m. netrix* (RE). 3 *B. t. przewalskii* (1489).
 4 *B. t. thoracicus* (1490). 5 *B. t. davidi* (RE). 6 *B. t. sushkini* (RE).

VOICE and CALLS. 'A most persistent see-see note, and when uttering its song usually rises a short distance above the ground dropping again out of sight into the grass' (A. E. Osmaston). This description appears to be that of its song.

BREEDING. As in 1490.

MUSEUM DIAGNOSIS. Differs from *thoracicus* (1490) in being paler on flanks. Eye-streak a little more distinct.

MEASUREMENTS and COLOURS of BARE PARTS. As in 1490.

1490. Eastern Spotted Bush Warbler. *Bradypterus thoracicus thoracicus* (Blyth)

D. (umeticola) thoracica Blyth, 1845, Jour. Asiat. Soc. Bengal 14: 584 (Nepal)

Baker, FBI No. 810 (part), Vol. 2: 405
Plate 83, fig. 10

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. A skulking plain brown bird of scrub and shrubbery. Above, dark rufous-brown. Sides of head and supercilium grey. Below, chin white; throat ashy spotted with blackish brown. Breast grey; centre of belly

WARBLERS

23

FIELD CHARACTERS. Above, olive-brown. A short pale supercilium and a pale eye-ring. Below, chin and throat white, the latter spotted with brown, more heavily so at base. Breast and under tail-coverts fulvous; sides of breast and flanks olive-brown; centre of belly white. Sexes alike.

Doubtfully distinguishable from 1489 unless in the hand. See Key to the Species.

STATUS, DISTRIBUTION and HABITAT. Fairly common vertical migrant. The extreme western Himalayas from Gilgit and the Indus Valley (Kagan) east through Ladakh (to Upshi) and Kashmir (to the Suru Valley). Breeds between 2400 and 3600 m, arriving on its summer grounds in early June. Winters down to c. 1200 m. Affects low thorny scrub (*Lonicera*, *Hippophae*) interspersed with rank grass, bracken and tangled herbage fringing the forest, and irrigated crops (barley etc.).

This species and *B. thoracicus* are presumably allopatric and have the same habits; study of their distribution between Kashmir and Garhwal is desirable.

Extralimital. The species extends to the Kun Lun range and western Astin Tagh.

GENERAL HABITS. A skulker, scuttling off like a mouse at amazing speed through the rootstocks of the grasses and difficult to flush; when forced to fly will drop again into cover after a few hurried metres. When alarmed flicks its tail and wings.

FOOD. Insects.

VOICE and CALLS. Alarm-note, a grating *irr*. Song said to be 'strictly that of a *Locustella*' (Brooks); described as a series of strident monotonous clicks (up to 200 without a break) at a rate of about three per second, rendered as *chipi-chipi-chipi*... or *clipper-clipper-clipper*... (Whistler, Osmaston). Usually uttered from the topmost twig of a bush.

BREEDING. Season, June and July. Nest, a deep cup of grass lined with finer stems and a few hairs, resembling that of *Locustella*; placed very near the ground at the base of some low shrub. Very difficult to find as the owner usually runs through the grass on leaving the nest. Eggs, 3, or more often 4, pinkish, spotted all over but especially at the broad end with bright terracotta, with a few underlying markings and occasionally very thin black lines. Average size of 34 eggs 18.9 × 14.3 mm (Osmaston).

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species.

Young, like adult but upperparts browner; underparts pale yellow, throat spots indistinct and cloudy; flanks washed with ochraceous-olive.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	55-65	c. 18	21-22	59-63 mm (Hartert)

COLOURS of BARE PARTS. Iris pale brown. Bill: upper mandible brownish black, lower brownish flesh. Legs and feet pale brownish flesh.

22

SYLVIINAE

white; flanks olive-brown. Under tail-coverts olive-brown barred with white. Sexes alike.

The boldly spotted throat, grey breast and barred under tail-coverts are diagnostic.

STATUS, DISTRIBUTION and HABITAT. Fairly common vertical migrant. Nepal, Sikkim, Bhutan and Arunachal Pradesh from 3300 to 4350 m (old summer records at '5000 feet' and '400 feet' are certainly erroneous). Recorded in winter in the terai, duars and the plains of Jalpaiguri district; south to Sylhet (Godwin-Austen) and Calcutta (Holmes, 1968, JBNHS 65: 779). A specimen of juvenile male from 'Shillong' in the British Museum is dated 30 August. Affects shrubbery on the edge of open grassy places and pastures, dwarf junipers and rhododendrons near timber-line, low scrub above timber-line, and bracken, rank grass and bushes between patches of forest. In winter may be seen in heavy grass jungle and reed-beds (*Phragmites*).

Extralimital. 'Neighbouring parts of southern Tibet and southwestern Sikkim to Pome...' (Vaurie). Southeastern Tibet. The species ranges north to Amurland, Transbaikalia and Altai.

GENERAL HABITS. Apparently not such an arant skulker as other bush warblers, showing itself somewhat more freely as it weaves its way through the shrubbery.

FOOD. Insects.

VOICE and CALLS. As in 1489.

BREEDING. Season, May to July. Nest, domed or deep cup-shaped, loosely made of rather coarse grass outside, finer inside, without true lining but often with a feather or two; placed in tufts of grass or in low scrub, usually within c. 50 cm from the ground, well concealed. Eggs, 3 or 4, white, lightly freckled with pinky red or brick-red, with a tendency to form a ring or cap at the large end. Average size of 50 eggs 18.4 × 13.9 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies. For details of plumages see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♂	50-58	10-11	18-19	46-53 mm
♀ ♀	52-55			

(Wing NBK, Ludlow; rest Baker)

Bill from skull c. 15 mm

Weight 1 ♂ 10 g (SDR).

COLOURS of BARE PARTS. Iris brown. Bill dark brown to black. Legs and feet fleshy yellow to pale brown.

1491. Largebilled Bush Warbler. *Bradypterus major major* (Brooks)

Dumeticola major Brooks, 1871, Proc. Asiat. Soc. Bengal: 210 (Cashmir)

Baker, FBI No. 808, Vol. 2: 403

Plate 83, fig. 13

LOCAL NAMES. Tiktik pitta (Kagan Valley); Chibi marta (Ladakh).

SIZE. Sparrow —; length c. 13 cm (5 in.).

SYLVIINAE

24

1492. Chinese Bush Warbler. *Bradypterus taczanowskii taczanowskii* (Swinhoe)

Locustella taczanowskia Swinhoe, 1871, Proc. Zool. Soc. London: 355 (Transbaikalia)

Baker, FBI No. 809, Vol. 2: 404

Plate 83, fig. 15

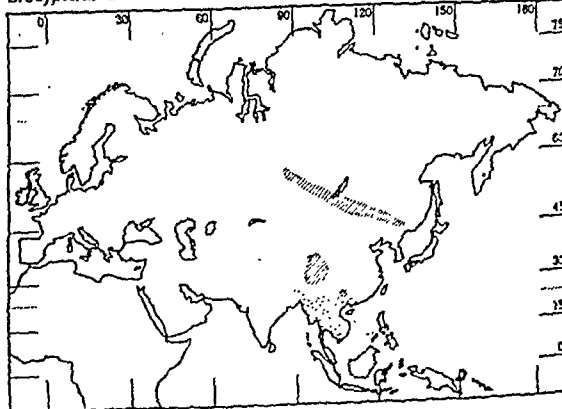
LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Above, russet olive-brown; a short, narrow whitish supercilium. Below, chin and throat whitish, the latter with a few brown specks. Rest of underparts buffish suffused with pale brown on breast and flanks. Sexes alike.

Difficult to identify unless in the hand.

STATUS, DISTRIBUTION and HABITAT. Winter visitor. Three records: 'Bhutan duars' (Mandelli) and eastern Nepal terai (Biswas, JBNHS 65: 783-4; Fleming & Traylor, *Feldiana* 35: 541). In view of its skulking and silent habits, may be more frequent than the records indicate. Affects stubble

Bradypterus t. taczanowskii

Breeding

Winter

fields, grass and bushes, standing rice until cut, and reed-beds, apparently in the plains only. May be expected between October and March. In summer frequents shrubs, undergrowth and grassy glades in open Altai forest from c. 2800 to 3600 m.

Extralimital. Breeds in southern Siberia from the Yenisey to Ussurland and adjacent parts of northern China and Mongolia; also from northern Szechuan and eastern Tsinghai south to southeastern Tibet (Ludlow, *ibid*

WARBLERS

25

1951: 563) and northern Yunnan (Likiang Mts, specimens collected by J. F. Rock). The subspecies *chui* (Yen) 1933 was described on specimens collected on Yao Shan, Kwangsi, in June. Winters in southern China, northern Indochinese countries and southern Burma.

GENERAL HABITS. Very skulking, restless and difficult to observe. Escapes by creeping on the ground among grass roots and under small bushes. On being flushed, rises a little but settles again almost at once to resume the creeping.

FOOD. Insects.

VOICE and CALLS. A call-note similar to but recognizable from that of *Locustella lanceolata* (1544) which frequents the same grounds. In the breeding season has a strident song reminiscent of that of *Locustella nana* (1545) but shorter.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species. Tail obsoletely cross-rayed above, with white shafts to the feathers below.

Young, yellowish buff below, and slightly paler than adult above.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	52-56	c. 14	c. 20	53-58 mm (MD, Baker)

COLOURS OF BARE PARTS. Iris pale brown. Bill: upper mandible dark brown, lower yellowish, brown at tip. Legs and feet flesh colour.

1493. **Brown Bush Warbler.** *Bradypterus luteoventris luteoventris* (Hodgson)

Tribuna luteoventris Hodgson, 1845, Proc. Zool. Soc. London: 30 (Nepal)

Baker, FBI No. 811, Vol. 2: 406

Plate 83, fig. 8

LOCAL NAME. *Daotisha-tchik* (Cachari).

SIZE. Sparrow — ; length c. 13 cm (5 in.).

FIELD CHARACTERS. Above, rufous-brown; a short pale supercilium and a pale eye-ring. Below, chin, throat and belly white tinged with buff on sides; throat sometimes with fine dark specks. Upper breast, flanks and under tail-coverts rufous-brown. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. A vertical migrant, locally common. Nepal (probably extreme east and not recorded since Hodgson), Sikkim, Bhutan, Arunachal Pradesh (Lhalung, Pachakshiri area, and probably throughout the State); also Meghalaya in the Khasi and Cachar hills, Nagaland, Manipur (?) south to the Chin Hills of Burma. Breeds between 2100 and 3300 m, in a lower zone than *B. thoracicus*, but the two species may occur on the same grounds. In the Khasi Hills breeds between 1200 and 1600 m and on Mt Victoria from 2500 m to the summit. Affects grassy downs, high grass- and bracken-covered hillsides in treeless regions, but in the Khasi Hills frequents undergrowth of bushes, bracken and grass in pine forest. Winters in the foothills.

Extralimital. Extends to central China, Fukien and northern Vietnam.

Other subspecies in Vietnam, southeastern China, Formosa and Luzon.

GENERAL HABITS. Skulking; similar to those of other bush warblers.

WARBLERS

27

FOOD. Grubs, worms, green grasshoppers and other insects.

VOICE and CALLS. Usually very silent, the only note being a low, single, explosive *quizee* or *qiz* (Betts)—sometimes sounding more like *queek* (Henry). This also uttered on alarm, e.g. when nest is approached. In the breeding season, a queer, rather squeaky song of a few scattered notes given from a commanding position on a stem (Betts, Henry).

BREEDING. Season, March to May, occasionally (second brood ?) in August-September. Nest, a deep, substantial cup of moss, dead leaves and rootlets, lined with skeleton leaves; occasionally nests may be made of bamboo leaves and lined with fine grass as is usual in other bush warblers; usually placed in a low shrub or clump of bamboo within a metre or so from the ground, often near a forest path. Eggs, usually 2, pale pink, covered with fine purple-brown specks often coalescing at the larger end; also numerous underlying grey freckles. Average size of 5 eggs 21.7 × 16.1 mm (Phillips). A close sitter; when disturbed the birds scuttle about under cover in the immediate vicinity continually uttering their alarm-notes. Feeding of young by both sexes. Share in other duties not determined.

MUSEUM DIAGNOSIS. See Field Characters.

Young, like adult but rufous throat replaced by whitish, the feathers tipped with olive-grey; rest of underparts more yellow.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
4 ♂♂	61-64	18-19	25-28	65-70 mm
2 ♀♀	60, 61	18	24, 26	65 mm (HW)

Weight 1 ♂ 9 g (SDR).

COLOURS OF BARE PARTS. Iris red-brown to bright red (♂), pale buff (♀). Bill: upper mandible black, lower paler and greyer. Legs and feet purplish brown or mauve-grey.

Genus LUSCINIOLA Gray

Lusciniola Gray, 1841, List Gen. Bds., 2nd ed., 28. Type, by monotypy.

Sylvia melanopogon (Temminck)

1st primary (as.) less than half length of 2nd, which reaches almost to tip of wing. Tail with 12 rectrices, rounded, nearly as long as wing. Bill thin and pointed. Rectal bristles small, not obvious.

1495. **Moustached Sedge Warbler.** *Lusciniola melanopogon mimica* Madarász

Lusciniola mimica Madarász, 1903, Vorläuf. neuen Rohrängler [a leaflet]

(Transcaspia and Persia = Tedjen in Transcaspia, and Khorasan and Seistan in Iran)

Baker, FBI No. 821, Vol. 2: 418

Plate 85, fig. 10

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

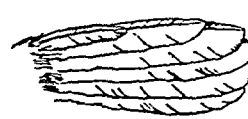
26

SYLVIINAE

FOOD. Insects.

VOICE and CALLS. Alarm-notes *tek . . . tek*. Song, a very peculiar grating trill deceptively like that of a grasshopper (Heinrich). Described as a rapid repetition of two notes, a sort of screech followed by a sharp short note, at the rate of two or three pairs of notes per second, *creet-ul-creet-ul . . .*; very slight pauses are made every few seconds (Smythies). Sings from a concealed perch near the ground.

BREEDING. Season, April to July. Nest, usually a deep cup, sometimes domed, made of grass blades with finer material inside; placed in bushes or



Wing, x c. 1

clumps of grass, generally within a metre from the ground, sometimes a little higher; rarely on the ground, under a tuft of grass. Eggs, normally 4, often 3, rarely 5, white to pale pink, marked with reddish brown freckles or sometimes blotches, in some eggs coalescing to form a crown around the large end. Average size of 200 eggs 18.2 × 14.3 mm (Baker). Building and incubation by both sexes but mostly by female; period 12 or 13 days.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species. First primary (as.) about half the length of second.

Young, like adult but underparts tinged with yellow.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	51-54	c. 14	c. 19	55-56 mm
♀♀	49-52			

(Stresemann, Ludlow, Baker)

COLOURS OF BARE PARTS. Iris pale brown. Bill: upper mandible dark brown or blackish, lower fleshy yellow. Legs and feet flesh colour, fleshy yellow to fleshy brown.

1494. **Ceylon Bush Warbler.** *Bradypterus palliseri* (Blyth)

Brachypteryx palliseri Blyth, 1852, Jour. Asiat. Soc. Bengal 20: 178 (Ceylon)

Baker, FBI No. 812, Vol. 2: 408

Plate 83, fig. 9

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Above, brown. A pale grey supercilium and a pale eye-ring. Below, throat ochraceous buff, a diagnostic character. Rest of underparts olive-grey, centre of belly pale yellowish. Sexes alike, except that male has red iris and female pale buff.

STATUS, DISTRIBUTION and HABITAT. Endemic to Ceylon. Common resident in the hills above 900 m, more common above c. 1300 m. Affects undergrowth of *Strobilanthes* and dwarf bamboo in damp forest, occasionally venturing into tea-plantation where it borders the jungle.

GENERAL HABITS. Skulks in dense cover, creeping about the stems, seldom ascending more than a metre or two above the ground; continually flicks its tail. In the non-breeding season may be seen in small family parties.

28

SYLVIINAE

FIELD CHARACTERS. Above, rufous-brown streaked with dark brown.

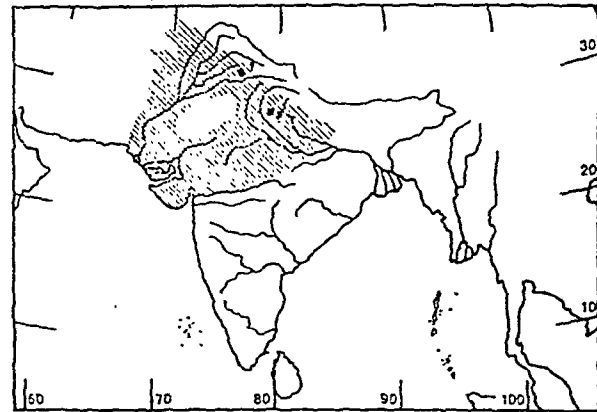


x c. 1

Crown and nape black, the feathers edged with rufous-brown. A conspicuous white supercilium. Below, throat and upper breast white; rest of underparts cream-buff. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Fairly common winter visitor; partly resident and breeding very locally but often overlooked; thus distribution imperfectly known. Baluchistan, Sind, the flood plains of the Indus R. system in Punjab, and western Gangetic Plain south through eastern Rajasthan (Bharatpur) to Madhya Pradesh (Schore) and Gujarat (Kathiawar, Kutch). Breeds in Baluchistan (around c.

Lusciniola melanopogon mimica



Winter range

Breeding records

30°N.—Meinertzhagen *epud* Ticehurst, JBNHS 31: 697); circumstantially also in Punjab (Gurdaspur dist., Currie, *ibid.* 24: 603) and Kumaon terai (Lalkua, Smythies, *ibid.* 44: 295). Affects reed-beds and partially submerged rush and tamarisk thickets around jheels (or *dhaads*) and rivers.

Extralimital. Breeds from the Caspian Sea to Russian Turkestan and south to Iraq, southern Iran and Afghanistan. The species extends west through the Mediterranean countries to Spain and Tunisia.

Migration. Arrives on its winter grounds in August-September, leaves in March, some individuals being still seen in April. Movements take place mostly in March and September. Noted on passage in Chagai (Baluchistan) and Kohat (NW. Frontier Province) up to 1400 m.

GENERAL HABITS. Creeps about among partially submerged reeds and bushes in search of food, frequently exposing itself on reed tops on misty

WARBLERS

33

Tail of non-breeding birds longer than in breeding dress. Prenuptial moult in spring involves all feathers except wing-coverts. Postnuptial moult complete.

MEASUREMENTS

	Wing	Tail	
		summer	winter
♂ ♀	44-47	25-26	46-48 mm (Baker)

Bill and tarsus as in 1496.

COLOURS OF BARE PARTS. As in 1496.

CISTICOLA JUNCIDIS (Rafinesque)

Key to the Subspecies

		Page
A	Paler.....	<i>C. j. curritans</i> 33
B	Darker and more richly coloured	
1	Bill and size as in A.....	<i>C. j. salimalii</i> 35
2	Bill as in A; size smaller, wing average 50 mm.....	<i>C. j. malaya</i> 37
3	Bill stronger and longer; 12 mm or over, size larger, wing average c. 54 mm.....	<i>C. j. omalura</i> 36

1498. Streaked Fantail Warbler. *Cisticola juncidis curritans* (Franklin)

Prinia curritans Franklin, 1831, Proc. Zool. Soc. London: 118

(between Calcutta and Benares)

Baker, FBI No. 825 (part), Vol. 2: 422

Plate 85, fig. 20

LOCAL NAMES. *Ghāski-phūtki*, *Ghāski-pitpiti* (Hindi); *Khergusa* (Bhagalpur); *Tūntūnia* (Monghyr); *Tedru-jitta* (Telugu).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. A tiny rufous-brown warbler boldly streaked with black above, with a prominently white-tipped fan-shaped tail. Underparts whitish buff, darker on flanks. Sexes alike. Absence of nuchal collar, and broader whitish tips to rectrices, distinguish it from *C. exilis* (1496-7).

STATUS, DISTRIBUTION AND HABITAT. A common and widespread resident, subject to local movements. Pakistan, Nepal, Bangladesh and India from the Himalayan foothills south to Kanyakumari (except for the range of *salimalii*), and Ceylon in the low-country Dry zone (Phillips, 1958, SZ 28: 191).

Intergrades with *malaya* in Manipur and adjacent regions. Absent from desert tracts; scarce in Tamil Nadu. Ascends the hills up to c. 1400 m, locally to 1900 m (Himalayas) and 1800 m (Meghalaya and southern India). Affects tall grass and reed-beds, especially along the margins of tanks, lagoons, tidal creeks, wet paddyfields, and also open, dry grasslands and crops of cereals, lucerne, sugarcane, etc. Paddyfields have probably attracted this species into the Himalayan valleys where they are its almost exclusive habitat.

Extralimital. The species ranges from Africa and southern Europe through southern Asia to China, Japan and south to northern Australia.



x c. 1

WARBLERS

35

VOICE AND CALLS. One alarm-call is an excited, rapid *zit-zit-zit* (Lynes). Song: see Display, above. Very silent outside the breeding season.

BREEDING. Season, correlated with the rains and availability of suitable ground vegetation. Over most of peninsular India breeding starts in May, in Assam in March and in Sind in April or even as early as February, and generally lasts till October; in Ceylon breeds most of the year with a peak period about June. Two or three broods may be reared. Nest, of two types: the more common is a small, cylindrical, narrow purse of fine grass-stems drawn together, fastened with cobweb and vegetable down. The other type is a deepish oval pouch, the small end up with a large entrance at the top; felted inside with vegetable down. It is fastened to several stems of grass which are incorporated with the nest materials, thus reinforcing the otherwise flimsy structure; usually hidden in the base of grass tufts and seldom more than half a metre or so above the ground — sometimes in clumps of rushes standing in water. Often several nests in a restricted patch, in a scattered colony. Eggs, in most of the Peninsula generally 5, sometimes 4 or 6, in Assam normally 4, often 5, in Ceylon mostly 3 or 4; ground colour usually white, sometimes pale blue, speckled or sometimes blotched with pale red or red-brown. Average size of 400 eggs 15 × 11.5 mm (Baker). Building of nest and incubation by both sexes though more by female; period ten days. Often brood-parasitized by cuckoo (*C. canorus*) in Assam — Baker, JBNHS 17: 792, 876.

MUSEUM DIAGNOSIS. See keys to the Species and Subspecies; for details of plumage Baker, loc. cit. Winter plumage rather lighter in colour, supercilium more clearly defined. Complete moult in May (Sind).

Young (juvenile) resembles adult in winter plumage but underparts yellowish and upperparts more streaked with ochraceous, especially on head.

For differences from *salimalii*, *omalura* and *malaya*, see 1499, 1500 and 1500a respectively.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	48-55	10-11	19-20	31-43 mm
♀ ♀	45-55	11-12	18-19	29-43 mm

(SA, HW, Rand & Fleming)

Tail, summer: 36-40; winter 41-47 mm (Ticehurst)

Weight 1 ♂ (June) 8 g — GD; 2 ♂♂ (March) 6, 7 g — SA.

COLOURS OF BARE PARTS. Iris hazel-brown, olive-brown or straw-coloured. Bill: upper mandible brown, lower flesh; mouth black in summer, fleshy pink in winter. Legs and feet flesh-coloured.

1499. Kerala Streaked Fantail Warbler. *Cisticola juncidis salimalii* Whistler

Cisticola juncidis salimalii Whistler, 1936, Jour. Bombay nat. Hist. Soc. 38: 487 (Peermade, Travancore)

Baker, FBI No. 825 (part), Vol. 2: 422

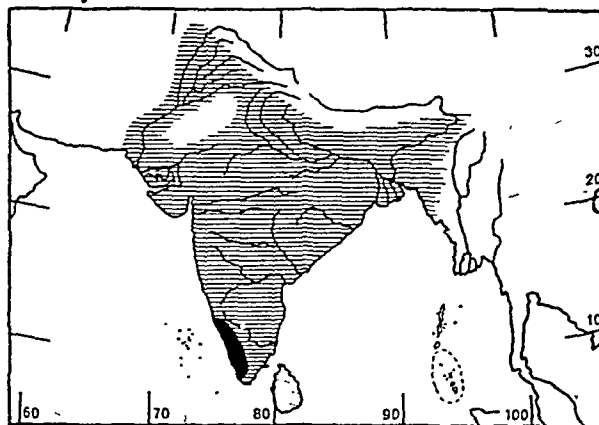
LOCAL NAME. *Potappottas* (Malayalam).

SIZE. Sparrow —; length c. 10 cm (4 in.).

34

SYLVIINAE

Cisticola juncidis



Distributional ranges

	<i>curritans</i> (1498).		<i>salimalii</i> (1499).
	<i>omalura</i> (1500).		<i>malaya</i> (1500a).

MIGRATION AND MOVEMENTS. Mostly a summer visitor to N.W.F.P., northern Punjab and Nepal Valley (March or April to September). In other parts of its range it is subject to local, somewhat unpredictable and erratic movements with seasonal conditions, mainly rainfall or drought, affecting its habitat. In some areas may be a winter visitor only (e.g. Khandesh) while in others (Ghazipur, Mhow) it is a summer visitor, sometimes disappearing without visible reason. Mostly a resident in southern India, Bangladesh and Assam.

GENERAL HABITS. Keeps singly or in loose 'colonies' of 10 to 15 birds. Skulks among grass and herbage, making short low flights when flushed and pitching quickly into the stems again. Feeds on or near the ground, seldom flitting about or on to tops of bushes or grass clumps in the manner of wren-warblers. Flight jerky, undulating — similar to that of *Prinias*.

Display. Has a rambling, mounting flight, in which the white-tipped fanned tail is conspicuous — each upward motion accompanied by a sharp characteristic *zit* or *chip*, sounding in the distance remarkably like the snip of a barber's scissors. This also uttered from a grass tip at the rate of c. 3 *chips* in 2 seconds. Sometimes skims over the vegetation, at other times rises high in the air in erratic zigzags, flying in wide circles and suddenly nose-diving after a while to alight gently on a grass blade.

FOOD. Insects: small grasshoppers, weevils, tenebrionid beetles, ants, aphids and caterpillars identified among stomach contents (Mason & Lefroy, 1912). Also takes spiders and, rarely, some green tender seeds.

36

SYLVIINAE

FIELD CHARACTERS. As in 1498, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident in Kerala from the low country to 2100 m. Affects paddyfields, tall grass especially where moist or waterlogged, and swampy depressions among the hilltops.

GENERAL HABITS, FOOD AND VOICE. As in 1498.

BREEDING. Season, August to March. Nest and eggs as in 1498.

MUSEUM DIAGNOSIS. Differs from *curritans* in being darker, more richly coloured. Rump bright reddish brown (v. rufous) and flanks washed with bright rufous.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂ ♂ (summer)	51-56	11	19	33-34 mm
6 ♂ ♂ (winter)	47-53	11	19	37-40 mm
3 ♀ ♀ (summer)	45-49	11	18-19	33-37 mm
4 ♀ ♀ (winter)	46-49	11	17-18	35-40 mm (HW)

COLOURS OF BARE PARTS. Iris pale hazel-brown or pale olive-brown. Bill: upper mandible and tip of lower pale horny brown; commissure and rest of lower mandible pinkish flesh; mouth pink, brownish pink or pale yellowish flesh, in some individuals streaked or blotched with brown (seasonal variations? See 1498). Legs and feet pale brownish flesh; claws dusky.

1500. Ceylon Streaked Fantail Warbler. *Cisticola juncidis omalura* Blyth

Cisticola omalura Blyth, 1851, Jour. Asiat. Soc. Bengal 20: 176 (Ceylon)

Baker, FBI No. 826, Vol. 2: 424

LOCAL NAMES. *Tanacoli-kurullā* (Sinhala); *Tinu-kūrūri*, *Yalālān* (Tamil).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1498, q.v.

STATUS, DISTRIBUTION AND HABITAT. Subspecies endemic to Ceylon. Common resident in the low-country Wet zone and Hill zone up to over 2100 m. Affects paddyfields, swamps and tall grassland. Very common in *Salicornia* and other salt-marsh herbage in northern coastal areas (Jaffna district).

GENERAL HABITS, FOOD AND VOICE. As in 1498.

BREEDING. Season, most of the year but with two peak periods: March-April and July to September. Nest, as in 1498. Eggs, 3 or 4, sometimes 5, similar to those of *curritans*. Average size of 50 eggs 15.7 × 11.9 mm (Phillips).

MUSEUM DIAGNOSIS. As richly coloured as *salimalii* but distinguished by its much larger bill. Complete moult takes place in October.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	50-58	12-14	20-21	35-42 mm
♀ ♀	49-50	12-13	19-20	35-39 mm (HW)

Weight 1 ♂ 8 g (SDR).

COLOURS OF BARE PARTS. As in 1499.

WARBLERS 37

1500a. **Malay Streaked Fantail Warbler.** *Cisticola juncidis malaya* Lynes

Cisticola juncidis malaya Lynes, 1930, Ibis, Suppl.: 92 (Klang, Malay Peninsula)
Not in Baker, FBI

LOCAL NAMES. None recorded.
SIZE. Sparrow — ; length c. 10 cm (4 in.).
FIELD CHARACTERS. As in 1498, q.v.
STATUS, DISTRIBUTION and HABITAT. Common resident. The Nicobar Islands (Car Nicobar, Trinkat, Camorta and Great Nicobar). Affects grass fields.

Extralimital. Lower Burma, Thailand, Malay Peninsula, Sumatra and western Java.

GENERAL HABITS, FOOD and VOICE. As in 1498.

BREEDING. Unrecorded. Presumably as in 1498, but season apparently July to January (from circumstantial evidence of plumage).

MUSEUM DIAGNOSIS. Similar to *curvatus* but more richly coloured. Pattern stronger and colour markedly richer throughout. See Key to the Subspecies.

Young shows much more yellow around chin and breast than *curvatus* and has more prominent streaks on head.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
Nicobars (decidedly larger)				
3 ♂♂	51-53	12-13	18-20	40-45 mm
Burma, Thailand, West Sumatra				
10 ♂♂	45-53	11-12	18-20	30-40 mm
3 ♀♀	43-46	11-12	17 (3)	34 (3) mm (MD)

COLOURS OF BARE PARTS. Unrecorded, probably as in *curvatus*.

Genus *PRINIA* Horsfield

Prinia Horsfield, 1821, Trans. Linn. Soc. London 13: 165. Type, by monotypy, *Prinia familiaris* Horsfield

Sitta Hodgson, 1836, Asiat. Res. 19: 183. Type, by original designation, *Sitta criniger* Hodgson

Laticilla Blyth, 1845, Jour. Asiat. Soc. Bengal 14: 596, new name for *Eurycerus* Baird, 1843. Type, by monotypy, *E. burnesii* Blyth

Franklinia 'Blyth' = Jerdon, 1863, Bds. India 2: 186. Type, by monotypy, *Prinia buchanani* Blyth

Cf. Deignan, H. G., 1942, *Smiths. Misc. Coll.* 103: 1-12

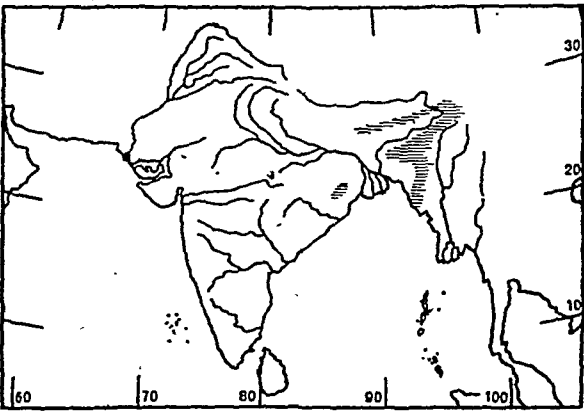
Key to the Species

	Page
I Upperparts streaked	
A Underparts ashy white..... <i>P. burnesii</i>	74
B Underparts buff..... <i>P. criniger</i>	69
II Upperparts not streaked	
C Belly lemon-yellow..... <i>P. flaviventris</i>	66
D Throat black..... <i>P. atrogularis</i>	72

WARBLERS 39

STATUS, DISTRIBUTION and HABITAT. Common resident. Nepal (one Hodgson specimen), Sikkim, Bhutan, Arunachal Pradesh (?), the Patkai Range, Nagaland, Manipur, Meghalaya and Mizoram; Bangladesh south to the Chittagong Hill Tracts. Also northeastern Orissa in the Simlipal hills (Mukherjee, *Rec. Indian Mus.* 50: 166). Breeds in the foothills up to

Prinia r. rufescens



Distributional range

c. 1200 m (Sikkim) and up to 1800 m, mostly 500-1200 m in the eastern hills. Affects long grassland or patches of light grass under groves of deciduous trees, and low *Eupatorium* and other weeds and scrub on openly forested hillsides, terraced cultivation, fringes of forest and secondary growth. More of a forest bird than *P. hodgsonii*, though it seldom nests inside forest.

Extralimital. Extends east to Vietnam. Other subspecies in southern Thailand and Malaya.

GENERAL HABITS. Keeps singly, in pairs or small parties. Seldom shows itself except for momentary glimpses as it makes short, jerky flights of a few metres to dive into cover again. Thereafter its presence is revealed only by the slight movement of herbage which marks its progress through the stems. Occasionally found in hunting parties with *Stachytis* or other skulking babblers. Habits very similar to those of *Prinia hodgsonii* (1503), q.v.

FOOD. Insects.

VOICE and CALLS. 'A feeble seep (or sip), seep, seep... confusable with notes of *Rhipidura hypoxantha* or *Scircus burkii*' (SA). Described also as rather harsh grating or churring trills, and a continual monotonous chip, and a double chip-wee chip-wee. Song said to be similar to that of *P. hodgsonii*, but no comparable description available.

38 SYLVIINAE

E Not as C or D		Page
a Crown and nape dark grey or slaty		
1 Forehead usually with some rufous..... <i>P. cinerocapilla</i>		48
2 No rufous on forehead..... <i>P. socialis</i>		57
b Crown not dark grey		
3 Belly white or creamy white		
i Crown rufous..... <i>P. buchanani</i>		46
ii Crown sandy brown concolorous with back		
a ¹ Crown streaked..... <i>P. gracilis</i>		49
b ¹ Crown not streaked		
o ¹ Larger; tarsus usually 22 mm or more, bill (from skull) 14 mm or more; upperparts earthy brown with white outer rectrices (summer) or warm rufous brown (winter)..... <i>P. sylvatica</i>		62
o ² Smaller; tarsus usually 21 mm or less, bill (from skull) 14 mm or less; upperparts earthy brown, outer rectrices pale brown..... <i>P. subflava</i>		52
iii A grey pectoral band..... <i>P. hodgsonii pectoralis</i> (Ceylon race)		43
4 Belly ochraceous		
iv Tail grey, pectoral band present or absent..... <i>P. hodgsonii</i> (continental races)		40
v Tail rufous..... <i>P. rufescens</i>		38

1501. **Rufous Wren-Warbler.** *Prinia rufescens rufescens* Blyth

Pr. (inia) rufescens Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 456 (Arracan)

Franklinia rufescens austeni Baker, 1924, Bull. Brit. Orn. Cl. 44: 39 (Lhota, Naga Hills)

Franklinia rufescens assamensis Baker, 1924, Fauna Brit. Ind., Bds. 2: 427. *Nom. nud.*

Baker, FBI No. 829, Vol. 2: 427
Plate 84, fig. 16

LOCAL NAME. *Daousta gajao* (Cachari).
SIZE. Sparrow — ; length c. 11 cm (4 in.).

FIELD CHARACTERS. A slim, skulking wren-warbler with a long graduated black-and-white-tipped tail carried almost erect and incessantly shaken up and down.

Above (including tail), rufous brown; crown and nape ashy brown in summer, almost concolorous with back in winter. Lores and supercilium buff. A pale eye-rim. Below, pale buff, more ochraceous on flanks and lower belly. Sexes alike.

Recognized by its rufous back and tail. The very similar *P. hodgsonii* (1503) has a grey tail (also black-and-white-tipped), a shorter supercilium and, in summer, a diffuse grey band across the breast. *P. subflava* (1511) is sand-coloured above (including tail which lacks the white terminal spots), nearly white below. *P. sylvatica* (1521) is darker above and has a brown tail. *P. socialis* (1517) has a grey crown, white lores but no supercilium. *P. cinerocapilla* (1507) has a grey crown, blackish lores and a narrow rufous supercilium.

40 SYLVIINAE

BREEDING. Season, April to September, chiefly May and June. Nest, similar to that of *P. hodgsonii*. Eggs also similar, but larger, and as a series somewhat bluer. Average size of 200 eggs 16.1 x 11.8 mm (Baker). Building and incubation by both sexes.

MUSEUM DIAGNOSIS. For details of plumages see Deignan, loc. cit., p. 2. Distinguished from *P. hodgsonii* as follows:

<i>P. hodgsonii</i>	<i>P. rufescens</i>
Upperparts duller, more olive; tail grey-brown	Upperparts brighter, more fulvous, tail bright fulvous
Summer plumage	
Upperparts and tail uniform leaden grey, wings washed with dull chestnut. Underparts pale fulvous white, a leaden grey band across breast.	Upperparts fulvous brown, crown and nape leaden grey, wings washed with dull chestnut. Underparts fulvous white, warmer on sides of breast and flanks.

P. rufescens generally has a heavier bill.
Young, like adult in fresh winter plumage but paler above and more or less washed with yellow on belly.

MEASUREMENTS	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	43-47	c. 11	c. 20	summer 30-47 winter 48-67 mm (Baker)

Bill from skull 12-13 mm (SA)
Weight 8 ♂ ♀ 6-7 g (SDR).
COLOURS OF BARE PARTS. Iris pale brown. Bill black, edges of lower mandible paler. Legs and feet flesh-colour.

PRINIA HODGSONII Blyth

Key to the Subspecies
(there is of course complete intergradation)

	Page
A Above olive-brown	
1 Above warm rufous olive-brown..... <i>P. h. rufula</i>	40
2 Above more greyish..... <i>P. h. hodgsonii</i>	42
B Above slate-brown	
3 Grey on breast in summer only..... <i>P. h. albogularis</i>	44
4 Grey on breast the year round..... <i>P. h. pectoralis</i>	43

1502. **Northern Ashy-grey Wren-Warbler.** *Prinia hodgsonii rufula* Godwin-Austen

Prinia rufula Godwin-Austen, 1874, Proc. Zool. Soc. London: 47 (Naga Hills)

Baker, FBI No. 827 (part), Vol. 2: 425

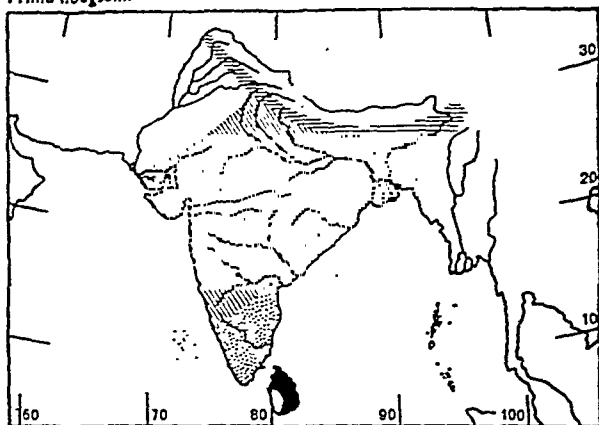
LOCAL NAMES. *Dao pitti*, *Daotih-pitti* (Cachari).
SIZE. Sparrow — ; length c. 11 cm (4½ in.).

FIELD CHARACTERS. As in 1503. Distinguished from *P. rufescens* by the grey (v. rufous) tail, and in summer by the cloudy grey band across breast. For distinction from other species, see 1501, Field Characters.

WARBLERS

41

STATUS, DISTRIBUTION and HABITAT. Common resident, locally subject to slight downward movements during cold weather. The Himalayan foothills from the Indus river east to Arunachal Pradesh including the Sadiya

Prinia hodgsonii

Distributional ranges

rufula (1502)

hodgsonii (1503).

albogularis (1504).

pectoralis (1505).

Frontier tract; Nagaland, Manipur, Meghalaya, Assam and most of Bangladesh south to the Chittagong region; from the plains generally to c. 1200 m, locally up to 1600 m (Simla, Nepal) or 1800 m (Meghalaya); also breeds in the plains of Bangladesh and Assam. Affects scrub and grass jungle, forest clearings, cultivation and bushes in and around villages. A bird of bushes rather than grass.

Extralimital. Burma. The species extends to Yunnan and Vietnam.

GENERAL HABITS and FOOD. As in 1503.

VOICE and CALLS. A distinctive *cheu-cheu-cheu* and a rapid, trilling *tut-tut-tut* (Smythies). For description of song see 1503.

BREEDING. *Season*, correlated with the rains: mostly from mid June to September, but sometimes as early as April, especially in Assam. Two or three broods may be reared. *Nest*, a rough cup of grass and fibres built inside a broad, pendent leaf, rarely two or three, the edges of which are sewn together to form a cone. The nest and method of supporting it closely resemble the Tailor Bird's, except that the structure is more globular and the cup usually not lined with felted flower-heads of grasses; normally placed less than half a metre or so from the ground. *Eggs*, 3 or 4, very variable: white or pale blue, sometimes unspotted, more often marked with pale reddish to reddish brown specks and spots distributed fairly evenly over the

WARBLERS

43

FIELD CHARACTERS. A small, rufous brown wren-warbler recognized mainly by its longish grey tail tipped with black and white. Sexes alike.



x c. 1

P. buchanani has a rufous forehead, very dark brown tail (similarly black-and-white-tipped) and white underparts, and is more terrestrial. *P. socialis* has grey crown and sides of head. For distinction from other unstreaked species, see 1501, Field Characters.

STATUS, DISTRIBUTION and HABITAT. Common resident. The Indian Peninsula between Pakistan and Bangladesh, and between the ranges of *rufula* (Himalayan foothills etc.) and *albogularis* (southwestern India); in the plains and hills up to at least 1000 m. May be subject to local movements: occurs commonly in the plains of Madhya Pradesh during winter but has been noted as absent during the rains. Affects scrub jungle with coarse grass and thorn bushes, mango groves and deciduous forest with rank undergrowth, gardens, bushes and hedgerows in cultivation, and to some extent bamboo jungle, mangrove swamps and reeds.

GENERAL HABITS. Keeps singly or in pairs during the breeding season, otherwise in roving parties of five to ten, sometimes up to twenty or more individuals. More gregarious than *P. subflava* but otherwise very similar to it in habits. Works its way through undergrowth, hunts among twigs and foliage of small trees, and flits jerkily from bush to bush with a constant flicking of the tail, the birds loosely following one another. Rather noisy and conspicuous in the breeding season when the males sing vehemently from exposed situations. Pairs form between March and May according to local weather conditions.

Display. A lively and spirited performance. The male mounts to a prominent perch on a bare tree- or bush-top and excitedly warbles his loud, squeaky song (see below). Another turn in the display consists of some spectacular aerobatics when the bird springs up in the air and executes a series of vertical wave-crests and steep nose-dives in quick succession, to the accompaniment of the song (SA).

FOOD. Chiefly insects: ants, tiny beetles, caterpillars, etc. Also takes nectar from blossoms of *Butea*, *Erythrina*, *Bombax*, *Woodfordia*, etc. and often carries pollen adhering to forehead feathers.

VOICE and CALLS. Conversational call-notes, an incessant tinkling *zee-zee-zee* or *pree-dee-dee* as the birds move along. During the breeding season the male pours forth a vehement, squeaky song from a bush-top: *chizwee-chizwee-chip-chip-chip* (or *yousre-yousre-yousre-which-which-which-which*). The *chizwee* portion starts low and feebly and is quickly repeated three or four times. It rises in pitch at each successive note and ends loudly and abruptly after the third or fourth *chip* (SA). Reminiscent of the song of *P. socialis* in overall pattern yet distinct enough to be unmistakable.

BREEDING. *Season*, from the middle of June to October, chiefly July and August, during the height of the monsoon. Also in February-March (Gujarat — Dharmakumarsinhji). *Nest* (of Tailor Bird type), and eggs, as in 1502.

MUSEUM DIAGNOSIS. For details of plumage see 1502.

Differs from *rufula* in being more greyish and pale olive-brown above and on the

42

SYLVIINAE

whole surface. Unspotted eggs are much more common in the early part of the year than later. Out of 178 eggs laid in April-June, 60 were plain blue and 12 plain white; of 266 eggs seen in July-September, only 9 were unspotted blue and 2 white (Baker). Average size of 400 eggs 14.7 × 11.7 mm (Baker). Building and incubation by both sexes; construction takes four to eight days; eggs deposited before completion of nest. Incubation period ten or eleven days, generally the latter.

MUSEUM DIAGNOSIS. Summer plumage: Upperparts, hair brown tinged rufescent on mantle, rump and upper tail-coverts. Supraloral region concolorous with crown. Swollen edges of eyelid orange, tiny feathers of both eyelids slaty. Underparts, white with a broad pectoral band and flanks deep ashy grey, the throat and centre of abdomen washed with cream.

Winter plumage: Upperparts, dark olivaceous brown suffused with rufescent, faintly on forehead, crown and nape, more strongly on mantle, conspicuously on rump and upper tail-coverts. Supraloral streak ashy white. Edges of eyelids neither swollen nor brightly coloured, the tiny feathers of the upper eyelid mixed ashy, grey and white, those of the lower eyelid white. Underparts, white (more or less sullied with ashy grey on breast and upper flanks) washed with cream which posteriorly changes to light rufous cream (Deignan).

Differs from the peninsular *hodgsonii* (1503) in being a warmer rufous olive-brown above and on edges of wing; flanks washed with rusty cream. According to Ticehurst & Whistler (*Ibis* 1939: 762) birds from the Himalayan foothills have no pectoral band.

For details on moults see 1503. Tail shorter in summer, longer in winter (data not available but see 1504 for comparative measurements).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail (March to June)
17 ♂♂	42-49	13-14	c. 20 (one)	45-55 mm
2 ♀♀	43, 48	13		— mm
				(BB)

Weight ♂♀ (winter) 5-7 g (SDR). 5 ♂♂ (March-April) 5.5-6.8 g; 3 ♀♀ (March-April) 5.5-6.5 g (GD).

COLOURS OF BARE PARTS. Iris and edges of eyelids dull brownish orange. Bill black. Legs and feet yellow; claws horny; soles white.

1503. Franklin's Ashy-grey Wren-Warbler. *Prinia hodgsonii hodgsonii* Blyth

Pr. (inia) Hodgsonii Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 376

New name for *Prinia gracilis* Franklin, 1831, not *Sylvia* (= *Prinia*) *gracilis* Lichtenstein, 1823

Prinia gracilis Franklin, 1831, Proc. Zool. Soc. London: 119

(Mirzapur District, restricted by Ticehurst & Whistler, *Ibis* 1939: 763)

Prinia hodgsonii pallidior Koelz, 1950, Amer. Mus. Novit., No. 1452: 8

(Sihor, Kathiawar)

Baker, FBI No. 827 (part), Vol. 2: 425

Plate 84, fig. 17

LOCAL NAME. *Phūtki* (Hindi).

SIZE. Sparrow —; length c. 11 cm (4½ in.).

44

SYLVIINAE

edges of wing. Flanks suffused with cream. *Albogularis* is slate-brown above, almost pure white below, and also has a grey pectoral band in summer. For distinction from *P. rufescens* see 1501, Museum Diagnosis.

This species usually has two or three filoplumes projecting behind nape. Tail with 12 rectrices.

Young resembles adult in winter plumage but upperparts, edges of wing and tail more rufous; underparts pale yellow, buffish on flanks and thighs.

Postjuvinal moult to winter dress complete. Prenuptial moult complete and takes place about the end of February to beginning of April. Postnuptial moult complete and takes place in October, November and December (Ticehurst & Whistler, 1939, *Ibis*: 761-3).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
10 ♂♂	44-51	11-13	18-20	46-58 mm
	(av. 47.8)			(summer and winter)
5 ♀♀	44-48	11-13	18-20	44-55 mm
	(av. 46)			(winter)
				(SA)

Weight 8 ♂♂ 5-9 (av. 6.4) g — SA.

COLOURS OF BARE PARTS. Iris yellow to orange-brown; eye-rim brownish yellow. Bill black, commissures and tip paler; mouth black or dark brown (pale flesh with brown blotches in juvenile). Legs and feet pale yellow, brownish fleshy or yellowish fleshy.

1504. Southern Ashy-grey Wren-Warbler. *Prinia hodgsonii albogularis* Walden

Prinia albogularis Walden, 1870, Ann. Mag. Nat. Hist. 5: 219 (Coorg)

Baker, FBI No. 827 (part), Vol. 2: 425

LOCAL NAMES. *Telikkurēri* (Malayalam); *Kosa ketai*, *Nenni chirai* (Tamil).

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. As in 1503, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to some seasonal local movements. The southern Indian Peninsula including Kerala, western Tamil Nadu, southern Mysore and the Eastern Ghats north to the Vishakhapatnam district; in the plains and hills up to c. 1500 m but mostly under 1000 m. Affects thorn scrub, lantana brakes and deciduous jungle with tall grass and bushes and, to some extent, coffee plantations.

GENERAL HABITS, FOOD and VOICE. As in 1503.

BREEDING. *Season*, April to August, chiefly July and August during the height of the monsoon. *Nest*, built in large-leaved herbaceous plants growing in the open among long grass, of two types: one is a cup of fine grass flower-heads, lined with still finer grass stems, slung by threads of cobweb round the rim to the underside of a broad leaf which forms a lid, leaving a small entrance where the leaf-stalk joins the stem of a plant. The other type is similar to that of the Tailor Bird: the two sides and the end of a large leaf are sewn into a bag and the nest proper built inside (Betts). *Eggs*, normally

WARBLERS

45

3, similar to those of *rufula* (1502), q.v.; breeding biology as of that subspecies.

MUSEUM DIAGNOSIS. For details of plumage see 1502. Differs from *hodgsonii* in being more slate-brown above; edges of wings brown; flanks and underparts almost pure white, without a cream wash. Differs from *pectoralis* of Ceylon in having the grey pectoral band less marked.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail	
♂♂	45-52	12-13	17-19	summer	winter
♀♀	42-48	12	17-19	45-50	55-57 mm
				39-50	55 (one) mm (SA)

COLOURS OF BARE PARTS. Adult: Iris straw colour. Bill black; horny at base of lower mandible; mouth slaty brown and pink or pinkish brown. Legs and feet brownish flesh; claws horny brown. Immature: Iris orange-straw. Bill dark horny brown, paler at commissures and gape; mouth pale yellowish cream with slaty blotches. Legs and feet yellowish flesh; claws horny brown.

1505. Ceylon Ashy-grey Wren-Warbler. *Prinia hodgsonii pectoralis* Legge

Prinia pectoralis Legge, 1874, Ceylon Blue Book: 9
(Hambantota District, Ceylon)

Baker, FBI No. 827 (part), Vol. 2: 425

LOCAL NAMES. Hambu-kurulla (Sinhala); Timu-kürini (Tamil).

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. As in 1503 but with a grey breast-band throughout the year. Female differs in having this band incomplete in the middle. The pectoral band identifies this bird in Ceylon.

STATUS, DISTRIBUTION AND HABITAT. Resident, moderately plentiful. The eastern and southeastern part of Ceylon from Mankulam in the Northern Province (*Spolia Zeylanica* 28: 190) south to Tangalla, and inland to the foothills of the Uva and Central provinces; in the low-country Dry zone and Hill zone up to 900 m or a little higher. Affects scrub country and parkland, preferring bushes and small trees to grass.

GENERAL HABITS AND FOOD. As in 1503.

VOICE AND CALLS. A rapid chatter of three to five notes *chechecheh*, less loud and less musical than a very similar note produced by *P. socialis* (Henry). See also 1503.

BREEDING. Season, March to June, perhaps extending till October. Nest and eggs, as in 1504.

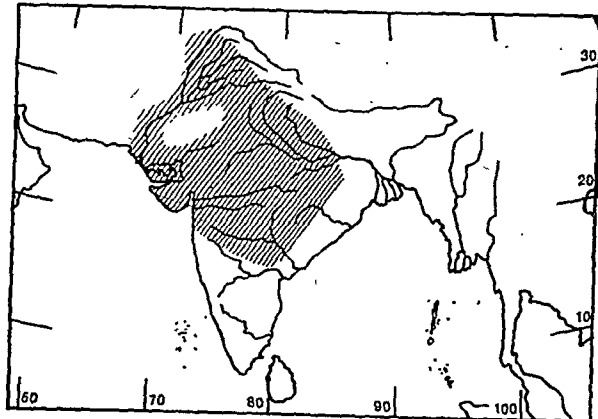
MUSEUM DIAGNOSIS. Differs from peninsular races in having winter and summer plumages alike, both of the summer type, i.e. with the grey pectoral band present the year round. This band is also better marked.

Young, dark brown with an olive tinge above, becoming almost greenish on crown. Wings and tail as in adults. Underparts white, washed with fulvous brown on flanks and greyish olive on sides of breast. No pectoral band.

Moult sequence unclear. Some birds collected in May, August and October were in complete moult while others were in fresh plumage.

WARBLERS

47

Prinia buchanani

▨ Distributional range

but is more terrestrial-feeding than either. Hops on the ground among grass tussocks and thorn scrub, tail slightly cocked, looking very much like *Scotocerca*; also creeps about in bushes, loosely switching the tail — then suggesting a miniature Common Babbler (*T. caudatus*, 1254).

FOOD. Insects and larvae.

VOICE AND CALLS. A lively reeling, twittering song consisting of 'a trill followed by a triple note like *sirigel-sirigel-sirigel*' (Basil-Edwardes), given vehemently from an exposed twig or a bush-top, tail spread out and partially cocked, showing off the white tips prominently; reminiscent of the song of *P. socialis* but distinct enough to be quite unmistakable. May be heard from February onward. Call-note, a shrill *chirrup* constantly uttered while foraging.

BREEDING. Season, mainly during the monsoon, i.e. end of June to September; breeds earlier in the western part of its range (Gujarat, Rajasthan and Pakistan) where nesting has been recorded from March to August. Nests also found in October and December. Nest varies from a cup-shaped to a domed, oblong purse-like structure with entrance near top (the latter type more common) made of fine grass and silky fibres and lined with finer grass and vegetable down; placed in a grass tussock or thorn bush, usually within a metre from the ground. Eggs 4 or 5, white, faintly tinged with pink or bluish, profusely speckled and spotted with reddish brown or deep chestnut. Average size of 100 eggs 15.9 × 12 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. This species has twelve rectrices. A complete moult takes place in May and June, and again in October-November.

46

SYLVIINAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	45-48	13-14	18-20	42-47 mm
♀♀	43-46	c. 13	17-18	(summer) 40-44 mm (summer) (HW)

It is not known whether there is a seasonal variation in the length of tail.

COLOURS OF BARE PARTS. Iris reddish. Bill blackish. Legs and feet fleshy yellow.

1506. Rufous-fronted Wren-Warbler. *Prinia buchanani* Blyth

P. (Prinia) buchanani Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 376, new name for *Prinia rufifrons* Jerdon, 1840, *see Prinia rufifrons* Rüppell, 1835

Prinia rufifrons Jerdon, 1840, Madras Jour. Lit. Sci. 11: 4

(neighbourhood of Jalna, northwestern Hyderabad)

F. (ranklinia) eleghorniae Blyth, 1867, Ibis: 24 (northwest of Delhi)

Baker, FBI No. 831, Vol. 2: 429

Plate 85, fig. 8

LOCAL NAMES. *Chihio* (Sind); *Lālbhālāi fūdkī* (Gujarati).

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. Above, forehead and crown rufous; lores and a narrow supercilium whitish. Back grey-brown. Tail dark brown with broad white tips (except on central pair of rectrices) showing up as a conspicuous white fringe when tail fanned while bird alighting. Below, whitish, tinged with fulvous on flanks and vent. Sexes alike.

In worn plumage the white tips of rectrices become abraded and the bird looks confusingly like *P. subflava*; the rufous forehead provides a clue to its identity but is sometimes very faint; tail darker. *P. sylvatica* is larger, lacks the white tips to tail-feathers and has buff underparts. *P. hodgsonii* is olive-brown above and has a buff belly. For other species see 1501, Field Characters.

STATUS, DISTRIBUTION AND HABITAT. Common resident, locally subject to some seasonal movements. Pakistan in the plains of the upper Indus river system from Peshawar and Bannu (summer only) north to the Himalayan foothills, south at least to Bahawalpur; the southern part of Pakistan from the Hab river valley in Baluchistan east through Sind (northern extension not known), and India from Punjab: Rajasthan (Jodhpur dist.), N. Gujarat (including Kathiawar and Kutch) east to Bihar (Palamau) and south through the central tableland to Andhra Pradesh (common around Secunderabad — R. Sparrow in *epist.* to HW) and central Maharashtra (Ahmednagar). Affects arid scrub jungle mixed with coarse grass, babool scrub in ravines, and stony semi-desert studded with *Capparis*, *Prosopis* and *Zizyphus* bushes, occasionally entering nearby high crops (paddy, wheat, mustard). Prefers a drier biotope than *P. hodgsonii*.

GENERAL HABITS. Keeps in pairs or in small parties according to the season, frequently in company with *Prinia hodgsonii* and *Chrysomma sinense*.

SYLVIINAE

48

Young, like adult but paler above; crown concolorous with back, supercilium whiter. Postjuvénal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail	
♂♂	51-55	12-14	18-19	summer	winter
♀♀	47-51	12-14	17-19	53-56	61-70 mm
				51-60	68 (one) mm (SA)

Weight 3 oo? 5-9 g (SA).

COLOURS OF BARE PARTS. Iris yellow-brown. Bill brown, flesh-colour at base, darker in summer. Nestlings have two black spots on tongue. Legs and feet pale flesh.

1507. Hodgson's Wren-Warbler. *Prinia cinereocapilla* Hodgson

Prinia cinereocapilla Hodgson, 1854, in Horsfield & Moore, Cat. Bds.

Mus. E.I. Co. 1: 322 (Nepal)

Baker, FBI No. 830, Vol. 2: 428

Plate 84, fig. 15

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. Above, forehead and a narrow supercilium rufous, this colour sometimes reduced or completely absent; lores blackish. Crown, nape and sides of neck dark grey; rest of upperparts dark rufous. Tail rufous-brown with a subterminal dark brown patch on rectrices. Below, fulvous, darker on lower flanks and vent. Sexes alike.

The dark grey cap and very rufous back and wings identify this species.

STATUS, DISTRIBUTION AND HABITAT. A little known, yet fairly common resident species within its very restricted range. The Himalayan foothills, duns and bhabar from Kumaon through Nepal, Darjeeling, Sikkim and Bhutan. Also North Cachar, where it is very rare (Baker, JBNHS 9: 15); from the edge of the plains to c. 1350 m. Affects dense jungle, secondary growth and trees.

GENERAL HABITS. Little known except that it is more arboreal than other wren-warblers; also found in company with *P. hodgsonii*.

FOOD. Insects; flower-nectar.

VOICE AND CALLS. 'A trilled note with a rising inflection (like an *iors*), then a loud drawn out *swe-e-e-e-chor*' (Fleming & Traylor). Song said to be 'quite different from that of any other *Prinia*, better and more varied' (Brooks, SF 3: 242).

BREEDING. Season, about June. Nest, very similar to that of *P. hodgsonii*, made of fine grass and enclosed in a single broad leaf, the edges of which are stitched with cobweb and the feathery ends of grasses forming the container. Eggs, pale blue, spotless; clutch size unrecorded. Average size of 10 eggs from North Cachar 15 × 10.7 mm (Baker, JBNHS 9: 15). Two eggs from Bhutan measured 16.1 × 11.7 and 16 × 11.6 mm (Baker, 1933).

MUSEUM DIAGNOSIS. See Field Characters. Tail with 12 rectrices. For discussion on variation of amount of rufous on head, see Biswas, JBNHS 59: 427. Young undescribed.

WARBLERS

49

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
9 ♂♂	42-46	13-14	c. 20	40-50 mm
4 ♀♀	42-43	14	—	39-44 mm (BB)

COLOURS OF BARE PARTS. Iris and edges of eyelids yellow ochre with a pinkish tinge. Bill black. Legs and feet yellowish brown; claws horny; soles white.

PRINIA GRACILIS (Lichtenstein)

Key to the Subspecies

Paler above, purer fulvous below.....*P. g. lepida*
Darker above, fulvous tinged with brown below.....*P. g. steerei*

1509. Indian Streaked Wren-Warbler. *Prinia gracilis lepida* Blyth

P. (Prinia) lepida Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 376

(Indus territories = Sind fide Whistler & Kinnear, 1933, JBNHS 36: 579)

Baker, FBI No. 931, Vol. 2: 526

Plate 85, fig. 7

LOCAL NAMES. *Pitāk* (Brahui); *Door* (Sind); *Khār phūtki* (Hindi); *Vid fūtki* (Gujarati).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. Above, pale drab brown, crown and back with dark streaks. Lores and round the eye whitish. Tail long, graduated, faintly cross-barred, the rectrices tipped whitish with a subterminal dusky spot. Below, whitish, washed with buff on lower belly. Sexes alike. Superficially a tiny miniature of Common Babbler (*Turdoides caudatus*) except for tail tip.

Small size and paleness distinguish it from the other two streaked wren-warblers (1527, 1531, qq.v.).

STATUS, DISTRIBUTION AND HABITAT. Common resident. Pakistan from Kohat and the Himalayan foothills south through the plains of the Indus and Quetta, and west through Baluchistan to Iran; India in Gujarat (Kutch, Kathiawar and east to Cambay), western Rajasthan, Punjab and the Gangetic Plain east through Bihar; in the foothills of Pakistan up to c. 1000 m. Affects tamarisk jungle, rank herbage, sarkhan grass (*Saccharum*) and scrub, particularly along rivers, canals, jheels and on river islands; also more sparingly in sandy, semi-desert country with scrub and coarse grass tussocks.

Extremal. Extends westward through SW. Afghanistan and Iran. The species ranges to Egypt and Somalia.

GENERAL HABITS. Lives in pairs or small loose parties according to the season. Flies from bush to bush in search of food, just above the ground, occasionally up to c. 4 metres. On the ground, hops about energetically and will make a long spring if necessary to secure an insect. All the while flicks the wings like a *Phylloscopus* and loosely switches its tail from side to side with a slight upward flick. Slips smoothly through grass, clinging sideways

¹ The observation by Proud attributed to this species by Biswas (JBNHS 59: 427), pertains to *Fredericia gracilis* (= *Prinia hodgsonii*). However, see next subspecies.

WARBLERS

51

snatches may be heard in October, December and January. Call-note, a drawn out *breep* or *izeep* uttered by both sexes to keep in touch. Alarm-note a few *trrt-trrt-trrt* with a slight inflection at the end of each note, which may develop into a reeling succession of notes slurred together in a fast, ticking stream. Also a flat *jit* of threat (Simmons). A bill-snapping noise, noted by some observers in India, is not mentioned by Simmons who describes (p. 268) wing-snapping flight and display. (See also p. 292 of same paper for wing-snapping in the Sylviidae.)

BREEDING. Season, February to October with two peak periods: March-April, particularly in the western part of its range where suitable vegetation is found along rivers, and, for the majority, July-August, especially in the east where suitable vegetation is governed by the monsoon; the same peculiarity is apparent in *Cisticola juncidis cuscatus*, *Prinia h. hodgsonii* and *Prinia buchanani*. Nest, a domed structure or upright oval pouch, very like that of *P. s. inornata* (1511), with the entrance-hole about two-thirds of the way up; woven mostly of dry grass bound with vegetable down or cobweb, and lined with downy vegetable matter. It is placed in bushes or clumps of grass, usually within a metre from the ground. Nest-site selected by male. Construction almost entirely by male, helped by female mainly with the lining. Eggs, 3 to 5, normally 4, pale greenish profusely covered with small, light to dark reddish blotches. Average size of 100 eggs 13.8 × 10.7 mm (Baker). Incubation by both sexes, share not determined; period 12 days ± 1 day. Brooding, feeding young, and nest sanitation by both sexes, chiefly by female; male takes over feeding of juveniles, presumably while female prepares for another brood. Two broods are reared in one peak period. For further details of breeding biology see Simmons, loc. cit.

MUSEUM DIAGNOSIS. See Field Characters and keys to the Species and Subspecies. Tail graduated, of ten rectrices.

Young, like adult, but streaks on upperparts broader and more shadowy; a distinct yellow tinge on the sides of neck and upper breast.

Two moults a year, before and after reproductive activity.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail summer winter
♂♂	43-46	c. 12	17-18	59-61 68-72 mm
♀♀	40-45	11-12	17-18	54-55 68-71 mm

(SA, HW)

COLOURS OF BARE PARTS. Iris yellow to brown. Bill: winter, brown above, yellowish brown below; summer, black; inside of mouth black during the breeding season, this colour being lost during the postnuptial moult and regained during the spring one. Legs and feet pale flesh.

1509. Eastern Streaked Wren-Warbler. *Prinia gracilis steerei* Hartert

Prinia gracilis steerei Hartert, 1923, Bull. Brit. Orn. Cl. 18: 132

(N. Lakhimpur)

Baker, FBI No. 932, Vol. 2: 527

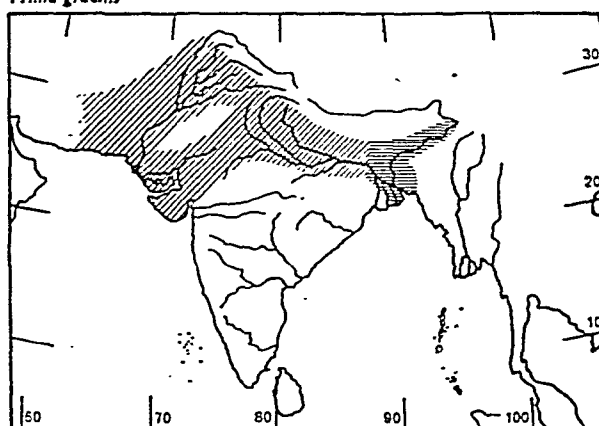
LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

50

SYLVIINAE

Prinia gracilis



Distributional ranges

▨ *lepida* (1508).

▨ *steerei* (1509).

to stems and slipping down like a reed warbler. Occasionally catches an insect in flight or hovers to pick a caterpillar off a leaf. Flight jerky, undulating, characteristic of the genus.

Display. 'The male shoots almost vertically upwards for a few feet with very rapid movements in which the wings are used extremely quickly and the tail cocked up repeatedly, giving the whole display a jerky nature. When the peak of the ascent is reached the bird may either flit about erratically before perching again, or dive straight down to its original post before repeating the performance. All the while, a triple wing-snapping is heard, sounding like a quick, crackling *brmp-brmp-brmp*. Wing-snapping is essentially a reaction to other individuals of the same species and is confined to the reproductive cycle. Female does a less intense snapping and jerky flight as predator reactions, but in threat and not in sexual circumstances.' For other forms of display (bowing, flicking and wing-fanning) as well as an excellent study of the behaviour and biology of this species in Egypt, see K. E. L. Simmons, 1954, *Ibis* 96: 262-92.

FOOD. Grasshoppers, small beetles, caterpillars and other insects; spiders. Also a small amount of vegetable matter.

VOICE AND CALLS. Song, a wheezy, reeling warble, of similar pattern to that of *P. s. inornata* (1511) and often indistinguishable from it. A hard, thin, somewhat slurred and disyllabic note delivered in phrases of from one to fifteen, sometimes up to thirty, sung persistently and monotonously in fast, non-stop succession — *ze(r)uitze(r)uitze(r)uit*... Sings from a vantage point, the black gape very conspicuous. Song also given during wing-snapping display; uttered regularly from February to September but

52

SYLVIINAE

FIELD CHARACTERS. As in 1509, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. The plains of the Brahmaputra and Ganges rivers. Recorded from the Subansiri river, Dibong, Tezpur, Dacca, and the Morang district of southeastern Nepal. Affects tall grass in sandy areas along the margins and on islands of big rivers.

GENERAL HABITS, FOOD AND VOICE. As in 1508.

BREEDING. Nests found in April. Season, probably as in 1508. Nest, and eggs as in 1508. Average size of seven eggs 13.7 × 10.9 mm (Baker).

MUSEUM DIAGNOSIS. Like *lepida* but darker above, and underparts tinged with brown rather than fulvous.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1508.

PRINIA SUBFLAVA (Gmelin)

Key to the Subspecies

	Page
A Winter and summer plumages alike. Bill longer..... <i>P. s. insularis</i>	57
B Winter and summer plumages not alike. Bill shorter	
1 palest; dark subterminal bar of tail almost obsolete..... <i>P. s. territorial</i>	52
2 intermediate between preceding and the two following... <i>P. s. inornata</i>	53
3 Darker; underparts browner..... <i>P. s. fusca</i>	55
4 Darkest; underparts more fulvous..... <i>P. s. franklinii</i>	56

1510. Northwestern Plain Wren-Warbler. *Prinia subflava territorial* (Hume)

Dryocopus territorial Hume, 1874, Nests and Eggs of Indian Birds: 349
(N.-W. India = Oudh, Agra)

Baker, FBI No. 940 (part), Vol. 2: 534

LOCAL NAME. *Phūtki* (Hindi).

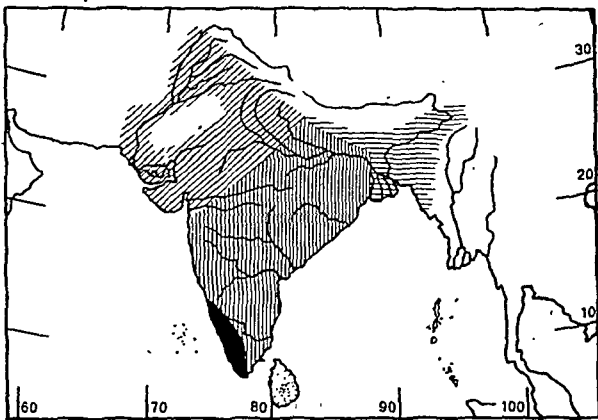
SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1511, q.v. See Key to the Subspecies and Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. The commonest and most widespread wren-warbler; locally subject to short-range seasonal movements, especially in the north. The plains of Pakistan from N.W.F.P. (Peshawar, Thal, Bannu) and eastern Baluchistan (Hab valley and probably the Sibi plain) east to northwestern India in Punjab, Rajasthan and Gujarat. Eastern limit roughly a line from Baroda to the extreme western Nepal terai, east of which it intergrades with the adjacent subspecies (1511, 1512). In the Himalayan foothills up to c. 800 m, in smaller numbers up to c. 1200 m. Affects tamarisk and thorn scrub jungle mixed with tall grass (*Saccharum* etc.) and cultivation, especially wheatfields. Commoner near water, but more tolerant of arid conditions than *P. socialis*, being met with also in sandy or stony semi-desert. Often found in same flocks as *P. gracilis*.

GENERAL HABITS, FOOD AND VOICE. As in 1511.

Prinia subflava



- terricolor (1510).
- inornata (1511).
- insularis (1514).

- fusca (1512).
- franklinii (1513).

BREEDING. Season, overall March to October but chiefly during the monsoon (June–September). Nest, as in 1511: purse-shaped type more common. Eggs, as in 1511.

MUSEUM DIAGNOSIS. Like *inornata* but paler. Colour of tail more uniform; dark subterminal bar obsolete. Tail of ten rectrices; longer in winter.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail	
				summer	winter
♂♂	47–54	12–13	19–21	48–56	59–85 mm
♀♀	48–50	12–13	19–21	—	64–75 mm

(SA, HW)

COLOURS OF BARE PARTS. As in 1511.

1511. Central India Plain Wren-Warbler. *Prinia subflava inornata* Sykes

Prinia inornata Sykes, 1832, Proc. Zool. Soc. London: 89 (Dukhun)
Baker, FBI No. 940 (part), Vol. 2: 534
Plate 85, fig. 12

LOCAL NAMES. *Phūtki* (Hindi); *Lota-kun-jitta* (Telugu); *Chitakul* (Saugor, M.P.).

SIZE. Sparrow; length c. 13 cm (5 in.).

FIELD CHARACTERS. A plain, sand-coloured wren-warbler with a longish, graduated tail; in the peculiar jerky switchback flight it gives the impression of being too heavy for the bird. Above, sandy brown; lores, narrow

MUSEUM DIAGNOSIS. See Key to the Subspecies.

As in the species *P. gracilis*, *P. socialis* and *P. sylvatica*, *P. subflava* also has a summer and winter plumage, both alike in the south but markedly different in colour and in length of tail in the north.

Winter: Upperparts strongly rufescent; lower parts warm buff; wings hair-brown, margined with dull ferruginous. Tail long, deeply graduated, rufescent brown with an imperfect subterminal dark bar and a pale tip. Bill brown, with the greater part of the lower mandible yellowish horny.

Summer: Upperparts dull earthy grey-brown; lower parts white with a faint yellowish tinge; wings earthy brown, margined albescent. Tail shorter and less graduated than in winter, the lateral rectrices growing paler towards the outermost pair which is almost white. Subterminal dark bar and pale tip usually absent from central rectrices. Bill black, yellowish at the extreme base of the lower mandible.

Summer and winter plumages are each preceded by a complete moult from March to May and July to November. Many individuals breed during the moult, contrary to the normal procedure in birds.

Young, somewhat between winter and summer dress of adult: upperparts more rufescent than summer but less rufescent than winter; tail length about as in summer. Postjuvénal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail	
				summer	winter
♂♂	46–54	12–14	18–20	48–57	53–80 mm
♀♀	45–51	12–13	c. 19	49–57	69–74 mm

(HW)

Weight 9 ♂♂ 5–9 (av. 7) g — SA.

COLOURS OF BARE PARTS. Iris orange-yellow or brownish orange. Bill black (summer), brown (winter), yellowish at base of lower mandible; inside of mouth blackish brown (summer); pinkish, pale pink or pale yellowish flesh streaked with brown (winter). Legs and feet brownish yellow; claws brown.

1512. Eastern Plain Wren-Warbler. *Prinia subflava fusca* (Hodgson)

Drymocha fusca Hodgson, 1845, Proc. Zool. Soc. London: 29 (Nepal)
Baker, FBI Nos. 940 (part) and 942 (part), Vol. 2: 534, 536

LOCAL NAME. *Niongho* (Lepcha).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1511, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. From the extreme western Nepal terai east through northern Bengal (Darjeeling and Jalpaiguri districts), Sikkim, Bhutan and Arunachal foothills, Assam, Nagaland (?), Manipur and Bangladesh to the Chittagong region; intergrades with *inornata* in lower Bengal and presumably along the northern Gangetic Plain. Ascends the hills to c. 1200 m. Affects high grass in open fields, reeds along streams, secondary growth and mixed bamboo and scrub jungle.

Extralimital. The species extends east to Vietnam and south to Java.

GENERAL HABITS, FOOD and VOICE. As in 1511.

BREEDING. Season, March to October, chiefly May to July. Nest and eggs, as in 1511. Average size of 200 eggs 15.5 × 11.4 mm (Baker).

supercilium and sides of head creamy white. Outer rectrices whitish. Below, entirely cream-coloured, more yellow in fresh nuptial plumage. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Common resident. Central India east of the range of *terricolor* (1510, q.v.) and from the Gangetic Plain in Uttar Pradesh, Bihar and lower Bengal, south through Tamil Nadu, but exclusive of the range of *franklinii* (1513). Affects scrub and boulder country, rank grassland, thorn thickets mixed with high grass, wild cane and tall grass in damp situations, and open cultivation with suitable high crops; also mangroves and salt-marsh vegetation in coastal areas. As a rule frequents a less dry facies than typical of *P. sylvatica* and less wet than that of *P. socialis*.

GENERAL HABITS. Found in pairs or small parties according to the season. Flits, clambers and creeps about among grass and bushes in the erratic, jerky manner of most wren-warblers, tail erect and loosely flicked up and down and sideways.

FOOD. Insects: caterpillars, ants, small beetles, etc. Flower-nectar: *Salmalia*, *Erythrina* and other species.

VOICE and CALLS. Call-notes, a rather plaintive *tee-tee-tee* (SA); other notes recorded as *kink*, *kink*... or *chi-up* rapidly repeated many times. Alarm-note (or wing-snapping ?) rendered as *creak*, *creak*, *creak* like sharply striking the point of a quill across a comb (cf. Ashy Wren-Warbler, 1517). Song, reminiscent of a grasshopper, more wheezy and insect-like than that of the Ashy Wren-Warbler: a rapid *tick-tick-tick*... sustained sometimes for ten seconds or more without a pause; given lustily from a prominent perch, on a reed or bush-top, with the body flattened down, head thrown back, tail fanned out, and an excited opening and shutting of wings; sometimes in jerky switchback flight. A wing-snapping is heard when the bird is disturbed from the nest. (See 1508, General Habits, for details and putative meaning of wing-snapping.)

BREEDING. Season, chiefly June to October (monsoon). Nest, variable in shape and structure. Commonest type a deepish, oval or pear-shaped pouch of loosely interwoven thin grass strips (loofah-like) with a lateral entrance-hole at or near the top, the material sometimes forming a dome and partially concealing the orifice. At other times it is more or less open at the top and has cobweb and vegetable down woven into the texture, thus recalling the nest of *Cisticola juncidis* (1498); attached to several upright grass stems or lentil stalks up to a metre or so from the ground. A less common type of nest is of the Tailor Bird pattern, supported between two or more broad leaves stitched together along the edges with fine grass or fibres. Nests usually devoid of lining; sited in a *Lantana*, *Zizyphus* or suchlike bush or grass tussock, commonly growing on bunds separating cultivated fields, especially inundated paddyfields. Eggs, generally 4 or 5, sometimes 3 or 6, variable in colour: usually pale blue with bold, deep reddish, blackish brown or purple spots, blotches and an intricate pattern of fine hairlines especially at the large end. For further details see Baker, *Nidification* 2: 488. Average size of 200 eggs 15.6 × 11.5 mm (Baker). Building and incubation by both sexes; incubation period 11 or 12 days. One pair under observation reared three successive broods and built but deserted a fourth nest.

MUSEUM DIAGNOSIS. Darker and more saturated than *inornata* with a more pronounced fulvous wash below.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	47–52	13–14	66–87 mm
♀♀	48–52	13–14	71–83 mm

(HW)

Weight 2 ♂♂ 5, 9 g (SA).

COLOURS OF BARE PARTS. As in 1511.

1513. Nilgiri Plain Wren-Warbler. *Prinia subflava franklinii* Blyth

Pr. (inia) franklinii Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 376.
Based on *Prinia macroura* 'Franklin' = Jerdon, 1840, *see Prinia macroura* Franklin, 1831, preoccupied by *Motacilla macroura* Gmelin, 1789.
[No locality, (S. India) = Nilgiris, vide Whistler & Kinnear, 1933, JBNHS 36: 565–6]
Baker, FBI No. 941 (part), Vol. 2: 535

LOCAL NAMES. *Chit-kūrūri* (Telugu); *Vāyātkūrūri* (Malayalam).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1511, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident but unevenly distributed. Southwestern India from southwestern Mysore through Kerala and the adjacent hills of western Tamil Nadu (Nilgiris, Palnis, etc.); from the lowlands to c. 1800 m. Affects grasslands, paddyfields, bracken-covered slopes, and patches of *Berberis*, *Rubus* and St John's wort on high grassy plateaux.

GENERAL HABITS, FOOD and VOICE. As in 1511.

BREEDING. Season, March to July. Nest and eggs, as in 1511.

MUSEUM DIAGNOSIS. Differs from *inornata* in being darker and browner at all seasons. Tail markings more distinct. Summer and winter plumages different (see 1511 for details).

MEASUREMENTS

	Wing	Bill (from skull)	Tail	
			summer	winter
♂♂	47–55	13–14	53–55	58–71 mm
			(4 msd)	(7 msd)
♀♀	46–49	13–14	50, 51	57–63 mm
			(2 msd)	(3 msd)

(HW)

COLOURS OF BARE PARTS. Iris and eyelids brownish yellow, orange or orange straw-colour. Bill: (summer) black, yellowish at extreme base of lower mandible; (winter) upper mandible and tip of lower brown, rest of lower mandible pale flesh; mouth (summer) blackish brown; (winter) pale pink with brownish streaks and blotches. Legs and feet brownish flesh; claws dusky.

WARBLERS

57

1514. Ceylon Plain Wren-Warbler. *Prinia subflava insularis* (Legge)

Dryococca [sic] *insularis* Legge, 1879, Bds. Ceylon: 529
(Hurrell Tank, N.C.P.)

Prinia inornata leucura Deraniyagala, 1956, Spolia Zeylanica 28: 97
(Delft Island, North Ceylon)

Baker, FBI No. 941 (part), Vol. 2: 535

LOCAL NAMES. *Hambu-kurullā* (Sinhala); *Tinu-kūrūzi* (Tamil).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1511, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. Ceylon in all zones up to c. 1600 m. Affects tall grass and scrub, paddyfields and grassy swamps.

GENERAL HABITS, FOOD and VOICE. As in 1511.

BREEDING. *Season*, almost throughout the year, varying to some extent in each climatic zone; in the hills, mostly March–April and September–November; in the Wet zone, January–March and July–September; in the Dry zone, April–May and November–December and possibly throughout the north-east monsoon when herbage is rank. *Nest and eggs*, as in 1511. Clutch size normally 3 or 4; as a series they are paler and brighter than those of *inornata*. Average size of 200 eggs (including some of *franklinii*) 15.8 × 11.7 mm (Baker).

MUSEUM DIAGNOSIS. Colour as in *franklinii* (1513) but bill longer. Summer and winter plumages alike; tail short throughout the year.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
16 ♂♂	49–56	14–15	20–22	52–62 mm
4 ♀♀	47–52	14–15	20–22	46–55 mm
				(HW)

Weight 1 ♂ 8 g (SDR).

COLOURS OF BARE PARTS. As in 1513, but bill black at all seasons.

PRINIA SOCIALIS Sykes

Key to the Subspecies

	Page
A Rump and upper tail-coverts rufous brown..... <i>P. s. stewarti</i>	57
B Slate colour of back extending to upper tail-coverts	
1 Flanks deeper rufous..... <i>P. s. inglisii</i>	59
2 Flanks paler, ochraceous buff	
a Tail longer, mostly over 55 mm..... <i>P. s. socialis</i>	59
b Tail shorter, mostly under 55 mm..... <i>P. s. breviceauda</i>	61

1515. Northern Ashy Wren-Warbler. *Prinia socialis stewarti* Blyth

Prinia Stewarti Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 455 (near Agra)

Baker, FBI No. 936 (part), Vol. 2: 531

Plate 84, fig. 14

LOCAL NAME. *Phūtki* (Hindi).

SIZE. Sparrow —; length c. 13 cm (5 in.).

WARBLERS

59

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail summer winter
♂♂	47–52	13–15	20–21	50–54 67–80 mm
♀♀	45–58	13–15	c. 20	c. 52 59–64 mm
				(2 msd)
				(SA, HW, BB)

Weight 1 ♂ 6.7, 2 ♀ 6.9, 7.5 g (GD).

COLOURS OF BARE PARTS. As in 1517.

1516. Assam Ashy Wren-Warbler. *Prinia socialis inglisii* Whistler & Kinnear

Prinia socialis inglisii Whistler & Kinnear, 1933, Jour. Bombay nat. Hist. Soc. 36: 574 (Bhutan duars)

Baker, FBI No. 936 (part), Vol. 2: 531

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1517, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. Bengal (including Darjeeling and Jalpaiguri districts), Sikkim and Bhutan foothills, Brahmaputra valley, Meghalaya, Manipur and Bangladesh to the Chittagong region (Rashid); plains and hills up to c. 1200 m. Affects grassland, thin secondary jungle, cultivation and gardens.

GENERAL HABITS, FOOD and VOICE. As in 1517.

BREEDING. *Season*, May to August. *Nest and eggs*, as in 1517.

MUSEUM DIAGNOSIS. Differs from *stewarti* (1515) in lacking the rufous winter plumage, being slaty above as in *socialis* (1517); from the latter it differs in being much darker, more saturated above, deeper rufous on flanks, and in having a finer and shorter bill.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail summer winter
♂♂	45–49	13–14	19–21	62 to 70 mm
1 ♀	46	14	19	46 — mm
12 ♂♂	44–50	13–14	—	57–70 — mm
				(HW)

COLOURS OF BARE PARTS. As in 1517.

1517. Southern Ashy Wren-Warbler. *Prinia socialis socialis* Sykes

Prinia socialis Sykes, 1832, Proc. Zool. Soc. London: 69 (Dukhun)

Baker, FBI No. 935 (part), Vol. 2: 530

Plate 84, fig. 13

LOCAL NAMES. *Phūtki*, *Kāli phūtki* (Hindi); *Kaṭṭūrūzi* (Malayalam).

SIZE. Sparrow —; length c. 13 cm (5 in.).

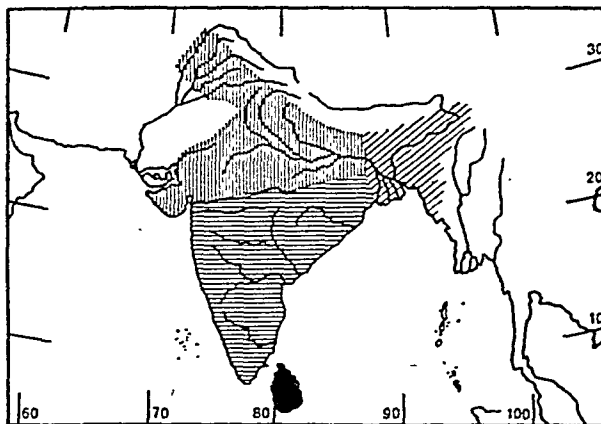
FIELD CHARACTERS. Above, head, sides of neck and back dark ashy grey; lores white; rest of upperparts warm rufous-brown. Tail graduated with

SYLVIINAE

58

FIELD CHARACTERS. As in 1517, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. Pakistan in the plains of the upper Indus river system, and northern India from the Himalayan foothills [Jammu, Kangra, Kumaon bhabar and Nepal terai (*vide* Birwas, JBNHS 59: 425)] south through the Gangetic Plain, northern Madhya Pradesh and eastern Rajasthan to the Kathiawar peninsula, the

Prinia socialis

Distributional ranges

 <i>stewarti</i> (1515).	 <i>inglisii</i> (1516).
 <i>socialis</i> (1517).	 <i>breviceauda</i> (1518).

Narmada river and southern Bihar, intergrading along this limit with the nominate race. Ascends the hills to c. 1200 m. Affects *sarpat* grass, reeds on the margins of streams and ponds, scrub and grass near cultivation, grain fields and bracken-covered slopes in the foothills. Generally prefers a better-watered facies than *P. subflava*.

GENERAL HABITS, FOOD and VOICE. As in 1517.

BREEDING. *Season*, chiefly June to September (monsoon), but locally with a first period in April–May. *Nest and eggs*, as in 1517. Average size of 100 eggs 15.6 × 11.9 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *socialis* (1517) in having the rump and upper tail-coverts rufous-brown.

There is a marked difference between summer and winter plumage. In summer the back is uniform slaty grey; rump and upper tail-coverts rufous-brown; tail shorter. In winter the entire upperparts are dark rufous-brown washed with slaty on crown and nape; tail longer.

SYLVIINAE

60

fulvous tips and blackish subterminal spots. Below, throat whitish buff; rest of underparts strongly washed with ochraceous, especially on flanks and lower belly. Sexes alike.

The longish tail carried partially erect or cocked and loosely flicked up and down, together with slaty head and back and rufous underparts identifies this species.

STATUS, DISTRIBUTION and HABITAT. Resident, but unevenly distributed; locally common. The entire Indian Peninsula south of the Narmada river and southern Bihar; plains and hills up to the highest summits. Affects grassland and scrub on the banks of streams in deciduous facies, open scrub jungle, outskirts of cultivation, shrubbery in gardens, reed-beds in water-logged depressions, and grassy hillsides; mangroves in coastal areas.

GENERAL HABITS. Found singly or in pairs, hopping restlessly among grass stems and bushes, tail erect and constantly flicked about. When suddenly flushed on disturbance, as from nest, will fly from one clump of grass to the next in a curious jerky fashion, emitting with the mandibles (presumably) a peculiar crackling noise *kit, kit, kit* as of electric sparks. Will sometimes descend to the ground to take insects, hopping about with cocked tail.

FOOD. Insects, larvae, spiders, etc.; also flower-nectar (*Bombax*, *Erythrina*, and other species).

VOICE and CALLS. Call-note, a sharp, rather nasal *tee-tee-tee* uttered from time to time while hopping among the bushes. Song rather wheezy and chipping: a loud, sprightly *jinny-jinny-jinny* quickly repeated five or six times, usually delivered from the top of a grass stem or bush; sometimes also given while the bird flits about in erratic rising and falling courtship display, jerking its tail up and down and often fluttering its wings to the accompaniment of a peculiar clapping sound *frap, frap*.

BREEDING. *Season*, overall March to November but varying locally with incidence of rains: in central India mostly July–September; in Andhra chiefly during the latter part of the monsoon (September–November); in Kerala and Tamil Nadu, mainly April to July. *Nest*, more often of two types, both of which may be built by the same pair. One is a flimsily built cup placed in several broad leaves sewn together. A second type is an oblong purse of woven grass and fibres and vegetable felt with the supporting grass stems incorporated into the structure (Lowther). A third, but less frequent, type is a flimsy ball of grass, supported by grass and weeds (Bates). It is generally placed in bushes (*Lantana*, *Lecy*, etc.) within two feet (60 cm) from the ground and frequently near a stream. *Eggs*, 3 to 5, not distinguishable from those of *P. fusciventris*: a glossy uniform reddish brown or mahogany-red with often a darker ring around the large end. Average size of 60 eggs 16.2 × 12 mm (Baker). Building, incubation and care of young by both sexes. Incubation period about 12 days. Frequently brood-parasitized by Plaintive Cuckoo (*Cacomantis merulinus*, 584). Nesting subject to inordinately heavy depredation by snakes, lizards, crow-pheasants, mongooses, and other marauders.

MUSEUM DIAGNOSIS. There is little difference between summer and winter plumage, the latter only differing in the presence of a faint olive wash on the back, not always noticeable in worn plumage. Difference in tail length not so great as in northern birds. Summer plumage differs from that of the northern subspecies

WARBLERS

61

(1515) in the slate colour extending to the rump and upper tail-coverts. See also Key to the Subspecies.

The species undergoes a complete spring moult about April-May and a complete autumn moult about October-November.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail summer winter
♂♂	45-53	13-15	19-21	55-56 60-65 mm
♀♀	45-47	13-14	19-20	— c. 55 mm (HW)

Weight 8 ♂♀ 7-10 (av. 8) g — SA.

COLOURS OF BARE PARTS. Iris and eye-rim rich orange-brown. Bill black; inside of mouth black in summer, brown, blackish brown or slaty pink in winter; mouth of nestlings bright orange-yellow. Legs and feet brownish yellow or brownish flesh; claws dusky.

1518. Ceylon Ashy Wren-Warbler. *Prinia socialis brevicauda* Legge

Prinia brevicauda Legge, 1879, Bds. Ceylon: 521 (Ceylon)
Baker, FBI No. 935 (part), Vol. 2: 530

LOCAL NAMES. *Hambu-kurullis* (Sinhala); *Tinu-kürüvi* (Tamil).

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. As in 1517, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Ceylon in all zones — lowland and hills up to c. 1600 m. Affects long grass and scrub, paddyfields, and occasionally tea-plantations.

GENERAL HABITS AND FOOD. As in 1517.

VOICE AND CALLS. Song, a loud, unmusical chirruping which sounds like a ringing *thrip, thrip, thrip*. . . Alarm-note, a nasal *cher, cher, cher* or *teuteuteu* rapidly uttered and suggestive of a sewing-machine; scolding-note, a peevish *mee . . . mee* (Henry).

BREEDING. Season, ill-defined; breeds throughout the year, with a peak period about March in the hills, and mainly December to March (north-east monsoon) in the Dry zone. A second peak occurs in August-October. Nest, as in 1517. Eggs, generally 3, sometimes 4 or 2, similar to those of 1517.

MUSEUM DIAGNOSIS. Summer and winter plumages alike. Differs from nominate *socialis* (1517) in having a shorter, more plumbeous tail, paler underparts and more earth-brown on wings.

Young (juvenile), greyish olive above with a buffy yellow loreal streak; underparts paler than in adult.

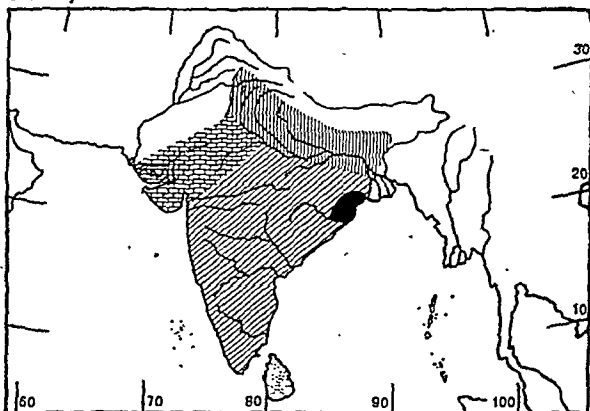
MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
9 ♂♂	47-51	14-15	19-21	47-56 mm
2 ♀♀	45, 48	14, 15	19, 19	44, 48 mm
				(HW)
♂♀	43-51	—	—	42-54 mm
				(SDR)

WARBLERS

63

Prinia sylvatica



Distributional ranges

	<i>gangetica</i> (1519).		<i>insignis</i> (1520).
	<i>sylvatica</i> (1521).		<i>mahendrar</i> (1522).
	<i>valida</i> (1523).		

FOOD. Insects — green grasshoppers, small beetles, caterpillars, ants, etc.; spiders. A small quantity of vegetable matter has also been found in stomachs.

VOICE AND CALLS. Song, a loud triple note rapidly reiterated for two or three minutes at a stretch, and repeated frequently: *pit-pretty, pit-pretty, pit-pretty* . . ., the *pit* subdued, rather ventriloquistic, and heard only at close range (see Display, above). When alarmed, the bird hops about agitatedly with a loud, quick-repeated *pit, pit, pit*, etc.

BREEDING. Season, overall March to October, mostly June to September (monsoon). Nest, a round or oval ball of grass rather loosely put together, strengthened on the outside by cobweb and vegetable down, and lined with fine grass; entrance on the side. Built in a low bush or in clumps of grass, the blades of which are drawn down and woven into the nest; placed within a metre or so above the ground, usually quite low down. Eggs, usually 4, often 3, sometimes 5, very variable: dull grey-green, sometimes buffy or pink, faintly speckled with light reddish to deep reddish brown, usually forming a ring around the broad end. Eggs of abnormal clutches may be pale blue or white, completely unspotted. Average size of 100 eggs 17.5 × 12.8 mm (Baker). Building, incubation and care of young by both sexes. Incubation period undetermined.

MUSEUM DIAGNOSIS. Differs from *insignis* (1520) in being browner above. Post-nuptial moult takes place from October to December. Both postnuptial and pre-nuptial moults are complete.

62

SYLVIINAE

Weight 1 ♂ c. 11 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill black (all year). Legs and feet flesh-colour.

PRINIA SYLVATICA Jerdon

Key to the Subspecies

A	Summer and winter plumages different	Page
1	Paler and greyer	<i>P. s. insignis</i> 64
2	Darker and browner	<i>P. s. gangetica</i> 62
3	Darkest, more cinnamon	<i>P. s. mahendrar</i> 65
B	Summer and winter plumages alike	
4	Paler, bill smaller (13-15 mm)	<i>P. s. sylvatica</i> 64
5	Darker, bill longer (15-17 mm)	<i>P. s. valida</i> 65

1519. Gangetic Jungle Wren-Warbler. *Prinia sylvatica gangetica* (Blyth)

Suya gangetica Blyth, 1867, Ibis: 23 (Upper Ganges)
Baker, FBI No. 937 (part), Vol. 2: 532

LOCAL NAME. *Tot-rungi* (Hindi).

SIZE. Sparrow —; length c. 15 cm (6 in.).

FIELD CHARACTERS. A large brown wren-warbler with the characteristic longish graduated 'loosely inserted' tail.

Above (summer), earthy brown. Lores and a narrow supercilium whitish. Tail (except central rectrices) tipped whitish, sub-tipped darker; outermost pair almost entirely white on inner web. Below, entirely cream-colour. In winter the upperparts are more ruddy and the tail lacks the white tips. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common resident. From Kangra district (Himachal Pradesh) and Punjab eastward through Uttar Pradesh and northern Madhya Pradesh, Nepal (terai and foothills) and Bihar to northern Bengal (Jalpaiguri district) and northwestern Bangladesh, in the foothills up to c. 1000 m. Affects low bush jungle mixed with coarse grass, especially in eroded ravines and broken stony country — drier facies than characteristic of *P. socialis*.

GENERAL HABITS. Keeps in pairs or small parties of three to five birds, according to the season, often in company with *Dumetia*, *Chrysomma* and *Prinia hodgsonii*. Hops and flits about jerkily in grass and thorn scrub in the characteristic manner of the genus, switching the tail loosely up and down, clambering to the top now and again and diving into the thicket on alarm.

Display. The male sings excitedly from a bush-top or boulder, or during the vehement aerial courtship display. This consists of a succession of quick-repeated nose-dives, the bird tumbling headlong downwards, then rising steeply again for the next dive, and so on, with occasional snapping of the wings as in *P. socialis* (1517), till it finally alights on a nearby bush. While the song is uttered, whether from a perch or in the air, the tail is spread to show off the white outer feathers and tips prominently. The black inside of mouth is conspicuous while singing.

64

SYLVIINAE

Young, like summer adult but with a distinct yellow wash on underparts. Tail earth-brown with pale tips. First primary shorter and rounded, outer web broader. Postjuvénal moult complete.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in *insignis*.

1520. Northwestern Jungle Wren-Warbler. *Prinia sylvatica insignis* (Hume)

Dryomys Insignis Hume, 1872, Stray Feathers 1: 10 (Mount Abo)
Baker, FBI No. 939, Vol. 2: 533 (= *P. s. rufescens*)

LOCAL NAME. *Tot-rungi* (Hindi).

SIZE. Sparrow —; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1519, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Gujarat (including Kutch and Kathiawar) and western Rajasthan. Affects stony, semi-desert grass-and-euphorbia scrub country, cut up by erosion ravines.

GENERAL HABITS, FOOD AND VOICE. As in 1519.

BREEDING. As in 1519.

MUSEUM DIAGNOSIS. Differs from *gangetica* in being grey above and having more white in tail (summer plumage).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail (winter)
♂♂	59-67	15-17	23-25	73-95 mm
♀♀	53-61	c. 15	22-25	71-77 mm (SA)

Weight 11 ♂♀ 10-21 (av. 16) g — SA.

COLOURS OF BARE PARTS. Iris light brown. Bill: upper mandible black, lower flesh-colour or yellowish; mouth of breeding males black. Legs and feet flesh to brownish flesh.

1521. Peninsular Jungle Wren-Warbler. *Prinia sylvatica sylvatica* Jerdon

Prinia sylvatica Jerdon, 1840, Madras Jour. Lit. Sci. 11: 4
(Seegore Ghat, Nilgiris)

Prinia sylvatica palniensis Koelz, 1939, Proc. Biol. Soc. Washington 52: 72
(Kodaikanal, Palni Hills)

Baker, FBI No. 937 (part), Vol. 2: 532
Plate 85, fig. 13

LOCAL NAMES. *Tot-rungi* (Hindi); *Kenda-lotakun-jilla* (Telugu); *Chettikūrū* (Malayalam).

SIZE. Sparrow —; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1519, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The Indian Peninsula from Maharashtra and northern Madhya Pradesh (intergrading hereabouts with *gangetica*) south to Kanyakumari; plains and hills up to c. 1500 m. Affects sparsely scrubbed, stony, hummocky country — boulder-strewn hillsides with rank grass and scattered thorn bushes etc.

GENERAL HABITS, FOOD AND VOICE. As in 1519.

WARBLERS

65

BREEDING. Season, overall April to September with apparently two peak periods: April-May, especially in the south, and June to September (monsoon) in the north. Once December (Mysore). *Nest* and *eggs*, as in 1519.

MUSEUM DIAGNOSIS. Intermediate in colour between the darker *valida* of Ceylon and the greyer *insignis* of Gujarat etc. Summer and winter plumages show little variation and agree with summer plumage of the northern subspecies. Only some summer birds develop white lateral rectrices.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail	
				summer	winter
♂♂	52-65	14-16	21-24	65-72	67-79 mm
♀♀	50-54	13-14	20-21	—	57-65 mm

(HW, SA, Koelz)

Weight 6 ♂♀ (July-August) 14-18 (av. 16.3) g—SA.

COLOURS OF BARE PARTS. Iris orange (♂), orange-straw, straw or drab (♀), olive-brown (juv.). Bill: summer male black; in other stages horny brown, lower mandible fleshy; in juvenile lower mandible bright yellow, gape yellow; mouth: summer male black; in other stages brownish pink, or pink with brownish streaks. Legs and feet fleshy or pale fleshy brown; claws similar or darker.

1522. Orissa Jungle Wren-Warbler. *Prinia sylvatica mahendras* Koelz*Prinia sylvatica mahendras* Koelz, 1939, Proc. Biol. Soc. Washington 52: 72

(Mahendra Giri, Orissa)

Baker, FBI No. 937 (part), Vol. 2: 532

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1519, q.v.

STATUS, DISTRIBUTION AND HABITAT. Region of the type locality (Mahendra Giri, Orissa).

GENERAL HABITS, FOOD AND VOICE. As in 1519.

BREEDING. As in 1519.

MUSEUM DIAGNOSIS. Differs from other races in the winter plumage being dark cinnamon rather than grey-brown or fulvous; underparts, especially sides, much greyer (Koelz).

MEASUREMENTS. Said to have a longer tail than *sylvatica*, but this is a clinal character from south to north: cf. measurements of *insignis*.

	Wing	Tail
3 ♂♂	60-62	77-81 mm

(Koelz)

COLOURS OF BARE PARTS. As in 1521.

1523. Ceylon Jungle Wren-Warbler. *Prinia sylvatica valida* (Blyth)*Dryosia valida* Blyth, 1851, Jour. Asiat. Soc. Bengal 20: 180, new namefor *D. robusta* Blyth, 1849, Jour. Asiat. Soc. Bengal 18: 812(Ceylon), nec *D. robusta* Rüppell, 1840

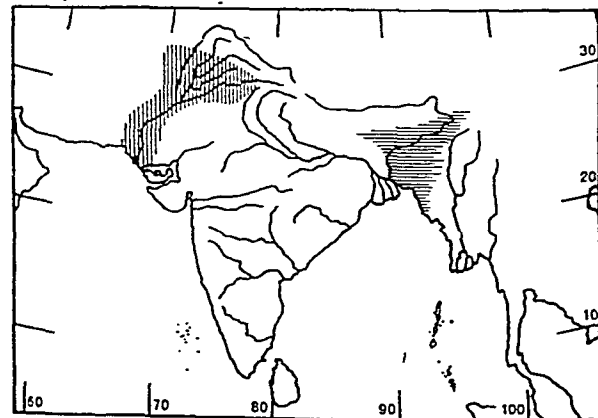
Baker, FBI No. 938, Vol. 2: 533

LOCAL NAMES. *Hambu-kurullā* (Sinhala); *Tiru-kūrūci* (Tamil).

SIZE. Sparrow —; length c. 15 cm (6 in.).

WARBLERS

67

Prinia flaviventris

Distributional ranges

■ *sindiana* (1524).■ *flaviventris* (1525).

GENERAL HABITS AND FOOD. As in 1525.

VOICE AND CALLS. Song, four or five silvery notes uttered in quick succession, rendered as 'a cheerful *tuweedle-li-li*'. Alarm-note, a shrill, plaintive *tree*.

BREEDING. Season, April to September. *Nest* and *eggs*, as in 1525. Size of eggs about 14.5 × 11.7 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *flaviventris* (1525) by its smaller bill, and in being duller green above and paler yellow below.

MEASUREMENTS

	Wing	Bill (from feathers)	Tail
♂♀	43-45	c. 10	48-64 mm

(Baker)

COLOURS OF BARE PARTS. As in 1525.

1525. Assam Yellowbellied Wren-Warbler. *Prinia flaviventris flaviventris* (Delessert)*Orthotomus flaviventris* Delessert, 1840, Rev. Zool.: 101 (N. Bengale)*Prinia flaviventris fulvicinctus* Koelz, 1952, Jour. Zool. Soc. India 4: 154

(Karong, Manipur)

Baker, FBI No. 933, Vol. 2: 528

Plate 85, fig. 15

SIZE. Sparrow —; length c. 13 cm (5 in.).

SYLVIINAE

66

FIELD CHARACTERS. As in 1519, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Ceylon in all zones up to c. 1800 m. Affects scrub-and-grass jungle; low scrub, tea plantations, fernlands and undergrowth around ricefields.

GENERAL HABITS AND FOOD. As in 1519.

VOICE AND CALLS. A loud and monotonous song beginning 'with a slow *titter* . . . *titter* which soon becomes a loud, ringing *titter*, *titter* . . . and this again changes to *thirrip*, *thirrip*, *thirrip* . . . Yet another note is very like the *terik terik terik* . . . of the tailor bird, but less musical' (Henry).

BREEDING. Season, ill-defined: breeds the year round with a peak period from March to May and again from July to September. Several broods are reared. *Nest*, usually a rather untidy ball of grass, but sometimes purse-shaped or even deep cup-shaped. Other details as in 1519. *Eggs*, either 8 or 4, similar to those of 1519. Average size of 12 eggs 17.9 × 12.9 mm (Phillips).

MUSEUM DIAGNOSIS. Differs from *sylvatica* in being darker above. Bill longer and stronger (12 ♂♂ *valida* 15.5-17 mm, 12 ♂♂ *sylvatica* 13-15 mm — HW). Lacks all trace of the pale supercilium sometimes present in peninsular races. Summer and winter plumages alike, of the summer type. Birds in complete moult have been collected in January and in July.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
12 ♂♂	60-65	15-17	22-25	59-70 mm
1 ♀	55	15	23	55 mm

(HW)

COLOURS OF BARE PARTS (Breeding). Iris pale brown. Bill: upper mandible dark blackish brown, lower greyish. Legs and feet fleshy brown.

PRINIA FLAVIVENTRIS (Delessert)

Key to the Subspecies

Paler and duller *P. f. sindiana*
Darker and brighter *P. f. flaviventris*

1524. Sind Yellowbellied Wren-Warbler. *Prinia flaviventris sindiana* Ticehurst*Prinia flaviventris sindianus* Ticehurst, 1920, Bull. Brit. Orn. Cl. 40: 157

(Sukkur, Sind)

Baker, FBI No. 934, Vol. 2: 529

Plate 82, fig. 14

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1525, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident, common but locally distributed. Pakistan and Punjab in the plains of the Indus river system, from Bannu and Ambala south through Sind. Affects riverain tamarisk and *sarkhan* grass jungle, or reed-beds.

SYLVIINAE

68

FIELD CHARACTERS. A typical wren-warbler with, longish, graduated, loosely inserted tail and bright yellow underparts. Above, forehead and sides of head dark grey; a short supercilium (not always present) and a pale eye-ring. Rest of upperparts and tail olive-green, the latter tipped whitish, and faintly subtyped brown. Below, throat and breast whitish cream. Belly bright lemon-yellow, a distinctive character. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. Nepal (Rapti Dun, Diesselhorst 1968: 266, sole post-Hodgsonian record), Bengal in the Jalpaiguri district and near Calcutta, Bangladesh south to the Chittagong Hill Tracts, Assam, Nagaland and Manipur. Range disjunct from that of *sindiana*. In the plains and foothills, generally up to c. 800 m, locally to 1200 m. Affects humid grasslands mixed with bushes, elephant grass and reeds near paddyfields, tanks, lakes and swamps, occasionally in thin secondary growth.

Extralimital. Burma. The species extends east to Vietnam and south to Sumatra.

GENERAL HABITS. A sprightly restless little bird, keeping singly, or 3 or 4 loosely together, hopping and climbing about in grasses where it finds its food, sometimes descending to the ground. As a rule difficult to see.

FOOD. Insects.

VOICE AND CALLS. Song consists of a sharp chirp followed by a little trill of about five notes, uttered from the top of a tall grass stem or bush. Call-note, an incessant *chink, chink* . . . Alarm-note, a plaintive *tree*. Also snaps wings.

BREEDING. Season, April to October, mostly June-September (monsoon). *Nest*, oval with the entrance near the top, made of fine grass, grass roots and vegetable down, strengthened by cobwebs and lined with finer grass; fixed to upright grass stems or placed in bushes often on pendent twigs, at heights varying from c. 50 to 150 cm above the ground. *Eggs*, usually 4, glossy mahogany-red, indistinguishable from those of *Prinia socialis* (1517). Average size of 60 eggs 15.2 × 11.7 mm (Baker). Building and incubation by both sexes; incubation period undetermined.

MUSEUM DIAGNOSIS. See Field Characters. Differs from *sindiana* (1524) in having a more saturated olive-green back and rump and a deeper yellow belly.

In summer the tail is shorter with obscure subterminal brown patches; in winter, tail longer without brown patches.

Young, upperparts and sides of neck yellowish olive-brown. Edges of wings rufous brown. Tail brown tinged with olive on outer webs, tips whitish. Underparts pale yellow. Postjuvénal moult complete.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	42-49	10-11	c. 21	50 (summer) to 70 (winter) mm

(Baker)

Weight 1 ♂ 7 g (GD).

COLOURS OF BARE PARTS. Iris yellow to brown. Bill black in summer, brown in winter; inside of mouth black in summer. Legs and feet orange-flesh.

PRINIA CRINIGER Hodgson

Key to the Subspecies

A	Palest; less warm brown.....	<i>P. c. striatula</i>	Page 69
B	Intermediate between A and C.....	<i>P. c. criniger</i>	70
C	Darkest; upperparts rich dark rufous.....	<i>P. c. catharia</i>	71

1526. Sind Brown Hill Warbler. *Prinia criniger striatula* (Hume)

Blandfordius [sic] *Striatulus* Hume, 1872, *Stray Feathers* 1: 44, *nomen nudum*
Blandfordius striatulus Hume, 1873, *Stray Feathers* 1: 300
(Karachi, Sind)

Baker, FBI No. 924, Vol. 2: 520

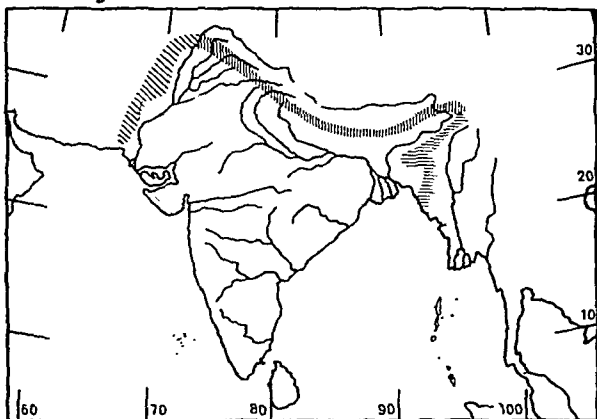
LOCAL NAMES. None recorded.

SIZE. Sparrow —; length, including long tail, c. 16 cm (6 in.).

FIELD CHARACTERS. As in 1527, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The foothills of Pakistan from the Salt Range and Kohat south through the Suleiman and Sind ranges nearly to the coast and west to

Prinia criniger



striatula (1526).

criniger (1527).

catharia (1528).

the Hingol Valley; from c. 900 to 2200 m, drifting down to the foothills in winter. Affects grass-and-scrub jungle and open pine forest on hillsides.

Extralimital. Recorded from Nuristan, N.E. Afghanistan (Paludan).

(Lister), of same pattern as Jungle Wren-Warbler's (1519), q.v.; uttered from some vantage point or as the bird dive-bombs at the female or in the vicinity of the nest, this performance accompanied by a loud flutter. See also Display, above. Regular song period, beginning of March till end of October, but song may also be heard sporadically throughout the winter (Proud, Nepal).

BREEDING. Season, May to October, chiefly July and August. Nest, an oval structure with the entrance near the top, made of grass, thickly matted with vegetable down and lined with finer grass. Usually placed in grass within a half-metre of the ground, sometimes in bushes overgrown with grass, up to c. 120 cm above the ground. Eggs, normally 4, sometimes 3, rarely 5; clutches of more than four may include an egg of the Plaintive Cuckoo (*Cacomantis merulinus*) closely resembling those of the host. Colour, white to pale pink marked with tiny reddish blotches and specks forming a ring near the extremity of the large end (not around the broadest part). Average size of 100 eggs 17.6 × 12.6 mm (Baker). Building, incubation and care of young by both sexes; incubation period ten or eleven days. Frequently brood-parasitized by *Cuculus canorus* and *Cacomantis merulinus*.

MUSEUM DIAGNOSIS. See Key to the Subspecies; for details of plumages Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail summer winter
♂♂	51-61	14-15	c. 23	{ 90 - 114 mm 74-84 — mm
♀♀				

Weight 2 ♂♂ (May) 15, (Nov.) 17 g — GD; 1 o? (Jan.) 13.2 g — Paynter.

COLOURS OF BARE PARTS. Iris pale brown. Bill: upper mandible black, lower light brown. Legs and feet brownish flesh; claws black (summer — SDR).

Iris yellow-white to orange. Bill black (summer), horny brown, flesh below (winter). Legs and feet fleshy pink or yellowish flesh (Baker).

1528. Assam Brown Hill Warbler. *Prinia criniger catharia* Reichenow

Prinia catharia Reichenow, 1908, *Orn. Monatsb.* 16: 13

(Ta-tsieng-lu-ting, Szechuan)

Suya criniger yunnanensis Harington, 1913, *Bull. Brit. Orn. Cl.* 31: 110

(Yunnan = Momien)

Suya crinigera assamica Baker, 1924, *Bull. Brit. Orn. Cl.* 44: 80 (Shillong)

Suya [sic] *crinigera nebulosa* Koels, 1952, *Jour. Zool. Soc. India* 4: 43

(Cherrapunji, Khasi Hills)

Baker, FBI No. 925, Vol. 2: 520

LOCAL NAME. *Daotisha dldao* (Gachari)

SIZE. Sparrow —, with a long tail; length c. 16 cm (6 in.).

FIELD CHARACTERS. As in 1527, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The hills of Assam, Nagaland, Manipur and Bangladesh south to the Chittagong Hill Tracts; from c. 800 m to the highest summits, optimum zone 1200-1600 m. Affects coarse grass and scrub-and-grass jungle.

GENERAL HABITS, FOOD AND VOICE. As in 1527.

BREEDING. Season, May to August. Nest and eggs, as in 1527.

MUSEUM DIAGNOSIS. Differs from *criniger* in the winter plumage being paler above, less warm brown; light streaks also paler; edges of wing less deep rufous; under tail-coverts and flanks paler. Summer plumage also paler.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1527.

Weight 1 ♂ (Dec.) 12.4; 1 o? (Dec.) 13 g — Paynter; 1 ♂ (March) 12 g — Paludan.

1527. Himalayan Brown Hill Warbler. *Prinia criniger criniger* Hodgson

Prinia? *Suya criniger* Hodgson, 1836, *Asiat. Res.* 19: 183 (Nepal)

Baker, FBI No. 923, Vol. 2: 518

Plate 85, fig. 19

LOCAL NAMES. *Phitta* (Kashmir); *Suya* (Nepal); *Dang-prim-pho* (Lepcha); *Stik-shillik* (Bhutan).

SIZE. Sparrow —, with a long tail; length c. 16 cm (6 in.).

FIELD CHARACTERS. A long-tailed, brown warbler dark-streaked above, strongly reminiscent of the wren-warblers of the plains. A passable miniature of the Common Babbler (*Turdoides caudatus*).

Above, brown, distinctly streaked on head and back. Tail very long, strongly graduated, each rectrix tipped with buff and a subterminal dusky spot; tail narrowly cross-barred but this character only visible at very close range. Below, pale fulvous (summer), marked with dusky spots or mottling on sides of throat and breast (winter); flanks olive-brown. Sexes alike.

The similar *P. burnesii* (1531) is a bird of the plains only. It is distinguished by its whitish underparts (v. warm fulvous).

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to small vertical movements. The Himalayan foothills from Murree and Kashmir east to Arunachal Pradesh. Breeds from c. 1200 m (in the western Himalayas down to c. 600 m) up to 2100 m, locally up to 2800 m, exceptionally 3100 m (Simla, Nepal). Winters from c. 2100 m down to c. 300 m. Affects low bushes on grassy slopes and in stony ravines, terrace-cultivated hillsides, and open pine forest.

GENERAL HABITS. Found singly or in pairs, skulking among low scrub and grass tussocks. Flight feeble and jerky. When disturbed, seldom flies far before tumbling headlong into another bush; or it shoots almost vertically down a steep hillside, tail doubled over the back and wings pulled in at the sides.

Display. In the breeding season males frequently mount to the top of a bush or tree to utter their reeling creaky song. For this, very partial to telegraph wires where available. From time to time one will jump up and perform curious aerial evolutions consisting of a series of steep wave-crests and nose-dives accompanied by a low fluttering sound — antics recalling those of the Ashy Wren-Warbler (1517), q.v.

FOOD. Insects.

VOICE AND CALLS. Song, an exuberant but wheezy, almost scraping double-note, like a knife being sharpened on a grindstone: 't'zeetu-t'zeetu-t'zeetu (or tsee-tsee-tsee-tsee...) usually given in series of three or four

Extralimital. Extends to northern Burma, northwestern Yunnan and Szechuan. The species ranges east through the Indochinese countries and southern China to Formosa.

GENERAL HABITS, FOOD AND VOICE. As in 1527.

BREEDING. Season, chiefly April, May and June, but eggs may be found in almost every month of the year. Nest, as in 1527. Eggs, 3 to 7, normally 4, pale blue to dull green, spotted as in 1527 but ring not so invariably well defined; occasional eggs may be unmarked. Average of 200 eggs 16.7 × 12.8 mm (Baker). Breeding biology as in 1527.

MUSEUM DIAGNOSIS. Summer. Feathers of forehead, crown, nape and mantle blackish brown suffused with chestnut and margined brownish ashy to give a boldly streaked appearance. Winter. Equally boldly streaked, but feathers overlaid with a rich dark rufous wash which masks the light margins and gives the bird a generally darker appearance (Deignan). Differs from 1527 in being darker.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1527.

PRINIA ATROGULARIS (Moore)

Key to the Subspecies

Upperparts olive-brown.....	<i>P. a. atrogularis</i>
Upperparts ferruginous brown.....	<i>P. a. khasiana</i>

1529. Himalayan Blackthroated Hill Warbler. *Prinia atrogularis atrogularis* (Moore)

Suya atrogularis Moore, 1854, in Horsfield & Moore, *Cat. Bds. E.I. Co.* 1: xviii, 326 (Darjeeling)

Baker, FBI No. 928, Vol. 2: 523

Plate 85, fig. 11

LOCAL NAMES. *Chiburchay* (Pahana); *Shikshillik* (Bhutan).

SIZE. Sparrow —, with a long tail; length c. 17 cm (6½ in.).

FIELD CHARACTERS. A long-tailed warbler. Above, unstreaked dark olive-brown, greyer on head and nape. Wings and tail rufous brown. Tail very long (c. 10 cm), strongly graduated, paler at tip. Below, throat black, bordered with white moustachial stripes. Breast spotted black and white; belly fulvous, more olive on flanks. In winter the throat is fulvous white streaked with black, and there is a more or less distinct white supercilium. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Fairly common resident but locally distributed. Eastern Nepal (Ilam District — Stevens, Fleming & T aylor), Bengal (Darjeeling district), Sikkim, Bhutan and Arunachal Pradesh (Bailey, JBNHS 24: 75). Breeds from c. 1000 to 2500 m; observed in winter as high as 2200 m. Affects open scrub-and-grass jungle on hillsides, bushes among terrace cultivation and long grass in pine forest — much the same type of country as *P. criniger*, but occasionally found in forested areas.

Extralimital. Adjacent southeastern Tibet. The species extends east to

Fukien and Vietnam, and south to Sumatra.

GENERAL HABITS. Very similar to those of Brown Hill Warbler (1527). Keeps singly or in pairs, skulking in tall grass and scrub. A very active bird.

WARBLERS

73

ceaselessly turning this way and that, twitching its tail up and down — occasionally vibrating it up and down very rapidly for a moment. Repeatedly works its way in little spurts to the top of a bush and then flies down into cover (Lister).

FOOD. Insects.

VOICE and CALLS. Alarm, a series of soft, scolding *chrrrr-churr-churr*. Call-notes, a soft *tp-tp-tp*... while foraging; a soft, high-pitched *pri*... *pri*... *pri* and a *tyip*... *tyip* (Lister). For rendition of song see 1530.

BREEDING. Season, chiefly May and June. Nest, globular with a lateral entrance, made of grass stems and flowering grass heads, usually with a small amount of moss incorporated; generally placed in clumps of grass, attached to two or more stems, the materials being loosely wrapped around these. Eggs, 3 to 5, variable: more commonly pale greenish, more or less covered with reddish freckles or small blotches, usually forming a ring around the broadest part; eggs with white or pink ground colour are also found. Different from those of *P. criniger* in the less bold definition of the ring and in the great preponderance of the green type. For further details see Baker, *Nidification* 2: 473. Average size of 100 eggs 16.9 × 12.7 mm (Baker). Building, incubation and care of young by both sexes; incubation period c. 10 days.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

Young, above, brownish with a faint yellowish tinge; below, white with faint yellow tinge on throat and belly; an indistinct yellowish and green-brown band across the breast. Markings less distinct than in adult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	45-56	13-15	20-25 (mostly 21-23)	75-117 mm (Oct.-April) (SA, Stresemann)

Weight 11 ♂ ♀ 8-16 (av. 11.8) g — SA.

COLOURS OF BARE PARTS. Iris greyish brown. Bill brown (winter). Legs and feet brownish flesh; claws horny brown.

1530. Assam Blackthroated Hill Warbler. *Prinia atrogularis khasiana* (Godwin-Austen)

Suya khasiana Godwin-Austen, 1876, Ann. Mag. Nat. Hist. 18: 412 (Khasia Hills)

Baker, FBI No. 929, Vol. 2: 524

LOCAL NAME. *Daolisha ddao* (Cachari).

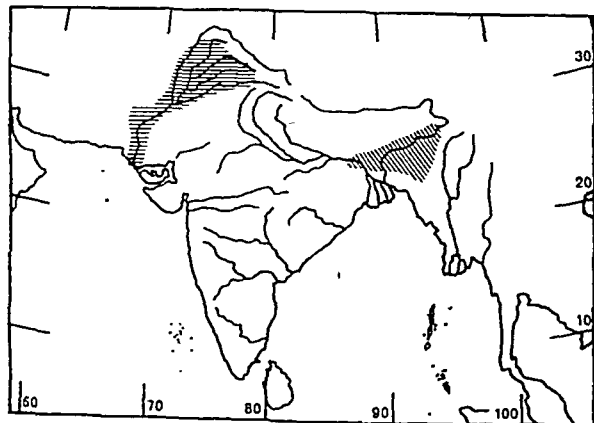
SIZE. Sparrow —, with a long tail; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in 1529, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Common resident. Nagaland, Manipur and Meghalaya in the Cachar and Khasi hills south to the Chittagong Hill Tracts of Bangladesh; from c. 900 to 1800 m (1400 to 2600 m on Mt Victoria). Affects tall grass or patches of low scrub mixed with grass on steep hillsides, on the edge of cultivation or fringe of forest.

WARBLERS

75

Prinia burnesii

Distributional ranges

■ *burnesii* (1531).

▨ *cinerascens* (1532).

again, being almost impossible to flush a second time. General effect of the bird and its behaviour strangely reminiscent by turns of both Jungle Wren-warbler (1521) and Streaked Laughing Thrush (1314) — a similarity that seems curiously apparent also in their reeling songs. Occasionally feeds on the ground, turning over dead leaves and searching nooks and crannies for insects. During daytime little or nothing is usually seen of the bird; towards evening however it comes out of its retreat, creeps about the outside of a bush, singing cheerily at intervals, only to dive into thick cover again if disturbed.

FOOD. Insects.

VOICE and CALLS. Call-note, a wheezy *fee-z*. Song loud and pleasant, recalling that of *Saxicola caprata*, 'a clear sweet liquid warble of about four seconds' and in a way reminiscent also of the reeling songs of Jungle Wren-warbler and Streaked Laughing Thrush. A chattering alarm-note described as 'a quiet nasal rattle, and when excited a very rapidly repeated *chit* or *szi!*' (Holmes & Wright).

BREEDING. Season, February to September. Nest, cup-shaped, made of coarse grass lined with vegetable down, fine grass and sometimes a feather or two. Well hidden in a grass clump, almost on the ground, often on the edge of a small clearing. The female sits close, skulking off into cover on being disturbed and easily abandons the nest. Eggs 4, white with a very faint tinge of greenish blue, profusely speckled all over with dark brown, slightly more so at the large end. Average size of 20 eggs 17.9 × 14.2 mm (Baker). Share of sexes in domestic duties unknown except that the female alone appears to build the nest.

74

SYLVIINAE

Extralimital. Burma.

GENERAL HABITS and FOOD. As in 1529.

VOICE and CALLS. A loud song rather similar to that of *P. criniger* (1527) rendered as *tulip*... *tulip*... *tulip* (Heinrich). Other calls as in 1529.

BREEDING. As in 1529.

MUSEUM DIAGNOSIS. Male and Female, winter, like *atrogularis* but upperparts, edges of wings and tail bright rufous; flanks more ochraceous. Summer, like *atrogularis* but upperparts, especially crown, bright rufous as are edges of wing and tail. Female like male but chin and throat with white markings making the black less conspicuous. Apparently only has a body moult in spring.

Young, like winter adult but not so rich or so rufous brown. Underparts as adult; there is an indication of the black, white-tipped throat. First primary with broader outer web. Tail shorter and more flimsy. Postjuvénal moult complete.

MEASUREMENTS. As in 1529.

Weight 1 ♀ 11; 1 juv. ♂ 9 g (SDR).

COLOURS OF BARE PARTS. As in 1529.

PRINIA BURNESII (Blyth)

Key to the Subspecies

Under tail-coverts dark ferruginous..... *P. b. burnesii*
Under tail-coverts greyish white..... *P. b. cinerascens*

1531. Western Longtailed Grass Warbler. *Prinia burnesii burnesii* (Blyth)

Eu.(tyercus) Burnesii Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 374

(Indus territories = Sind)

Baker, FBI No. 832, Vol. 2: 430

Plate 85, fig. 17

LOCAL NAMES. *Hedela*, *Chihio* (Sind).

SIZE. Sparrow —, with a long tail; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Above, rufescent grey and rufous-brown with darker streaks. A pale eye-ring. Below, greyish white. Tail olive-brown, very long and graduated, the lateral feathers tipped fulvous. Sexes alike.

Distinguished from *P. criniger* by the whitish underparts. *P. lepbida*, the other streaked *Prinia*, differs by its smaller size and paler plumage.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. Pakistan in the plains of the Indus. Affects long *sarkhan* grass (*Saccharum*) in pure stands or where mixed with acacias and tamarisks, mainly in the vicinity of large rivers and their tributaries.

GENERAL HABITS. Keeps in pairs or small parties to rootstocks of dense grass clumps, hopping and threading its way through the stems and in and out of cover with the agility of a mouse. Is an inveterate skulker, slipping away silently through the thickest scrub, and flushed only with difficulty. Then flies hurriedly for a few short metres and tumbles headlong into cover

76

SYLVIINAE

MUSEUM DIAGNOSIS. Differs from disjunct *cinerascens* (1532) in being more rufescent above and in having the under tail-coverts deep rufous (v. greyish white). Young, like adult but upperparts more uniform, the dark streaks hardly discernible.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	53-57	10-11	20-21	85-108 mm (Baker)

COLOURS OF BARE PARTS. Iris brown. Bill brown above, straw below. Legs and feet flesh-coloured.

1532. Eastern Longtailed Grass Warbler. *Prinia burnesii cinerascens* (Walden)

Eurtyercus cinerascens Walden, 1874, Ann. Mag. Nat. Hist. 14: 156

(Dhubri, Lower Bengal)

Baker, FBI No. 833, Vol. 2: 431

Plate 85, fig. 16

LOCAL NAMES. None recorded.

SIZE. Sparrow —, with a long tail; length c. 16 cm (6½ in.).

FIELD CHARACTERS. As in 1531, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. Assam in the plains of the Brahmaputra and Cachar, Bangladesh in the north and in Sylhet; western Bihar (Monghyr, one record). Affects the vast expanses of *ekra* or elephant-grass in the vicinity of large rivers and in swamps.

GENERAL HABITS, FOOD and VOICE. As in 1531.

BREEDING. Season, at least April and May. Nest, as in 1531. Eggs, as in 1531 but ground colour slaty green and speckling almost black. Average size of 7 eggs 16.9 × 13.9 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *burnesii* in being more olive-grey, less rufous above, and in having the under tail-coverts greyish white like the abdomen.

MEASUREMENTS

	Wing	Tarsus	Tail
♂ ♀	51-52	c. 21	68-79 mm (Baker)

Bill from skull c. 15 mm

COLOURS OF BARE PARTS. Iris sienna-brown. Bill horny black, dark above, bluish below. Legs and feet brownish, plumbeous or slaty brown.

Genus SCOTOCERCA Sundevall

Scotocerca Sundevall, 1872, Meth. Av. Disp. Tent.: 7.

Type, by original designation, *Malurus iniquus* Cretzschmar

Much resembles *Prinia* but tarsus longer. Tail slightly graduated, slightly longer than wing. Long hairs overhanging nostrils.

WARBLERS

77

1533. Streaked Scrub Warbler. *Scotocerca inquieta striata* (Brooks)

Melizophilus striatus Brooks, 1872, Ibis: 180 (Naoshera, Punjab)
Baker, FBI No. 905, Vol. 2: 501

Plate 85, fig. 18

LOCAL NAMES. None recorded.

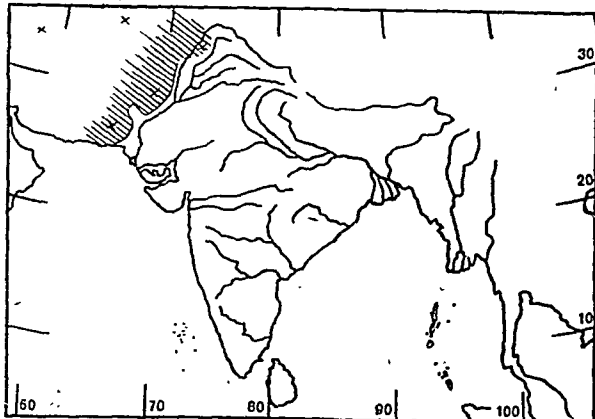
SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. A small sand-coloured warbler with a dark, erect tail. Above, pale sandy brown, conspicuously streaked on crown with dark brown. A dark line from lores through eye and a broken, pale eye-ring. Supercilium, cheeks and sides of breast pinkish fulvous. Tail dark brown, outer rectrices with pale tips. Below, buffish white, lightly striated with brown on throat; flanks pale buff. Sexes alike.

The dark line through eye, terrestrial habits, and barren stony habitat at once distinguish this species from any streaked *Prinia*.

STATUS, DISTRIBUTION and HABITAT. Fairly common resident. The hills of Pakistan from Peshawar and Kohat east to the Jhelum River, south to the Makran coast and west through Baluchistan (Ticehurst, JBNHS 31: 700,

Scotocerca inquieta striata



▨ Distributional range x Isolated records

1926, Christison, Ibis 1941: 536). Affects arid, rocky hillsides, ravines and valley floors where scrub or a few clumps of grass afford it hunting ground. In summer locally up to c. 3000 m (at least until October) and down to the foothills, but does not enter the plains.

Extralimital. The species extends through the Middle East countries and North Africa to Morocco.

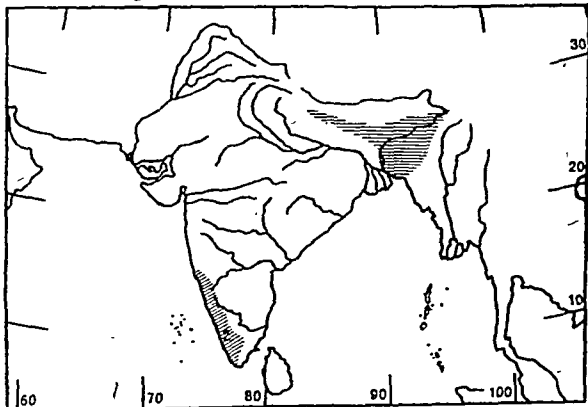
WARBLERS

79

FIELD CHARACTERS. A rufous-brown grass warbler with a broad, graduated, white-tipped tail. Above, head and back streaked with black and rufous; sides of neck and lower nape streaked black and white. A white supercilium. Wings and rump rufous. Tail dark brown, strongly graduated, conspicuously tipped with white. Below, throat, breast and belly white, flanks rufous. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. From the western Nepal terai (Rand & Fleming 1957, Fleming & Traylor 1968) east through northern Bengal (Jalpaiguri duars) and the flood-plains of the Brahmaputra, south through the plains of Assam, Manipur and Bangladesh to the Ganges. Affects tall grass and reeds.

Graminicola bengalensis and *Schoenicola platyura*



▨ *G. b. bengalensis* (1534). ▨ *S. platyura* (1546).

Extralimital. The species ranges through the Indochinese countries to Hainan.

GENERAL HABITS. Little known except that it is difficult to observe in the dense grass in which it skulks. With close beating and walking up the bird flushes readily but it dives into cover almost instantaneously; and if fired at and missed it vanishes for ever! (Hume).

FOOD. Insects.

VOICE and CALLS. Said to be very noisy in the breeding season, soaring into the air and singing a harsh and loud song, also from the tops of reeds. Call-note similar to that of the American Catbird — 'a mewling call' (Fleming).

78

SYLVIINAE

GENERAL HABITS. Keeps in pairs or in small parties. 'A most attractive bird racing about like a mouse, its tail never quiet, and working itself into an ecstasy of excitement, flicking its little wings, bouncing this way and that, under one stone, over another, round another, reappearing in most unexpected places' (Meinertzhagen). It is a typical wren-warbler, aside from its more terrestrial habit. Feeds a great deal on the ground under the shelter of bushes and coarse grass, or hops about restlessly among the rootstocks and low branches of stunted thorn scrub, constantly jerking its cocked tail over its head and from side to side.

FOOD. Insects, minute snails and seeds.

VOICE and CALLS. 'Has a variety of notes of three main types: A cheerful and sweet song. A melodious, rather loud trill of about five notes descending in tone, uttered when the bird is at ease. A dull but rather loud pit, pit of alarm, much like a dull version of the familiar call of the Tailor Bird' (Whistler MS.). 'Like the squeaking of mice' (Williams).

BREEDING. Season, end of February to August. Nest, globular, made of dry grass stems, rather untidy but well lined with silky fibres, some felt-like vegetable matter and a few feathers. Placed in low bushes from a few centimetres above the ground up to c. 1.5 m, usually rather low down. Eggs, 5 or 6, white marked with minute specks of reddish pink to reddish brown, numerous at the large end where they form an ill-defined cap or zone. Average size of 40 eggs 15.8 × 11.9 mm (Baker). Apparently frequently brood-parasitized by *Cuculus canorus*.

MUSEUM DIAGNOSIS. See Field Characters.

Young, like adult but wing and tail browner and dark markings on upperparts not so sharply defined.

The species has two moults, the spring moult only partial.

MEASUREMENTS

	Wing	Tarsus	Tail
♂ ♀	49-52	c. 18	43-50 mm (Baker)

Bill from skull 12 mm

Weight 1 ♂ 8, 1 ♀ 8 g (subsp.?, Afghanistan) — Paludan.

COLOURS OF BARE PARTS. Iris hazel. Bill brown, lower mandible yellowish. Legs and feet yellowish brown.

Genus GRAMINIGOLA Jerdon

Graminicola Jerdon, 1863, Bds. India 2: 177.

Type, by monotypy, *Graminicola bengalensis* Jerdon

Bill rather stout, about half the length of the head. Four stiff rictal bristles. Crest feathers distinctly spinous.

1534. Large Grass Warbler. *Graminicola bengalensis bengalensis* Jerdon

Graminicola Bengalensis Jerdon, 1863, Bds. India 2: 177

(Cachar — see Baker, Nidif. 2: 393; also Biswas, JBNHS 65: 224)

Baker, FBI No. 834, Vol. 2: 433

Plate 85, fig. 21

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 16 cm (6½ in.).

80

SYLVIINAE

BREEDING. Season, at least July and August (monsoon). Nest, a deep cup of sedges and vegetable fibres, lined with fine grass roots and fixed between a few reeds in the manner of reed warblers. It is placed in dense *chra* grass or reeds standing in deep water during the rains, thus extremely difficult to find. Eggs, apparently 4, white, thickly covered with purple-red and deep brown specks and spots, especially at the large end. Two eggs measured 17.2 × 14.5 and 17.2 × 14.1 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	58-63	13-15	c. 24	73-90 mm (Baker)

Weight 5 ♂ 3, 1 ♀ 0.46–0.58 oz. (c. 13–16.5 g) — Hume.

COLOURS OF BARE PARTS. Iris reddish brown. Bill brown, fleshy at base of lower mandible. Legs and feet pale fleshy brown.

Genus ORTHOTOMUS Horsfield

Orthotomus Horsfield, 1821, Trans. Linn. Soc. London 13: 165.

Type, by monotypy, *Orthotomus sepium* Horsfield

Phyllergates Sharpe, 1883, Cat. Bds. Brit. Mus. 7: 176, 229.

Type, by original designation, *Phyllergates cucullatus* Temminck

Bill as long as head, broad and rather flat. A few rictal bristles. Forehead very smooth and flat. A few long soft hairs springing from nape. Wing very short and rounded; first primary (as.) large, fourth and fifth longest. Tail with 12 rectrices, graduated. Tarsus long and strong.

Key to the Species

		Page
A	Throat black.....	<i>O. atrogularis</i> 86
B	Throat not black.....	
1	Belly bright yellow.....	<i>O. cucullatus</i> 87
2	Belly buffish white, concolorous with throat.....	<i>O. sutorius</i> 80

ORTHOTOMUS SUTORIUS (Pennant)

Key to the Subspecies

A	Upperparts brighter yellow-green.....	
1	More richly coloured; bill averaging shorter.....	<i>O. s. patia</i> 84
a	Below whitish buff.....	<i>O. s. laterus</i> 84
b	Below more rufous.....	<i>O. s. gurgatus</i> 81
2	Duller; bill averaging longer.....	
B	Upperparts darker and greener.....	<i>O. s. fernandensis</i> 86
3	Plumage more saturated.....	<i>O. s. sutorius</i> 85
4	Plumage duller.....	

WARBLERS

81

1535. Indian Tailor Bird. *Orthotomus sutorius guzeratus* (Latham)*Sylvia guzerata* Latham, 1790, Index Orn.: 554 (Guzerat)*Sylvia ruficapilla* Hutton, 1833, Jour. Asiat. Soc. Bengal 2: 504

(Simla, ride Koelz, 1939)

Orthotomus sutorius londa Koelz, 1939, Proc. Biol. Soc. Washington 52: 70

(Londa, Bombay Presidency)

Orthotomus sutorius sindiana Koelz, 1939, Proc. Biol. Soc. Washington 52: 71

(Hyderabad, Sind)

Baker, FBI No. 813 (part), Vol. 2: 410

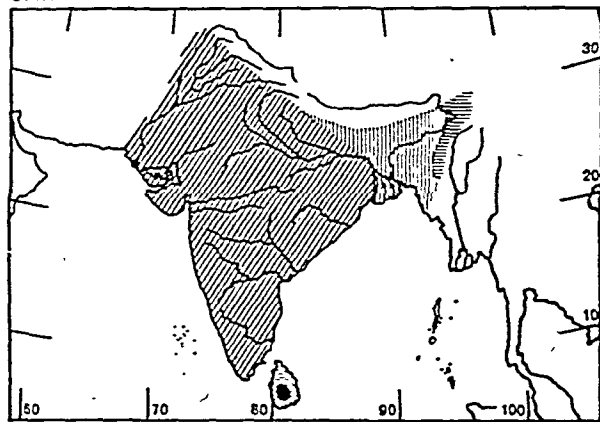
Plate 87, fig. 1!

LOCAL NAMES. *Därzer*, *Phēla*, *Piddi* (Hindi, Marathi); *Tashko*, *Dōjido* (Gujarati); *Likka jitta* (Telugu); *Pānakkīvūri* (Malayalam); *Thaigal chitta*, *Pon chitta* (Tamil).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. A small restless yellowish green warbler with whitish buff underparts and rust-coloured crown. Tail pointed, usually carried erect, the central rectrices narrow and elongated. Sexes alike but tail usually longer in male.

STATUS, DISTRIBUTION AND HABITAT. A common and widespread species. Pakistan and India from the Himalayan foothills [except range of *patia* (1536, q.v.)] south to Kanyakumari (Cape Comorin). In the hills up to *Orthotomus sutorius*



Distributional ranges

guzeratus (1535).

patia (1536).

luteus (1537).

sutorius (1538).

fernandensis (1539).

c. 1400 m, rarely 2000 m. Affects herbaceous gardens (even in the midst of noisy cities), scrub country especially in the vicinity of cultivation; deciduous jungle and village environs; in arid regions it is found in wooded

WARBLERS

83

built near houses or in pot plants in a veranda, as is often the case, all sorts of unusual materials such as bits of string, wool or cotton may be used. In semi-desert country where large-leaved plants are absent, the nest is of the *Cisticola* type. A number of small narrow leaves, e.g. of *Salvadora oleoides* or maybe a garden rosebush, are loosely sewn together with vegetable floss and the nest-cup within stitched to them for support.

The site chosen is usually under a metre from the ground on account of the bird's partiality for broad-leaved plants — occasionally in a leaf almost trailing the ground — but sometimes up to 4 to 5 metres. Nests usually well concealed. For further nesting details, see *Nidification* 2: 370. Eggs, 3 to 5, usually 3, very variable in ground colour but of two main types: 1) white to cream or pale pink, 2) white with a faint tinge of green or blue to a bright blue or pale sea-green. In both types the markings are fairly large blotches, spots and specks of pinkish red to red-brown about the large end where they may form an ill-defined ring, and smaller marks scattered about scantily elsewhere. Average size of 100 eggs 16.4 × 11.6 mm (Baker). Both sexes help in construction though share of male appears mostly to be bringing the material. Stitching of leaf apparently by female alone. In one case the building took four days; an egg was laid on each of the following days. Incubation by both sexes; period 12 days. Often brood-parasitized by the Plaintive Cuckoo, *Cacomantis merulinus*. When disturbed, the incubating bird slips off quietly until it is at a safe distance, when it demonstrates noisily. Male feeds his mate when she is incubating at intervals of c. 10 minutes. Feeding of young by both parents. Nestlings may be heard calling inside the nest but alarm-notes from the parents produce instant silence. The birds remain paired after breeding and may often be seen roosting cuddled together on a twig, sometimes in a potted plant in a veranda and hardly 50 cm from the ground.

Nesting subject to heavy mortality at all stages from rodents, cats, mongooses, crow-pheasants, lizards, snakes, etc.

MUSEUM DIAGNOSIS. Rufous cap confined to forehead and anterior crown; a broad grey area separating the cap from the yellowish green mantle. Central pair of rectrices much longer in winter than in summer. Premautal moult of body, tertials and tail.

Young, similar to adult female. Postjuvénal moult of body, lesser and median coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	47-55	15-17	17-21	37 (summer) to 110 (winter) mm
♀♀	43-49	14-17	18-21	34-39 mm (HW, SA)

Weight 10 ♂♂ 6-10 (av. 7.5) g — SA.

COLOURS OF BARE PARTS. Iris ochre to orange. Bill: upper mandible brown, lower dark flesh; mouth pale flesh. Legs and feet brownish flesh; claws dusky.

82

SYLVIINAE

compounds even where separated maybe by several kilometres of un-cultivated semi-desert.

GENERAL HABITS. Found singly or in pairs. Normally quiet and skulking, but tame and confiding near human dwellings. Usually keeps low down in herbage and undergrowth, hopping about energetically, tail erect and constantly flicked from side to side, uttering its loud, familiar call. Seldom flies more than a metre or two from cover to cover, the long tail jerked over the back in a very characteristic manner. Commonly seen hunting for insects attracted to mango blossoms, and will also feed on flower nectar; occasionally hops about to feed on the ground.

FOOD. Mainly small insects and their larvae: identified among stomach contents are tenebrionid and curculionid beetles, hemipterous bugs, ants, and jassid flies. Has been observed to take butterflies and moths. Also feeds on the flower nectar of *Salmalia*, *Bombax*, *Erythrina*, *Butea*, and many other species (pollen transported on frontal and throat feathers).

VOICE AND CALLS. Alarm-note (as when nest approached) a loud, quick repeated *pit-pit-pit-pit*... while hopping agitatedly in the bushes around the intruder. While foraging often utters a quick *cheep-cheep*... in runs of 5 or 6 *cheeps* each. Song surprisingly loud for such a small bird. Rendered as *pit-pit-pit-pit-pit-pit*... or *chubit*, *chubit*, *chubit* uttered intermittently all day long during the breeding season in series of 3 or 4 *pit-pits* with hardly any pause between the runs. When excited, the male 'climbs to an out-standing twig and pours out this song, his whole body vibrating with the effort, his tail cocked till it nearly touches his back, and the feathers of the throat parting to show their dark bases which give him the appearance of having a black gorget' (Betts).¹

BREEDING. Season, overall March to December, but mainly during the monsoon when herbaceous growth required for nesting is at its maximum, i.e. June to August. Broad-leaved seedlings and grafts of mango and fig, young teak in nurseries, and *cannas*, *crotons* and *suchlike* ornamental plants in gardens afford favourite sites. The nest may be built into one large drooping leaf or several smaller ones sewn along the edges to form a cone or bag with threads of vegetable down. One thread may serve for several stitches. The ends do not always appear to be knotted, but flock out naturally and hold themselves in place. The upper portion of the leaf nearest the stem arches over and protects the aperture which faces into the interior of the plant. Sometimes the tension of the leaf is too great for the strand to hold the edges in place, and the bird returning with more material finds that the leaf has sprung back to its original position with numerous strands floating. At other times the knots, not being large enough, pull through, thereby ruining the labour of perhaps a whole day; but the bird's patience is inexhaustible and as often as a strand snaps, so often is it renewed and strengthened.

The nest itself, built when the sewing is completed, is placed within the leaf cone and consists of a soft cup of fibres (coir etc.), spiders' egg bags and vegetable floss. The rim is strongly reinforced with bark fibre. When

¹ The dark [crescent-shaped] spots on each side of the Tailor Bird's throat are found in both sexes and are primarily due to the absence of feathers on an area of darkly pigmented skin. Its nature and purpose require investigation.

84

SYLVIINAE

1536. Bengal Tailor Bird. *Orthotomus sutorius patia* Hodgson*Orthotomus patia* Hodgson, 1845, Proc. Zool. Soc. London: 29

(Nepal, restricted to Katmandu by Ripley, 1950, JBNHS 49: 402)

Baker, FBI No. 814, Vol. 2: 412

LOCAL NAMES. *Pātia* (Nepal); *Tētāni* (Bengali); *Tētes srai* (Assam); *Noni dao* *terter* (Cachari).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1535, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The Nepal terai, northeastern Uttar Pradesh, northern Bihar and Bengal east through Bangladesh, Bhutan foothills and Assam (except for the range of *luteus*). Affects gardens, hedgerows, orchards, edges of forest and thin scrub; plains and hills up to c. 1800 m.

EXTRALIMITAL. Burma. The species extends east through the Indochinese countries, southern China and south to Java.

GENERAL HABITS AND FOOD. As in 1535.

VOICE AND CALLS. Generally as in 1535. Song also rendered as *titawet* or *toet* repeated several times while foraging. A loud, clear *tyra* given in quick succession with barely any pause between.

BREEDING. Season, overall March to October, chiefly May to July. Nest as in 1535. Eggs, 3 to 6, generally 4, similar to those of 1535. Average size of 200 eggs 15.9 × 11.3 mm (Baker).

MUSEUM DIAGNOSIS. More richly coloured than *guzeratus*. Upperparts more saturated olive-green; buff wash of lower parts more pronounced; rufous cap still more reduced; bill somewhat shorter.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	45-50	15-16	43 (summer) to 69 (winter) mm
♀♀	44-50	15-16	37-41 mm (BB, HW)

Weight 10 ♂♂ (April-Aug.) 7.7-8.9 g; 3 ♂♂ (Nov.-Jan.) 8.1-9.9 g; 2 ♀♀ (April-Aug.) 7.3-8.2 g; 3 ♀♀ (Jan.) 7.8-8.8 g (Paynter).

COLOURS OF BARE PARTS. Iris brown to yellowish brown. Bill: upper mandible dark horny, lower fleshy. Legs and feet brownish flesh; claws horny brown; soles fleshy white.

1537. Mishmi Tailor Bird. *Orthotomus sutorius luteus* Ripley*Orthotomus sutorius luteus* Ripley, 1948, Proc. Biol. Soc. Washington 61: 105

(Teru, Mishmi Hills, NE. Assam)

Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1535, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Common resident. From the Mishmi Hills south through Margherita and Nagaland to northern Manipur. Habitat as in 1536.

GENERAL HABITS AND FOOD. As in 1535.

VOICE AND CALLS. Noted as of same pattern but strikingly different from *guzuratus* of the Bombay area — a distinct 'regional dialect' (SA).

BREEDING. As in 1535.

MUSEUM DIAGNOSIS. More rufous-buff below than *patia*; crown and nape darker, forehead richer rufous.

MEASUREMENTS. As in 1536.

Weight 2 ♀ 7.5 (Nov.), 8.5 (Oct.) g — SDR.

COLOURS OF BARE PARTS. Iris pale brown. Bill dark brown. Legs and feet flesh coloured.

1538. Ceylon Tailor Bird. *Orthotomus sutorius sutorius* (Pennant)
Motacilla sutoria Pennant, 1769, Ind. Zool. pl. 7 (Ceylon)
Baker, FBI No. 813 (part), Vol. 2: 410

LOCAL NAMES. *Battichehā, Tawilā* (Sinhala); *Thayarkāran-kirūci, Koddia-pakkān* (Tamil).

SIZE. Sparrow — ; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1535, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Common and widespread resident. Ceylon, in all zones from sea level to c. 1500 m. Affects gardens, jungle, scrub.

GENERAL HABITS AND FOOD. As in 1535.

VOICE AND CALLS. Generally as in 1535; described as a loud, rather monotonous call with many variants, something like *tiwer tiwer tiwer*... sometimes speeded up to *twik twik twik*... When a pair has become separated, it becomes a loud *twike, twike, twike* (Henry). Alarm-note, a rapid chatter.

BREEDING. Season, ill-defined: nearly all year but with a peak in March to May and again in August-September. Nest and eggs, as in 1535. Clutch size usually 2, sometimes 3.

MUSEUM DIAGNOSIS. Differs from *guzuratus* in being darker green above, more uniformly washed with buff below. Rufous cap more extensive, practically absorbing all the grey of the nape. Bill longer and heavier. Not yet clear whether length of tail a seasonal or a seasonal characteristic (see Whistler, JBNHS 41: 96).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	47-50	16-17	18-20	40-64 mm
♀♀	42-46	16-17	18-20	29-33 mm (HW)

Weight 1 ♀ 9 g (SDR).

COLOURS OF BARE PARTS. As in 1535.

up to 1400 m, rarely 1800 m. Affects heavy scrub and edges of evergreen forest.

Extralimital. The species extends east through the Indochinese countries and south to Sumatra and Borneo.

GENERAL HABITS. A retiring species frequenting low undergrowth in dense jungle. It is more often heard than seen and, unlike the Indian Tailor Bird, confines itself to forest, not being found in open surroundings. Works its way through the bushes, tail cocked often well over the head.

FOOD. Insects.

VOICE AND CALLS. A loud trill 'kri-kri-kri... repeated a varying number of times' (Smythies); quite distinctive and easily recognized when once heard.

BREEDING. Season, March to August, chiefly May and June. Nest, very similar to that of Indian Tailor Bird, usually built within a single broad leaf and quite close to the ground (within one metre). Eggs, 3 to 5, generally 4, indistinguishable from those of *sutorius*. Average size of 100 eggs 15.4 × 11.4 mm (Baker). Both sexes share incubation.

MUSEUM DIAGNOSIS. See Field Characters. 'Black bases of throat feathers of female can always be seen if turned back with the finger' (Baker).

Young, similar to adult female but lacks rufous cap.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	42-48	14-15	c. 19-20	31-36 mm (Baker)

Bill from skull 16 mm

Weight 2 ♂♂ 6.8 (Feb.), 7.5 (May) g — Paynter.

COLOURS OF BARE PARTS. Iris orange-brown. Bill brown, lower mandible pale fleshy brown. Legs and feet flesh-colour.

1541. Goldenheaded Tailor Bird. *Orthotomus cucullatus coronatus* Blyth
Orthotomus coronatus Blyth, 1861, Proc. Zool. Soc. London: 200 (Sikkim)
Baker, FBI No. 922, Vol. 2: 516
Plate 87, fig. 12

LOCAL NAME. *Inhamui* (Kacha Naga).

SIZE. Sparrow — ; length c. 12 cm (4½ in.).

FIELD CHARACTERS. Above, forehead and crown rufous; a short yellow supercilium. Lores, sides of head and a nuchal collar dark grey. Back and wings olive-green; lower rump yellow. Below, throat and breast greyish white. Rest of underparts bright yellow. Tail brown; inner web of outer rectrices white. Sexes alike.

Easily distinguished from other tailor birds by its bright yellow belly.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. Eastern Nepal (not recorded since Hodgson), Sikkim, Darjeeling and Jalpaiguri districts (duars), Bhutan and Arunachal foothills to the Mishmis, Nagaland, Manipur and the hills of Assam and Bangladesh

1539. Ceylon Highland Tailor Bird. *Orthotomus sutorius fernandensis* Whistler
Orthotomus sutorius fernandensis Whistler, 1939, Bull. Brit. Orn. Cl. 60: 15 (Ohiya)
Not in Baker, FBI

LOCAL NAMES. As in 1538.

SIZE. Sparrow — ; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1535, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The hills of Ceylon from c. 1500 m to the highest summits. Habitat as in 1538.

GENERAL HABITS, FOOD AND VOICE. As in 1538.

BREEDING. Season, March to October with a peak in April-May and August-September. Nest and eggs, as in 1535.

MUSEUM DIAGNOSIS. Differs from *sutorius* (1538) in being darker more saturated green on upperparts. Grey of throat-feather bases more extensive; flanks dark slaty grey.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂	49-50	16-17	19-21	52-64 mm
1 ♀	47	16	20	33 mm (HW)

COLOURS OF BARE PARTS. As in 1535.

1540. Blacknecked Tailor Bird. *Orthotomus atrigularis nitidus* Hume
Orthotomus nitidus Hume, 1874, Stray Feathers 2: 478, 507 (Pahpoon, Tenasserim)
Orthotomus atrigularis [sic] *latebricola* Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 16 (Dimapur, Naga Hills)
Baker, FBI No. 818, Vol. 2: 415
Plate 87, fig. 14

LOCAL NAMES. *Junglā teete sorūi* (Assam); *Hagra das teete* (Cachari).

SIZE. Sparrow — ; length c. 13 cm (5 in.).

FIELD CHARACTERS. Male. Above, olive-green with a rufous or chestnut crown. Below, cheeks and chin whitish grey; throat black; sides of breast grey; belly whitish; lower flanks greenish yellow; under tail-coverts yellow.

Female, like male but lacks the black on throat. Distinguished from Indian Tailor Bird (1535) by its bright yellow bend of wing and under tail-coverts (both whitish buff in the species *sutorius*). The rufous of crown is more extensive and reaches the green of back, lacking the grey area of *sutorius*. Best distinguished by voice, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. Sikkim, northern Bengal (Jalpaiguri dist.), the hills of Bangladesh and Assam south of the Brahmaputra, and south to the Chittagong region, Nagaland and (?) Manipur, from the base of the hills and adjoining plains



to the Chittagong region; up to c. 1800 m (2200 m on Mt Victoria). Affects evergreen biotope — scrub, grass and bamboo jungle, climax forest and secondary growth.

Extralimital. The species extends east through southern China, the Indochinese countries, and south to Borneo and Bali.

GENERAL HABITS. Very similar to the Indian Tailor Bird (1535) but is exclusively forest-dwelling. Usually found in pairs or small parties, hunting in low thickets, elusive and difficult to observe. Occasionally climbs up to six or nine metres in a tall bamboo when foraging, or makes short excursions into the air after insects.

FOOD. Insects.

VOICE AND CALLS. Alarm-note, a low buzz sounding like *kiz-kiz-kiz* (Davison). Song, a loud four-noted whistle, the first two on the same pitch, the third a trill (three or four notes uttered very rapidly) and the fourth either higher or lower than the first two. It is repeated in a remarkable number of keys, high and low, rendered as *pee-pi-pi-pee* (Smythies). Also described as a very thin and high phrase of three notes, *tū-tā-tū*, the second note only a short introduction to the last higher and emphasized note. This song is usually repeated three times at intervals of a few seconds, each time higher than the preceding (Heinrich).

BREEDING. Season, May to July. Nest, made of fine grass stems, dry moss, lined with vegetable down and built within sewn-up leaves in the characteristic manner of *O. sutorius*. It is placed within a metre from the ground. Eggs, 3 or 4, pale blue marked with fine reddish specks. Average size of 12 eggs 15.5 × 11.3 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
7 ♂♂	46-48	16-18	c. 20	34-41 mm
5 ♀♀	45-46	16-18	19-20	c. 42 mm (Stresemann, Baker, SA)

Weight 4 ♂♂ 0.20-0.25 oz. (5.6-7.1 g) — Hume; 1 ♀ 5.5 g (SA); 1 ♂ 6 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible black, lower basally orange, distally horn. Legs and feet brownish flesh.

Genus LOCUSTELLA Kaup

Locustella Kaup, 1829, Skizz. Entw. Nat. Syst. 115.
Type, by tautonymy, *Sylvia Locustella* Latham

Cf. Williamson, K., 1963, The Genera *Cettia*, *Locustella*, *Acrocephalus* and *Hippolais*. British Trust for Ornithology, Identification Guide No. 1.

Dementiev, G. P., et al., 1954, *Birds of the Soviet Union* (English translation), 6: 233. Smithsonian Institution, Washington.

Bill slender, about half as long as the head. Rictal bristles very weak and hardly noticeable. Plumage soft. First primary (as.) very short; 2nd reaching nearly to tip of wing. Tail graduated, very much rounded at tip, the rectrices slightly pointed; under tail-coverts very long.

WARBLERS

89

Key to the Species

A	Flanks boldly streaked.....	<i>L. lanceolata</i>	90
B	Flanks hardly or not streaked		
1	Rectrices tipped with whitish.....	<i>L. certhiola</i>	89
2	Rectrices not tipped with whitish.....	<i>L. naevia</i>	91

LOCUSTELLA CERTHIOLA (Pallas)

Key to the Subspecies

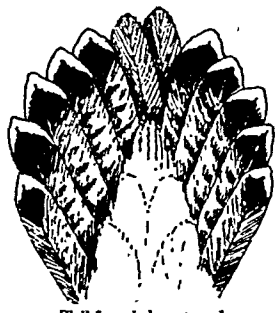
Darker and browner.....	<i>L. c. rubescens</i>
Paler and brighter rufous.....	<i>L. c. centralasiae</i>

1542. Pallas's Central Asian Grasshopper Warbler. *Locustella certhiola centralasiae* Sushkin

Locustella certhiola centralasiae Sushkin, 1925, Proc. Boston Soc. Nat. Hist. 38 (1): 45
(Khara Usu River, Khangai, northwestern Mongolia)
Baker, FBI No. 805, Vol. 2: 399

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 13 cm (5 in.).



Tail from below, x c. 1

FIELD CHARACTERS. As in 1543, q.v.
STATUS, DISTRIBUTION and HABITAT. Apparently scarce winter visitor. Andaman Islands and Nicobars [Camorta—Abbott & Kloss (ssp.?)]. Habitat as in 1543.

Extralimital. Breeds in central Asia from the Tien Shan to Mongolia. Recorded in winter from Burma.

GENERAL HABITS, FOOD and VOICE. As in 1543.

MUSEUM DIAGNOSIS. See keys to the Species and Subspecies.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1543.

1543. Pallas's Siberian Grasshopper Warbler. *Locustella certhiola rubescens* Blyth

Locustella rubescens Blyth, 1845, Jour. Asiat. Soc. Bengal 14: 582
(near Calcutta)
Baker, FBI No. 805, Vol. 2: 399
Plate 85, fig. 1

LOCAL NAME. *Sun-batta-sorai* (Assam).

SIZE. Sparrow — ; length c. 13 cm (5 in.).

WARBLERS

91

breast and flanks with dark brown, this character distinguishing it from the other two species which occur in India (viz. *certhiola* and *naevia*). Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Winter visitor. Bangladesh (all parts *vide* Rashid), probably Assam, eastern Nepal (Biswas, 1968, JBNHS 65: 783), and northern India (where very scarce): Etawah (U.P.), Delhi and Kutch (in both places one record—Donahue, JBNHS 64: 425). Also the Andaman and Nicobar Islands (Abdulali, JBNHS 64: 185). Affects dense bush-and-grass; in the Nicobars open grassland and sugarcane; in Burma also low herbage in paddy stubbles.

Extralimital. Breeds mainly in southern Siberia from the Ob river to Sakhalin island. Winters in the Indochinese countries and south to Sumatra and Borneo.

MIGRATION. Arrives in its winter quarters in October. Migration takes place mostly in September (Dementiev); the Delhi record, August 17, is exceptionally early. Leaves in April. One taken at sea in the Gulf of Martaban on April 29 (on passage from Andamans?)—SF 6: 340.

GENERAL HABITS. Those of the genus; one of the greatest skulkers, hard to flush and usually seen only by chance. Makes its way rapidly through tangled weeds and grass stems and runs along the ground among the rootstocks of the herbage in a truly astonishing manner. When flushed, flies low and jerkily for a few short metres and dives into cover, running on immediately upon alighting.

VOICE and CALLS. Alarm-note, *chirr-chirr* louder than that of *L. certhiola*.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Tail
6 ♂♂	53-59	44-47 mm
4 ♀♀	52-58	— mm
		(Dementiev)
1 ♂, 2 oo?	50-55	32-42 mm
		(HA)

Bill from skull c. 14 mm. Tarsus c. 19 mm

Weight (on summer grounds) ♂♂ 14-15; ♀♀ 13-14 g (Dementiev).

COLOURS OF BARE PARTS. Iris brown. Bill dark brown, yellowish at base of lower mandible. Legs and feet pale flesh.

1545. Eastern Grasshopper Warbler. *Locustella naevia straminea* Seebohm

Locustella straminea Seebohm, 1881, Cat. Bds. Brit.
Mus. 5: 117, ex Severtzov, 1872, *nom. nud.* (Turkestan)
Baker, FBI No. 807, Vol. 2: 402
Plate 85, fig. 3

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 13 cm (5 in.).

FIELD CHARACTERS. Above, pale olive-brown with broad, dark brown streaks. A pale, narrow supercilium. Below, whitish or pale yellowish washed

90

SYLVIINAE

FIELD CHARACTERS.

Above, crown streaked grey and dark brown. A pale but conspicuous supercilium from lores to nape. Rest of upperparts olive-brown, the back streaked with dark brown. Tail rounded, tipped with whitish. Below, whitish suffused with pale brown on breast and flanks. Under tail-coverts buff. Under surface of tail blackish broadly tipped with whitish. Sexes alike.

x c. 1

Young bird similar to adult but underparts strongly suffused with yellow.

The white-tipped tail and more rufous rump distinguish it from *L. naevia*. STATUS, DISTRIBUTION and HABITAT. Winter visitor, locally common. Lower Bengal, Assam, Bangladesh, 'Central India' (Blyth, 1851), eastern Nepal (Biswas, 1968, JBNHS 65: 783), Andaman Islands, Ceylon (not recorded since 1877—Legge). A specimen netted in May 1963 in Kerala (P. V. George, JBNHS 62: 304). Affects swamps, *Phragmites* reed-beds and standing paddy fields.

Extralimital. Breeds in Siberia between the Yenisey and the Sea of Okhotsk, south to the Lake Baikal region. Winters in Burma, the Indochinese countries, Malaysia and Indonesia.

MIGRATION. Arrives in its winter quarters in October, remains till April or early May. Arrives on its breeding grounds in late May and early June. GENERAL HABITS. Very quiet and secretive in winter when it skulks in reeds and grass; rises almost from under an advancing observer's feet and hurriedly tumbles into cover again.

FOOD. Insects.

VOICE and CALLS. In winter only an occasional *chi-chirr* is uttered.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	61-71	15-17	20-24	50-56 mm
♀♀	58-68			48-55 mm
				(Williamson)

Weight 1 o? 12 g (BB); ♂♂ 16.4-19.5 g (Dementiev).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible dark brown, lower fleshy yellow. Legs and feet pale flesh.

1544. Streaked Grasshopper Warbler. *Locustella lanceolata* (Temminck)

Sylvia lanceolata Temminck, 1840, Man. d'Orn. 4: 614
"Mayence" error = Russia, see Ticehurst, JBNHS 31: 497 and
Dementiev *et al.*, Bds. Sov. Union 6: 293
Baker, FBI No. 806, Vol. 2: 401
Plate 85, fig. 9

LOCAL NAME. *Sun-batta-sorai* (Assam).

SIZE. Sparrow — ; length c. 13 cm (5 in.).

FIELD CHARACTERS. Above, olive-brown streaked with black. A pale yellowish supercilium. Below, very pale yellow, conspicuously streaked on

92

SYLVIINAE

with buff on breast and flanks, lower throat often speckled. Under tail-coverts very long, whitish with broad brown shaft-streaks. Sexes alike.

The plain brown tail without white tips, and lack of streaking on flanks and breast, distinguish this species from our other two *Locustellas*.

STATUS, DISTRIBUTION and HABITAT. Widespread winter visitor. The Indian subcontinent from Sind (Manchar Lake), Kutch and the Gangetic Plain south to Tamil Nadu and Kerala, and east through the Bengal duars (Jalpaiguri dist.), Bangladesh (all parts *vide* Rashid), and Assam. In the southern hills up to c. 1800 m. Affects flattened-down sedges (Cyperaceae) and low matted herbage on the moist edges of drying-up tanks and in swampy depressions, grass and tamarisk jungle, ricefields, rushes and reeds; *Andropogon* grass intermixed with sparse date scrub on hillsides, especially on the fringe of sholas, in the south.

Extralimital. The species breeds in temperate Eurasia from Turkestan to western Europe; winters in the Mediterranean countries, southern Iran and Afghanistan, east to Burma.

MIGRATION. Arrives in its winter quarters in September, remains till April and early May. Spring passage takes place from the last week of March till the middle of May (Simla 2100 m, Dharmasala, Kohat). A specimen from Sikkim taken in June (Brit. Mus.). On autumn migration recorded in Gilgit (September) and Simla (August).

GENERAL HABITS. Very similar to 1544, q.v., almost invariably met singly. A great skulker usually flushed when almost trodden on, diving headlong into cover again after a short jerky flight low over the herbage and threading its way swiftly through the rootstocks. Almost impossible to flush a second time.

FOOD. Insects.

VOICE and CALLS. Very silent in winter. Normal call when foraging and well-hidden a subdued *chek-chek* or *churr-churr* reminiscent of Blyth's Reed Warbler. Alarm-note (as when mobbing a snake) an agitated *cht-cht-cht* recalling *Dumetia hyperythra*, 1222.

Has an almost incessant, unmusical cicada-like 'song' in breeding season, whence the name Grasshopper Warbler.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

Young (immature). Underparts washed with bright yellow.

MEASUREMENTS

	Wing	Tarsus	Tail
♂♂	53-62	18-19	48-61 mm
♀♀	50-57		48-55 mm
			(Dementiev)

Bill from skull 13-14 mm

COLOURS OF BARE PARTS. Iris brown. Bill dark brown, lower mandible pale yellowish brown. Legs and feet pink.

Genus SCHOENICOLA Blyth

Schoenicola Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 374.

Type, by monotypy, *Thimalia platyura* Jerdon

Bill about half as long as head. Two strong rictal bristles. Wing rather long, third primary (as) longest. Tail long, broad and graduated. Feet powerful.

1546. **Broadtailed Grass Warbler.** *Schoenicola platyura* (Jerdon)*Thimalia platyura* Jerdon, 1844, Madras Jour. Lit. Sci. 13: 170

(Goodaloor, foot of the Neilgherries)

Baker, FBI No. 837, Vol. 2: 437

Plate 85, fig. 2

LOCAL NAME. *Potakkili* (Malayalam).

SIZE. Sparrow; length c. 18 cm (6½ in.).

FIELD CHARACTERS. *Above*, plain rufous-brown. An indistinct pale supercilium. Tail broad, rounded blackish brown, faintly cross-rayed. *Below*, whitish, washed with ochraceous on breast and flanks. Under surface of tail nearly black, the rectrices tipped with whitish. Sexes alike.



× c. 1

The plain, unstreaked appearance and broad, rounded tail distinguish this species.

STATUS, DISTRIBUTION AND HABITAT. Resident; on the whole rather scarce, common in southern Kerala. The hills of the southern Western Ghats complex from Belgaum south to the Ashambu Hills and east to the Madurai district; from c. 900 m to 2000 m (see map, p. 79). Occurrence in Ceylon known only from a single very old and insufficiently documented specimen and by two unconfirmed sight records by W. W. A. Phillips in 1939 (Gammaduwa, East Matale Hills, and Waitalawa, Nugatenne in the Rangala Hills, altitude 750 m). Affects steep grass- and bracken-covered hillsides, matted reeds and grass in marshy depressions among the hilltops, and stretches of *Andropogon* grass and stunted date clothing the opener slopes of the Nilgiris and associated hills.

GENERAL HABITS. Keeps singly or in widely scattered pairs. Habits very similar to *Chaetornis* (1547). An inveterate skulker like grasshopper warblers. Seldom seen except in the early mornings and late afternoons (around sunset) when single birds will clamber up to the tops of grass stems, drawing attention by their feeble pink, pink calls, rather reminiscent of the Red Munia (*Estrilda amandava*, 1964) but louder. Flight indirect and top-heavy like that of *Prinia*, the broad graduated tail conspicuous on the wing. Like *Locustella*, flushes with difficulty only when almost trodden on and dives into cover again after a short jerky flight, threading its way swiftly through the rootstocks and vanishing mysteriously!

Display. In the breeding season rises constantly into the air, soaring 4 or 5 metres up with tail fanned out, chirruping like *Chaetornis* and descending afterwards in the same way on to some low bush or grass tussock, sometimes even on to telegraph wires.

FOOD. Insects.

VOICE AND CALLS. See General Habits and Display. Song delivered on wing as well as from a perch, 'A shrill and sweet trill, ending with a few warbling notes and *chacks*. It is the best song of any of our warblers' (Nichols, Kodaikanal, JBNHS 39: 819).

BREEDING. *Season*, (from the state of the gonads) March to May. *Nests* with eggs or young have actually been found only between the first week of July and September, so perhaps double-brooded. *Nest*, a good-sized ball of

On a fleeting glimpse could be confused with Common Babbler (*Turdoides caudatus*, 1254), rather similar to it in appearance and behaviour.

Graminicola has a nearly black crown (v. pale brown) and some white on sides of neck. *Megalurus* is much larger and has streaked breast and flanks.

STATUS, DISTRIBUTION AND HABITAT. Resident subject to local movements. Distributed over most of the Indian subcontinent but very local; noted as fairly common in Gujarat, Andhra Pradesh and lower Bengal. Range: Pakistan in Punjab and perhaps Sind, east and south through the Indian Peninsula to Tamil Nadu, the Bengal duars (Jalpaiguri dist.) and the plains of Bangladesh and Assam. Does not occur outside our limits. Affects coarse grassland intermixed with low thorny bushes of *Lixyphus* etc., *Imperata* and other tall grasses especially in swampy areas, and also standing rice fields.

GENERAL HABITS. Similar to those of *Schoenicola* and *Megalurus*. Keeps singly or in pairs skulking swiftly through the grass, occasionally exposing itself at the top, tumbling headlong into cover on disturbance and difficult to flush again.

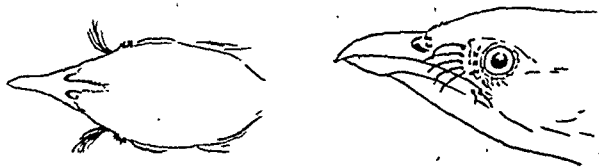
Display. Male soars in the air a metre or two above the grass every now and again, flying about aimlessly — up and down and in zigzags — for a short distance while singing loudly, and then parachuting back or diving into cover. These antics may be observed the year round though the bird is more noisy and demonstrative during the breeding season.

FOOD. Insects.

VOICE AND CALLS. A pleasant, musical *chwee-chew* (rising-falling) uttered from an exposed position on tall marsh grass or bush (Donahue) and during display flight.

BREEDING. *Season*, May to September. *Nest*, a ball of dry grass with an entrance near the top, placed in grass or scrub on or near the ground. *Eggs*, 4 or 5, similar to those of *Schoenicola* (1546). Average size of 22 eggs 20.4 × 15.2 mm (Baker). Incubation apparently by female only; period undetermined.

MUSEUM DIAGNOSIS. See Field Characters. Some individuals have dark shafts on breast-feathers forming a 'necklace' (Donahue, JBNHS 64: 425); this character has not been mentioned in published descriptions.

from above
× c. 1+

Rictal bristles

from side
× c. 1+

MEASUREMENTS

Wing

Bill
(from feathers)

Tarsus

Tail

♂ ♀

80-92

c. 12

c. 28

75-95 mm
(Baker)

coarse blades of dry grass with an entrance on the side, built in tussocks of long grass up to a metre or so from the ground. *Eggs*, of the same type as those of *Megalurus* and *Chaetornis*, qq.v. — white or pale pinkish profusely speckled and spotted with brownish red, here and there a few larger spots or small irregular blotches; clouds, streaks and tiny spots of grey or lavender-grey form an ill-defined cap at the broad end. Clutch-size not ascertained but apparently 2 or 3. Average size of 10 eggs 19.4 × 14.7 mm (Baker). Presumably only one bird (female?) builds while her mate sings from a vantage point nearby (M. C. A. Jackson).

MUSEUM DIAGNOSIS. See Field Characters. There appears to be but one moult, February to April (HW). Young unknown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	64-72	13-16	21-23	65-73 mm
♀ ♀	63-67	13-15	21-22	61-66 mm

(HW)

COLOURS OF BARE PARTS. Iris brownish grey, greyish olive or olive-brown. Bill: upper mandible horn brown, lower horn grey or flesh-colour; mouth yellowish pink, stippled with brown in some individuals; gape yellowish cream, yellow or black (it is not known whether these variations are seasonal). Legs, feet and claws greyish brown; soles fleshy.

Genus CHAETORNIS Gray

Chaetornis Gray, 1848, Gen. Bds. 1, pl. 48, fig. 9: 161.Type, by original designation, *Megalurus? striatus* Jerdon

Characterized by having unfeathered lores with five very strong rictal bristles arranged in a vertical row in front of the eye.¹ Feathers of breast stiff-shafted.

1547. **Bristled Grass Warbler.** *Chaetornis striatus* (Jerdon)*Megalurus? striatus* Jerdon, 1841, Suppl. Cat. Bds.: 88

(Nilgiris)

Baker, FBI No. 838, Vol. 2: 438

Plate 85, fig. 6

LOCAL NAMES. *Grenla pitta* (Telugu); *Kāñāḍālī khāḍ-jūḍī* (Gujarati).

SIZE. Sparrow +; length c. 20 cm (8 in.).

FIELD CHARACTERS. A large brown warbler of wet grasslands. *Above*, fulvous brown boldly streaked with dark brown on back. Visible part of wing fulvous brown. A pale supercilium. Tail graduated, tipped with whitish, sub-tipped black; edges of rectrices pale brown with a broad dark brown stripe along the shaft having a saw-like design on each side giving the tail a barred appearance. *Below*, cream-buff, sometimes with a necklace formed by the dark shafts of breast-feathers. Sexes alike.



× c. 2

¹ These five bristles are set in a loose moveable flap of skin so that they move backwards and forwards as on a hinge. When pressed back they cover the eyes completely with a grating and afford adequate protection to them while the bird is moving through heavy rough-edged grass (Whistler, JBNHS 33: 783).

Bill from skull c. 16; tarsus c. 30 mm

COLOURS OF BARE PARTS. Iris light brown. Bill: upper mandible greenish black, lower bluish grey darker at base and on edges. Legs flesh-pink; toes light brown; claws dark brown; soles flesh-white (Donahue).

Genus MEGALURUS Horsfield

Megalurus Horsfield, 1821, Trans. Linn. Soc. London 13: 158.Type, by monotypy, Gray, 1849, *Megalurus palustris* Horsfield

Bill strong; rictal bristles strong. Wing less rounded than in most sedentary warblers. Tail much longer than wing, greatly graduated. Foot deeply cleft between middle and inner toe, the latter partially reversible. Legs and feet powerful.

1548. **Striated Marsh Warbler.** *Megalurus palustris toklas* (Blyth)*Turdus toklas* Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 179

(Calcutta), ex 1842, Jour. Asiat. Soc. Bengal 11: 603, and 1843,

Ann. Mag. Nat. Hist. 12: 99; *ibid.* Blyth, 1844, J.A.S.B. 13: 372*Megalurus palustris andrewsi* Bangs, 1921 Bull. Amer. Mus. Nat. Hist. 44: 592

(Malipa, Burma = Mengting, Yunnan)

Baker, FBI No. 836, Vol. 2: 435

Plate 85, fig. 5

LOCAL NAMES. *Takko, Jāl-aggin* (Hindi); *Nul chaypee* (Assam).

SIZE. Bulbul +; length c. 25 cm (10 in.).

FIELD CHARACTERS. A very large striated warbler with a long pointed and graduated tail. *Above*, fulvous brown with fine streaks on head and broad black stripes on back and wings. A pale supercilium. Tail fulvous brown. *Below*, whitish, tinged with fulvous and finely brown-streaked on breast, flanks and under tail-coverts. In fresh plumage, underparts dull primrose-yellow, quite bright in patches. Sexes alike.



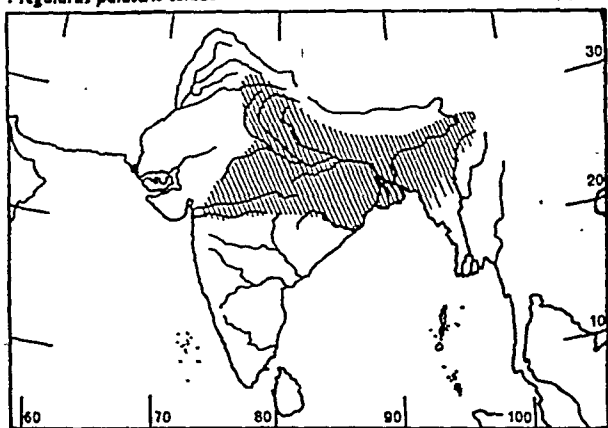
× c. 1

May be confused with two very similar grass-haunting babblers: *Turdoides earlei* which has a rufous throat and *Turdoides caudatus* which lacks any streaking on breast. Both have a narrowly barred tail. *Megalurus* is also much more boldly striped with black on back and wings. The warblers *Chaetornis* and *Graminicola* are smaller and have white-tipped rectrices.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. From Pakistan in the Punjab east through the plains of northern India, Nepal terai, Bengal duars (Jalpaiguri dist.), Bhutan and Arunachal foothills, Assam, Nagaland, Manipur and Bangladesh to the Chittagong region. South in the Peninsula to western Khandesh, the Tapi and Mahanadi

WARBLERS

97

Megalurus palustris tokio

▨ Distributional range

river. Affects grass and reeds in swamps and around ponds, tall grass and scrub on overgrown cultivation clearings, and tamarisk-covered islands in large rivers; in Assam frequents grasslands near cultivation and villages, and in Manipur even enters gardens of the suburbs.

Extralimital. The species ranges east through Burma, Thailand, southern China and the Indochinese countries to the Philippines, and south to Java and Bali.

GENERAL HABITS. Usually found singly or in pairs according to the season. Behaves very much like *Turdoides caudatus* and *T. earlei* with which it may easily be confused, but unlike them is seldom seen in flocks. Not such a skulker as other grass warblers, and may commonly be seen perched on bush-tops and reeds, especially in the early morning, when reminiscent in the distance of Brown Shrike (*Lanius cristatus*). While perched flicks tail loosely up and down from time to time like bush chat (*Saxicola*). On alighting on a reed often observed to flick wings nervously like a *Phylloscopus*, fluttering one half-open wing for 2 or 3 seconds followed by the other, and so on alternately—an action comically suggestive of a person scratching his armpits! (Presumably agonistic or threat behaviour.) Searches for food in dense cover, climbing about rapidly among reeds and grass, and threading its way through the stems and brushwood. Occasionally descends to the ground, walking about and feeding like a pipit (not hopping).

Display. Male soars in the air up to thirty metres or so while giving his song, hovering over the vegetation and parachuting down after a short flight with outspread wings.

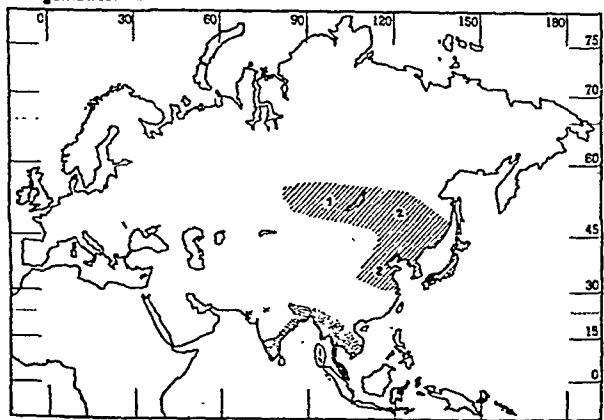
WARBLERS

99

FIELD CHARACTERS. Above, plain fulvous olive-brown. Below, whitish buff more or less tinged with ochraceous, especially on breast, flanks and under tail-coverts. Sexes alike.

The relatively shorter bill and absence of supercilium distinguishes this species from the superficially similar Great Reed warblers with which easily confusable on a fleeting glimpse, as also with Brown Shrike. Best identified by its distinctive calls (qq.v.).

STATUS, DISTRIBUTION and HABITAT. Winter visitor locally common; apparently more widespread than hitherto believed as disclosed by recent mist-netting. Assam, northern Bengal and Bangladesh (fairly common), west to central Nepal (Kathmandu Valley, 1500 m—Fleming & Traylor, Diesselhorst), lower Bengal, Orissa, Andhra Pradesh, southwestern Maharashtra, Goa (?), Mysore, Tamil Nadu and Kerala (uncommon except in

Phragmatocola aedon

▨ Breeding

■ Winter

× Isolated records 1 *P. a. aedon* (1549). 2 *P. a. rufescens* (RE?).

(After Dementiev)

the latter state); specimens netted in Kutch (Gujarat) and at Bharatpur (Rajasthan) between September and March (SA). Also winters in Andaman and Nicobar islands. Affects marshy places covered with reeds and bushes, patches of tall grass and weeds overrunning abandoned forest clearings, grass tussocks and bracken bushes on waterlogged ground, undergrowth in light forest, even tea and coffee plantations.

SYLVIINAE

98

FOOD. Insects.

VOICE and CALLS. Song recalls nuptial song of *Melanocorypha maxima* lark (893—SA); rather loud and harsh but pleasant, rendered as *oh, where are you going* with variations (Roseveare), uttered from a prominent perch or during the display flight. One call is a clear, drawn-out, rather subdued whistle ending in a short explosive *whetchoo*, of a pattern resembling Bush Warbler's (*Cettia*, 1478—SA). Call-note a loud, harsh *chat*.

BREEDING. Season, April to June. *Nest*, a rough ball of coarse grass lined with finer grasses; placed low down in reeds or grass clumps close above the swampy ground. *Eggs*, normally 4, pale dull pink marked with numerous blackish brown and purple-brown specks with secondary freckles of lilac grey. Average size of 40 eggs 22.7 × 16.7 mm (Baker). Share of the sexes in the domestic chores, and incubation period, unknown. Brood-parasitism by *Cuculus canorus* recorded in Burma by Osmaston and Mackenzie (JBNHS 24: 359; 25: 743).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	100-137	18-19	39	115-134 mm
♀♀	82-86	17	35	84-102 mm
		(from skull)		(Baker)
1 ♂	95	21	35	111 mm
1 ♀	85	19	32	107 mm
				(SA)

Weight 14 ♂♀ 30-38 (av. 34) g—BB.

COLOURS OF BARE PARTS. Iris yellow-tan to pale brown. Bill: upper mandible dark horny brown, lower fleshy or yellowish. Legs and feet pale yellowish or pinkish flesh.

Genus PHRAGAMATICOLA Jerdon

Phragmaticola Jerdon, 1845, Madras Jour. Lit. Sci. 13: 129.

Type, by monotypy, *Phragmaticola olivacea* Jerdon = *Muscicapa Aedon* Pallas. Bill short, rather wide and strong. Three strong rictal bristles. Feathers of forehead soft and disintegrated with lengthened shafts. Wing pointed: first primary (as.) very large; 3rd reaching to tip of wing. Rectrices narrow, graduated.

1549. Thickbilled Warbler. *Phragmaticola aedon aedon* (Pallas)¹

Muscicapa Aedon Pallas, 1776, Reise Russ. Reichs 3: 695 (Dauria)
Baker, FBI No. 839, Vol. 2: 440

Plate 83, fig. 14

LOCAL NAME. Chundanbheri (Malayalam).

SIZE. Bulbul; length c. 20 cm (8 in.).

SYLVIINAE

100

Extralimital. The species breeds in southern Siberia from the Ob river to northeastern China and Japan. Winters in the Indochinese countries south through the Malay Peninsula.

MIGRATION. Arrives in its winter quarters in September, leaves by end of April.

GENERAL HABITS. Solitary. Rather secretive; hops about in the undergrowth and reeds close to the ground, seldom showing itself but occasionally makes short sallies after flying insects.

FOOD. Insects.

VOICE and CALLS. A loud harsh, quick-repeated *tchuk, tchuk*, and *chr-r* while hopping among the thickets (SA). A sharp *click, click* (BBO). A distinctive harsh alarm-call *chok-chok* (by which name the bird is known in Transbaikalia), sometimes running into a rattle *chok-chok-cherre-rrek-chok* (Dementiev). A secondary song given in winter quarters described as weak and monotonous but pleasing.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Distinguished from *Acrocephalus arundinaceus*, *A. stentoreus* and *A. orientalis* by its first primary being longer than the primary coverts. Feathers of forehead rough and disintegrated; rectrices narrow and steeply graduated.

	Wing	Bill (from skull)	Tarsus	Tail
4 ♂♂	79-87	18-21	26-29	85-91 mm
9 ♀♀	78-85	18-21	26-29	83-89 mm
				(HW, SA)

Weight 9 ♂♀ 22-28 (av. 25.9) g—SA.

COLOURS OF BARE PARTS. Iris hazel-brown to olive-brown. Bill: upper mandible horny brown, lower yellowish flesh; gape and mouth bright orange-yellow. Legs and feet plumbeous.

Tail, × c. ½
(After Hartert)

Genus ACROCEPHALUS Naumann

Acrocephalus J. A. & F. Naumann, 1811, Naturg. Land- u. Wasserv. Deutschl. 4: 199.

Type, by subsequent designation, Gray, 1840, *Turdus arundinaceus* Linnaeus. Bill rather slender, generally nearly as long as the head. Three well-developed rictal bristles. First primary (as.) small and pointed. Tail rounded or slightly graduated. Tarsus long.

Key to the Species

	Page
A Size large; wing over 75 mm	
1 2nd primary shorter than 5th.....	<i>A. stentoreus</i> 101
2 2nd primary longer than 5th.....	
a Notch on inner web of 2nd primary between 6th and 8th....	<i>A. arundinaceus</i> 105
b Notch on inner web of 2nd primary between 8th and secondaries' tips.....	<i>A. orientalis</i> 106

WARBLERS.

- B Size small; wing under 65 mm
3. A conspicuous brown stripe above supercilium..... *A. bistrigiceps* 107
- 4 No dark stripe above supercilium
- c No supercilium; outer web of 3rd primary only emarginate.... 108
- d A pale supercilium; outer web of 3rd, 4th and sometimes 5th primaries emarginate
- o Notch on inner web of 3rd primary between 8th and 10th; supercilium light..... *A. dumetorum* 109
- oo Notch on inner web of 3rd primary equal to tips of secondaries; supercilium prominent
- i 2nd primary between 5th and 8th..... *A. agricola* 112
- ii 2nd primary between 8th and 10th..... *A. concinnus* 114

ACROCEPHALUS STENTOREUS (Hemprich & Ehrenberg)

Cf. Stresemann, E. & Arnold, J., 1949, JBNHS 48: 428-43; Zahavi, A., 1957, *Ibis* 99: 606-7.

Key to the Subspecies

- A Darker, less rufous..... *A. s. amayae* 104
- B Paler, more rufous..... *A. s. brunescens* 101
- C Darker and smaller than B..... *A. s. meridionalis* 104

1550. Indian Great Reed Warbler. *Acrocephalus stentoreus brunescens* (Jerdon)

A. (grobates) brunescens Jerdon, 1839, Madras Jour. Lit. Sci. 10: 269 (Carnatic, near Trichinopoly)

Baker, FBI No. 795 (part), Vol. 2: 389

Plate 83, fig. 19

LOCAL NAMES. Kārkaī, Korkuch (Kashmir); Pān tiktiki (Gujarati); Bora-jitti (Telugu); Kaitakkallan (Malayalam); Kosu kattai, Nanni chirai (Tamil).

SIZE. Bulbul; length c. 19 cm (7½ in.).

FIELD CHARACTERS. A large plain olive-brown warbler with a conspicuous whitish supercilium. Below, throat whitish; rest of underparts buff. Sexes alike.



× c. 1

In appropriate facies may be mistaken for Brown or Isabelline Shrike when darting from bush to bush. The superficially similar Thickbilled Warbler (1549) has no supercilium; the Eastern Great Reed Warbler (1554) has a faintly streaked throat, though not readily noticeable in the field.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor, passage migrant and breeder. Breeds mostly in northwestern India and Pakistan — Kashmir (very common in Srinagar valley), Punjab, Uttar Pradesh (Oudh, Bahraich), N.W.F.P. (Kagan and Kurram valleys), the northern Indus plains (West

WARBLERS

103

Pandanus brakes along the backwaters. On passage may be seen in dry situations (acacia jungle, cultivation, etc.).

Extralimital. Extends northwest to the Aral Sea where it overlaps the range of *A. arundinaceus*, and west to western Iran. The nominate race is found as an isolated population from the Nile delta and the Huleh swamp at the head of the Jordan valley where it is sympatric with *A. arundinaceus*, the latter being restricted to reeds, and *stentoreus* to papyrus swamps (Zahavi, A., 1957, *Ibis* 99: 606-7).

MIGRATION. Widespread during migration in northern India and Pakistan, on passage to and from Transcaspiia in March-May and September-November. In southern India (Madurai) it is found as a winter visitor from September to May. Kerala breeding population is probably sedentary. On its breeding grounds in Kashmir and Baluchistan from April to September. A bird ringed near Calcutta (22°34'N, 88°22'E.) in April 1965 was recovered 3 years and 5 months later (Sept. 1968) in Uzbek S.S.R. near Samarkand, 39°41'N, 66°58'E. — c. 2600 km NW. (JBNHS 66: 174).

GENERAL HABITS. Keeps singly or in pairs according to the season. Moves about in reeds close to water. Is a great skulker and might easily be overlooked but for its loud harsh single *ke* (reminiscent of Jungle Babbler's) or *chur-r*, *chur-r* uttered every few seconds, and occasional snatches of its very distinctive rasping song, q.v. When warbling, throat swells out revealing a patch of dark feather-bases.

FOOD. Grasshoppers and other insects.

VOICE AND CALLS. Song spirited, very loud and harsh but quite pleasant; a typical refrain of it well rendered as *karra-karra-kareet-kareet-kareet* or *prii-prii-prii* with many variations, suddenly bursting out of a reed-bed; often of peculiar ventriloquial quality. Described as louder and harsher than that of *arundinaceus* (Witherby). It is a good mimic, and according to Meinertzhagen, in certain cases it might be possible to tell with accuracy from the imitations interlarded in the song where a bird had spent the winter. In Afghanistan in spring he was able to recognize the calls of the Peacock and the Bulbul. The song may be heard sporadically all through the winter.

BREEDING. Season, overall May to August; in Kashmir chiefly June and July. Nest, a neat, deep and massive cup of dry reed leaves and strips of reed bark, lined with softer shreds of the same material. It is firmly slung between several reed or rush stems (*Phragmites*, *Typha*) standing partially submerged, from 30 to 100 cm above water level, more often under c. 50 cm and vulnerable to swamping by flash floods. Eggs 3 to 6, normally 4 (3 in Kerala, 5 or 6 in Baluchistan). Ground colour varies from greyish white to pale sea-green or pale brown, with numerous blackish brown specks and spots and secondary markings of lavender-grey. Average size of 60 eggs 22.7 × 15.9 (Baker), of 29 eggs 22.6 × 15.8 mm (Osmaston). Share of the sexes in nest-building and incubation unrecorded; both parents feed the young and attend to nest sanitation; incubation period undetermined. Nests frequently brood-parasitized by Cuckoo (*Cuculus canorus*).

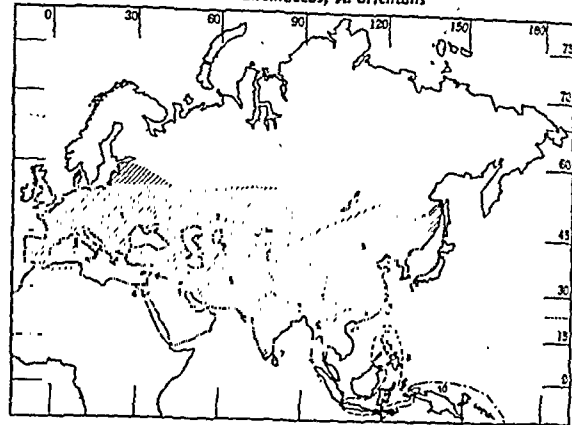
MUSEUM DIAGNOSIS. See Key to the Species. *A. s. amayae* is darker, less rufous. A complete postnuptial moult takes place from September to November; apparently no spring moult. In fresh autumn plumage distinctly washed with grey

102

SYLVIINAE

Punjab), Baluchistan (Quetta, Chagai, Malezai, Makran coast), Sind (Karachi, Narra), Rajasthan (Sambhar Lake), West Khandesh (Tapti river), and the Bombay area (nest not actually found in the last three

Acrocephalus stentoreus, A. arundinaceus, A. orientalis



■ Breeding ranges

Arrows indicate areas of overlap between *A. stentoreus* and *A. arundinaceus*.

Breeding ranges

1. *A. arundinaceus arundinaceus* (RE)
2. " " *zaidnyi* (1553)
3. " " *griseidis* (RE)
4. " *stentoreus stentoreus* (RE)
5. " " *brunescens* (1550)
6. " " *amayae* (1552)
7. " " *meridionalis* (1551)
8. " " *siberici*, *celebensis*, *lentus* and *toxopei* (RE)
9. " *orientalis* (1554)
10. " *australis* *crinitus* (SE)

(modified from Meinertzhagen, Stresemann and Dementiev)

N.B. Distribution within delineated range in central Asia and other arid regions sporadic. Distribution in China very imperfectly known.

localities). Breeds regularly also in Kerala (Vembanad Lake — P. V. George, JBNHS 58: 797), Bengal (Salt Lakes, Calcutta — Biswas, *ibid.* 68: 456) and sporadically elsewhere in the Peninsula. Winters over most of the subcontinent from Sind, Madhya Pradesh and Bengal south to Tamil Nadu; in the southern hills up to 1600 m; also in Ceylon. Affects reed-beds and tall bushes around lakes, ponds, jheels and irrigation canals; on the Arabian Sea coast mangrove swamps, and in Kerala reeds (*Phragmites*) and

104

SYLVIINAE

on upperparts, particularly on crown and hindneck. With wear, the colour becomes much duller and browner in summer.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	84-97	23-26	28-30	76-85 mm
♀♀	85-90	25-26	28-29	72-79 mm
				(SA, HW)

Weight 10 ♂ 23-34 (av. 28.8) g — SA.

COLOURS OF BARE PARTS. Iris pale hazel-brown to olive-brown. Bill: upper mandible blackish brown, edges and lower mandible flesh; gape and mouth bright orange. Legs and feet pale greyish brown.

1551. Ceylon Great Reed Warbler. *Acrocephalus stentoreus meridionalis* (Legge)

C. (alamodyta) meridionalis Legge, 1875, Stray Feathers 3: 369 (Jaffna, Ceylon)

Baker, FBI No. 795 (part), Vol. 2: 389

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 19 cm (7½ in.).

FIELD CHARACTERS. As in 1550, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident, plentiful in suitable biotope. Ceylon in the low-country Dry and Wet zones. Affects reed-beds or rushes around lagoons, ponds and in swamps.

GENERAL HABITS, FOOD AND VOICE. As in 1550.

BREEDING. Season, March to August, 'chiefly June' (Phillips). Nest and eggs as in 1550; clutch size 2 or 3. Average size of 8 eggs 20.6 × 15.2 mm (Baker).

MUSEUM DIAGNOSIS. Differs from the Indian race (1550) in being darker and smaller (Phillips, 1933, p. 95).

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
7 ♂♂	80-85	18-21	27-30	65-75 mm
1 ♀	75	21	30	67 mm
				(Karunaratne, Colombo Museum)

COLOURS OF BARE PARTS. As in 1550.

1552. Assam Great Reed Warbler. *Acrocephalus stentoreus amayae* Baker

Acrocephalus stentoreus amayae Baker, 1922, Bull. Brit. Orn. Cl. 43: 17 (Hessamara, Assam)

Baker, FBI No. 796, Vol. 2: 390

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 19 cm (7½ in.).

FIELD CHARACTERS. As in 1550, q.v.

WARBLERS

105

STATUS, DISTRIBUTION and HABITAT. Resident or short-range migrant; Assam in North Lakhimpur and probably other parts of the Brahmaputra plains. Recorded in winter from the Andamans (Abdulali, JBNHS 61: 562). Affects reed-beds and elephant grass.

Extralimital. Extends east to southern China.

GENERAL HABITS, FOOD and VOICE. As in 1550.

BREEDING. As in 1550. Eggs, 3 or 4, duller, browner and smaller than those of *brunescens*. Average size of 30 eggs 20.6 × 15 mm (Baker).

MUSEUM DIAGNOSIS. Like *brunescens* (1550) but darker on upperparts; fulvous underparts somewhat richer and darker.¹

MEASUREMENTS

	Wing	Bill (from skull)	Tail
2 ♂♂	88-91	25-26	79-84 mm
4 ♀♀	86-89	25-26	79-80 mm (HW)

Tarsus c. 28 mm (Baker)

COLOURS OF BARE PARTS. Iris olive-brown. Bill horny black above, paler on edges; lower mandible pinkish, darker at tip. Legs and feet bluish horn.

1553. Eurasian Great Reed Warbler. *Acrocephalus arundinaceus zarudnyi* Hartert

Acrocephalus arundinaceus zarudnyi Hartert, 1907, Bull. Brit. Orn. Cl. 21: 26 (Djarkent, Turkestan)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 19 cm (7½ in.).

FIELD CHARACTERS. Indistinguishable in the field from *A. stentoreus*, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Accidental or rare passage migrant. One record in Kalat, northern Baluchistan, in October (Laubmann, 1913. 'Birds collected by Zugmayer in Makran in 1911', *Abh. I. Kon. Bayer. Ak. der Wissensch. Math.-Physik. Klasse XXVI*, Band 9). Affects reed-beds.

Extralimital. Western Palaeartic (see map on p. 102).

GENERAL HABITS and FOOD. As in 1550.

VOICE and CALLS. Apparently identical with those of *stentoreus*.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Distinguished from *A. stentoreus* in having the first primary shorter than primary coverts. Wing more pointed: second primary longer than fourth (v. shorter in *stentoreus*). General colour much paler. Throat often streaked with brown. An entirely misleading wing-formula could arise in August-November when many birds are completing the moult; shortness of first primary however is diagnostic. For distinction from *A. orientalis* see 1554.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	91-102	20-24	28-32	72-84 mm
♀♀	90-100			71-85 mm (Williamson)

¹ Not always borne out by specimens. Tenability of the subspecies dubious.

106

SYLVIINAE

COLOURS OF BARE PARTS. Unrecorded. 'Iris yellowish sepia. Bill; upper mandible and tip of lower dark brown, rest of lower pinkish flesh. Legs and feet pale brownish grey' (Witherby, for the extralimital nominate race).

1554. Eastern Great Reed Warbler. *Acrocephalus orientalis* (Temminck & Schlegel)

Salicaria turdina orientalis Temminck & Schlegel, 1847, in Siebold, Fauna Japon., Aves: 50-51, pl. 21 B [= 20B] (Japan)
Baker, FBI No. 797, Vol. 2: 391

LOCAL NAMES. Not recorded.

SIZE. Bulbul; length c. 19 cm (7½ in.).

FIELD CHARACTERS. Probably not distinguishable in the field from *A. stentoreus* although throat distinctly streaked: See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Winter visitor, possibly less uncommon than records suggest. Bengal (specimens mist-netted near Calcutta by Biswas); Assam in Cachar and the Dibrugarh area, and Manipur. Andaman Islands (Abdulali, JBNHS 61: 562; also a specimen in Brit. Mus. collected by Wimberly) (see map p. 102). Affects reed-beds.

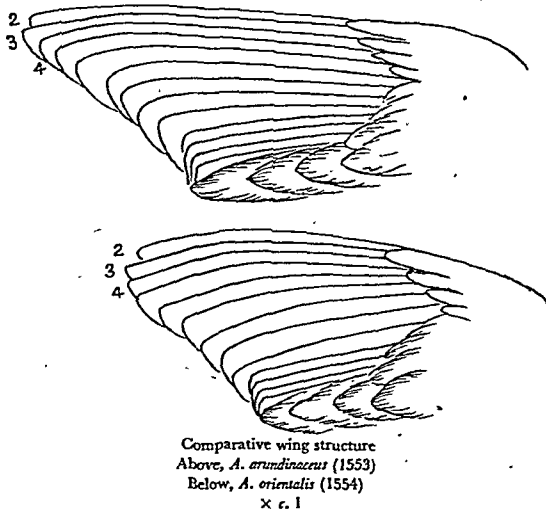
Extralimital. The species breeds in China and southeastern Siberia and winters in the Indochinese countries, Malaysia and Indonesia.

MIGRATION. Found in its winter quarters from October to April.

GENERAL HABITS, FOOD and VOICE. As in 1550.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Similar to *A. arundinaceus zarudnyi* (1553) but darker above; throat more streaked, wing shorter and rounder. See Key to the Species.



108

SYLVIINAE

1555a. Asian Reed Warbler. *Acrocephalus scirpaceus fuscus* (Hemprich & Ehrenberg)

Curruca fusca Hemprich & Ehrenberg, 1833, Symb. Phys. Avium, fol. cc (northern Arabia)
Not in Baker, FBI
Plate 83, fig. 18

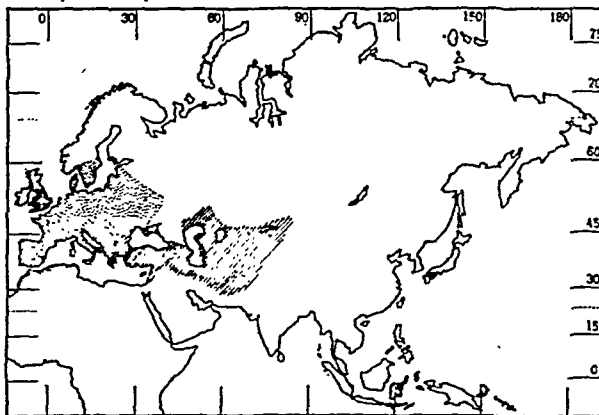
LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 13 cm (5 in.).

FIELD CHARACTERS. A plain olive-brown reed warbler with buff underparts. Sexes alike. See Key to the Species.

Very like *A. agricola* (1557) but without the reddish (russet) tinge.

STATUS, DISTRIBUTION and HABITAT. Probably breeds in the Malezai Lora, northern Baluchistan (see JBNHS 43: 480). May also winter on the

Acrocephalus scirpaceus

Distributional ranges

■ *A. s. scirpaceus* (RE).

▨ *A. s. fuscus* (1555a).

Makran coast as the species is said to be a resident in Persian Baluchistan (Dementiev). Affects reed-beds around lakes and ponds.

Extralimital. Ranges from Turkestan and Afghanistan to Turkey. The species extends to England and Morocco.

GENERAL HABITS. Those of the genus.

FOOD. Insects.

VOICE and CALLS. Usual call-note a low *churr*. Song of the same type as *A. stentoreus* but not so loud and harsh, delivered in a more subdued and continuous manner.

BREEDING. Season, about June. Nest, a small version of that of *A. stentoreus* (1550).

MUSEUM DIAGNOSIS. See Key to the Species.

WARBLERS

107

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	75-88	20-24	27-31	67-77 mm
♀♀	75-83			67-71 mm (Williamson)

Weight 13 ♂♀ 22-29 (av. 25.5) g — BB.

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible and tip of lower nearly black, rest of lower pinkish to yellowish flesh; mouth orange. Legs and feet lead-grey.

1555. Blackbrowed Reed Warbler. *Acrocephalus bistrigiceps bistrigiceps* Swinhoe

Acrocephalus bistrigiceps Swinhoe, 1860, Ibis: 51 (Amoy)
Baker, FBI No. 798, Vol. 2: 392
Plate 83, fig. 12

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 13 cm (5 in.).

FIELD CHARACTERS. A russet olive-brown reed warbler with a conspicuous pale supercilium and a blackish brown stripe above it. Underparts pale fulvous buff, whitish on throat. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Winter visitor. Recorded in Bengal (24-Parganas dist., 'regular in small numbers'—Biswas), eastern Assam and Manipur. Possibly also occurs in Bangladesh. Affects dense cover near *bheels*, high grass and paddyfields.

Extralimital. Breeds in the Ussuri region; winters in Burma, Thailand, the Indochinese countries and southern China.

MIGRATION. Arrives in its winter quarters in November, leaves in April.

GENERAL HABITS. Typical of reed warblers; very skulking and difficult to see.

FOOD. Insects.

VOICE and CALLS. A *churr* of alarm.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Key to the Species.

Two subspecies may be encountered in India, the nominate and *tangorum* (see K. Williamson, 1963).

MEASUREMENTS

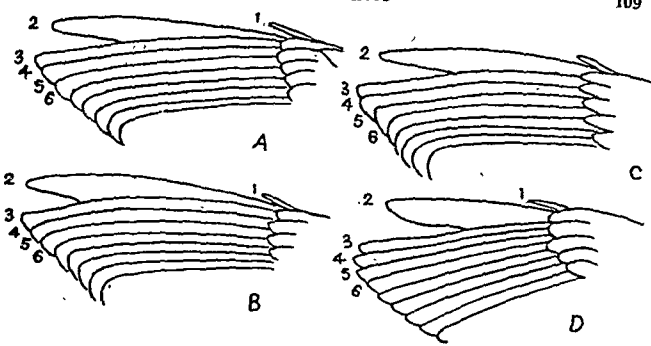
	Wing	Bill (from skull)	Tarsus	Tail
♂♂	50-58	12-15	19-23	44-52 mm
♀♀	50-56			42-51 mm (Williamson)

Weight 16 ♂♂ 8-11 (av. 9.4) g; 8 ♀♀ 7-10 (av. 8) g (Williamson); 1 ♂? (winter) 8 g (BB).

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible and tip of lower dusky brown; rest of lower mandible and gape fleshy yellow. Legs yellowish brown with a fleshy tinge, yellower on toes and soles, browner on claws (Hume).

WARBLERS

109



A. Asian Reed Warbler (*A. scirpaceus*, 1555a)
B. Marsh Warbler (*A. palustris*, SE)
C. Blyth's Reed Warbler (*A. dumetorum*, 1556)
D. Paddyfield Warbler (*A. agricola*, 1557)

Showing differences in relative lengths of second primary and position of notch on inner web of this primary

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	59-71	15-18	22-25	50-58 mm
♀♀	59-68			48-55 mm

(Williamson)

Weight 1 ♂ 9 g (Paludan, Afghanistan).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible brown, lower flesh. Legs greenish horn; feet greenish.

1556. Blyth's Reed Warbler. *Acrocephalus dumetorum* Blyth

Acrocephalus dumetorum Blyth, 1849, Jour. Asiat. Soc. Bengal 18: 815
(No locality = Calcutta, see Biswas, 1962, JBNHS 59: 410)
Baker, FBI No. 799, Vol. 2: 393

Plate 83, fig. 16

LOCAL NAMES. Pēdnā, Tikitiki (Hindi); Pān tikitiki (Gujarati); Tikra (Bengali); Kumpa jitta (Telugu); Etelapoppān (Malayalam).

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. A smaller replica of Great Reed Warbler (1550). Above, olive-brown; a pale supercilium. Below, throat white, rest of underparts buffish. Sexes alike.

Confusable with Tree Warbler (1562-3), but somewhat larger size, longer and heavier bill, brighter olive-brown plumage and prominent buff supercilium will usually distinguish it; also its bush- rather than tree-haunting habit.

WARBLERS

111

through bushes and undergrowth, seldom affording a glimpse of itself, its presence within the shrubbery betrayed only by the distinctive loud chuck notes.

FOOD. Insects.

VOICE AND CALLS. A harsh, single chuck given every few seconds while foraging — 'reproduced exactly by placing the tongue against the teeth and drawing it back rapidly' (Davison). Alarm-note churr-r-r. Song, a chattering warble with 'a good deal of the spitting, sputtering noise so peculiar to the genus' (Magrath). A subdued melodious warbling, recalling the breeding song of Rufous-backed Shrike (*Lanius schach*) thus: chek-chek-chek-che-chwee-chek-chek rapidly repeated, punctuated by the usual chur-rs and chucks (SA). May occasionally be heard in winter quarters, particularly from mid March on, when migrating.

BREEDING. Within our limits authentically recorded only in N. Baluchistan, but without details. Elsewhere season, June and July. Nest, a compact cup of long leaves and grass-stalks interwoven with cobweb and vegetable down, lined with fine grass stalks and sometimes horse hair. Hangs from stems and twigs, from a few centimetres to about one metre above the ground, in dense shrubs and thickets. Eggs 4 to 6, of very variable colour, generally falling into three types: (1) pale pink with reddish brown spots and secondary violet-grey blotches, (2) milk-white with olive-brown spots and secondary violet-grey blotches, (3) dingy white, covered to a large extent with cinnamon-brown spots. Average size of 24 eggs 17.5 × 13.8 mm (Pleske in Dementiev).

MUSEUM DIAGNOSIS. See Key to the Species. Distinguished from *Hippolais caligata* (1562, 1563) by its minute, pointed 1st primary (as) equal to or shorter than primary-coverts; tail slightly, graduated (rounded) with narrow rather pointed central rectrices; absence of white edging on inner tip of outer rectrices.

Arrives in India in worn breeding plumage. A usually complete moult takes place from August to November (HW). However, moulting appears to vary according to latitude, and may take place on the breeding grounds as birds from the southern Urals moult from mid July through August while more northern individuals have not begun moulting by the end of July (Dementiev). Spring moult, apparently confined to chin, throat and breast, takes place in April-May. The upper plumage becomes much browner and duller by wear. Postjuvénal moult usually completed on summer grounds but sometimes after arrival in winter quarters. Young birds recognized by being more rusty brown above.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	60-66	15-18	21-23	50-55 mm
♀♀	59-66	15-18	21-23	48-55 mm

(BB, HW, SA)

Weight 4 ♂♂ (April) 10.8-13.5; 2 ♀♀ (April) 10.2, 10.7 g — Paynter. 20 ♂♂ (Sept.-Nov.) 8-13 (av. 10.6); 5 ♂♂ (May) 12-16 (av. 13.8) g — SA.

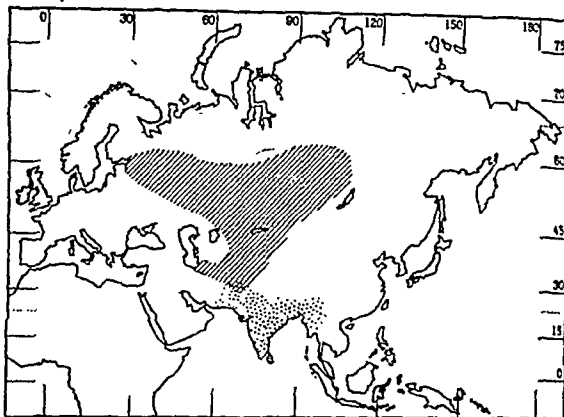
COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible grey-black, lower light brown, pale flesh at base; mouth orange-yellow or pale pinkish yellow. Legs, feet and claws greyish flesh.

110

SYLVIINAE

STATUS, DISTRIBUTION and HABITAT. Common and abundant winter visitor. Madhya Pradesh, Bihar, the Nepal Valley (Diesselhorst) and the eastern Nepal terai south through the Peninsula to Kanyakumari (Cape Comorin) and Ceylon; east through the Jalpaiguri duars, Bhutan foothills, lower Bengal, Assam, Nagaland, Manipur and Bangladesh to Burma; plains and hills up to 2100 m. Very common on passage in Pakistan (Sind, Punjab), north-western India (including eastern Rajasthan, Kutch and Kathiawar),

Acrocephalus dumetorum



Breeding

Winter

the western Himalayas and Nepal, up to over 3300 m. Breeds in the Naleyai Lora, 60 km north of Quetta, according to Christison (*Ibis* 1941: 535). Affects bushes, hedges, orchards, gardens, bamboo clumps and grain fields both near and away from water; in winter, mostly found in deciduous biotope.

Extratropical. Winters also in lower Burma. Breeds in central Eurasia from Lake Baikal west to southern Finland and south to Iran.

MIGRATION. Spring migration takes place from March to May when the species is very common in northwestern India; a few individuals may still be seen in the Peninsula till mid May and in the western Himalayas till early June. Autumn passage already begins in August and lasts till October. Large numbers pass through Pt Calimere (Tamil Nadu) to and from Ceylon in autumn and spring. Main wintering season: September to April.

GENERAL HABITS. Although a reed warbler by name, this species is more commonly seen in bushes, sometimes quite far from water. Habits very similar to those of *Hippolais*. Keeps singly, hopping about and creeping

112

SYLVIINAE

ACROCEPHALUS AGRICOLA (Jerdon)

Key to the Subspecies

More rufous above.....*A. a. agricola*
Less rufous, more olivaceous above.....*A. a. capistrata*

1557. Indian Paddyfield Warbler. *Acrocephalus agricola agricola* (Jerdon)

Sylvia (acrocephalus) agricola Jerdon, 1845, Madras Jour. Lit. Sci. 13: 131
(neighbourhood of Nellore)
Baker, FBI No. 800 (part), Vol. 2: 394

Plate 83, fig. 17

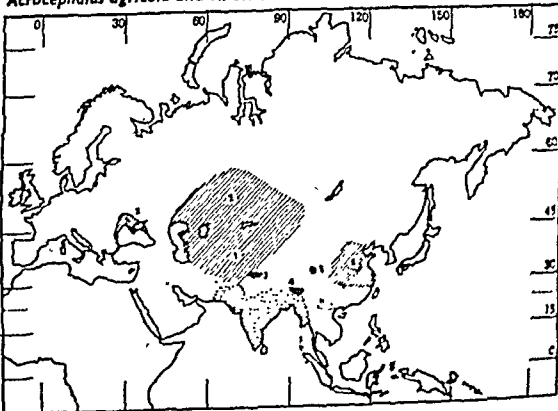
LOCAL NAMES. Terra-kumpa-jitta (Telugu); Pāḍikkūrūci (Malayalam).
SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. Above, rufous brown, rump a little paler and brighter; an indistinct pale supercilium. Below, throat whitish, rest of underparts ochraceous buff. Sexes alike.

Not distinguishable from *A. concinens* (1559). *A. dumetorum* is olive-brown above and less warm olive-buff below. *Luscinola melanopogon* (1495) has a brighter, white supercilium.

STATUS, DISTRIBUTION and HABITAT. Widespread winter visitor. The whole Indian Peninsula, Pakistan, Bangladesh and Assam. Breeds in the Malesai Lora, northern Baluchistan (Christison, JBNHS 43: 480). In winter affects standing rice, reed-beds, sugarcane and elephant grass, almost

Acrocephalus agricola and *A. concinens*



Breeding

Winter

1 *A. a. agricola* (1557). 2 *A. a. capistrata* (1558). 3 *A. a. harringtoni* (1559).
4 *A. a. strenuus* (1560). 5 *A. a. concinens* (RE).

WARBLERS

113

always above water or on wet ground; breeds in reeds, cat's-tail and neighbouring bushes.

Extralimital. Probably breeds in parts of Afghanistan and Turkestan (cf. Ludlow, *Ibis* 1933: 468). The species ranges north to Mongolia and west to the Danube delta. Winters west to southern Iran and east to Burma.

MIGRATION. Spring migration takes place from March to May (latest date: 27 May); autumn passage from August to October. Common on passage through Pakistan (N.W.F. Province, Baluchistan, Sind), north-western India and the western Himalayas.

GENERAL HABITS. Keeps singly within thick cover, hopping from stem to stem close to the ground or to water, clinging sideways and often lunging to snap up tiny insects from the surface. When flushed, the bird skins over the vegetation in a jerky, hurried flight, spreading the tail as it dives into the reeds a few metres further, the rufous rump then showing up prominently.

FOOD. Insects (small beetles, ants, etc.).

VOICE and CALLS. A characteristic harsh *chr. chuck* constantly uttered. Song said to be very imitative and to resemble that of *Hippolais caligata*. Also sings in flight.

BREEDING. So far authenticated only in Baluchistan. *Season*, May to July. *Nest*, a deep cup woven around three or four reed stalks or other stems; 30 to 90 cm above water. Made of rough grass, lined with fine grass or reed fibres, wool, goat's hair, feathers and downy inflorescence of reeds. Of 25 nests found in Baluchistan, 18 had 5 eggs and 7 had 4. Colour varies from whitish to greenish stone, blotched, streaked and spotted with dark olive, brown, dark grey and black, the markings denser at the large end where they tend to form a zone, sometimes a cap. Average size 16.8 × 12.9 mm (largest 17.2 × 13.1, smallest 16.4 × 12.8 mm) [Christison].

MUSEUM DIAGNOSIS. See Key to the Species. More richly coloured and darker than *capistrata* (1558) in corresponding plumage, more rufous above, less dull and olivaceous, more rusty, less whitish below (Vaurie).

A complete moult takes place immediately after arrival in winter quarters. A body moult begins in early March.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	56-61	14-15	20-23	53-59 mm
♀♀	56-60	14-15	21-23	53-57 mm

Weight 1 ♂ (April) 10.5 g — GD. 10 ♂♀ 8-11 (av. 9.5) g — SA.

COLOURS OF BARE PARTS. Iris olive-brown (once pale straw). Bill: upper mandible dark brown, lower pale flesh; mouth pale greyish yellow. Legs, feet and claws pale greyish brown.

1558. Northern Paddyfield Warbler. *Acrocephalus agricola capistrata* (Severtzov)

Salicaria capistrata Severtzov, 1872, Vertik. Turkest. Zhivotn.: 127 (Turkestan), *nee Salicaria brevipennis* Severtzov, 1872, loc. cit., preoccupied (vide G. E. Watson & B. J. Gray, 1969, Bull. Brit. Orn. Cl. 89: 8) Baker, FBI No. 800 (part), Vol. 2: 394

LOCAL NAMES. As in 1557.

WARBLERS

115

MUSEUM DIAGNOSIS. See Key to the Species. Differs from *stevensi* in being paler and slightly greyer above, especially on head.

MEASUREMENTS (all subspecies)

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	53-58	14-15	21-22	52-60 mm
♀♀	52-58			51-58 mm

COLOURS OF BARE PARTS. Iris hazel or olive-brown. Bill: black above, yellowish or flesh below. Legs and feet light brown or brownish flesh.

1560. Assam Bluntwinged Paddyfield Warbler. *Acrocephalus concinens stenseni* Baker

Acrocephalus concinens stenseni Baker, 1922, Bull. Brit. Orn. Cl. 43: 16 (Hesamara, N. Lakhimpur, Assam) Baker, FBI No. 803, Vol. 2: 397

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1557, q.v. See Key to the Species and Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to some winter movements. Assam in the plains of the Brahmaputra. Recorded in winter in the Bengal duars (Jalpaiguri dist.), Bangladesh and lower Burma. Affects high grass on wet ground close to rivers or swamps.

Extralimital. Probably breeds also in Burma (Pegu); nominate *concinens* breeds in eastern China and has been recorded in winter in Kwangtung and northern Thailand.

GENERAL HABITS and FOOD. As in 1557.

VOICE and CALLS. As in 1559.

BREEDING. *Season*, end of April to June. *Nest*, as in 1559. *Eggs*, apparently 3, pale buffy brown to sepia brown with dark brown to black blotches, bolder and larger than in *haringtoni*. Average size of 13 eggs 15.9 × 12.1 mm (Baker).

MUSEUM DIAGNOSIS. Like *haringtoni* but darker.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	49-53	11-12	c. 20	46-50 mm

COLOURS OF BARE PARTS. Iris olive-brown. Bill: upper mandible horny black, paler on edge of commissure; lower mandible horny, darker at tip. Legs and feet fleshy brown.

1561. Largebilled Reed Warbler. *Acrocephalus (stentoreus) orinus* Oberholser

Acrocephalus orinus Oberholser, 1905, Proc. U.S. Nat. Mus. 28: 899, new name for *Acrocephalus macrothrychus* Hume, 1871, *Ibis*: 31 (not far from Rampoor), *ex Phylloscopus macrothrychus* Hume, 1869, *Ibis*: 357, nom. *nov.*, *nee Celamophorus macrothrychus* Müller, 1853

Baker, FBI No. 804, Vol. 2: 398

LOCAL NAMES. None recorded.

114

SYLVIINAE

SIZE. Sparrow — ; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1557, q.v.

STATUS, DISTRIBUTION and HABITAT. Winter visitor. Recorded in Baluchistan, Sind, Uttar Pradesh, Madhya Pradesh and the Nepal terai. Noted in Kathmandu Valley on spring passage. Habitat as in 1557.

Extralimital. Breeds in northern Transcaspia and in the northwestern Black Sea region.

MIGRATION. As in 1557.

GENERAL HABITS, FOOD and VOICE. As in 1557.

MUSEUM DIAGNOSIS. For subspecific distinction see 1557 under Museum Diagnosis.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1557.

ACROCEPHALUS CONCINENS (Swinhoe)

Key to the Subspecies

Paler	<i>A. c. haringtoni</i>
Darker	<i>A. c. stenseni</i>

1559. Kashmir Bluntwinged Paddyfield Warbler. *Acrocephalus concinens haringtoni* Witherby

Acrocephalus agricola haringtoni Witherby, 1920, Bull. Brit. Orn. Cl. 41: 26 (Buttakundi, Khagan)

Acrocephalus concinens hokrae Whistler, 1930, Bull. Brit. Orn. Cl. 50: 71 (Hokra jheel, Kashmir)

Baker, FBI No. 802, Vol. 2: 396

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in *A. a. agricola* (1557); not distinguishable from it in the field.

STATUS, DISTRIBUTION and HABITAT. A summer (breeding) visitor to the northwestern Himalayas in the Kagan Valley, Gagai Pass, Wardwan Valley, upper Kishtwar, and the Vale of Kashmir. An example mist-netted in Nepal (northern Jhapa dist.), February (Fleming, JBNHS 65: 332 — subspecies?). Breeds in reeds, rushes and long grass around lakes and swamps, and in rank vegetation, either on flat ground or at the base of hillsides; in the higher rainy valleys up to c. 3000 m, frequently away from water. Winter quarters unknown.

Extralimital. Adjacent parts of northern Afghanistan.

MIGRATION. Noted on its breeding grounds from May to August.

GENERAL HABITS and FOOD. Not different from those of *agricola*.

VOICE and CALLS. Song described as pleasant, vigorous and varied. Probably not different from that of *agricola*.

BREEDING. *Season*, June and July. *Nest*, a neat cup of grass, reed fibre, rush leaves, occasionally some moss, lined with wool, vegetable down, and sometimes a few feathers. Attached to or suspended between several upright plant stems within 90 cm from the ground. *Eggs*, normally 4, very pale green, almost white, stippled and blotched with yellowish brown, purplish grey and black, more or less all over but chiefly at the large end. Average size of 47 eggs 17.1 × 12.7 mm (Osmaston).

116

SYLVIINAE

SIZE. Sparrow — ; length c. 13 cm (5 in.).

FIELD CHARACTERS. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Known only from the type obtained near Rampur (c. 31°26'N., 77°37'E.), Sutlej Valley, Himachal Pradesh. Habitat unknown.

GENERAL HABITS, FOOD, VOICE and BREEDING. Unknown.

MUSEUM DIAGNOSIS. This species is known from a unique specimen in the collection of the British Museum which Hume had collected near Rampur on 13 November 1867. G. Vaurie (*Amer. Mus. Novitates*, No. 1753, p. 9, 1955) discusses the specimen describing the wing formula in detail — 5th primary [as.] longest, 2nd 10 mm shorter and 3rd-4th intermediate — but this is unhelpful since it is in moult. Primaries 3rd-5th are emarginated, and there is a notch on inner web of 2nd, 16 mm from tip.

The bill is long and strongly made, and akin to that of a small *A. stentoreus* (such as *toxopei* of the Moluccas). It measures 19 mm from skull, instead of about 15 mm in *A. concinens* and *A. agricola*. The plumage is almost identical with *A. concinens* (or with *A. stentoreus toxopei*), being slightly darker olive-brown above, and buffish white below, heavily washed with fulvous on sides of breast and flanks. Its status as a full species whose breeding range is still unknown may be doubted. Perhaps the best guess is that it represents a rare and isolated form of the widely but very patchily distributed *A. stentoreus* (Williamson, 1963).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
1 ♂?	61	19	23	54 mm
		(from nostrils)		15 mm

Width of bill at gape 6 mm

COLOURS OF BARE PARTS. Unknown.

Genus HIPPOLAIS Baldestein

Hippolais Baldestein, 1827, Neue Alpina 2: 77.

Type, by monotypy, *Sylvia polyglotta* Vieillot

Close to *Acrocephalus* but tail square or nearly so. Bill flattened and wide. Three weak rectal bristles.

Key to the Species

	Page
Wing over 70 mm	<i>H. longida</i> 119
Wing under 70 mm	<i>H. caligata</i> 116

HIPPOLAIS CALIGATA (Lichtenstein)

Key to the Subspecies

Tail usually under 50 mm	<i>H. c. caligata</i>
Tail usually over 50 mm	<i>H. c. rufus</i>

WARBLERS

117

1562. Siberian Booted Tree Warbler. *Hippolais caligata caligata* (Lichtenstein)

Sylvia caligata Lichtenstein, 1823, in Eversmann's Reise Orenburg Buchar: 128 (Ilek River, near Orenburg)
Sylvia scita Eversmann, 1843, Add. Pallas Zoogr. Rosso-Asiat., fasc. 3: 12 (Ural Mts)
Baker, FBI No. 842, Vol. 2: 444
Plate 86, fig. 3

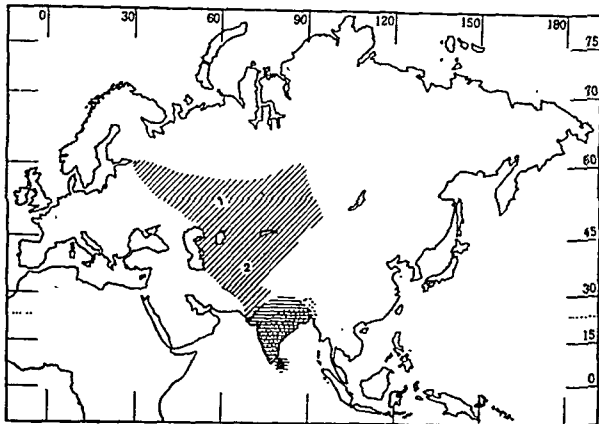
LOCAL NAME. *Chinnambhəri* (Malayalam).

SIZE. Sparrow — ; 12 cm (4½ in.).

FIELD CHARACTERS. As in 1563, q.v.

STATUS, DISTRIBUTION AND HABITAT. Widespread and fairly common winter visitor. The Indian Peninsula from Madhya Pradesh and the Ganges south to Kanyakumari (Cape Comorin); east through the Bengal duars,

Hippolais caligata



▨ Breeding range 1, 2 ▨ Winter, 1 ▨ Winter, 2
1 *caligata* (1562). 2 *rama* (1563).

Assam and Bangladesh (fide Rashid). Also Ceylon (one record — Phillips). On passage throughout the western Himalayas and Pakistan (including northern Baluchistan), northern and northwestern India, Nepal (not recorded since Hodgson) and Sikkim. Affects deciduous scrub jungle, isolated shrubs in dry cultivated land, clumps of grass, and occasionally reeds.

Extralimital. Breeds in southern Siberia from the Yenisey to the Lenin-grad region.

WARBLERS

119

MIGRATION. As a winter visitor may be found from September (August in the north) to April. On its summer grounds from April to August. Common on passage through northern India, Pakistan, the Makran coast and the western Himalayas.

GENERAL HABITS. Usually seen singly, sometimes loose 'flocks' of up to 10 birds or so, restlessly hunting insects among leaves and blossoms such as *Acacia* and *Prosopis*; often flies out from the extremity of a twig to take insects on the wing. Closely resembles leaf warblers in behaviour and movements.

FOOD. Insects.

VOICE AND CALLS. A harsh chuck . . . chuck or churr-r . . . chur-r recalling the notes of the Lesser Whitethroat (*Sylvia curruca*). Song, a soft, sweet and spirited creaky jingle reminiscent of song of Lesser Whitethroat as well as of Swallow (*Hirundo rustica*) uttered more or less incessantly throughout the day from shortly before spring departure. A quieter warbling in the nature of sub-song given now and again in winter while foraging.

BREEDING. Season, May to July. Nest, a cup of twigs, grass roots and stems, lined with fine grass, wool, vegetable down and hair. Well hidden in dense undergrowth especially tamarisk and rose bushes, sometimes in grass clumps, within a couple of metres from the ground. Eggs, normally 3 or 4, occasionally 5, very variable: pinkish white to pale grey with grey, purple or black spots and specks, sometimes lines, scrawls or blotches (for further details see Baker, *Nidification* 2: 402). Average size of 200 eggs 15.8 × 12.3 mm (Baker). Appears to breed in loose colonies; many nests may be found in a small area and sometimes a couple of nests even in the same bush. Share of the sexes in nest-building and incubation, and incubation period, unrecorded.

MUSEUM DIAGNOSIS. In fresh winter plumage differs from *caligata* (1562) by its uniform mouse-grey upperparts with slight olive tinge, as against darker, more fulvous brown. Tail longer, usually over 50 mm.

Best differentiated from *Acrocephalus dumetorum* by the rudimentary first primary being longer than primary coverts by 4–10 mm. In *A. dumetorum* the first primary is narrow and pin-like, shorter than or equal to primary coverts, never exceeding them by more than c. 3 mm.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	60–65	14–16	19–22	50–57 mm
♀♀	58–62	15–16	20–21	49–57 mm
			(HW, SA, CBT)	

Weight 14 ♂♀ 8–11 (av. 9.3) g — SA (possibly both subspecies).

COLOURS OF BARE PARTS. Iris hazel-brown or olive-brown. Bill: upper mandible brown, lower pale flesh; mouth pale lemon-yellow or bright yellow; gape yellowish buff. Legs and feet greyish brown; claws dusky; soles pale lemon-yellow.

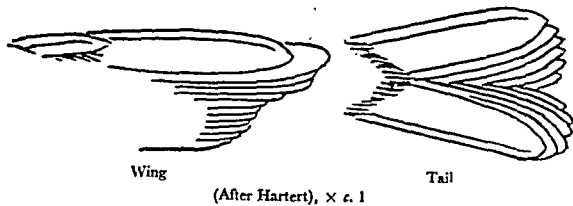
1564. Upcher's Tree Warbler. *Hippolais languida* (Hemprich & Ehrenberg)

Curruca languida Hemprich & Ehrenberg, 1833, Symb. Phys. Avium, fol. cc (Syria)
Baker, FBI No. 844, Vol. 2: 445
Plate 86, fig. 1

LOCAL NAMES. None recorded.

118

SYLVIINAE



(After Hartert), × c. 1

MIGRATION. Spring passage from April to May; autumn passage August to September. On its winter grounds from August to April.

GENERAL HABITS, FOOD AND VOICE. As in 1563.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Like *rama* but upperparts darker, more fulvous brown. Tail shorter.

Young (immature) paler, more sandy grey above, whiter below. Often migrates in this plumage.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	59–65	13–15	19–22	47–51 mm
♀♀	58–65			46–52 mm
				(HW, SA)

COLOURS OF BARE PARTS. As in 1563.

1563. Indian Booted Tree Warbler. *Hippolais caligata rama* (Sykes)

Sylvia Rama Sykes, 1832, Proc. Zool. Soc. London: 89 (Dukhun)
Baker, FBI No. 840, Vol. 2: 442

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 12 cm (4½ in.).

FIELD CHARACTERS. Above, pale olive-brown; a short, whitish supercilium. Below, buffish white. Sexes alike.

May be easily confused with the very similar Paddyfield and Blyth's warblers which are darker brown. The latter is slightly larger, has a sensibly longer bill and a more rounded (v. square-ended) tail. May also be confused with some *Phylloscopi* but calls different.

STATUS, DISTRIBUTION AND HABITAT. Common and widespread winter visitor. From Sind, Delhi and Calcutta south to Kanyakumari (Cape Comorin) and Ceylon. Breeds in Sind, northern Baluchistan, Peshawar dist. and western Punjab. In winter affects almost any country where acacias, bushes or scrub abound. More a bird of semi-desert country whereas *caligata* prefers less arid parts. In the breeding season frequents tamarisks and bushes along river beds and canals; also gardens and hedges.

Extralimital. Breeds also in Afghanistan, northern Iran, southern Turkey and Transcaucasia.

SYLVIINAE

120

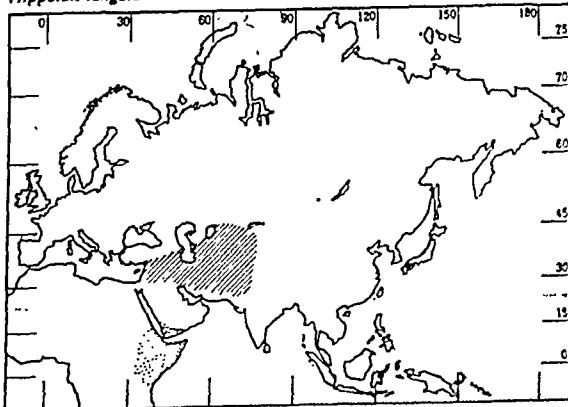
SIZE. Sparrow — ; length c. 14 cm (5 in.).

FIELD CHARACTERS. Above, pale grey-brown. Loes whitish. Below, buffish white, flanks washed with pale brown. Outer rectrices tipped white. Sexes alike.

The conspicuous white-tipped rectrices identify this species.

STATUS, DISTRIBUTION AND HABITAT. Summer visitor. Breeds in small numbers in the hills of Quetta at c. 2300–2400 m. Affects stunted bush-covered, stony hillsides. Recorded on migration in southern Baluchistan.

Hippolais languida



▨ Breeding ▨ Winter

Extralimital. Extends to the Aral Sea and eastern Mediterranean. Winters in southwestern Arabia, Ethiopia, Sudan and Kenya.

MIGRATION. Arrives on its summer grounds in April. Autumn passage noted in September and spring passage in April (Baluchistan).

GENERAL HABITS. Undescribed. Said to be rather silent and thus easily overlooked.

FOOD. Insects.

VOICE AND CALLS. Song undescribed. Call-note a sharp chick chick.

BREEDING. Season, May and June. Nest, a neat cup of grass well plastered with cobweb on the outside and lined with fine grass-stems. Generally placed in stunted, thorny bushes some 30 to 50 cm from the ground. Eggs, clutch size not recorded with certainty (c/4–5 in more northern latitudes); colour, pale pinkish purple, sparsely marked with fairly bold black blotches and dots. Average size of 28 eggs 18.9 × 13.6 mm (Baker).

MUSEUM DIAGNOSIS. The white-tipped rectrices distinguish this species.

WARBLERS

121

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
4 ♂♂	71-77	18-21	21-22	{ 59-62 mm 60-72 mm (Dementiev)
4 ♀♀	72-75			

Weight 4 ♂♂ 9.8-10.5; 3 ♀♀ 9.6-10 g (Dementiev).

COLOURS OF BARE PARTS. Iris light brown. Bill: upper mandible dark brown, lower flesh. Legs and feet light brown or flesh.

Genus *SYLVIA* Scopoli

Sylvia Scopoli, 1769, *Annus I*, Hist. Nat.: 154.

Type, by subsequent designation, *Motacilla atricapilla* Linnaeus

Bill not compressed, culmen more or less curved. Rectal bristles less developed than in *Acrocephalus* and *Hippolais*.

Cf. Williamson, K., 1964, The Genus *Sylvia*. British Trust for Ornithology, Field Guide No. 9.

Key to the Species

		Page
I First primary (as.) shorter than primary-coverts		
A Underparts conspicuously barred.....	<i>S. nisoria</i>	121
B Underparts not barred.....	<i>S. communis</i>	124
II First primary longer than primary-coverts		
C Wing over 74 mm.....	<i>S. hortensis</i>	122
D Wing under 73 mm		
1 Upper plumage a striking fawn colour.....	<i>S. nana</i>	130
2 Upper plumage grey or grey-brown.....	<i>S. curruca</i>	126

1564a. Barred Warbler. *Sylvia nisoria* (Bechstein)

Motacilla nisoria Bechstein, Orn. Monatsb. 15: 3

(Kachka Su, central Tien Shan)

Not in Baker, FBI

Plate 84, fig. 1

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 16 cm (6½ in.).

FIELD CHARACTERS. A large warbler resembling whitethroats in shape and actions.

Male (adult). Above, grey, flecked with white on sides of crown; wing-coverts, tertials and upper tail-coverts tipped with white. Outer rectrices partly white. Below, white scalloped with grey (except on centre of belly).

Female similar but scalloping much less prominent.

Young birds have plain whitish buff underparts.

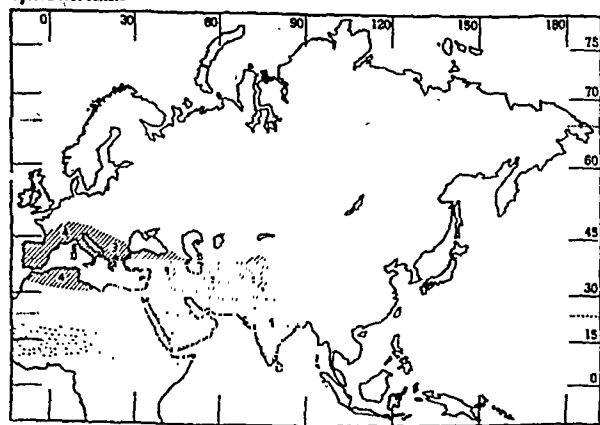
The finely barred appearance of underparts is diagnostic. The yellow eye is also a distinctive character in both sexes (juveniles have a brown iris).

STATUS, DISTRIBUTION and HABITAT. Scarce passage migrant. Two records: Gilgit, 1500 m (Biddulph, vide N. B. Kinnear, *Ibis* 1931: 575) and Shyok Valley, Ladakh, 4150 m (J. A. Sillem, 1934, *Orgaan der Cl. Nederland. Vogelk.* 7: 29). Affects bushes:

WARBLERS

123

ibid. 44: 400). Winters irregularly in the more northern parts (Sind, Punjab); appears to be scarcer in dry years when trees are not in good leaf. A common passage migrant in northwestern India, Pakistan and the western Himalayas. Affects semi-desert, stony country and ravines with a

Sylvia hortensis

■ Breeding

■ Winter

1 jerdoni (1565). 2 balchanica (RE). 3 crassirostris (RE).

4 hortensis (RE).

sparse vegetation of *Capparis*, *Prosopis* and leafy babool trees and scrub. In summer, appears to be confined to localities where there is a fair amount of shrubbery, not too far from water, though it is sometimes met with also in arid regions.

Extralimital. Turkestan, Afghanistan and eastern Iran. The species extends west to Spain and Morocco. Winters in Arabia and in Africa from Ethiopia to Guinea.

MIGRATION. Found on its summer grounds from April to August and in its winter quarters from August to March, in the north till the end of April. A bird ringed in Kathiawar on 27.ix.1960 was recaptured and released at the same place on 21.ix.1961; it was captured again in the identical spot a year later, on 18.ix.1962. A second bird ringed here on 19.ix.1960 was also recaptured in the same locality two years later, on 24.ix.1962 (Shivraj-kumar, JBNHS 59: 963).

GENERAL HABITS. Very skulking. Hunts in bushes and lower branches of trees; sometimes descends to the ground to pick up a morsel. Extremely discreet in its breeding territory and easily overlooked even when searched for.

122

SYLVIINAE

Extralimital. Breeds in the western Palearctic from Turkestan to Germany. Winters in eastern Africa from Egypt to South Africa.

MIGRATION. The specimen from Ladakh (a juvenile) was taken on 2 July, that from Gilgit on 6 September.

GENERAL HABITS. Those of the genus. Very skulking.

FOOD. Insects in summer and also berries in autumn.

VOICE and CALLS. A *chak, chak* and a churring note as common to most members of the genus. Alarm, a harsh chatter *trr-trr-trr*. Said to be a magnificent songster.

MUSEUM DIAGNOSIS. See Field Characters. Unbarred juvenile distinguished from young or female *S. hortensis* by having first primary shorter than primary-coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	83-90	16-18	24-26	64-79 mm (Williamson)

Weight 50 ♂ ♀ (first-winter) 18.8-31 (av. 22.8) g — Williamson.

COLOURS OF BARE PARTS. Iris pale to bright yellow in adults, dark brown in juveniles becoming grey-brown in first winter. Bill dark brown, base of lower mandible yellow or yellowish brown. Legs and feet dull yellowish flesh to brownish grey.

1565. Eastern Orphean Warbler. *Sylvia hortensis jerdoni* (Blyth)

G. (urruca) Jerdoni Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 439

(Southern India)

Baker, FBI No. 846, Vol. 2: 448

Plate 84, fig. 3

LOCAL NAMES. *Gaz burruck* (Brahui); *Moto shveta kántha* (Gujarati); *Pedda nalla kampa jitta* (Telugu).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. A large grey warbler with a white throat, dark crown and cheeks, and pale eyes.

Male (adult). Above, head black; rest of upperparts grey. Tail blackish, outer rectrices white. Below, throat white, rest buffish white.

Female. Above, head grey, darker on cheeks and contrasting with white throat.

Back and wings pale brownish grey. Tail grey, outer rectrices white. Below, as in male.

STATUS, DISTRIBUTION and HABITAT. As a summer (breeding) visitor, locally common. Northern Baluchistan and N.W.F.P., between 2100 and 3000 m, in Kohat apparently as low as 750 m. A specimen collected in Gilgit on 11 June. As a winter visitor, widely distributed and locally common from Sind, the Indus Valley, Punjab, Uttar Pradesh (Oudh), and southern Bihar (Manbhum), south through the Deccan to Mysore (Satnur — Sálím Ali, JBNHS 43: 575) and Tamil Nadu, c. 10°N. (Madurai dist. — Nichols,

124

SYLVIINAE

FOOD. Mainly insects; flower nectar (e.g. of *Capparis aphylla*) and berries are taken in autumn and winter; also determined are seeds and a snail (SA).

VOICE and CALLS. Song, short vehement phrases of almost blackbird-like quality. Sings very sporadically, even during courtship season when one may be within its territory without hearing a sound for several hours. Call-note *chuck* . . . *chuck* like that of a whitethroat but louder and deeper. Alarm, a hard, rattling *trrr*. Other notes, a *chichirichich* given while hopping among bushes.

BREEDING. Season, end of April to July. Nest, a cup of grass stems, twigs and dead leaves lined with fine grass and some hair. Placed near the top of a small, often isolated bush some 60 to 150 cm above the ground, often ill-concealed. Eggs, 4 or 5, very pale greenish

white, marked with blackish brown specks or small blotches and secondary ones of pale grey, fairly numerous at the large end, scanty elsewhere. Average size of 31 eggs 20.6 × 15.5 mm (Baker). Other details of breeding biology not recorded within our limits.

MUSEUM DIAGNOSIS. See Field Characters. Postjuvénal moult of body, lesser and median coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	79-86	19-21	23-25	66-72 mm
♀♀	77-83	19-21	23-25	67-71 mm (HW, SA)

Weight 9 ♂ ♀ 22-24 (av. 22.2) g — SA.

COLOURS OF BARE PARTS. Iris grey-white to pale straw. Bill dark brown, base of lower mandible pale lead. Legs and feet olive-brown to slate-grey.

1566. Indian Whitethroat. *Sylvia communis icterops* Ménétries

Sylvia icterops Ménétries, 1832, Cat. Rais. Caucase: 34

(Talych, eastern Transcaucasia)

Sylvia communis rubicola Stresemann, 1928, Jour. f. Orn. 76: 378

(Kuldja, Chinese Turkestan)

Baker, FBI No. 845, Vol. 2: 447

Plate 84, fig. 2

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Above, brownish grey; edges of secondaries rufous-brown. Outer rectrices white. Below, throat white, rest of underparts with a pinkish flush. Sexes practically alike.

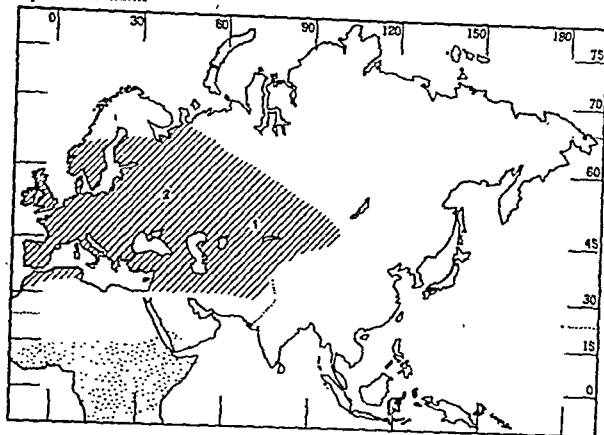
The Lesser Whitethroat is smaller, lacks the rufous wing-patch and has distinctive dark cheeks which contrast sharply with the glistening white throat.

STATUS, DISTRIBUTION and HABITAT. As a summer (breeding) visitor recorded only from northern Baluchistan at 2100-2300 m (Meinertzhagen,

WARBLERS

125

JBNHS 31: 698). Obtained once in Ladakh (Chang Chenmo, 4500 m) on 1 June (Meinertzhagen, Ibis 1927: 421). An abundant autumn migrant west of a line Spiti-Mt Abu-Kutch and western Kathiawar (Amreli), only occasionally straying farther east (Kanpur, U.P., once). Said to be also a

Sylvia communis

Breeding

Winter

1 *icterops* (1566). 2 *communis* (RE).

Dotted line: eastern limit of migrants.

spring migrant on the Makran coast (CBT). Affects *Capparis* and other scrub in stony and sandy semi-desert, and bushes and hedges amidst cultivation, often by roadsides. Breeds in low thorn bushes on hillsides.

Extralimital. The western Palearctic from Turkestan to the Urals and Turkey (*icterops*) and westward to Scandinavia and Morocco (nominat). Winters in Yemen and tropical Africa.

MIGRATION. One of the species (cf. Ind. Hb. 1: xxxv) that pass through NW. India on autumn migration to take the Arabian route to their winter quarters in Africa. Earliest autumn migrants reach India in the second half of August, the bulk arriving in early September often literally swarming. Passage lasts till about the middle of October. Return (spring) passage apparently largely extralimital. On breeding grounds from May to September.

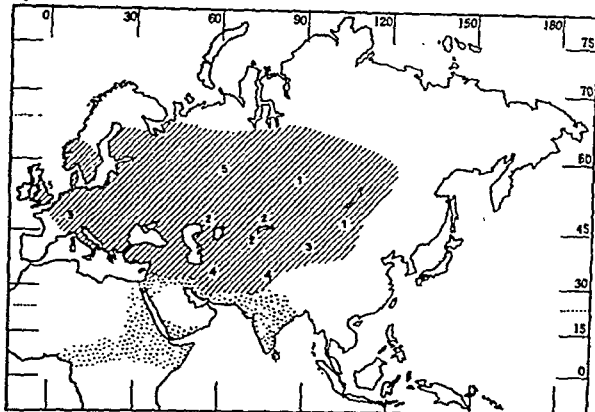
GENERAL HABITS. Less secretive than most warblers. Moves about in low scrub, frequently showing itself outside. Unlike the Lesser Whitethroat, seldom ascends trees.

FOOD. Chiefly insects, occasionally berries.

VOICE AND CALLS. Very silent during migration. A hoarse *churr-r* and a sharp *tak, tak*. Also a *che-wee che-wit-whit-whit-whit*. Song, (not recorded in India)

WARBLERS

127

Sylvia curruca

Breeding ranges

Winter range of the species

1 *blythi* (1567). 2 *halimodendri* (1568). 3 *minula* (1569).4 *althara* (1570). 5 *curruca* (RE).

Extralimital. Breeds in central Siberia from Lake Baikal to the Ob river. The species ranges west to the British Isles. Winters in India and west through southern Iran to Syria, Egypt, Sudan, southern Arabia and in Africa from Ethiopia to Nigeria.

MIGRATION. Found in its winter quarters from September to April (August to May in the north). An individual ringed in Kathiawar on 24.ix.1961 was recaptured in the same place almost exactly a year later, on 26.ix.1962 (Shivraj Kumar, JBNHS 59: 963).

GENERAL HABITS, FOOD AND VOICE. As in 1570.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Second primary usually falls between 6th and 7th. Moults as in 1570.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	61-68	12-13	18-23	54-62 mm
♀♀	61-67	—	19-21	53-61 mm

(CBT, SA, HW)

Weight 1 ♂ (Oct., Nepal) 12.1 g (Paynter); 19 ♀♀ (Oct., S. India) 11-18 (av. 13) g — SA.

COLOURS OF BARE PARTS. Iris pale yellowish brown. Bill bluish grey with black tip; mouth whitish flesh. Legs and feet dark brown to plumbeous slate.

126

SYLVIINAE

a short, rapid warble of poor quality, emphasized on the first few notes, often delivered in short song-flight or from an exposed spray, the white throat-feathers characteristically ruffled; well rendered as *ri-chi-ri-chi-chuchi* (Dementiev).

BREEDING. Season, May to July. Nest, a cup of grass stems lined with finer material, rootlets, hair and vegetable down; generally placed in a low bush within 50 cm from the ground. Eggs, white to greenish white spotted with light grey and dark brown, especially at large end where forming a cap. Clutch size not ascertained in our territory. Average size of 20 eggs 19.1 × 14.7 mm (Dementiev).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
8 ♂♂	73-77	11-13	20-22	60-65 mm
3 ♀♀	73-76	11-13	21-22	58-66 mm (SA)

Weight 24 ♂♂ (Sept.) 15-25 (av. 17.3) g — SA.

COLOURS OF BARE PARTS. Iris yellowish brown. Bill brown, flesh at base of lower mandible. Legs and feet yellowish brown.

SYLVIA CURRUCA (Linnaeus)

Key to the Subspecies

	Page
A Upperparts dark grey, head darker.....	<i>S. c. althara</i> 129
B Back greyish brown.....	
a Head grey contrasting with back.....	<i>S. c. blythi</i> 126
b Paler, more sandy brown.....	<i>S. c. halimodendri</i> 128
C Back sandy brown, crown ashy grey not contrasting with back....	<i>S. c. minula</i> 128

1567. Siberian Lesser Whitethroat. *Sylvia curruca blythi* Ticehurst & Whistler

Sylvia curruca blythi Ticehurst & Whistler, 1933, Ibis: 556

(Cawnpore)

Baker, FBI No. 849, Vol. 2: 45 (See footnote 2, p. 129, under *S. c. althara*)

Plate 84, fig. 6

LOCAL NAME. Chinna nalla kampa jitta (Telugu).

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. As in 1570, q.v., but back browner.

STATUS, DISTRIBUTION AND HABITAT. Common and widespread winter visitor. Pakistan and India from the western Himalayan foothills, Uttar Pradesh and lower Bengal south through the Peninsula to Tamil Nadu. One record from Ceylon (Phillips, 1953, p. 97). In the hills up to at least 900 m. Noted on passage in Spiti at over 3300 m and in northern Baluchistan. One record from Nepal (Ripley, JBNHS 59: 290). Affects scrub jungle and undergrowth; in semi-desert especially partial to *kerdi* bushes (*Capparis aphylla*), babool (*Acacia nilotica*) and *kandi* (*Prosopis spiciogera*) trees.

128

SYLVIINAE

1568. Kirghiz Lesser Whitethroat. *Sylvia curruca halimodendri* Sushkin

Sylvia curruca halimodendri Sushkin, 1904, Bull. Brit. Orn. Cl. 14: 42

(lower Irghiz and lower Turgai rivers, southern Kirghiz Steppes)

Not in Baker, FBI

LOCAL NAME. Chia (Sind).

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. As in 1569, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor to the plains of the Indus in Punjab (Dera Ghazi Khan, Bahawalpur) and Sind; also Salt Range and Baluchistan (Challarbar, specimen in Brit. Mus.). Affects bushes and scrub.

Extralimital. Breeds between the Caspian Sea and the Lake Balkhash region.

MIGRATION. As in 1567.

GENERAL HABITS, FOOD AND VOICE. As in 1570.

MUSEUM DIAGNOSIS. Paler than *blythi* but not as sandy as *minula*.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	57-64	11-13	18-20	55-60 mm
♀♀	57-64	—	—	52-62 mm (Dementiev)

COLOURS OF BARE PARTS. As in 1567.

1569. Small Whitethroat. *Sylvia curruca minula* Hume

Sylvia minula Hume, 1873, Stray Feathers 1: 198

(Bhawulpore)

Baker, FBI No. 850, Vol. 2: 451

Plate 84, fig. 4

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. Above, pale sandy brown, more ashy on crown. Dark cheeks contrasting with white throat distinctive. Tail dark brown, outer rectrices white. Below, throat white, rest pale buff. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common winter visitor. North-western India in Haryana and Pakistan from Peshawar and Punjab south through the Indus Valley to the Makran coast in the west and Kutch (JBNHS 61: 184) in the east. On passage through the western Himalayas and northern Baluchistan. Affects thorn scrub in semi-desert country, frequently far out in sand-dune desert among sparse *Capparis* bushes. As a breeder, also frequents semi-desert.

Extralimital. Breeds from Transcaspiia to the Gobi desert.

MIGRATION. Spring passage in March-April; autumn passage September to mid November. In its winter quarters from September to April.

One of the Kutch specimens (W. 68 mm) identified by Dr C. Vaurie as perhaps *S. minula marginata* Stollmann.

WARBLERS

129

GENERAL HABITS, FOOD and VOICE. As in 1570. Perhaps more terrestrial than other whitethroats, commonly seen running on ground in and out of rootstocks of bushes like *S. nana* (1571).

MUSEUM DIAGNOSIS. A pale sandy brown desert form, the palest of all whitethroats. Brown ashy grey. White part of outer rectrices purer than in other races, 2nd primary (as.) usually between 7th and 8th, occasionally equal to 7th or 8th. Moults as in 1570.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	58-65	11-12	20-23 (CBT, Williamson)	50-58 mm

COLOURS OF BARE PARTS. Iris pale yellowish brown. Bill bluish grey, tip black; mouth whitish flesh. Legs and feet brown to plumbeous-slate.

1570. Hume's Lesser Whitethroat. *Sylvia curruca althaea* Hume¹

Sylvia althaea Hume, 1878, *Stray Feathers* 7: 60, 62 (Kashmir)

C. (curruca) affinis Blyth, 1845, *Jour. Asiat. Soc. Bengal* 14: 564 (S. India)²

Cf. Watson, G. E., 1969, *Bull. Zool. Nomencl.* 26: 39-41

Baker, FBI No. 848, Vol. 2: 450

Plate 84, fig. 5

LOCAL NAME. *Chat lyot* (Kashmir).

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. Above, dark grey, back and wings tinged with brown. Ear-coverts a darker grey contrasting with glistening white throat. Tail blackish brown, outer rectrices white. Below, white tinged with buff on breast and belly. Sexes alike.

The dark ear-coverts, darker than crown and contrasting with white of throat, are characteristic of all Lesser Whitethroats. The very similar female of the Orphean Warbler (1565) is much larger.

STATUS, DISTRIBUTION and HABITAT. Summer (breeding) visitor to the western Himalayas; winter visitor to the Peninsula, locally common. Breeds in Kashmir from 1500 to 2700 m, in Astor, Gilgit and Ladakh between 2100 and 3700 m, and from Murree west through N.W.F.P. and south through the high ranges to northern Baluchistan. Affects stony, bush-covered hillsides, often along streams, *Berberis*, *Rubus*, *Coloneaster* and briar in Kashmir, *Lonicera*, willows and fruit trees in Ladakh, buckthorn bushes and juniper in Baluchistan. Winters from the western Himalayan foothills south to Sind and southeast to the Eastern Ghats and Tamil Nadu. Also fairly common in northern Ceylon. In this season affects bushes and scrub of babool etc.

EXTRALIMITAL. Ranges north to Turkestan and west to the southern Caspian and Zagros mountains of Iran, these populations probably wintering in southern Iran and Iraq.

MIGRATION. Arrives on its summer grounds in April. First autumn migrants appear in Punjab at the end of July. Recorded in Ceylon from October to April.

¹ Subsequent information on habits, distribution and intergradation show that *althaea* and *minula* are better treated as subspecies of *curruca*.

² Although this name is synonymized with *althaea*, most of the notes published under the name '*S. affinis*' pertain to *S. curruca blythi*, *fide* Whistler & Ticehurst, *Ibis* 1933: 554-6.

WARBLERS

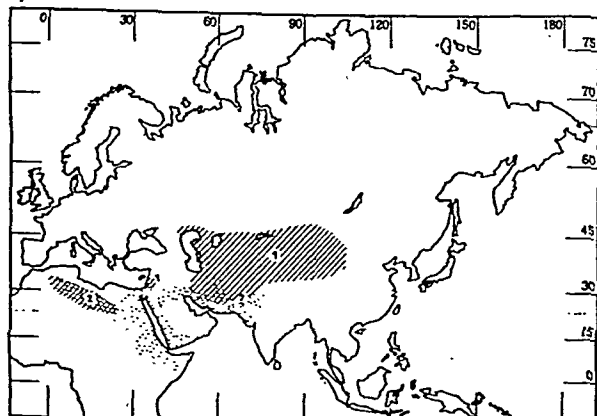
131

SIZE. Sparrow —; length c. 11 cm (4½ in.).

FIELD CHARACTERS. Above, pale greyish brown; a white ring round eye. Tail pale rufous, showing when expanded dark brown inner rectrices (some with white tips) and pure white outer rectrices. Below, creamy white. Sexes alike.

Superficially a passable miniature of Rufous Chat (1641), especially when tail cocked and fanned out.

STATUS, DISTRIBUTION and HABITAT. Winter visitor, locally common. Pakistan from N.W.F.P. and Punjab south through Sind, Baluchistan (Chagai, Makran coast) and northwestern India in Haryana, Rajasthan and Kutch. Affects scattered *Capparis* and suchlike bushes often far out in

Sylvia nana

■ Breeding ranges

□ Winter

1 *nana* (1571). 2 *deserti* (RE).

sandy or boulder-strewn desert, stony hillsides, and even *Salsola* and *Suaeda* vegetation on salty mudflats. May breed in Baluchistan (Dicean hills near the Sind border) whence Baker (*Nidification* 2: 407) received a nest and eggs, but confirmation required. The nest was found in 'barren, rocky mountains'.

EXTRALIMITAL. Breeds from Mongolia to the Caspian Sea and Iran (south to Zagros Mts, Afghanistan and Baluchistan?). Another subspecies in the northern Sahara. Winters in southern Iran, Arabia and northeastern Africa south to Ethiopia.

MIGRATION. Arrives in its winter quarters towards the end of September, leaves in March.

GENERAL HABITS. Usually seen singly hopping among low scrub or running briskly on the ground in among the bases of bushes like a desert

130

SYLVIINAE

GENERAL HABITS. Quiet and unobtrusive. Frequents bushes singly, creeping and hopping about restlessly amongst the tangles of twigs and foliage searching for caterpillars etc. Unlike the Indian Whitethroat (*S. communis*), freely ascends trees. Along with tree- and leaf warblers all whitethroats have a comical habit, when hunting, of lunging out with the bill to seize an insect just out of reach, nearly toppling over in the attempt then quickly steadying themselves with the wings.

FOOD. Insects. Commonly visits the blossoms of babool (*Acacia*), *Capparis* and *Prosopis* for nectar, perhaps also insects, often getting the forehead thickly coated with yellow pollen.

VOICE and CALLS. Ordinary note, a subdued, hard *tek . . . tek* like the clicking of two stones together or of one's tongue against the palate. This note is distinct from the *chuck* or *chur-r* of the Booted Warbler. Song, a varied soft warbling audible only at close range and followed by a rapid and far-carrying descending rattle. The latter has been rendered as *chuychirri chuychirri* (Magrath). The song is occasionally uttered before its departure in spring and often while on migration.

BREEDING. Season, end of April to August. Nest, a thin cup of dry grass and rootlets bound together with a little wool and scantily lined with finer grass and hair. Usually placed in low bushes some 60 to 150 cm above the ground, less often in the lower branches of trees up to 3 metres. However, where low vegetation has been burnt out the birds may nest again in the outer branches of pines 4 to 6 metres up (Davidson). Eggs, usually 4, sometimes 3, pale grey, white or creamy marked with light or dark brown spots and blotches with secondary markings of lavender. Average size of 41 eggs from Ladakh 18.5 × 13.7 mm; of 86 from Kashmir 17.5 × 13 mm (Osmaston).

MUSEUM DIAGNOSIS. Differs from other subspecies by larger size, dark grey upperparts and larger bill. 2nd primary (as.) usually between 6th and 8th.

Spring moult takes place in February and March and includes body-feathers, central rectrices, inner secondaries and their coverts, sometimes all rectrices and remiges. Postnuptial moult complete, July to September.

MEASUREMENTS

	Wing	Tarsus	Tail
♂ ♀	63-71	19-22	52-61 mm (Williamson)

Bill from skull 14-15 mm (HW)

COLOURS OF BARE PARTS. Iris brown or hazel brown. Bill horny brown, lower mandible paler; mouth fleshy pink. Legs and feet horny black or bluish slate; claws brown.

1571. Desert Warbler. *Sylvia nana nana* (Hemprich & Ehrenberg)

Curruca nana Hemprich & Ehrenberg, 1833, *Symb. Phys. Avium*, fol. cc

(Sinai)

Sylvia nana theresae Meinertzhagen, 1937, *Bull. Brit. Orn. Cl.* 58: 10

(Rohri, Sind)

Baker, FBI No. 847, Vol. 2: 449

Plate 84, fig. 7

LOCAL NAMES. None recorded.

SYLVIINAE

132

mouse. Tail often spread out and partly cocked, the bird then reminiscent of a *Scotocerca* (1533) or *Erythropgyia* (1641) but otherwise is a typical *Sylvia* in habits. Generally shy and retiring but at times will allow a close approach when perched on the top of a bush, bowing and eying the intruder before flying off low over the ground. Has a curious habit of often following other birds such as wheatears from bush to bush, maybe for sociability rather than with malice aforethought!

FOOD. Insects.

VOICE and CALLS. Call-notes unrecorded. Snatches of a pleasant, rather feeble reeling song may be heard in its winter quarters. Song rendered as *tiri-tityu-tyu-tyu-tyu* and likened to the jingle of a tiny bell. When singing often spreads and partly erects tail, displaying the white outer rectrices and tips. Song also given in flight.

BREEDING. Mainly extralimital. Season, end of April to July. Nest, a small cup of grass bents and rootlets lined with some vegetable down; placed in dense scrub within a metre from the ground. Eggs, 4 or 5 (in U.S.S.R.), white marked with dark brown and pale brown blotches fairly numerous at the larger end, with secondary markings of pale grey. Average size of 16 eggs 17.5 × 13.1 mm (Baker); of 61 eggs 15.7 × 12.1 mm (Zarudny).

MUSEUM DIAGNOSIS. See Field Characters. Young like adult but upperparts creamy grey, no fawn tinge. Postjuvenile moult of body-feathers. Spring moult includes body-feathers, tertials and at least part of tail.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	57-60	11-12	c. 18	46-51 mm
♀ ♀	54-58			c. 47 mm (CBT, SA)

Weight 12 ♂♂ 7-10.5 (av. 8.8); 2 ♀♀ 7, 9 g (Paludan, Afghanistan).

COLOURS OF BARE PARTS. Iris yellow or pale gold. Bill yellowish straw, dusky on culmen and tip. Legs and feet straw-yellow.

Genus PHYLLOSCOPUS Boie

Phylloscopus Boie, 1826, *Isis*, col. 972. Type, by monotypy, *Motacilla Trochilus* Linnaeus

Abramis Hodgson, 1844, in Gray's *Zool. Misc.*: 82. Type, by subsequent designation, *Regulus modestus* Gould

Acanthopneuste Blasius, 1858, *Naumannia*: 313. Type, by monotypy, *Phyllopneuste borealis* Blasius

Herbirocula Swinhoe, 1871, *Proc. Zool. Soc. London*: 353. Type, by monotypy, *Sylvia schwarzi* Radde

Cf. Ticehurst, C. B., 1938, *A Systematic Review of the Genus Phylloscopus*, London. Williamson, K., 1962, *The Genus Phylloscopus*. British Trust for Ornithology Field Guide No. 8.

Bill shorter than head, slim and pointed; rictal bristles present but short. For further details see Ticehurst, loc. cit., p. 27.

WARBLERS

133.

Key to the Species

Page

- I No wing-bars; 6th primary (as.) not emarginated
 A Olive above, some yellow below.....*P. borealis* 163
 B Brownish above, whitish suffused buff below.....*P. trochilus* 134
- II No wing-bars; 6th primary emarginated
 A Upperparts brown without olive, underparts without yellow
 1 No trace of green or yellow in plumage
 a Goldcrest-like; flanks creamy.....*P. neglectus* 139
 b Chiffchaff-like; flanks fulvous.....*P. fuscatus* (adult) 148
 2 Trace of greenish on lesser coverts.....*P. collybita* 135
 B Upperparts brown without olive, underparts with yellow
 3 Supercilium orange before eye, yellow behind; axillaries rusty buff.....*P. griseolus* 145
 4 Supercilium whitish before eye, rusty behind; axillaries fulvous white.....*P. fuscatus* (1st winter) 148
 5 Supercilium uniformly bright yellowish buff; axillaries same.....*P. affinis arcanus* 144
 6 Supercilium ill-defined, dusky yellowish.....*P. fulviger* 146
 C Upperparts with olive; underparts with yellow or buff
 7 Supercilium long, reaching to nape.....*P. tyleri* 141
 8 Supercilium of moderate length.....*P. a. affinis* 142
- III Single or double wing-bars; 6th primary emarginated
 A Pale yellow edges and tips to tertials
 1 Head pattern of dark coronal bands and pale crown-stripe
 a Rump yellowish than mantle but not a pronounced band
 i Supercilium and face bright yellow.....*P. subviridis* 157
 ii Supercilium and face whitish.....*P. inornatus mandellii* 155
 b Rump with a pronounced yellow band
 iii White in three outer rectrices
 o' Wing-bars orange, throat yellow.....*P. pulcher* 150
 o'' Wing-bars pale yellow, throat grey.....*P. maculipennis* 161
 iv No white in tail.....*P. protogulius* 158
 2 No definite head pattern but sometimes a pale crown-stripe.....*P. i. inornatus* and *humei* 156, 153
 B No pale edges and tips to tertials
 1 Coronal bands blackish or sooty, crown-stripe and supercilium bright yellow.....*P. cantator* 179
 2 Coronal bands dusky olive, crown-stripe and supercilium pale yellow or whitish
 a Single pale yellow wing-bar.....*P. occipitalis* (some) 172
 b Double pale yellow wing-bars
 i Outer three rectrices edged white on inner web *P. reguloides* 175
 ii Outer two rectrices edged white, a white apical spot on third.....*P. occipitalis* (some) 172
 3 Head darker than mantle but no definite coronal band
 c Upperparts brown, underparts white.....*P. tenellipes* 171
 d Upperparts greenish, underparts with yellow.....*P. trochiloides* 166
 4 Head uniform with mantle
 e Single yellowish wing-bar
 iii Bill long and robust, hooked at tip.....*P. magnirostris* 164

WARBLERS

135

first, but gaining loudness and then descending to a more distinct ending such as... *sweet-sweetew*. Sings almost incessantly during spring migration.
 MUSEUM DIAGNOSIS. See Key to the Species. More yellowish above than *yakutensis*. Underparts usually with a certain amount of yellow.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
1 ♂	63	13	19	46 mm (SA)
♂♂	64-72	11-12	20-21	48-56 mm
♀♀	62-66			44-51 mm (Williamson)

COLOURS OF BARE PARTS. Iris hazel. Bill brown, base of lower mandible paler. Legs and feet pale brown.

1573. Siberian Leaf Warbler. *Phylloscopus trochilus yakutensis* Ticehurst

Phylloscopus trochilus yakutensis Ticehurst, 1935, Bull. Brit. Orn. Cl. 55: 178 (Verkhoyansk District, Yakut Land)
 Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1572, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Perhaps an accidental winter visitor: specimens taken in January 1952 at Kohima, Nagaland (Meinertzhagen coll.). May be expected as a passage migrant. Affects bushes.

Extralimital. Breeds in Siberia from the Yenisey to Verkhoyansk (c. 133°E.). Winters in eastern Africa, at distances of over 11,000 km from its breeding range.

MIGRATION. As in 1572.

GENERAL HABITS, FOOD and VOICE. As in 1572.

MUSEUM DIAGNOSIS. See Key to the Species. Above, grey-brown with only a trace of olive on rump and edges of wing and rectrices. Below, dull white, clouded grey on breast and without yellow except at bend of wing and on thighs.

MEASUREMENTS

	Wing	Tail
♂♂	66-74	53-55 mm
♀♀	64-68	50-53 mm

Weight 1 ♂ 9.5 g (Dementiev).

COLOURS OF BARE PARTS. As in 1572.

PHYLLOSCOPUS COLLYBITA (Vieillot)

Key to the Subspecies

Page

- A Plumage with hardly any trace of greenish, rump uniform with mantle.....*P. c. sibiricus* 138
 B Upperparts brownish, more greenish on mantle and wings; no yellow in supercilium.....*P. c. tritris* 137
 C Upperparts olive, more yellowish on rump; supercilium pale yellow.....*P. c. collybita* 136

134

SYLVIINAE

- iv Bill of moderate size, not hooked
 o' Bright green above, yellow below; 2nd primary between 6th and 7th.....*P. trochiloides nitidus* 170
 o'' Greyish green above, little yellow below; 2nd primary between 7th and 9th.....*P. trochiloides viridulus* 166

PHYLLOSCOPUS TROCHILUS (Linnaeus)

Key to the Subspecies

- More yellowish above, more yellowish white below.....*P. t. acredula*
 More grey-brown above, more greyish white below.....*P. t. yakutensis*

1572. Northern Leaf Warbler. *Phylloscopus trochilus acredula* (Linnaeus)

Motacilla Acredula Linnaeus, 1758, Syst. Nat., ed. 10, 1: 189

(Europa = Uppsala, Sweden)

Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. No wing-bar. Above, olive-brown with a yellowish tinge. A short yellowish supercilium. Below, dull whitish more or less streaked with yellow. Sexes alike.

First-winter birds have yellow underparts and supercilium.

STATUS, DISTRIBUTION and HABITAT. Rare or accidental vagrant or passage migrant. One record, Gujarat (Sálim Ali, JBNS 52: 760). Affects bushes, particularly near water.

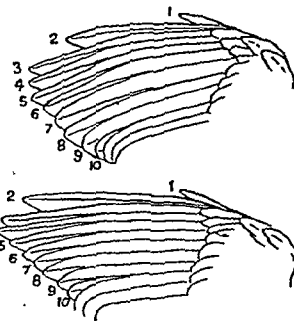
Extralimital. Breeds from western Siberia to Scandinavia. Winters in central and southern Africa.

MIGRATION. The Gujarat specimen was taken on 29 March. Migration takes place from March to May. Autumn migration takes place mostly in September.

GENERAL HABITS. Those of the genus.

FOOD. Insects.

VOICE and CALLS. Call-note *wheet* hardly distinguishable from that of *collybita*. Song, an unmistakable, beautiful liquid warble, usually faint at



Comparative structure of wings, X c. 1
 Above, *P. collybita* (1574)
 Below, *P. trochilus* (1572)

136

SYLVIINAE

1574. European Chiffchaff. *Phylloscopus collybita collybita* (Vieillot)

Sylvia collybita Vieillot, 1817, Nouv. Dict. d'Hist. Nat., nouv. éd., 11: 235 (France, restricted to Normandy by Mayaud, 1941, L'Oiseau: 89)

Not in Baker, FBI

Plate 86, fig. 4

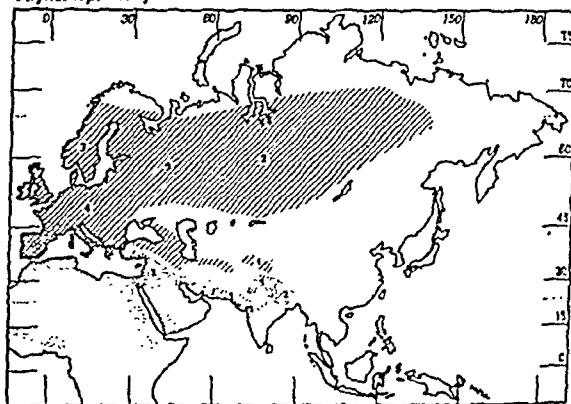
LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1575, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Vagrant. One record: Quetta, July 1914 (Meinertzhagen coll.). Affects bushes and forest.

Phylloscopus collybita



■ Breeding ranges □ Winter ranges
 1 *sibiricus* (1576). 2 *tritris* (1575). 3 *abietinus* (RE). 4 *collybita* (1574).
 Other subspecies (extralimital) not indicated

Extralimital. Breeds in western Europe from Poland to France and the British Isles. Winters in the Mediterranean region and Africa in the Savanna Zone.

GENERAL HABITS, FOOD and VOICE. As in 1575.

MUSEUM DIAGNOSIS. See Key to the Species. Above, brownish olive, slightly more yellowish olive on rump; supercilium yellowish white; cheeks and ear-coverts mottled buff and olive. Below, sullied white, streaked yellow on breast, suffused with buff on flanks; under tail-coverts yellowish white; under wing-coverts, axillaries and bend of wing yellow. Wings and tail brown with light yellowish olive fringes.

WARBLERS

137

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	57-63	11-12	19-21	45-53 mm
♀♀	53-62			41-52 mm

(Williamson)

COLOURS OF BARE PARTS. Iris brown. Bill dark brown, yellowish brown at base of lower mandible. Legs and feet dark brown.

1575. **Brown Chiffchaff.** *Phylloscopus collybita tristis* Blyth

P. (Phylloscopus) tristis Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 966 (Calcutta)
Baker, FBI No. 854, Vol. 2: 456

LOCAL NAME. *Viri tiris* (Kashmir).

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. No wing-bar. *Above*, pale olive-brown; a short, whitish supercilium. *Below*, dull whitish washed with buff on breast and flanks. Sexes alike.

Distinctly and unmistakably 'whiter' than nominate *collybita* (H. G. Alexander). Songs of the two similar but the latter's said to be more musical. The tail-wagging easily differentiates this species from *P. trochilus*.

STATUS, DISTRIBUTION AND HABITAT. Abundant winter visitor. The lower Himalayas (from c. 2100 m downwards) from N.W.F.P. in Pakistan east through Nepal, Sikkim, northern Bengal and the Bhutan foothills, south through the western half of Bangladesh, southern Bengal, Bihar, Madhya Pradesh, western Maharashtra south to north Kanara, Gujarat, Sind and the Makran coast. On passage through the western Himalayas and northern Baluchistan. Affects bushes (especially *Acacia*, *Zizyphus* and suchlike, and waterside vegetation); also hedges, gardens, babool groves, scrub jungle, reed-beds and standing crops.

Extralimital. Breeds in Siberia from the Ural Mts to the Kolyma river. Winters west through southern Iran and Iraq.

MIGRATION. Arrives in its winter quarters in September, remains till the end of April. Autumn passage lasts till November.

GENERAL HABITS. Found singly or in parties of 8 to 10 birds (once 50+ — SA) flitting restlessly from bush to bush or hopping on the ground flicking wings and tail nervously as characteristic of the genus, springing up a half-metre or so now and again to snatch a midge in flycatcher fashion. Feeds also in standing crops of cotton, wheat, etc., in stubble fields, or among partially submerged bushes. Commonly observed picking insects off the water surface, clinging sideways to reed-stems, reaching down and lunging out for them and deftly transferring itself to an adjacent stem when the perch bends over into the water with its weight.

FOOD. Insects. Identified among stomach contents are weevils and other small beetles (Coleoptera), aphids, dipterons and geometrid larvae (Mason & Lefroy, 1912).

¹ i.e. with no appreciable yellow or buff in plumage except on axillaries.

WARBLERS

139

given with less vigour and with intervals between notes longer and less regular (BBO). Other observers have noted no difference. Song may be heard in spring before departure. Call-note given by Brooks as *ti-yip*, different from that of *tristis*, but also *too-wit* similar to that of *occipitalis* (1606).

BREEDING. Season, May to July. Nest, domed, made of fine grass and weed stems, lined with very fine vegetable down and feathers; similar to that of *affinis* but latter lacks the layer of vegetable down. Usually placed in low thorny scrub within half a metre from the ground; sometimes in large tamarisks up to three metres, more rarely in willows up to c. 4 metres. Also built in the cut thorns that are placed on top of piled stone boundary walls or buildings in Ladakhi villages (BBO). Eggs, normally 4, sometimes 3, rarely 5, white marked chiefly at the large end with chestnut spots and specks. Average size of 140 eggs 15.8 × 12 mm (BBO).

MUSEUM DIAGNOSIS. See Key to the Species. Similar to *tristis* (1575) but with hardly any olive cast and generally paler underwing (white or yellowish white).

Spring moult (end of January to mid March) involves body plumage, innermost secondaries and their coverts, and usually central rectrices. Postnuptial moult complete in September and October, some later.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	57-65	11-13	19-20	47-56 mm
♀♀	51-62			43-52 mm

(HW, CBT)

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible blackish brown, lower yellowish brown; mouth yellow. Legs and feet very dark brown or black; soles yellowish.

1577. **Plain Leaf Warbler.** *Phylloscopus neglectus* Hume

Phylloscopus neglectus Hume, 1870, Ibis: 143 (Punjab and Doab)
Baker, FBI No. 856, Vol. 2: 458
Plate 86, fig. 2

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. No wing-bar. *Above*, greyish olive-brown; a pale supercilium. *Below*, whitish tinged with buff especially on flanks. Sexes alike. Distinguished by earthy grey colour, small size and short tail, the last a diagnostic character (Alexander).

STATUS, DISTRIBUTION AND HABITAT. Summer (breeding) visitor, locally common. Northern Baluchistan (Ziarat, Koh-i-Pusht), N.W.F.P. (Safed Koh), Kashmir in the Liddar Valley (Alexander, 1950, JBNHS 49: 11) and perhaps also Ladakh but records not well authenticated (cf. Ticehurst, 1938, p. 61). Affects juniper forest and low bushes between 2000 and 3000 m. Winters in Pakistan from the Himalayan foothills south through Sind and southern Baluchistan. In this season affects tamarisks, acacias and sheesham (*Dalbergia*) plantations, especially on damp ground along irrigation canals.

Extralimital. Breeds in eastern Iran north to the Kopet Dagh, Afghanistan and Tadzhikistan. Winters in southern Iran and Oman.

138

SYLVIINAE

VOICE AND CALLS. Call-note a plaintive-sounding *tweet* or *wheel*. Song, often uttered during spring migration, occasionally in autumn, the well known *chiff-chaff*... (*chip-chalp-chalp-chip-chip* — SA) casually indistinguishable from that of nominate *collybita*. However, according to H. G. Alexander, who made a special field study of leaf warblers in India, the call as well as song of *tristis* are quite distinct. He gives the song as a rapid repetition of the call-note *chi-nit chi-nit* run together by the introduction of a few more musical notes, as originally described by Seebohm.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See keys to the Species and Subspecies. *Above*, brownish to greyish brown without olive except on the edges of wing, rectrices, wing-coverts and rump. No yellow in supercilium, eye-ring and cheeks, this being replaced by buff. *Below*, sides of breast and flanks buff; bend of wing and under surface of wing yellow.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	57-66	11-12	19-21	43-55 mm
♀♀	54-65			41-49 mm

(Williamson, SA)

Weight 4 ♀♀ (March–April) 6.5–7.5 g — GD. 21 ♂♂ (Oct.–April) 5–8 (av. 7) g — SA. 1 ♂ (November) 9.3; 1 ♀ 7.3 g — Paynter.

COLOURS OF BARE PARTS. As in 1574.

1576. **Sind Chiffchaff.** *Phylloscopus collybita sindianus* Brooks

Phylloscopus sindianus Brooks, 1879, Stray Feathers 8: 476 (Sukkur, Sind)
Baker, FBI No. 855, Vol. 2: 457

LOCAL NAMES. *Chip-chip*, *Viri tiris* (Kashmir).

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1575, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Summer (breeding) visitor: Baltistan, Gilgit, Ladakh, Rupshu, Lahul and Spiti, from c. 2500 to 4400 m. Winters in Pakistan from the Himalayan foothills (and probably Jammu) and Haryana south to Sind (vide H. W. Waite, JBNHS 59: 962). On migration through Kashmir. In summer affects willow and poplar groves, tamarisks along streams, gardens, orchards and *Hippophae* scrub. In winter frequents tamarisk and open scrub and babool jungle.

Extralimital. Breeds in Tadzhikistan and western Kun Lun range. Obtained in winter from Helmand, south Afghan border and Persian Baluchistan.

MIGRATION. Noted on passage through Kashmir and the Indus Valley in March–April and October–November. Arrives on its breeding grounds in early May.

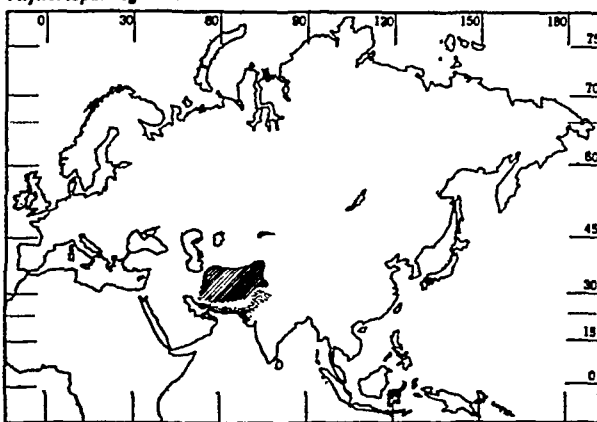
GENERAL HABITS. Not different from those of *tristis* (CBT).

FOOD. Small insects.

VOICE AND CALLS. Song described as more 'tinny' and not nearly as loud as that of the European Chiffchaff (H. G. Alexander); also said to be

140

SYLVIINAE

Phylloscopus neglectus

■ Breeding

▨ Winter

MIGRATION. Spring passage takes place from the end of February to April, autumn passage from mid August to October. May be seen commonly on the breeding grounds as late as October.

GENERAL HABITS. Typical of leaf warblers. Forages in low undergrowth, from time to time showing itself on top of bushes.

FOOD. Insects.

VOICE AND CALLS. Call-note, a sharp *chip* and occasionally a double *chi-ip* (Alexander); also described as a harsh, rather grating single *chit* or *chut* not unlike that of *Sylvia curruca* and very different from the call of most leaf warblers (CBT). Song, a three-note *ti-wish-i* (Alexander).

BREEDING. Known only from one record in Iran. Season, April to June. Nest, domed, neatly made of grass and well lined with feathers; placed in a small, dense bush within a metre from the ground. Eggs, 4, white, unspotted. Four eggs measured each 15 × 10.1 mm (Witherby).

MUSEUM DIAGNOSIS. See Key to the Species; for details of plumage Ticehurst, 1938, or Williamson, 1962.

Pre-nuptial moult of body-feathers, lesser wing-coverts and central rectrices during March. Complete postnuptial moult in August.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	49-55	9-11	17-19	39-43 mm
♀♀	47-51			37-42 mm

(CBT, HW)

COLOURS OF BARE PARTS. Iris dark brown. Bill blackish, brown paler at base of lower mandible. Legs and feet blackish brown.

WARBLERS

141

1578. **Tytlér's Leaf Warbler.** *Phylloscopus tytléri* Brooks*Phylloscopus tytléri* Brooks, 1872, Ibis: 23 (Kashmir and Simla)

Baker, FBI No. 853, Vol. 2: 455

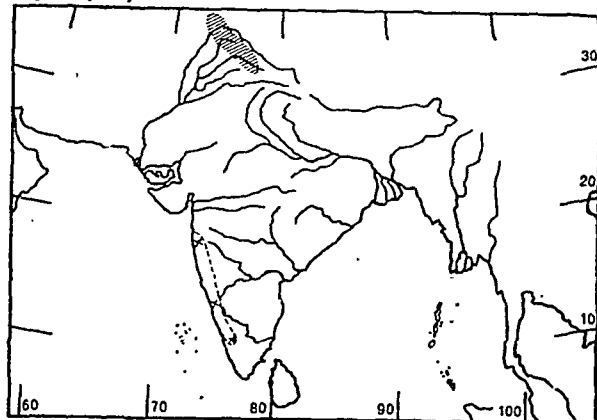
Plate 86, fig. 5

LOCAL NAME. *Viri tirio* (Kashmir).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. No wing-bar. *Above*, olive, looking dull brown in the field. A well-marked yellowish white supercilium; cheeks and ear-coverts yellowish white with dusky mottling. *Below*, yellowish white streaked with brighter yellow on throat, breast and belly. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Summer (breeding) visitor. Gilgit, Hazara and Kashmir (especially common on Pir Panjal range), from c. 2400 m to timber-line (c. 3600 m). Chiefly a bird of coniferous forest (blue

Phylloscopus tytléri

Breeding range

Isolated records

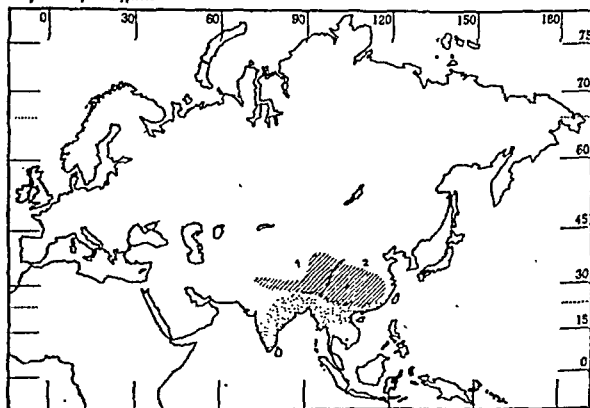
pine, silver fir); also seen in dwarf willows and birches near tree-line. Winter range little known, records very scanty: western Maharashtra in Khandala (one specimen — Fairbanks), and Londa (occasionally seen January–March — Koelz), and the Nilgiris (2 records, January and March — Davison). Records from Khandesh, M.P. and U.P. (Etawah) are of passage migrants. Passage recorded also in Kangra, Simla, Almora (Brooks) and extreme western Nepal (Fleming & Traylor, 1968). Winter habitat not described.

MIGRATION. Passage in northern India takes place in April and in September–October.

WARBLERS

143

zone 3500–4500 m. Affects scrub of *Barberis*, willow, juniper, rhododendron, *Hippophae* and *Caragana*; in Nepal also dwarf bamboo, edges of forest and bushes among upland cultivation. Winters from the Himalayan foothills (Nepal eastwards) south through the Peninsula to the southernmost hills

Phylloscopus affinis

Breeding

Winter

1 *affinis* (1579). 2 *subaffinis* (RE).

(Mysore, Kerala), east through Bangladesh, Assam and Manipur; keeps to the hills, from their base to at least 2100 m. In this season frequents scrub and secondary jungle, and well-wooded country.

EXTRALIMITAL. Breeds in eastern Tibet and western Szechuan north to Kansu. Winters east to northwestern Thailand.

MIGRATION. Found on its summer grounds from April to October and in its winter quarters from November to April (southern India). Abundant in the Himalayas at medium elevations during spring migration (March–April). Autumn passage mostly in October.

GENERAL HABITS. Found singly or in pairs in summer. Often in loose parties in winter, feeding in low bushes close to the ground, sometimes clinging upside down to sprigs and leaves or making short sallies into the air for insects.

FOOD. Weevils, small beetles, midges and other insects.

VOICE and CALLS. Song, given constantly from bush-tops in breeding season, a single note rapidly repeated five or six times, preceded by one or two higher-pitched notes; rendered as *pick-pick whi whi whi whi* (BBO) or *ze zizizizi* (GD). Very similar to that of *P. griseolus* (1581) but for the single (sometimes double) note that precedes it; for further renderings of song see Diesselhorst, 1968: 271. Song period April to end of July; a light

142

SYLVIINAE

GENERAL HABITS. An unobtrusive leaf warbler searching for food in low bushes and undergrowth, chiefly in clearings and along margins of forest. FOOD. Insects.

VOICE and CALLS. Song of 4 or 5 notes rendered as *whittle-di-wee-yea* (Alexander) and *let's kiss him*, or sometimes *superstition* (BBO), repeated at frequent intervals. Call, a squeaky single note.

BREEDING. Season, May to July. *Nest*, a small, globular structure of grass mixed with feathers, lichen, moss, birch bark and hair, lined with feathers. Well concealed in a leafy bough of fir, sometimes in the fork of a pollarded tree, at a considerable height above the ground, generally above 6 metres and up to c. 9 m. Eggs, normally 4, occasionally 5, white, sometimes faintly speckled with reddish. Average size of 36 eggs 16×12.2 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Species. Bill rather long and narrow, shaped like tailor bird's (*Orthotomus*). For details of plumage see Ticehurst, 1938 or Williamson, 1962. First-winter birds are rather yellower below and greener above than adults. Postnuptial moult complete, mid July to mid September.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	58–63	13–14	17–18	42–46 mm
♀♀	53–60			39–43 mm
				(CBT)

COLOURS OF BARE PARTS. Iris dark brown. Bill dark brown, yellowish brown at base of lower mandible. Legs and feet greenish brown to dark brown; soles yellow.

PHYLLOSCOPUS AFFINIS (Tickell)

Key to the Subspecies

Underparts bright yellow.....	<i>P. a. affinis</i>
Underparts straw-yellow.....	<i>P. a. arcanus</i>

1579. **Tickell's Leaf Warbler.** *Phylloscopus affinis affinis* (Tickell)*Molacilla affinis* [sic] Tickell, 1833, Jour. Asiat. Soc. Bengal 2: 576

(Borabhum & Dholbhum)

Baker, FBI No. 852, Vol. 2: 454

Plate 86, fig. 6

LOCAL NAMES. *Viri tirio* (Kashmir); *Foochi* (Manbhum); *Ani chin* (Tibet); *Dastika gabi* (Cachari).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. No wing-bar. *Above*, dark olive-brown. A prominent long, yellow supercilium. *Below*, almost canary yellow. Sexes alike.

Combination of uniform olive upperparts and bright yellow underparts serves easily to identify this species.

STATUS, DISTRIBUTION and HABITAT. Abundant summer (breeding) visitor to the Himalayas: from Gilgit and Hazara east through Sikkim and southeastern Tibet (not recorded in Bhutan in the breeding season). A bird of very high altitudes breeding above 2700 m in Nepal, 3300 m in Kashmir and up to the limit of scrub growth c. 4800 m in Tibetan facies; optimum

SYLVIINAE

144

autumn resumption in September. Call-note a feeble sparrow-like *chip* or *tisp* uttered as it flicks wings nervously and hops about.

BREEDING. Season, May to August, chiefly June and July. *Nest*, a ball of grass or sometimes juniper fibre, copiously lined with feathers, the entrance near the top; placed in a low *Caragana* or suchlike bush, often rather conspicuously in its outer rim, some 30 or 60 cm above the ground. Eggs, normally 4, sometimes 3 or 5, either unpigmented white, or white sparsely stippled with rusty red especially at the large end; both types may be found in the same clutch. Average size of 40 eggs 16.2×12.3 (BBO); of 18 eggs 15.2×11.5 mm (Ludlow). Incubation and care of young by both parents. Incubation period undetermined.

MUSEUM DIAGNOSIS. See Key to the Species; for distinction from *arcanus* see 1580. Young, warmer brown above than adult; underparts with a variable amount of yellow. Postjuvinal moult of body-feathers in August. Prenuptial moult of body-feathers in March and April, postnuptial moult complete, on or near breeding grounds in August and September.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	53–63	12–13	18–19	44–51 mm
♀♀	51–61			39–48 mm
				(CBT, BB, HW)

Weight 12 ♂♂ (March–Sept.) 6.3–7.6; 5 ♀♀ (June–Sept.) 6.0–7.7 g (GD).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible dark brown, lower yellowish brown (Osmaston) or orange-yellow (SA). Legs and feet yellowish brown; soles yellow.

1580. **Buffbellied Leaf Warbler.** *Phylloscopus affinis arcanus* Ripley*Phylloscopus subaffinis arcanus* Ripley, 1950, Proc. Biol. Soc. Washington 63: 105

(Tikapur, Kailali District, western Nepal)

Not in Baker, FBI

Plate 86, fig. 7

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1579, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Winter visitor. Obtained only from the western Nepal terai in January and from the central Kathmandu Valley in April (Ripley, loc. cit. *supra* and JBNHS 49: 400). Affects low bushes.

EXTRALIMITAL. Probably breeds at high elevations (3000–3600 m) in central Szechuan. Breeding range of the very similar race *subaffinis* extends east to Fukien; it winters in northern Burma, southern China and northern Indochinese countries.

GENERAL HABITS and FOOD. As in 1579.

VOICE and CALLS. Call-note recorded as a single tick (SDR) or tick-tick (Schäfer). Song (of *subaffinis*) rendered as *diil-diil-diil-zit-zit-zit*. Both song and call-note probably not different from those of *affinis*.

BREEDING. Unrecorded.

MUSEUM DIAGNOSIS. Differs from *affinis* in having the underparts paler yellow strongly tinged with buff.

WARBLERS

145

MEASUREMENTS

	Wing	Bill (from skull)	Tail
3 ♀♀	51-55	12-13	51-54 mm (SDR)

COLOURS OF BARE PARTS. Iris brown. Bill brownish horn, base of lower mandible flesh-coloured. Legs and feet pale brown.

1581. Olivaceous Leaf Warbler. *Phylloscopus griseolus* Blyth

Ph.(ylloscopus) griseolus Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 443
(banks of the Hoogly River, near Calcutta)
- Baker, FBI No. 858, Vol. 2: 459
Plate 86, fig. 8

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. No wing-bar. *Above*, grey-brown. A conspicuous yellow supercilium, pale eye-ring and dark streak through eye. *Below*, oil-yellow tinged with dusky on breast and flanks. Sexes alike.

One of the easiest leaf warblers to identify; recognized also by its tree-creeper-like climbing habit (q.v., 1842).

STATUS, DISTRIBUTION and HABITAT. Summer (breeding) visitor to the Pakistan and western Himalayan ranges, locally common. Breeds from northern Baluchistan to Chitral, Gilgit, Astor, Baltistan, Ladakh, the Zaskar Mts, Lahul and Spiti, from c. 2400 to 4500 m. Affects rocky or stony hillsides with a few bushes, desolate scree studded with tufts of grass, juniper forest, and willows along river beds. Winters in the northern Peninsula from Lahore (Ahmad, 1965), Rajasthan and Gujarat through Madhya Pradesh to lower Bengal, south to Maharashtra (Mahabaleshwar) and Andhra Pradesh (Nelipaka and Asifabad); in the hills up to at least 1000 m. In this season affects rocky country, steep sides of rocky ravines and deciduous forest. On passage through Pakistan and northwestern India from Chagai to central Nepal (Biswas, 1968, JBNHS 65: 783) and the plains of Uttar Pradesh.

Extralimital. Breeds also in Afghanistan and north to the Altai.

MIGRATION. Passage takes place from August to October and in March-April. Recorded on its breeding grounds from May to September.

GENERAL HABITS. Found singly or in pairs; on migration often in twos and threes. Usually keeps near the ground in low herbage and scrub, clambering over stones and boulders, rock outcrops and scarps, and in its winter quarters commonly on walls of ancient forts, archaeological ruins, etc. Often seen running up trunks of large trees in sideway and zigzag hops like a tree creeper (*Certhia*) or scuttling around and along horizontal branches like a nuthatch (*Sitta*) in search of insects, with a constant flicking of the wings.

FOOD. Insects — weevils, small beetles, larvae, etc.

VOICE and CALLS. A hard, finch-like *pick* or *quit* while foraging. Song similar to that of *fuligiventis*; also recalls song of *affinis* but lacks the single or double introductory note.

WARBLERS

147

winter keeps close to water, coming out freely on to little islets, stones or pieces of driftwood. Often flutters out over water catching insects, hovering momentarily above the surface as it does so (Proud).

FOOD. Insects.

VOICE and CALLS. Song, a monotonous repetition of a single note *tsli-tsli-tsli-tsli-tsli* or sometimes an almost disyllabic *tsli* . . . etc. given five or six times (Desfayes). Call-note *cht* . . . *cht* constantly uttered (Proud).

BREEDING. Unknown.

MUSEUM DIAGNOSIS. See Key to the Species. Differs from *tibetanus* by the greenish yellow underparts (v. grey).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	51-61	12-14	19-22	40-50 mm (Williamson)

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible black, lower brown, yellowish at base. Legs and feet brownish black, dark brown or greenish brown.

1583. Tibetan Smoky Leaf Warbler. *Phylloscopus fuligiventis tibetanus* Ticehurst

Phylloscopus tibetanus Ticehurst, 1937, Bull. Brit. Orn. Cl. 57: 109
(Bombi La, Tsari, S. Tibet)
Not in Baker, FBI

LOCAL NAME. *Chinteh-lok* ('top-of-the-thumb-size bird' - Tibetan).

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1582 but underparts grey with little or no yellow.

STATUS, DISTRIBUTION and HABITAT. Altitudinal migrant. Breeds in southeastern Tibet on the northern slopes of the main range from c. 3900 m to 4500 m, in the scrub zone and scree above timber-line. Winters in the Arunachal foothills and adjacent plains, in same habitat as *fuligiventis*.

Extralimital. Breeds on the ranges on both sides of the Tsangpo river east to Sanga Cho (cf. Williamson, 1962: 48).

GENERAL HABITS and FOOD. As in 1582.

VOICE and CALLS. Alarm-note likened to that of *Troglodytes* (Ludlow). Both call and song probably not different from those of *fuligiventis*.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. See Key to the Species. *Above*, dark sooty brown like *fuligiventis*. *Below*, different shades of grey, usually lacking any yellow. Supercilium greyish white (v. greenish yellow).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
1 ♂	59	13	21	50 mm
1 ♀	57	—	—	46 mm

(CBT, NBN)

COLOURS OF BARE PARTS. Iris brown. Bill nearly black, yellowish at gape. Legs and feet dark brown.

SYLVIINAE

146

BREEDING. Season, chiefly June-July. Nest, a ball of grass or juniper fibre copiously lined with feathers, placed in low bushes, herbage or nettles usually within c. 60 cm from the ground. Eggs, normally 4, white spotted with dull red, mostly in a broad zone around the large end. Average size of 19 eggs 16.7 × 12.5 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Species; for details of plumage Ticehurst, 1938, or Williamson, 1962.

Young, like adult but warmer brown above, less bright yellow below. Post-juvénal moult of body-feathers. Prenuptial moult of body-feathers in February and March. Postnuptial moult complete from July to September.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	65-67	14-15	20-21	49-52 mm
♀♀	63-68			50-53 mm (HW, SA)

Weight 6 ♂♀ 7-9 (av. 7.6) g — SA.

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible brown, lower yellow. Legs and feet yellowish brown; claws brown; soles yellow.

PHYLLOSCOPUS FULIGIVENTER (Hodgson)

Key to the Subspecies

Underparts greenish yellow.....*P. f. fuligiventis*
Underparts grey.....*P. f. tibetanus*

1582. Smoky Leaf Warbler. *Phylloscopus fuligiventis fuligiventis* (Hodgson)

H.(ormis)? fuligiventis Hodgson, 1845, Proc. Zool. Soc. London: 31 (Nepal).
Baker, FBI No. 859, Vol. 2: 460
Plate 86, fig. 12

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. No wing-bar. *Above*, very dark olive-brown; a long, greenish yellow supercilium. *Below*, dull greenish yellow (or dusky oil-green). Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Altitudinal migrant. Breeds from 3600 to over 4300 m in Bhutan, Sikkim and west probably to central Nepal (Desfayes, sight record, Gosainkund 4300 m, 18 June; see also Dieselhorst, 1968: 273 for another sight record near Gokyo north of Namche Bazar at nearly 5000 m). Frequents low scrub above timber-line and boulder-strewn alpine meadows. Winters from the western Nepal terai (Rand & Fleming, 1957) and duns (Proud, JBNHS 58: 277) east through the Sikkim, Bhutan and Arunachal foothills, northern Bengal and Assam in the plains of the Brahmaputra south to Cachar. In this season very partial to proximity of water: frequents dense bushes, grass and sedges along banks of water-courses, both small streams and large slow-flowing rivers.

MIGRATION. Noted on its breeding grounds from June to September.

GENERAL HABITS. Keeps singly or in pairs, on or near the ground in low scrub, or clambering about among large boulders in search of food. In

SYLVIINAE

148

PHYLLOSCOPUS FUSCATUS (Blyth)

Key to the Subspecies

	Page
A. palest; rear part of supercilium fulvous..... <i>P. f. fuscatus</i>	149
B. Darker; whole supercilium and underparts greyish white... <i>P. f. weigoldi</i>	148
C. Darkest; underparts more ochraceous buff..... <i>P. f. mariae</i>	148

1584. Szechuan Dusky Leaf Warbler. *Phylloscopus fuscatus weigoldi* Stresemann

Phylloscopus weigoldi Stresemann, 1924, Abh. u. Ber. Mus. f. Tierk. u. Volkerk., Dresden 16: 10 (Dschesiong, near Tatsienlu, SE. Chwanben)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1586, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Winter visitor. The Himalayan foothills and adjacent plains, from eastern Nepal (Fleming & Traylor, 1968) east through Arunachal Pradesh. Habitat as in 1586.

Extralimital. Breeds above timber-line in western Szechuan and Tsinghai. MIGRATION. Passage recorded in southeastern Tibet and eastern Bhutan in September and October.

GENERAL HABITS, FOOD and VOICE. As in 1586.

MUSEUM DIAGNOSIS. Like *fuscatus* but darker; supercilium, cheeks and underparts greyish white, but subspecies of winter birds not always easy to assign.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	56-67	12-14	21-23	48-56 mm
♀♀	53-60			42-49 mm (CBT, Williamson)

COLOURS OF BARE PARTS. Bill (except base of lower mandible), legs and feet said to be nearly black. Probably not different from 1585.

1585. Manipur Dusky Leaf Warbler. *Phylloscopus fuscatus mariae* Ripley

Phylloscopus fuscatus mariae Ripley, 1951, Postilla, Yale Peabody Mus., No. 6: 5 (Moirang, Manipur)
Baker, FBI No. 860 (part), Vol. 2: 461

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

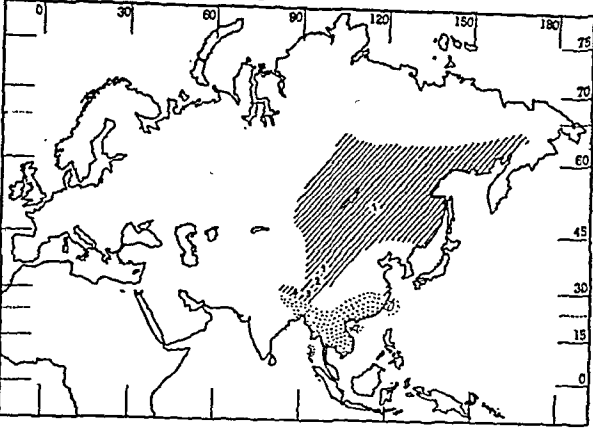
FIELD CHARACTERS. As in 1586, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Winter visitor to Manipur (whence described) and the Andaman Islands (Abdullahi, JBNHS 61: 562). Affects low bushes and long grass in swampy areas, often near cultivation.

WARBLERS

149

Phylloscopus fuscatus and *P. fulgiventor*



Distributional ranges

■ Breeding ● Winter (all subspecies)

1 *fuscatus* (1586). 2 *weigoldi* (1584). 3 *tibetanus* (1583). 4 *fulgiventor* (1582).

GENERAL HABITS, FOOD and VOICE. As in 1586.

MUSEUM DIAGNOSIS. Like *fuscatus* but darker; cheeks, flanks, underwing and under tail-coverts more ochraceous buff.

MEASUREMENTS

	Wing	Tail
3 ♂♂	57-63	50-55 mm
1 ♀	57	43 mm
		(SDR)

Weight 2 ♂♂ (October) 7, 8.5 g.—SDR.

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible brown, dark brown or black; lower mandible brown, yellowish brown or yellowish horn, yellow at base. Legs and feet brownish yellow, light brown or greenish brown; soles yellow.

1586. **Siberian Dusky Leaf Warbler.** *Phylloscopus fuscatus fuscatus* (Blyth)

Phyllopus fuscatus Blyth, 1842, Jour. Asiatic Soc. Bengal 11: 113

(neighbourhood of Calcutta)

Phyllopus fuscatus Dybowski, 1883, Bull. Soc. Zool. France: 358

(Tigil, Kamchatka Peninsula)

Oreopneuste fuscata altaica Sushkin, 1925, Distrib. Bds. Russian Altai: 73-4

(south slopes of Sailughem Range, Altai)

Baker, FBI Nos. 860 (part) and 861, Vol. 2: 461-2

Plate 86, fig. 11

LOCAL NAME. *Foochi* (Manbhum).

WARBLERS

151

1587. **Western Orangebarred Leaf Warbler.** *Phylloscopus pulcher kangrae* Ticehurst

Phylloscopus pulcher kangrae Ticehurst, 1923, Bull. Brit. Orn. Cl. 44: 29 (Simla)

Baker, FBI No. 865, Vol. 2: 465

LOCAL NAMES. None recorded.

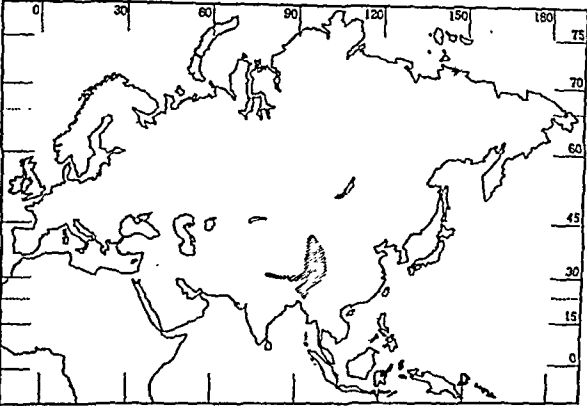
SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1589, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Altitudinal migrant, common.

Breeds in the western Himalayas from Kishtwar and Zaskar to Garhwal

Phylloscopus pulcher



Distributional ranges

■ *kangrae* (1587). ● *pulcher* (1589).

and Kumaon, between 2800 and 3900 m, optimum zone 3000-3600 m. Winters (October to March) between 1000 and at least 2100 m, east to western Nepal. In summer affects birch and mixed conifer-rhododendron forest; in winter forest of oak, *Ilex*, etc.

GENERAL HABITS, FOOD and VOICE. As in 1589.

BREEDING. Season, mainly June and July. Nest, a ball of green moss, grass, lichen and strips of birch bark copiously lined with feathers. Placed in the outer branches of a conifer, in dense bushes or against trunks of trees, some 60 cm to four metres above the ground. Eggs, normally 4, white with reddish brown blotches and specks, mostly at the large end, sometimes forming a well-defined ring. Average size of 16 eggs 14.9 × 11.4 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Species. Differs from the nominate race (1589) in being more yellowish olive above; head not so dark; underparts paler and purer yellow; grey suffusion on breast reduced.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1589.

150

SYLVIINAE

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. No wing-bar. Above, dusky olive-brown. A pale, prominent supercilium, pale semi-eyering, and dark streak through eye. Below, whitish with a grey wash on breast; flanks and under tail-coverts fulvous. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Winter visitor, locally common. From the Himalayan foothills (up to c. 1400 m in central Nepal) south through Uttar Pradesh, Bangladesh and Assam; also Andaman Is. Affects reed and scrub jungle, low bushes and long grass around pools, and hedges and standing crops in damp areas.

Extralimital. Breeds in northern China and southeastern Siberia; winters also in southern China and the Indochinese countries.

MIGRATION. Recorded on passage in southeastern Tibet and eastern Bhutan in September and October. Remains on winter grounds till April or early May.

GENERAL HABITS. Forages in low bushes or on the ground, usually singly, incessantly flicking wings and tail.

FOOD. Insects. Stomach contents showed weevils and other small beetles (Coleoptera), geometrid, pyralid and lepidopterous larvae; also some vegetable matter and *Ficus* and weed seeds (Mason & Lefroy, 1912).

VOICE and CALLS. A single *chuck* or *tek* like Lesser Whitethroat's but softer, and a soft *chi-chi-ree*. 'A sharp clicking note' (Osmaston).

MUSEUM DIAGNOSIS. See Key to the Species. Differs from *weigoldi* in being paler and having the cheeks and supercilium behind eye fulvous.



Wing, × c. 1

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	58-70	12-13	20-22	46-59 mm
♀♀	53-61			43-51 mm
				(Williamson, Hartert)

Weight 3 ♂♂ (April) 9-10.2; 4 ♀♀ (April) 8-8.5 g — Paynter. 2 oo? 9, 10 g (BB).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible and tip of lower brown, remainder yellow. Legs and feet yellowish brown.

PHYLLOSCOPUS PULCHER Blyth

Key to the Subspecies

More yellowish olive above.....*P. p. kangrae*
Darker; less yellowish more olive above.....*P. p. pulcher*

152

SYLVIINAE

1588, 1589. **Eastern Orangebarred Leaf Warbler.** *Phylloscopus pulcher pulcher* Blyth

Ph. (ylloscopus) pulcher Blyth, 1845, Jour. Asiatic Soc. Bengal 14: 592

(Nepal, restricted to Nepal Valley by Biswas, 1962, JBNHS 59: 413; cf. also 414)

Phylloscopus erichsoni Gray, 1846, Cat. Mammals. Bds. Nepal: 66, 152

(Nepal, restricted to Chandragiri Pass, central Nepal Valley,

by Ripley, 1950, JBNHS 49: 401)

Phylloscopus pulcher pernix Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 16

(Blue Mountain, Lushai Hills)

Baker, FBI No. 864, Vol. 2: 464

Plate 86, fig. 14

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Two orange-yellow wing-bars, lower very prominent. Above, olive; crown sooty olive with an indistinct median stripe and a prominent yellow supercilium extending to nape. Rump pale yellow. Inner webs of outer rectrices white. Below, pale yellow suffused with grey on breast. Sexes alike.

One of the most easily identified leaf warblers. Orange double wing-bar and white in tail very noticeable in the field, the latter particularly in flight.

STATUS, DISTRIBUTION and HABITAT. Altitudinal migrant, common. From western Nepal (where intergrading with *kangrae*) east through Darjeeling, Sikkim, Bhutan and Arunachal Pradesh, thence south through Nagaland and Manipur to the Khasi, Garo and Mizo hills (Koelz, loc. cit. *supra*). In the Himalayas breeds between 3000 and 4300 m, optimum zone 3800-4100 m. Altitudinal distribution and status unknown south of the Brahmaputra (on Mt Victoria, Heinrich found it common between 2400 and 2800 m, but the birds disappeared after 10 May; nest found in the Chin Hills at c. 1800 m). In the breeding season affects mixed conifer, rhododendron and birch forest, and also dwarf juniper, rhododendron or other scrub above tree-line. Winters (October to March) between 500 and 2800 m, its movements then influenced by weather conditions. At this season frequents oaks and other dense forest.

Extralimital. Extends through the mountains of western China to Kansu.

MIGRATION. Moves to higher altitudes at the end of March and first week of April but does not appear to start breeding until mid June.

GENERAL HABITS. More arboreal than other leaf warblers, especially in winter when it often keeps with the itinerant hunting parties of small insectivorous birds high up in the canopy foliage of trees.

FOOD. Insects. Observed drinking sap of oak (*Quercus*)—Proud.

VOICE and CALLS. Song said by several observers (Proud, Heinrich, Schäfer) to be reminiscent of song of *P. sibilatrix* but much slower and shorter; a very thin and high twitter preceded by, or ending with, a long-drawn high-pitched trill increasing in depth of tone and loudness. Song period: end of February till end of June (Proud). Call-note, a high-pitched *trip* or *trick* constantly repeated, sometimes quickly run together, sounding like the twitter of a flowerpecker (*Dicaeum*).

WARBLERS

153

BREEDING. As in 1587. This and several other leaf warblers commonly brood-parasitized by *Cuculus poliocephalus* and other cuckoos.

MUSEUM DIAGNOSIS. See Key to the Species. Young. *Above*, slightly browner, less olive than adult; *below*, duller and greyer. Postjuvénal moult of body-feathers, August to October. Prenuptial moult of body-feathers, mid February to mid April. Postnuptial moult complete, July to August.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	53-62	12-13	18-21	40-45 mm
♀♀	52-63			37-42 mm
(BB, CBT, Rand & Fleming)				

Weight 10 ♂♂ (June-July) 6.6-7.2; 3 ♀♀ (June-July) 5.4-6 g — GD. 3 ♂♂ (July) 6.8-8.1; 2 ♂♂ (December) 7.1, 7.4; 4 ♀♀ (December) 6.2-7 g — RAP.

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible black; lower mandible dark horny, yellowish on base, gape and sides. Legs, feet and claws brown; soles dull yellow.

PHYLLOSCOPUS INORNATUS (Blyth)

Key to the Subspecies

Page

A	Head pattern well-marked.....	<i>P. i. humei</i>	153
B	Head pattern very faint		
1	Wing-bars and supercilium yellow.....	<i>P. i. inornatus</i>	156
2	Wing-bars and supercilium buffish white.....	<i>P. i. mandellii</i>	155

1590. Hume's Yellowbrowed Leaf Warbler. *Phylloscopus inornatus humei* (Brooks)

Reguloides humei Brooks, 1878, Stray Feathers 7: 131 (Northwest India)
Baker, FBI No. 870, Vol. 2: 469

LOCAL NAMES. *Viri tiris* (Kashmir); *Fochi* (Manbhum).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Two wing-bars, upper usually less clear cut. *Above*, greenish olive; faint coronal bands, prominent pale yellowish supercilium and eye-ring. *Below*, whitish more or less tinged with yellow. Sexes alike.

Combination of whitish supercilium, double wing-bar, faint coronal bands and absence of white in the relatively short tail identifies this species.

STATUS, DISTRIBUTION AND HABITAT. Common summer (breeding) visitor to the western Himalayas from N.W.F.P. east through Gilgit, Astor, Hazara and Kashmir to Garhwal, from c. 2100 to 3600 m, optimum zone 2700-3000 m. Winters from c. 1400 m downwards and in the plains of northern Pakistan and peninsular India south to Belgaum, Hyderabad and Anantagiri (doubtfully south to Nellore); east through Nepal terai and lower hills of Sikkim and Bangladesh to the Brahmaputra-Ganges. In summer affects glades in mixed or coniferous forest, and birch forest above the conifer zone. In winter haunts gardens, orchards and dry-deciduous forest.

WARBLERS

155

MUSEUM DIAGNOSIS. See keys to the Species and Subspecies. Differs from the nominate race (1592) in having the upperparts and edges of wing and rectrices duller, more greyish olive, giving a mealy appearance; yellow of head, underparts and wing-bars replaced by buffish white.

Postnuptial moult complete from August to November, either on breeding grounds or after arrival in winter quarters. Prenuptial moult of body-feathers in March-April.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	51-61	10-12	17-19	38-45 mm
♀♀	51-60			37-43 mm
(BB, HW)				

Weight 15 ♂♂ (November to January) 5.3-7.1; 2 ♀♀ (January) 5.8, 6; 1 ♂ (March) 7 g — RAP. 2 ♂♂ (October) 6.2, 7.2; 1 ♀ (October) 6.2 g — GD.

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible very dark horny, lower mandible fleshy or light brown with dark horny tip. ('It is the only *Phylloscopus* with a dark tip to the lower mandible' — H. G. Alexander.) Legs horny to dark horny; feet and claws horny to pale horny; soles yellowish white (BB).

1591. Mandelli's Yellowbrowed Leaf Warbler. *Phylloscopus inornatus mandellii* (Brooks)

Reguloides Mandellii Brooks, 1879, Stray Feathers 8: 389 (Sikkim)
Baker, FBI No. 871 (part), Vol. 2: 470

LOCAL NAME. *Dastisha koro* (Cachari).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1590, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor. From the Himalayan foothills east of Sikkim, south through Assam, Nagaland, Manipur and Bangladesh; in the hills up to c. 1880 m. Summer visitor to southeastern Tibet (Ludlow, *Ibis* 1944: 200 and 1951: 563) and probably the ranges of Arunachal Pradesh from 2800 m up. Breeding recorded by Baker (JBNHS 9: 17, 1894) on a peak above Hungrum, North Cachar. In summer affects mixed coniferous and scrub forest. Winter habitat as in 1592.

Extralimital. Breeds in the mountains of Western China. Winters east to northern Burma.

MIGRATION. Spring passage recorded in southeastern Tibet in April, autumn passage in September.

GENERAL HABITS AND FOOD. As in 1590.

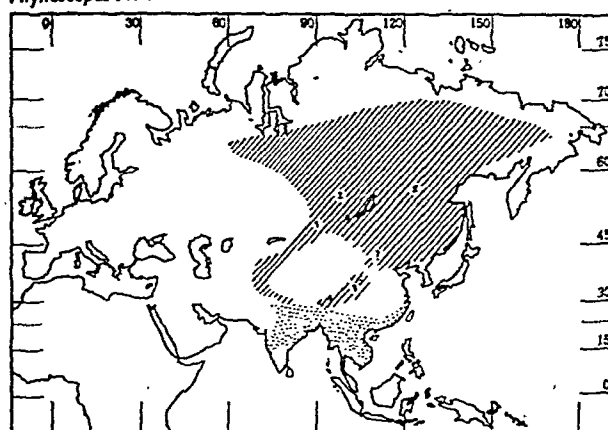
VOICE AND CALLS. A sparrow-like chirp *ch-chip* and a pipit-like *tripp tripp* (Schäfer). Song rendered by the same as *ch-chip* mixed with trills. See 1592.

BREEDING. Probably as in 1592. A nest reported by Baker (JBNHS 9: 17) at the end of March was a ball of moss lined with a little grass and rootlets; it was said to have been wedged between some stones on a steep mossy bank (this situation often recorded for *inornatus*). The three eggs were white with numerous freckles and spots of bright reddish. They measured 15.5 × 10.9, 15.2 × 10.6 and 15.2 × 10.9 mm (Baker).

154

SYLVIINAE

Phylloscopus inornatus



Distributional ranges

1. *humei* (1590). 2. *inornatus* (1592). 3. *mandellii* (1591).

Extralimital. Breeds also in adjacent parts of Afghanistan and north through the Turkestan ranges to the Altai. The nominate race extends from Lake Baikal to the northern Urals, Anadyr and the Ussuri region. *P. i. mandellii* breeds in the ranges of western China.

MIGRATION. Spring passage takes place from March till the middle of May, some birds already showing up on their breeding ground in the last week of March, where they may be seen till October. Autumn migration in September and October. Young birds may start drifting down in August. Recorded in the Peninsula from October to April.

GENERAL HABITS. Forages high up in trees as well as in low bushes. May be seen fluttering against the bark of a tree or even descending to the ground.

FOOD. Insects. Among stomach contents were found blattids and small beetles, ants (*Phidole malini*) and spiders (Mason & Lefroy, 1912).

VOICE AND CALLS. A sharp fairly long double *tis-jip* (Alexander) uttered as a call-note or alarm-note; also rendered as *chilip* or *tiu-lip* (SA) and as *te-hweet*, or *te-we-ul*, in one note (Whistler). Song, not described from the Himalayas, a brief and buzzing *rit-rit-zzhi* (Sushkin). See also 1591.

BREEDING. Season, end of May to July. Nest, a ball of grass and moss lined with finer grass, hair and, occasionally, a few feathers, with entrance on the side. Placed on the ground, on steep slopes or banks among ferns or at the foot of a small bush or tree. Eggs, normally 4, sometimes 5, white spotted with reddish brown, hardly distinguishable from those of *proregulus* (1594). Average size of 100 eggs 14.6 × 11.4 mm (Baker). Brood-parasitized by *Cuculus poliocephalus*.

SYLVIINAE

156

MUSEUM DIAGNOSIS. See keys to the Species and Subspecies. Differs from *inornatus* in having the upperparts darker and browner, except for greenish rump. Dark coronal bands and pale median stripe faintly indicated. Supercilium and underparts dirty yellowish white; centre of belly more yellowish. Upper wing-bar and pale edges to tertials less distinct.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1592.

Weight (winter) 4.5-6 g (SDR).

1592. Siberian Yellowbrowed Leaf Warbler. *Phylloscopus inornatus inornatus* (Blyth)

Regulus inornatus Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 191 (Darjeeling)
Phylloscopus humii praemium Mathews & Iredale, 1915, Aust. Av. Rec. 3: 44.
new name for *Motacilla superciliosa* Boddaert, 1783
Baker, FBI No. 871 (part), Vol. 2: 470
Plate 86, fig. 10

LOCAL NAME. *Dastisha koro* (Cachari).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1590, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor. The east Himalayan foothills from c. 1500 m downwards, west to central Nepal (Proud, JBNHS 53: 63) and south through Assam, Nagaland, Manipur and Bangladesh. Affects scrub, gardens, groves and open forest.

Extralimital. Breeds in Siberia, winters in the Indochinese countries, southern China and Formosa.

MIGRATION. Arrives in its winter quarters in October, leaves in April.

GENERAL HABITS AND FOOD. As in 1590.

VOICE AND CALLS. Contrary to what has been repeatedly stated in the literature, this subspecies also utters the disyllabic *tis-jip* recorded for *humei*; variously rendered as *tis-jipp* (Weigold), *tyu-i* (Kozlova) or *chee-wee* (Proud). However, *inornatus* seems to have, in addition to the disyllabic call, a note given as *wheet* (Proud), *west* (SA), *rist* (Portenko), or also a shrill *tree* (Brooks). A call which is probably the same as the latter is recorded by two observers as a pipit-like *biest-biast* (Weigold) or *tripp tripp* (Schäfer, for *mandellii*). Also a *ti-ti* while in family parties. Song poor and feeble, rendered as *sz sz sz szit* or *schuk djuid jid* rising and falling in tone (Weigold) and *ti ti tit zch-zhi* ending in a peculiar buzzing sound (Ivanov).

MUSEUM DIAGNOSIS. See Key to the Species. For details of plumages see Williamson, 1962: 16; for distinction from *humei* and *mandellii* see 1590 and 1591 and Key to the Subspecies. Postnuptial moult complete on breeding ground, late July to August. A moult of body-feathers only during March.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	55-61	10-12	17-18	40-44 mm
♀♀	51-57			36-41 mm
(CBT)				

Weight (winter) 5-7 g (SDR). 6 ♂♂ (Oct.-Nov.) 5-8 g — SA.

COLOURS OF BARE PARTS. Iris hazel. Bill brown, base of lower mandible yellowish flesh. Legs and feet olive-brown; soles yellow.

WARBLERS

157

1593. **Brooks's Leaf Warbler.** *Phylloscopus subviridis* (Brooks)
Reguloides subviridis Brooks, 1872, Proc. Asiat. Soc. Bengal: 148
(Etawah, U.P.)
Baker, FBI No. 869, Vol. 2: 468
Plate 86, fig. 9

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. Two yellowish white wing-bars, lower prominent, upper indistinct. Above, yellowish olive, head and cheeks appearing yellowish; a conspicuous yellow supercilium; median coronal stripe yellowish but indistinct; rump yellowish. Below, dull yellowish white. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Summer (breeding) visitor to Murree hills (Rattray, JBNHS 16: 424), Gilgit (Astor, Nulter Valley, Mt Deobani) and N.W.F.P. (Kagan Valley, Byan Khel, Hariab Valley, Safed Koh); from c. 2100 to 3600 m. Winters at lower elevations (c. 1800 m downwards) from Kohat to Simla, south in the plains to Multan (SW. of Lahore), Gwalior, M.P. (Sálim Ali, JBNHS 41: 98) and east to Etawah and Fatehgarh, U.P. Affects coniferous forest in summer; bushes, olive groves and thorny *kikar* (*Acacia*) trees in winter.

Extralimital. Breeds also in adjacent parts of Afghanistan and in Turkestan probably north to Kara-Kul Lake and Fergana Range (Dementiev).

MIGRATION. Arrives on summer grounds at the end of March, leaves in September and early October. In winter quarters from September to March, reaching its peak numbers in early November.

GENERAL HABITS. Little recorded. Appears to haunt trees more than bushes. Usually singly or in pairs; in winter also in mixed parties.

FOOD. Insects.

VOICE AND CALLS. Call-note a distinct *chwey* (Whitehead) or *twee-ut* (Whistler) fairly sharp, almost double but running into one, much flatter than the call of *P. inornatus*, the second half of the note lower than the first (Alexander, in litt.); it is also quite distinct from the slight, single note of *P. proregulus*. Song, shrill and weak, consisting of a series of single notes followed by a reel thus: *wet wet wet whir-r-r-r-r* (Whistler) or *pi-pi-piaz-z-z-z* with some variations (Whitehead). Song begins in March before departure.

BREEDING. Little known. Season, May to July. Nest, a ball of coarse grass lined with fine grass or goats' hair, placed on the ground, on a sloping bank. Eggs, 4, white with reddish spots and speckles. Average size 13.7 × 12.7 mm (Whitehead).

MUSEUM DIAGNOSIS. See Key to the Species. Considered by some authors to be conspecific with *P. inornatus*.

Postnuptial moult probably completed on breeding grounds. Moult of body-feathers in February or later. Upperparts are more olive, less yellow in late winter and spring.

MEASUREMENTS

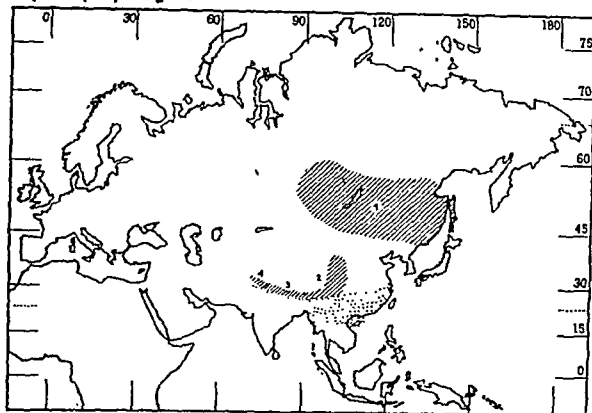
	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	49-62	10-12	16-18	37-47 mm

(Williamson)
Weight (April-July) 6 ♂♂ 5-6; 2 ♀♀ 5, 5 g — Paludan, Afghanistan.

WARBLERS

159

Phylloscopus proregulus



Distributional ranges

▨ Breeding

▤ Winter

1 *proregulus* (RE) 2 *newtoni* (1596) 3 *chloronotus* (1595) 4 *simlaensis* (1594).

(Alexander). Song, a short twittering phrase and a faint shivering sibilant note (Brooks).

BREEDING. Season, May to July. Nest, a neat ball with lateral entrance, of moss, lichen and a few strands of grass or some pine needles, lined with feathers. Usually placed in the outer branches of a conifer between two and fifteen metres, mostly between three and six, above the ground. Eggs, normally 4, rarely 5 or 3, white with numerous reddish blotches and dots, mostly at the large end. Average size of 100 eggs 14.1 × 10.9 mm (Baker). Frequently brood-parasitized by *Cuculus saturatus*.

MUSEUM DIAGNOSIS. See Key to the Species. Brighter above, more yellowish green, than other races; underparts paler yellow than in *chloronotus*.

MEASUREMENTS. As in 1595.

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible black, lower yellow, yellowish or brown; mouth yellow. Legs and feet brown or fleshy brown; soles yellow (Abbott).

1595. **Nepal Pallas's Leaf Warbler.** *Phylloscopus proregulus chloronotus* (Gray)

Abornis chloronotus Gray, 1846, Cat. Mamm. Bds. Nepal: 66, 152
(Nepal, restricted to Katmandu Valley by Ripley, JBNHS 49: 101)
Baker, FBI No. 866 (part), Vol. 2: 466

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 9 cm (3½ in.).

158

SYLVIINAE

COLOURS OF BARE PARTS. Iris brown. Bill dark brown above, base of lower mandible pale yellow. Legs and feet dark brown.

PHYLLOSCOPUS PROREGULUS (Pallas)

Key to the Subspecies

A	Underparts dull white tinged with yellow.....	<i>P. p. simlaensis</i>	Page
B	Underparts yellow		158
1	Paler above.....	<i>P. p. chloronotus</i>	159
2	Darker above.....	<i>P. p. newtoni</i>	160

1594. **Western Pallas's Leaf Warbler.** *Phylloscopus proregulus simlaensis* Ticehurst

Phylloscopus proregulus simlaensis Ticehurst, 1920, Bull. Brit. Orn. Cl. 41: 55
(Simla)
Baker, FBI No. 868, Vol. 2: 467
Plate 86, fig. 15

LOCAL NAME. *Viri tirio* (Kashmir).

SIZE. Sparrow — ; length c. 9 cm (3½ in.).

FIELD CHARACTERS. Two yellow wing-bars. Above, olive-green. A dusky olive coronal band on either side of a prominent pale yellow median stripe. A long conspicuous yellow supercilium and a dark streak through eye. A prominent pale yellow rump-band. Below, dull white tinged with yellow. Sexes alike.

The yellow rump distinguishes it from all but *pulcher* and *maculipennis*, both of which have white in tail.

STATUS, DISTRIBUTION AND HABITAT. Altitudinal migrant, common. Breeds in the western Himalayas from N.W.F.P. to west central Nepal, between 2200 and 3300 m, optimum zone 2700-3000 m. Winters from c. 2000 m down to the foothills (360 m in Kangra, 300 m in Nepal), optimum zone 1200-1800 m. Obtained in winter in Gilgit. In summer affects principally forests of fir, pine, deodar and also mixed conifers and birch, *kharsu* oak (*Quercus semecarpifolia*) and rhododendron. In winter frequents woods and bush-covered hillsides.

Extralimital. The species breeds in southern Siberia from the Russian Altai to Sakhalin Island and in the mountains of western China. Winters in the Indochinese countries and southern China.

MIGRATION. Occurs below c. 2000 m from October to March. Leisurely ascent to breeding grounds takes place from end of March through April.

GENERAL HABITS. Generally keeps high up in trees but occasionally also hunts in undergrowth; usually singly or in pairs, in winter often in mixed foraging parties of tits, tree creepers and other small birds. Exceedingly active and restless. Easily identified from its habit of fluttering and hovering in front of sprigs to pick off insects in the manner of a goldcrest, when the bright yellow rump shows up prominently.

FOOD. Insects and their larvae.

VOICE AND CALLS. Alarm, a twittering note. Call-note, a sharp *tsip* (Bates and others). Also a plaintive *twee* near the nest, and a flat *chi-wee*

160

SYLVIINAE

FIELD CHARACTERS. As in 1594, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Altitudinal migrant, common. Breeds in central and eastern Nepal between c. 2700 and 4200 m. Winters (end of October to mid April) from c. 2000 m down to the foothills. In the breeding season affects chiefly coniferous forest mixed with birch, rhododendron or oak, sometimes either of the preceding in pure stands. In winter frequents woods and jungle-covered hillsides.

GENERAL HABITS AND FOOD. As in 1594.

VOICE AND CALLS. See 1594 and 1596. A frequent call is given as *ut-ut-ut* (GD). Has a feeble but pleasing tinkling song. Period: middle of February (in winter quarters) till end of August (Proud).

MUSEUM DIAGNOSIS. Differs from *simlaensis* in having the underparts a darker yellow, and from *newtoni* in being paler above. Moult of body-feathers noted in March.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	48-58	10-11	37-44 mm
♀♀	46-55	—	35-36 mm

Tarsus 17-18 mm (SA)

Weight 5 ♂♂ (May-July) 5.1-6.2; 2 oo? 4.9, 5.3 g (GD). 6 ♂♂ (Nov.-Jan.) 4.8-5.4; 5 ♀♀ (Nov.-Dec.) 4.5-4.9 g (RAP).

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible very dark horny; lower yellowish fleshy with dark horn tip. Legs and feet horny; claws light horny with darker tips; soles light yellow (BB).

1596. **Eastern Pallas's Leaf Warbler.** *Phylloscopus proregulus newtoni* Gätke

Phylloscopus newtoni Gätke, 1889, Ibis: 579 (India = Darjeeling)
Phylloscopus proregulus forresti Rothschild, 1921, Novit. Zool. 26: 45
(Lichiang Range, Yunnan)
Baker, FBI No. 866 (part), Vol. 2: 466

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 9 cm (3½ in.).

FIELD CHARACTERS. As in 1594, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Altitudinal migrant, common. Breeds from Darjeeling and Sikkim east through Bhutan and Arunachal Pradesh, between 2700 and 4200 m. Also North Cachar (Baker, 1894, JBNHS 9: 16). Winters (September to March) from c. 2100 m down to the foothills and in the hills of Meghalaya, Nagaland and Manipur, south through Bangladesh to the Chittagong region (Baker, loc. cit., and Rashid, 1967). Habitat as in 1595.

WARBLERS

161

Extralimital. Northern Burma and northwards in the mountains of western China. Winters in Burma south to Arakan, and east to northern Vietnam.

GENERAL HABITS AND FOOD. As in 1594.

VOICE AND CALLS. Call-note, a soft, double *trip-trip* (SA). Also a canary-like *houip*. Song strong and pleasing, consisting of various notes repeated four or five times, rendered as *dju-dju-dju-dju*, *zidjüd*, *zidjüd*, etc. (Weigold).

BREEDING. As in 1594.

MUSEUM DIAGNOSIS. Differs from *chloronotus* in being darker above. Postnuptial moult complete in September.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1595.

Weight 11 ♂ ♀ (winter) 4-6 g (SDR). 4 ♂ ♂ (July) 4-7-5-8 g (RAP).

Phylloscopus maculipennis (Blyth)

Key to the Subspecies

	Page
A Darkest; back olive..... <i>P. m. maculipennis</i>	162
B Paler; back more yellowish olive..... <i>P. m. centralis</i>	161
C Palest; back still more yellowish olive and brighter..... <i>P. m. virens</i>	161

1597. **Western Greyfaced Leaf Warbler.** *Phylloscopus maculipennis virens* Ticehurst

Phylloscopus maculipennis virens Ticehurst, 1926, Bull. Brit. Orn. Cl. 46: 61

(Saraj, Punjab Himalaya)

Baker, FBI No. 863 (part), Vol. 2: 463

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 9 cm (3½ in.).

FIELD CHARACTERS. As in 1599, q.v.

STATUS, DISTRIBUTION AND HABITAT. Altitudinal migrant, uncommon and known only from winter quarters. The western Himalayas from Kashmir to Kumaon. Altitudinal distribution and habitat in summer unknown; see 1599 (altitudes given by Ticehurst, 1938, p. 123, are those given by Whistler for the eastern race). Winters from at least 1800 m down to the foothills, chiefly about 1200-1500 m. In this season found mostly in forest.

GENERAL HABITS, FOOD AND VOICE. As in 1599.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Like *centralis* (1598) but paler, less olive on back. Differs from nominate *maculipennis* (1599) in having the edges of crown paler slate-grey, upperparts brighter, more yellowish olive; underparts paler.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1599.

1598. **Central Greyfaced Leaf Warbler.** *Phylloscopus maculipennis centralis* Ripley

Phylloscopus maculipennis centralis Ripley, 1950, Proc. Biol. Soc. Washington 63: 106

(Rakha, Dailekh District, western Nepal)

Baker, FBI No. 863 (part), Vol. 2: 463

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 9 cm (3½ in.).

WARBLERS

163

FOOD. Insects.

VOICE AND CALLS. Song undescribed. Call-note, a short *zit* very similar to that of *P. proregulus*. Alarm, a high-pitched *sit sit sit* endlessly repeated.

BREEDING. Season, end of April to June. Nest, only recently discovered by Dieslhorst, extremely well concealed in a thick moss ball hanging from a branch, some five metres above the ground, completely invisible from below. Eggs undescribed.

MUSEUM DIAGNOSIS. See Key to the Species. For details of plumage and wing-formula see Ticehurst (1938) or Williamson (1962). Postnuptial moult complete in August and September.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	48-53	c. 10	16-17	{ 32-40 mm
♀ ♀	45-50			{ 30-33 mm
				(CBT, Heinrich)

Weight ♂ ♀ (winter) 4-5-6 g (SDR). (June-July) 4 ♂ ♂ 4-8-6; 3 ♀ ♀ 4-5-5-5; 3 oo? 4-7-5-7 g (RAP). 4 ♂ ♂ (breeding) 5; 2 ♀ ♀ 4-7, 5-5 g (GD).

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet ♂ brownish yellow, ♀ brownish grey.

1600. **Arctic Leaf Warbler.** *Phylloscopus borealis borealis* (Blasius)

Phylloscopus borealis Blasius, 1853, Naumannia: 313 (Sea of Okhotsk)

Baker, FBI Nos. 872 and 873, Vol. 2: 472

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 12 cm (4½ in.).

FIELD CHARACTERS. A relatively large leaf warbler with a slight single wing-bar, not always present. Above, brownish olive; a yellowish supercilium and a dark streak through eye; sides of head mottled yellowish and dusky. Below, dull white with a little amount of pale yellow, breast often mottled dull grey. Sexes alike.

Distinctive call-note (q.v.) when once learnt is best guide to identification.

STATUS, DISTRIBUTION AND HABITAT. Two winter records from the Andaman Islands. Frequents mangrove swamps and mango groves.

Extralimital. The species breeds in northern Eurasia from Finland and Anadyr and also Alaska, south in the mountains to Mongolia. Winters in the southern Indochinese countries, Malaysia, Indonesia, the Philippines and Formosa.

MIGRATION. Arrives in its winter quarters in September, leaves in April. Performs one of the longest migrations among the phylloscopi, the farthest distance between known points of breeding and wintering being over 10,500 km (CBT).

GENERAL HABITS. Solitary. Usually keeps to trees and high bushes.

FOOD. Insects.

VOICE AND CALLS. A loud *teeet ee* or *de-deet* unlike any other leaf warbler, and a hard *zit* or *chik*.

MUSEUM DIAGNOSIS. See Key to the Species. For details of plumages and wing-formula see Ticehurst (1938) or Williamson (1962).

162

SYLVIINAE

FIELD CHARACTERS. As in 1599, q.v.

STATUS, DISTRIBUTION AND HABITAT. Altitudinal migrant. Western and central Nepal. Vertical distribution and habitat as in 1599.

GENERAL HABITS, FOOD AND VOICE. As in 1599.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Differs from nominate *maculipennis* in being lighter, more yellowish olive on upperparts with the crown a lighter shade of iron-grey. Underparts paler yellow. Differs from *virens* in being darker, more olive on back (less yellowish olive) and darker, more fuscous on the crown.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1599.

Weight (Nov.-Dec.) 5 ♂ ♂ 5-3-5-7; 2 ♀ ♀ 4-7, 4-9 g (RAP).

1599. **Eastern Greyfaced Leaf Warbler.** *Phylloscopus maculipennis maculipennis* (Blyth)

Abornis maculipennis Blyth, 1867, Ibis: 27 (Nepal, restricted to Ilam District, eastern Nepal, by Ripley, 1950, Proc. Biol. Soc. Washington 63: 106)

Phylloscopus maculipennis papilio Koelz, 1952, Jour. Zool. Soc. India 4: 42

(Mawphlang, Khasi Hills)

Baker, FBI No. 863 (part), Vol. 2: 463

Plate 86, fig. 16

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 9 cm (3½ in.).

FIELD CHARACTERS. Two conspicuous yellow wing-bars. Above, head brownish grey with an interrupted whitish median coronal stripe, a long well-defined whitish supercilium, and a dark stripe through eye. Cheeks mottled whitish and grey. Back olive-green, rump yellow. Inner web of outer rectrices white. Below, throat and breast grey; rest of underparts yellow. Sexes alike.

Small size, grey head and throat, yellow rump, double wing-bar, and white in tail make this species unmistakable.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, rather sparsely distributed. Breeds from eastern Nepal through Darjeeling, Sikkim, Bhutan and Arunachal Pradesh. Probably breeds also in the hills south of the Brahmaputra (recorded as common by Baker) and in Nagaland (Ripley, 1958), since the species breeds in the Chin Hills and south to Mt Victoria. Found in summer between 2500 and 3400 m, optimum zone 2900-3200 m, in open mixed forest of oak and rhododendron or conifers and rhododendron, or mixed deciduous, all with plenty of undergrowth. Winters from c. 2900 m down to the foothills, mostly between c. 1400 and 2300 m, in broad-leaved, chiefly oak forests, and secondary scrub.

Extralimital. Breeds also in the mountains of Szechuan and Yunnan to northern Vietnam. A vertical migrant in its entire range.

GENERAL HABITS. A very active and restless species haunting mostly medium-sized trees though sometimes may ascend to great heights; also frequents bushes in forest, especially in winter. Usually single in summer, often in itinerant hunting parties, mixed or by themselves in winter. Flicks wings and white-margined tail as it hops about or flutters and hovers in front of springs or blossoms for insects.

164

SYLVIINAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	60-70	13-15	18-21	40-50 mm (Williamson)

Weight 45 ♂ ♂ 9-15 (av. 11); 25 ♀ ♀ 8-13 (av. 10) g — Shaw in Williamson.

COLOURS OF BARE PARTS. Iris hazel to dark brown. Bill: upper mandible dark brown with yellowish tomentum, lower mandible orange-yellow (adult) to pale brown or yellowish flesh, dark on underside towards tip (first winter); mouth orange (adult). Legs and feet pale or yellowish brown, often with greyish tinge in front (Williamson & Davis).

1601. **Largebilled Leaf Warbler.** *Phylloscopus magnirostris* Blyth

Phylloscopus magnirostris Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 966

(Calcutta)

Baker, FBI No. 878, Vol. 2: 476

Plate 86, fig. 22

LOCAL NAMES. *Deru* (Kohat); *Viri tirir* (Kashmir).

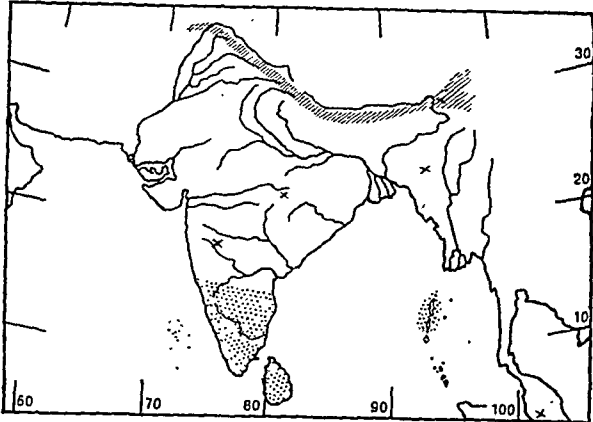
SIZE. Sparrow — ; length c. 12 cm (4½ in.).

FIELD CHARACTERS. The largest of all Indian leaf warblers; with a single very faint wing-bar. Above, brownish olive; a prominent yellowish supercilium and a dark streak through eye; cheeks mottled yellowish and dusky. Below, yellowish white sullied with grey on breast and throat. Sexes alike.

Very similar to Arctic Leaf Warbler (1600) but the two not likely to be found together. Very similar also to Greenish and Bright Green leaf warblers (1604, 1605). Best distinguished by their call-notes (qq.v.).

STATUS, DISTRIBUTION AND HABITAT. Fairly common summer (breeding) visitor to the Himalayas from N.W.F.P. (Safed Koh) east through Bhutan, and presumably Arunachal Pradesh. Breeds between 1800 and 3600 m, mostly above 2100 m. Winter range not satisfactorily known: recorded in Kerala (Sálim Ali, JBNHS 38: 493, Ferguson, JBNHS 15: 458; also Bourdillon and Davison), Mysore (Sálim Ali, JBNHS 43: 576), Belgaum (Butler, SF 9: 408), Londa (Koelz, JBNHS 43: 19), Tamil Nadu (Nichols, JBNHS 44: 400, Koelz, JBNHS 47: 135), Nellore (Jerdon), Nagpur (D'Abreu, *Rev. Nagpur Mus.*, No. 3, 1923), Manipur (Hume, SF 11: 218) and Mishmi Hills (Ali & Ripley, JBNHS 48: 31). All other data from the Indian Peninsula and Assam are in September, October, April and May and could be passage records. Said to be rare in all the above-mentioned localities except in the hills of Kerala (up to at least 1200 m) where it has been found to be common locally. Also winters throughout Ceylon where moderately plentiful in all zones (Phillips, 1953) and in the Andaman Islands (North Andaman, Hume collection; South Andaman, Wimberley and Davison & Hume specimens in British Mus.). Recorded commonly on passage in the Himalayan foothills, in the Peninsula (but not west of U.P. and M.P.), and in Bangladesh and Assam. In summer affects birches or other deciduous trees, or mixed rhododendron and firs in ravines or on their

Phylloscopus magnirostris



▨ Breeding
▤ Known winter range
x Isolated winter records

sides, almost invariably in the vicinity of torrential streams. In winter chiefly favours evergreen forest in sholas.

Extralimital. Breeds also in the mountains of western China north to Kansu. Winter range abroad little known. Said to winter at lower altitudes near breeding range; probably in the Indochinese countries as it has been recorded on passage in Tenasserim.

MIGRATION to summer grounds occurs from May to September. Downward movement begins after breeding as large numbers appear in the Nepal Valley in August. Passage in the Peninsula takes place from the end of August to October; recorded in winter quarters from October to May. Spring passage April to mid May.

GENERAL HABITS. Usually keeps singly to the crowns of medium-sized trees and lower canopy of taller ones. Unobtrusive and difficult to observe, but easily detected by its call and song.

FOOD. Insects.

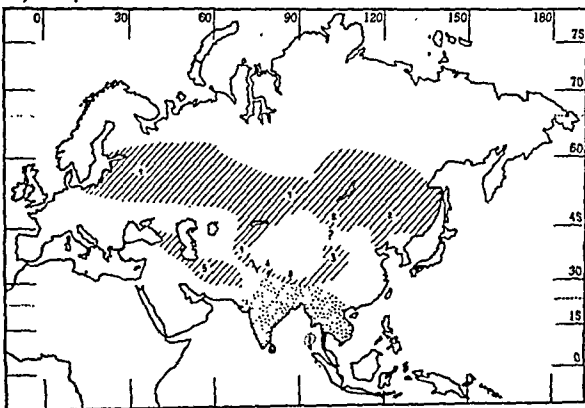
VOICE AND CALLS. Call-note, an unmistakable interrogative *dee-tee?* or *wee-chi?* second note much higher than first (various observers). This, in more agitated tone, is also the alarm-note in summer, e.g. when nest approached by intruder. In winter, a three-noted whistle on an ascending scale *yaw-wee-uee* likened to the song of the Orangebreasted Blue Flycatcher [*Muscicapa tickelliae*, 1443] (Henry, Ceylon). Song, a very distinctive, clear, five-noted silver bell-like *see, si-si, si-si* on three descending tones, with occasional variations (BBO, Alexander); reminiscent of ditty of *Rhipidura*

FIELD CHARACTERS. A single faint wing-bar. *Above*, dull greenish; a well-marked yellowish supercilium and a dark streak through eye; cheeks mottled olive and yellowish. *Below*, sullied yellowish white. Sexes alike.

Indistinguishable in the field from *P. t. nitidus* (1605) which however is greener above and yellower below, and has a better marked yellow wing-bar. *P. magnirostris* has a distinctive song and call-note.

STATUS, DISTRIBUTION AND HABITAT. Common summer (breeding) visitor to the western Himalayas from Gilgit and Kohat east through the Murree hills and Kashmir south of the main range, from 2700 to 3700 m. Winters from the Nepal and Sikkim foothills south throughout the Peninsula east to the Brahmaputra-Ganges rivers in Bangladesh, west to central Uttar Pradesh and western Madhya Pradesh, south to southern Kerala. Also

Phylloscopus trochiloides



▨ Breeding
▤ Winter (all subspecies)
1 *viridanus* (1602). 2 *plumbeitarsus* (RE). 3 *trochiloides* (1604).
4 *ludlowi* (1603). 5 *nitidus* (1605).

Ceylon where rare (Phillips). In Nepal up to c. 1800 m, in Kerala up to the summits of the hills but most common between c. 600 and 900 m. In summer affects willow, tamarisk and poplar groves (Gilgit, Kashmir) and mixed fir and deciduous forest (Turkistan). In winter frequents gardens, orchards, wooded compounds, lowland acacia groves, open deciduous and, to a lesser extent, evergreen jungle.

Extralimital. Breeds in Turkistan north to the Altai, thence west to the Baltic Sea. Other subspecies in eastern Siberia and western China. *P. t. nitidus* breeds in northern Iran and in the Caucasus Mountains. The species winters in India and the Indochinese countries.

albicollis, 1455 (SA). Song period, mid April till end of August (Proud). May also be heard in September while on migration, and occasionally in winter quarters.

BREEDING. Season, June to August. *Nest*, roughly domed, made of grass stems, moss, dead leaves, ferns and lichen, lined with fine grass; placed under a fallen log or rock, in hollows or crevices, under an overhanging bank or among the tangled roots of a fallen tree, often overhanging a stream. *Eggs*, usually 4, sometimes 5 or 3, white, unspotted. Average size of 50 eggs 18.2 × 13.2 mm (Baker); of 9 eggs 18.5 × 13.6 mm (BBO). Sometimes brood-parasitized by *Cuculus saturatus* (Currie, JBNHS 24: 594).



Wing, × c. 1

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	62-73	14-15	19-20	{ 48-56 mm
♀♀	58-65			{ 52-54 mm

(BB, HW)

Weight 2 ♂♂ (July) 11.3, 12 g (GD).

COLOURS OF BARE PARTS. Iris hazel brown. Bill brown, pale flesh at gape and base of lower mandible; mouth 'livid' (summer — HW), bright yellow or pale pinkish yellow (winter — SA). Legs and feet pale brown, greyish brown or brownish slate; soles lemon-yellow.

PHYLLOSCOPUS TROCHILOIDES (Sundevall)

Key to the Subspecies

	Page
A Upperparts brighter green; underparts yellow..... <i>P. t. nitidus</i>	170
B Upperparts duller greenish; underparts sullied yellowish white	
1 2nd primary (as.) usually longer than 8th..... <i>P. t. viridanus</i>	166
2 2nd primary usually shorter than 8th	
a Above greyer and paler; below less greyish..... <i>P. t. ludlowi</i>	168
b Above more olive, darker on head; below more greyish..... <i>P. t. trochiloides</i>	169

1602. Western Greenish Leaf Warbler. *Phylloscopus trochiloides viridanus* Blyth

Phylloscopus viridanus Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 967 (Calcutta)

Baker, FBI No. 875, Vol. 2: 474

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

MIGRATION. Found on its breeding grounds from April to September; on autumn passage from end of August to October. On winter grounds from October to May; spring migration, March to May.

GENERAL HABITS. Usually met with singly, sometimes among mixed foraging parties of small insectivorous birds, feeding mostly in the foliage canopy but also in undergrowth, bustling energetically among leaves and blossoms, clinging to sprigs upside down, nervously flicking wings, and at times launching into the air to seize a midge like a flycatcher.

FOOD. Insects, including small beetles and caterpillars.

VOICE AND CALLS. Call-note while foraging a characteristic squeaky *chiwee* or *si-chiwee* (sometimes *si-si-chiwee*) repeated every few seconds. Identical with call of *P. t. nitidus* (1605) and likewise indistinguishable from that of *P. inornatus humei* (1590). Song, also heard in the winter quarters prior to spring migration and constantly during passage, a lively high-pitched quick-repeated *chi-chi-chiwee*, *chi-chi-chiwee*... (of about 2 seconds duration) or *chi-chirichi-chiwee*... and variants of this theme (SA). Main song period April till end of July.

BREEDING. Very few authentic records in India. Season, May to August. *Nest*, a ball of moss, lichen, dead leaves and root fibres, lined with fine grass, fine moss, a few hairs and feathers, with a lateral entrance. Placed on sloping ground among roots of trees, or in hollows of rotten trunks up to two metres or so from the ground. *Eggs*, 3 or 4, unspotted white. Average size of 36 eggs 15.3 × 11.9 mm (Baker). Incubation by female only, care of nestlings by both sexes (Dementiev).

MUSEUM DIAGNOSIS. See Key to the Species. For details of plumages, wing-formula and moults see Ticehurst (1938) or Williamson (1962).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	59-65	12-13	18-19	{ 45-51 mm
♀♀	54-65			{ 42-47 mm

(CBT, Rand & Fleming, HW)

Weight ♂♀ (breeding) 6.5-10.5 (av. 7.9); (winter) 7.9-9.3 (av. 7.8) g — CBT. 25 ♂♂ (October, S. India) 8-14 (av. 9.5) g — SA.

Average of 10 autumn migrants 7.4 g (Williamson).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible brown, lower pale flesh or pale yellow. Legs and feet greyish or greenish brown; soles lemon-yellow.

1603. Baltistan Greenish Leaf Warbler. *Phylloscopus trochiloides ludlowi* Whistler

Phylloscopus trochiloides ludlowi Whistler, 1931, Bull. Brit. Orn. Cl. 52: 62 (Maran River, near Kishtwar)

Baker, FBI No. 875 (part), Vol. 2: 474

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1602, q.v.

WARBLERS

169

STATUS, DISTRIBUTION and HABITAT. Summer (breeding) visitor to Baltistan intergrading with *viridanus* in Gilgit and Kashmir, and with *trochiloides* in Garhwal and Kumaon. Vertical distribution and habitat as in 1602. Winters in the Peninsula: Etawah, Fatehgarh (U.P.), Ahmednagar (Maharashtra), Wynaad (Kerala), the Nilgiris and in the Eastern Ghats (Andhra Pradesh).

GENERAL HABITS, FOOD and VOICE. As in 1602.

BREEDING. As in 1602.

MUSEUM DIAGNOSIS. Like *viridanus* but slightly greyer above and a little larger. Paler and greyer above than *trochiloides* with less greyish wash below.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	60-66	12-13	18-20	45-55 mm
♀♀	56-60			44-51 mm
				(Williamson, HW)

COLOURS OF BARE PARTS. As in 1602.

1604. Eastern Greenish Leaf Warbler. *Phylloscopus trochiloides trochiloides* (Sundevall)

Acanthiza trochiloides Sundevall, 1838, Fysiogr. Sällskap. Tidskr. Lund 1: 76 (Calcutta)

Baker, FBI No. 875 (part), Vol. 2: 474

Plate 85, fig. 10

LOCAL NAME. *Inruite* (Kacha Naga).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1602, q.v.

STATUS, DISTRIBUTION and HABITAT. Abundant summer (breeding) visitor to the Himalayas from Garhwal and Kumaon to Arunachal Pradesh, between 2900 and 4200 m, optimum zone 3500-4000 m, wandering up to 4600 m after the breeding season. Also breeds in Nagaland and North Cachar at c. 1800 m (Baker, *Nidification* 2: 425). Winters from the Himalayas (up to c. 2200 m) south to lower Bengal (but apparently not south of the Gangetic Plain) and throughout Bangladesh and Assam. Also Andaman Islands. Has straggled to Wynaad and Ceylon. In summer affects subalpine mixed forest of fir, birch, rhododendron or juniper as well as pure stands of birch or conifers; also haunts bush jungle with isolated trees; occasionally met with in the scrub zone above timber-line, but does not appear to breed in this biotope. In winter frequents various types of mixed forest and open cultivated country.

Extralimital. Breeds also in the mountains of western China and winters east through the Indochinese countries. For range of the species see under 1602.

MIGRATION to breeding ground occurs from April to September; passage at lower elevations mostly in September and April.

GENERAL HABITS, FOOD and VOICE. As in 1602.

WARBLERS

171

MIGRATION. Recorded in winter quarters from October to April. Autumn passage from August through October. Spring migration from end of March till end of May; the last of the migrating leaf warblers to be seen in Kohat (Whitehead, *Ibis* 1909: 125). Abundant during spring migration in the lower Himalayas east to Sikkim, but appears to avoid this region in autumn when passage is chiefly recorded from Punjab to Sind.

GENERAL HABITS and FOOD. As in 1602. In winter quarters reported (this or *magnirostris*?) roosting individually at night under leaves, e.g. of papaya trees (*Carica papaya*)—Pillay, N. G., JBNHS 57: 659.

VOICE and CALLS. Call-note indistinguishable from that of *viridanus* (SA, Proud). A common call in Ceylon is given as *thirrip* (Henry). Song claimed to be recognizable (Proud); for rendition see under 1602.

BREEDING. As in 1602.

MUSEUM DIAGNOSIS. Differs from *viridanus* in being a brighter green above and distinctly yellow below. *Contra* Ticehurst (1938: 155) intergrades do occur (specimens examined U.S. Nat. Mus.). For details of plumages, wing-formula and moults see Ticehurst (1938) or Williamson (1962).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	58-68	12-14	18-20	45-51 mm
♀♀	58-64			43-47 mm
				(BB, HW)

Weight 3 ♂♂ 7.2-7.5; 1 ♀ 6.5 g (Dementiev).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible brown, lower yellowish brown. Legs and feet greyish brown (variable).

1605a. Palelegged Leaf Warbler. *Phylloscopus tenellipes* Swinhoe

Phylloscopus tenellipes Swinhoe, 1860, *Ibis*: 53 (Amoy, SE. China)

Baker, FBI No. 879, Vol. 2: 477

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Two faint wing-bars. *Above*, olive-brown, more rusty on rump, darker on rump and crown. A conspicuous buff supercilium and a dark streak through eye; a broken eye-ring. Sides of head mottled buff and dusky. *Below*, dull white, flanks washed with brownish. Sexes alike. Very similar to *P. fuscatus* (1586) but distinguished by presence of wing-bars and pale-coloured legs.

STATUS, DISTRIBUTION and HABITAT. Possible winter visitor: a migrant was taken on a boat 10 miles east of Great Nicobar (*Proc. U.S. Nat. Mus.* 25: 291; see also JBNHS 64: 186). Affects deciduous forest.

Extralimital. Breeds in Japan, Sakhalin and the Ussuri region. Winters in the Indochinese countries.

GENERAL HABITS. Frequents undergrowth and lower branches of trees.

FOOD. Insects.

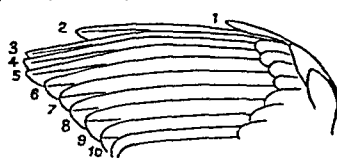
VOICE and CALLS. Call-note, a distinct *tik-tik*.

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters. For details of plumage and wing-formula see Ticehurst (1938) or Williamson (1962).

170

SYLVIINAE

BREEDING. As in 1602. Six eggs measure 15.5-15.6 × 11.7-12.5 mm (Baker, Ludlow).



Wing, × c. 1

MUSEUM DIAGNOSIS. Differs from *viridanus* in wing-formula: 2nd primary is usually shorter than 8th, mostly between 9/10 or = 10th, while in *viridanus* it is often longer than 8th, usually between 7/8. For details of plumages and moults see Ticehurst (1938) or Williamson (1962).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	62-68	12-14	18-20	50-57 mm
♀♀	55-62			45-52 mm
				(CBT, BB)

Weight 13 ♂♂ (May-Aug.) 8.8-9.2 ♂♂ (Sept.) 9.4, 9.8 g; 14 ♀♀ (May-Aug.) 7.9-10.3 g (GD). 4 ♂♂ (April) 7.5-8.7, 9 ♀♀ (April) 6.8-7.9 g; 13 ♂♂ (July) 8.9-9.5, 14 ♀♀ (July) 7.3-9.5 g (RAP).

COLOURS OF BARE PARTS. Iris hazel brown. Bill dark brown, yellow to orange at base of lower mandible; mouth yellow. Legs and feet yellowish brown to greenish brown.

1605. Bright Green Leaf Warbler. *Phylloscopus trochiloides nitidus* Blyth

Ph. (ylloscopus) nitidus Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 965 (vicinity of Calcutta)

Baker, FBI No. 874, Vol. 2: 473

Plate 86, fig. 21

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in *viridanus* (1602) but underparts distinctly yellow. Probably not distinguishable in worn winter plumage. Call-notes of the two identical.

STATUS, DISTRIBUTION and HABITAT. Winter visitor to southern India (Kerala, where common, Tamil Nadu and probably the Eastern Ghats) and Ceylon where common in all zones. On passage throughout the Peninsula east to Bengal and in Pakistan (Sind, northern Baluchistan and the western Himalayas) up to at least 2400 m. Probably nests near Quetta (Williams, JBNHS 33: 601; record unsubstantiated but description of nest and eggs clearly applies to either *nitidus* or *viridanus*. The occurrence of *nitidus* at Fort Munro as early as 27 July [Waite, JBNHS 37: 690] may also be an indication of breeding not far away). In winter affects heavy forest as well as gardens, orchards or other cultivation. In summer affects mixed forest at the upper limit of trees.

Extralimital. Breeds in the mountains of northern Afghanistan, central and northern Iran west to the Caucasus Mts.

172

SYLVIINAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	55-66	12-14	18-19	41-50 mm
				(Williamson)

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible dark brown, lower fleshy brown. Legs and feet pale flesh.

PHYLLOSCOPUS OCCIPITALIS (Blyth)

Key to the Subspecies

- Under tail-coverts concolorous with belly.....*P. o. occipitalis*
Under tail-coverts yellow, contrasting with belly.....*P. o. coronatus*

1606. Large Crowned Leaf Warbler. *Phylloscopus occipitalis occipitalis* (Blyth)

Ph. (yllopneuste) occipitalis Blyth, 1845, Jour. Asiat. Soc. Bengal 14: 593 (Southern India)

Baker, FBI No. 881, Vol. 2: 479

Plate 86, fig. 18

LOCAL NAME. *Viri tiriv* (Kashmir).

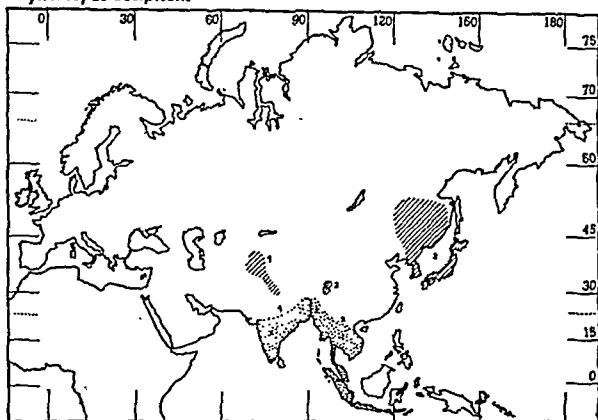
SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Two wing-bars of which only one noticeable. *Above*, light greyish olive; wings more yellowish; shoulders yellow. A pale median coronal stripe with a broad, dusky olive band on either side, blackish on nape. A conspicuous pale yellow supercilium, a dark line through eye. Cheeks pale yellow. *Below*, whitish tinged greyish on breast and flanks, slightly streaked with yellow on breast and belly. Sexes alike. Orange at base of lower mandible is a distinctive character.

STATUS, DISTRIBUTION and HABITAT. Abundant summer (breeding) visitor to the western Himalayas: Kohat dist. (N.W.F.P.) and Baltistan east to Garhwal and Kumaon; from c. 1800 to 3200 m. Breeds abundantly in Kashmir. Winters in the Peninsula from southern Gujarat (Surat Dangs) and northwestern Maharashtra (Dhulia), Madhya Pradesh (Raipur) and the Eastern Ghats (Vishakhapatnam) south to the southernmost hills; more common on the western side of the Peninsula. Appears to keep mostly to the hills, up to at least 2100 m. All records north of a line Dhulia-Raipur (c. 21°N.) are from October to April. Listed as winter visitor to Bangladesh west of the Brahmaputra-Ganges by Rashid, 1967. Recorded on passage at Lahore, and in Rajasthan and Gujarat; east to central Nepal and eastern Bihar (Madhupur). In summer affects willow groves, deciduous or mixed conifer-deciduous forest; in winter mostly moist-deciduous and evergreen biotope.

Extralimital. Breeds also in northwest Afghanistan and north to Uzbekistan. Also Ussuriland (see 1607).

MIGRATION. Found on summer grounds from end of March till September; autumn passage in September and October. May be seen in the Peninsula (M.P.) as early as August. Records from Rajasthan on 22 July

Phylloscopus occipitalis

Distributional ranges

▨ Breeding

▨ Winter

1 *occipitalis* (1606). 2 *coronatus* (1607).

are exceptional. In winter quarters from October to April; spring passage third week of March to early May.

GENERAL HABITS. Keeps singly or in pairs in the breeding season, in parties up to 30 birds in winter, almost invariably in mixed company with flycatchers, titmice, *Zosterops*, *Alcippe poioicephala* and other small birds. A restless leaf warbler, continually flicking its wings and tail as it creeps or flits among branches and shrubs, clinging to twigs to peer under leaves or making short aerial sallies after insects. Hunts mostly in the canopy of moderate-sized trees and higher bushes. Under excitement, as when mobbing a snake or owl, tail spread out and wings drooped at sides.

FOOD. Insects and spiders.

VOICE AND CALLS. Rather noisy. Said to have a wide repertoire of songs. Commonest song is a constantly repeated, cheerful, rapid *chi-wee-chie-wee* etc. (Alexander); also rendered as a squeaky but spirited *chi-chi-chi-chiwee-chiwee-chiwee* (or *ti-ti-tiu-tiu-tiu-tiu*) quickly repeated (SA). A 'monotonous chip-chip-chip-chip' (Magrath) appears to be another rendition of the song rather than a call-note. Song period, third week of March till early August. Alarm-note, *chick-wip* or *chick-weep*; sometimes repeated almost incessantly, maybe for several minutes, at the rate of c. two per second while fussing agitatedly around an intruder near nest (BBO, SA).

BREEDING. Season, May to July. Nest, varying from cup-shaped to completely domed according to situation. Made of moss, leaves and fibres, lined with fur or hair. Usually placed well out of sight, sometimes an arm-length within crevices of walls. Also in holes in trees up to a couple of metres from

WARBLERS

175

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Resembles *occipitalis* but crown darker, upperparts greener, under tail-coverts yellow contrasting with white belly. For details of plumages, wing-formula and moults see Ticehurst (1938) or Williamson (1962).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	60-65	13-15	17-19	42-50 mm
♀♀	57-61			

(Williamson)

Weight ♂♀ 8-10.5 g (Williamson).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible reddish amber, cutting edge and lower mandible orange; mouth orange. Legs and feet greyish brown.

PHYLLOSCOPUS REGULOIDES (Blyth)

Key to the Subspecies

	Page
A White edge to outer rectrices 2-4 mm broad..... <i>P. r. assamensis</i>	178
B White edge to outer rectrices c. 2 mm or less	
1 Upperparts yellowish green..... <i>P. r. kashmiriensis</i>	175
2 Upperparts greener..... <i>P. r. reguloides</i>	177
3 Yellow of underparts confined to streaks on breast..... <i>P. r. claudiae</i>	178

1608. Small Crowned Leaf Warbler. *Phylloscopus reguloides kashmiriensis* Ticehurst

Phylloscopus reguloides kashmiriensis Ticehurst, 1933, Bull. Brit. Orn. Cl. 54: 19 (Simla)

Baker, FBI No. 883 (part), Vol. 2: 481

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. A smaller version of *P. occipitalis* (1606) with the wing-bars better marked, but not readily distinguishable from it in the field. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Uncommon resident and altitudinal migrant. Breeds in the western Himalayas from Murree (Rattray, JBNHS 16: 426) and Kashmir (Brooks, JASB 41: 81; Wilson, JBNHS 12: 636) east to Garhwal, between c. 2400 and 3300 m. Affects rhododendron and oak forest. Winters in the foothills and adjacent plains south and east to Etawah (U.P.), Darbhanga and Dinapore (Bihar). In winter frequents subtropical pine and tal forest.

GENERAL HABITS, FOOD AND VOICE. As in 1609.

BREEDING. Season, May to July. Nest, similar to that of *occipitalis* (1606) but smaller, often placed between stones in walls, sometimes in tree hollows up to a couple of metres above the ground. Eggs, 4 or 5, white, unspotted. Average size of 36 eggs 15.6 × 12.1 mm (Baker). See also 1610.

the ground, hollows in dead stumps, under stones in rocky banks or under roots of trees, in old rat-burrows and sometimes in vertical holes in the forest floor; nests have even been recorded in rafters of cowsheds and in the gable of a bungalow roof. Eggs, normally 4, unspotted white. Average size of 36 eggs 16 × 12.3 mm (BBO), of 50 eggs 16.4 × 12.7 mm (Baker). Both sexes tend the young; share in nest-building and incubation, and period of incubation, not recorded. Often brood-parasitized by *Cuculus saturatus* and *C. poliocephalus* (Rattray).

MUSEUM DIAGNOSIS. See Key to the Species. For details of plumages, wing-formula and moults see Ticehurst (1938) or Williamson (1962).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	59-71	13-15	17-19	45-55 mm
♀♀	56-70			45-55 mm

(Williamson, HW, Koels)

Weight 8 ♂♂ (summer) 8-9 (av. 8.5); 5 ♀♀ (summer) 8-9 (av. 8.4) g — Paludan, Afghanistan.

COLOURS OF BARE PARTS. Iris brown. Bill brown, lower mandible pale orange; mouth pale orange or pale yellow. Legs and feet slaty brown or greyish brown; soles yellow (SA).

1607. Eastern Crowned Leaf Warbler. *Phylloscopus occipitalis coronatus* (Temminck & Schlegel)

Ficedula coronata Temminck & Schlegel, 1847, in Siebold's Fauna Japon., Aves: 48, pl. 18 (Japan)

Phylloscopus occipitalis extimus Koels, 1954, Contrib. Inst. Regional Exploration, No. 1: 16 (Karong, Manipur)

Baker, FBI No. 882, Vol. 2: 480

Plate 86, fig. 19

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1606 but has white underparts and bright yellow under tail-coverts. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor to the Sikkim foothills up to c. 2000 m (Meinertzhagen), the Garo, Khasi and Mizo hills, Nagaland and Manipur (Koels, loc. cit.; presumed by collector to be migrants) and the Chittagong ranges of Bangladesh (Rashid). In winter affects deep jungle.

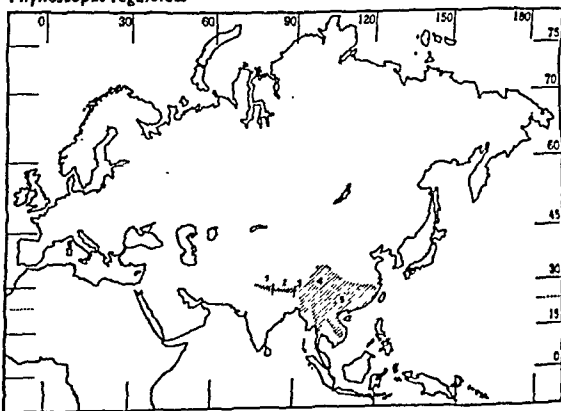
Extralimital. Breeds in Korea, Amurland, Japan and Szechuan (Traylor, M. A., Fieldiana: Zool. 53: 37, 1967). Winters also in the Indochinese countries, Sumatra and Java.

MIGRATION. Arrives in the Malay Peninsula in September, remains till mid April (Robinson).

GENERAL HABITS. In winter very silent and unobtrusive. Keeps to the lower boughs of trees and bushes.

FOOD. Insects.

VOICE AND CALLS. Call-note unrecorded. Song probably not uttered in winter: two repeated short syllables followed by a longer, drawn-out one *djiip-djiip*, *djiip-djiip*, *djee* (Austin & Kuroda).

Phylloscopus reguloides

▨ Breeding ranges

1 *kashmiriensis* (1608). 2 *reguloides* (1609). 3 *assamensis* (1610). 4 *claudiae* (1611). 5 Other races, extralimital.

MUSEUM DIAGNOSIS. Differs from *P. occipitalis* by smaller size, yellowish median coronal stripe, brighter greenish upperparts, broader wing-bars and different wing-formula: 2nd primary usually between 8/9 or equal to 9 while in *occipitalis* it usually falls between 7/8. Differs from *reguloides* (1609) in having the upperparts, edges to wings and coverts a yellowish green; lateral coronal bands less dark, not so conspicuous. Postnuptial moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	57-65	13-14	16-17	42-48 mm

(CUT)

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible dark brown; lower and edge of gape orange-yellow. Legs and feet bluish green to greenish yellow.

WARBLERS

177

1609. Blyth's Crowned Leaf Warbler. *Phylloscopus reguloides reguloides* (Blyth)*Phylloscopus reguloides* Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 191 (Darjeeling)

Baker, FBI No. 883 (part), Vol. 2: 481

Plate 86, fig. 20

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. Similar to *occipitalis* (1606) but smaller.

STATUS, DISTRIBUTION and HABITAT. Resident and altitudinal migrant, fairly common. Breeds in the Himalayas from Kumaon to eastern Bhutan, between 2000 and 3500 m, optimum zone 2500–3000 m. Affects forests of oak, rhododendron and conifers, mixed or in pure stands. Winters in the foothills from c. 1500 m downwards, and adjacent plains to northern Bangladesh and upper Assam; two records from Burma (Bhamo and northern Tenasserim). In winter frequents bushes in forest, forest edges and bush country with isolated trees.

MIGRATION. Arrives on its summer grounds in early March, leaves in August.

GENERAL HABITS. In the breeding season usually met singly or in pairs: in winter often in the mixed foraging parties of small insectivorous birds. Hunts in tree canopy as well as in bushes.

FOOD. Chiefly insects; berries also recorded (GD).

VOICE and CALLS. Call-note *kee-ku-i* constantly repeated (HGA). Song rendered as *ziwizi wizi wit* and said to recall that of the Coal Tit (*Parus ater*, 1803—GD); also described as a distinctive trill of nine to ten notes *chi-ti-chi-ti-chi-ti-chi-ti-chee* (Proud). No direct comparison with song of *occipitalis* available. See also 1610. Song period mid March till end of August (Proud).

BREEDING. As in 1608. One nest is described as cup-shaped, made of moss and placed in a hole in the ground, 60 cm from the entrance. The three eggs measured 17 × 12, 16 × 12, 17 × 12 mm (Ludlow). See also 1610.

MUSEUM DIAGNOSIS. See 1608. Differs from *assamensis* (1610) by restricted amount of white (2 mm wide) on inner webs of the two outer rectrices (v. 2–4 mm in *assamensis*) and slightly brighter upperparts. Intergrades with *kashmiriensis* in Kumaon and with *assamensis* in Bhutan. For details of plumage see Ticehurst (1938) or Williamson (1962). Postnuptial moult complete from July to early September. Prenuptial moult of body-feathers in February and March.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	53–62	11–13	16–18	39–49 mm (Williamson)

Weight 7 ♂♂ (Mar.–Oct.) 6.9–8.7; 7 ♀♀ (Mar.–Oct.) 6.2–8 g (GD). 8 ♀♀ (Oct.–Mar.) 6.6–9.4; 6 ♂♂ (Nov.–Mar.) 6.6–9.4; 5 ♂♂ (June–Aug.) 7.8–5; 8 ♀♀ (Oct.–Mar.) 6.6–9.4; 4 ♀♀ (June–July) 6.9–8.6 g (RAP).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible dark brown, lower yellow. Legs and feet pale yellowish plumbeous.

WARBLERS

179

STATUS, DISTRIBUTION and HABITAT. Winter visitor to the Khasi Hills and Manipur.

EXTRALIMITAL. Breeds in the mountains of Yunnan and Szechuan. Another subspecies in Fukien. Winters at lower elevations and at short distance from breeding area.

GENERAL HABITS, FOOD and VOICE. Probably those of the species (1609 and 1610).

BREEDING. Probably as in 1610.

MUSEUM DIAGNOSIS. Resembles *assamensis* but upperparts slightly brighter, not so yellowish green. Cheeks and median coronal stripe greyer yellow and paler. Underparts whiter, yellow confined to streaks on breast. Two outer rectrices only very narrowly and sharply edged with white. For wing-formula see Ticehurst, 1938.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	60–67	12–13	17–18	45–49 mm
♀♀	57–62			43–47 mm (CBT)

Weight ♂♀ (breeding) 7.5–10 (av. 8.7) g—CBT.

COLOURS OF BARE PARTS. As in 1609.

1612. Blackbrowed or Yellowfaced Leaf Warbler. *Phylloscopus cantator cantator* (Tickell)*Molaeilla Cantator* Tickell, 1833, Jour. Asiat. Soc. Bengal 2: 576

(Borabhum and Dolbhum)

Baker, FBI No. 895, Vol. 2: 492

Plate 86, fig. 17

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. A double yellow wing-bar, the lower one distinct. Above, olive-green. Two black coronal bands with a yellowish green median stripe, and a conspicuous yellow supercilium; sides of head bright yellow. Below, throat and under tail-coverts bright yellow, belly whitish. Sexes alike.

Combination of above characters identifies the species.

STATUS, DISTRIBUTION and HABITAT. Little recorded. Known to breed in North Cachar between 1200 and 1800 m (Baker, *Ibis* 1906: 262) and probably Manipur (Hume, SF 11: 221, 225). Specimens taken in the Chittagong Hill Tracts, February–March (R. A. Paynter) where, according to Rashid, it is a resident. Collected in Sikkim at c. 1000 m in March (Stevens, JBNHS 29: 1026) and at c. 2000 m in June (Schäfer *vide* Salim Ali, 1962); may be expected in the lower hills of Bhutan and Arunachal Pradesh. More widespread in winter when recorded in all parts of eastern Bengal (Rashid), Assam, the Jalpaiguri duars, Bhutan foothills, extreme eastern Nepal (Fleming & Traylor, *Fieldiana* 53: 181, 1968) and lower Bengal (type locality). In summer affects dense evergreen forest; in winter more open, deciduous and mixed forest.

EXTRALIMITAL. Extends east to Vietnam, Hainan and Fukien (*ricketti*).

GENERAL HABITS. Sociable in winter when often found in the roving mixed foraging parties of small birds. Hunts in the lower branches of trees,

178

SYLVIINAE

1610. Assam Crowned Leaf Warbler. *Phylloscopus reguloides assamensis* Hartert

Phylloscopus trochiloides assamensis Hartert, 1921, Vög. pal. Fauna (3): 2139, new name for *Acanthopneuste trochiloides harterti* Baker, 1913, Bull. Brit. Orn. Cl. 31: 36 (Peak near Shillong, Khasia Hills) *nee* *Phylloscopus bonelli harterti* Zedlitz, 1912 *Phylloscopus reguloides terpsinus* Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 16 (Blue Mountain, Lushai Hills) Baker, FBI No. 884, Vol. 2: 481

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. As in 1608, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Resident and altitudinal migrant, fairly common. Breeds in Arunachal Pradesh and the hills south of the Brahmaputra (cf. Koelz, loc. cit.), Nagaland and Manipur. In the Himalayas breeds between c. 2400 and 3600 m; for habitat see 1609. In the Khasi Hills above c. 1400 m in evergreen wet forest and mixed broad-leaved and pine forest (on Mt Victoria between 2000 and 3000 m). Winters from c. 2200 m (Nagaland) down to the foothills and adjacent plains west to Sikkim and south to the Chittagong region in Bangladesh. In winter may be seen in light scrub and pastureland with low second growth.

GENERAL HABITS and FOOD. As in 1609.

VOICE and CALLS. Has some 'cheep' call-notes. Alarm-notes *chee-pit* or *zip-ye*. Song rendered as *pit-chew-a-pit-chew-a-pit-chew-a*, the notes slurred into each other to produce a continuous undulating wave of sound (Smythies). Also given as *tschitschui* . . . *tschitschui* — *tschitschui*, recalling the song of *P. trochiloides* (Heinrich).

BREEDING. Season, end of April to June. Nest, a well-built ball of green moss, sometimes a few scraps of dead leaves or lichen being added, lined with soft vegetable down, occasionally with feathers. Placed in hollows on banks covered with moss, weeds and ferns; sometimes in holes in trees or rotten stumps. Eggs, 4 or 5, unspotted white. Average size of 50 eggs 15.3 × 11.9 mm (Baker). Building and incubation by both sexes though female has greater share. Brood-parasitized by *Cuculus saturatus* and *C. poliocephalus*.

MUSEUM DIAGNOSIS. For distinguishing from *reguloides* and *claudiae* see 1609 and 1611.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1609.

Weight 1 ♂ (March) 7 g (RAP).

1611. Yunnan Crowned Leaf Warbler. *Phylloscopus reguloides claudiae* (La Touche)*Acanthopneuste trochiloides claudiae* La Touche, 1922, Bull. Brit. Orn. Cl. 43: 22

(Mengt, Yunnan)

Baker, FBI No. 886, Vol. 2: 483

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. As in 1603, q.v.

180

SYLVIINAE

in bushes and bamboo clumps. Spreads tail and flicks it upwards. Makes short sallies after winged insects.

FOOD. Insects.

VOICE and CALLS. Call-note, a loud and incessant *pio, pio* . . . (CBT). Song undescribed.

BREEDING. Season, end of April to June. Nest, a little ball of green moss thickly lined with soft vegetable down; placed on the ground, generally at the foot of trees, half buried among fallen leaves, or in hollows in banks, concealed in moss, weeds or other cover. Eggs, 3 or 4, unspotted white. Average size of 50 eggs 14.5 × 11.9 mm (Baker). Building of nest and incubation by both sexes. Incubation period unrecorded.

MUSEUM DIAGNOSIS. See Field Characters; for details of plumage and wing-formula Ticehurst (1938) or Williamson (1962). First-winter birds have duller upperparts, and paler yellowish white underparts. Apparently a complete moult in July.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	50–57	12–13	17–18	35–43 mm (Williamson)

Weight 1 ♂ 7; 2 ♀♀ 5, 6 g (SA).

COLOURS OF BARE PARTS. Iris hazel to dark brown. Bill: upper mandible brown, lower yellow. Legs and feet fleshy yellow to pale yellow.

Genus SEICERCUS Swainson

Seicercus Swainson, 1837, Clasif. Bds. 2: 84, 259.Type, by monotypy, *Sylvia Burkii* Burton

Bill broad and blunt, about half the length of the head. Rictal bristles greatly developed, in some cases reaching almost to the tip of the bill. Wing rather rounded, first primary (as) small, second and third graduated.

Key to the Species

	Page
A Crown rufous <i>S. castaneiceps</i>	189
B No rufous on crown	
1 A white supercilium <i>S. xanthochristus</i>	184
2 No white supercilium	
a A yellow eye-ring <i>S. burkii</i>	181
b A white eye-ring	
i Grey of head not extending below eye <i>S. affinis</i>	180
ii Grey of head extending below eye <i>S. poliopteryx</i>	188

1613. Allied Flycatcher-Warbler. *Seicercus affinis* (Hodgson)

Abornis affinis Hodgson, 1854, in Horsfield & Moore, Cat. Bds. E.I. Co. 1: 341 (Nepal)

Baker, FBI No. 888, Vol. 2: 486

Plate 87, fig. 5

LOCAL NAME. *Inshush-gat* (Kacha Nag).

SIZE. Sparrow —; length c. 10 cm (4 in.).

WARBLERS

181

FIELD CHARACTERS. A yellow wing-bar. Above, crown striped grey and black; sides of head yellow; a conspicuous but incomplete white eye-ring. Rest of upperparts olive-green; inner webs of outer rectrices white. Below, bright yellow. Sexes alike.

S. burkii has a complete, yellow eye-ring and lacks the wing-bar. Easily confused with *S. poliopterus* but which has the grey of head descending below the eye.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to altitudinal movements. The eastern Himalayas from eastern Nepal (not recorded thence since Hodgson's days), Darjeeling, Sikkim, Bhutan and Arunachal Pradesh from c. 2300 m (summer) to the foothills (winter). Also the hills south of the Brahmaputra, Nagaland and Manipur, breeding above 1400 m, descending to the foothills and adjacent plains in winter. Affects dense, humid evergreen or pine forest.

Extralimital. Extends east to Vietnam and Fukien.

GENERAL HABITS. Very similar to the leaf warblers (*Phylloscopus*). Hunts mostly in the foliage of shrubs and undergrowth in deep forest, often catching insects on the wing. Flits tirelessly, flicking wings nervously, often fluttering and hovering in front of sprigs and blossoms to pick insects. In winter usually met with in the mixed itinerant foraging parties.

Display. Fluffs out feathers and spreads tail and wings while cowering low down on a branch close to the female, then springing erect and bursting into song.

FOOD. Insects.

VOICE and CALLS. Call-note, a sharp *che-wheel* like that of *S. burkii* (Stanford). Song not satisfactorily described.

BREEDING. Season, April to June. Nest, a well-made ball of green moss with rootlets and a few leaves incorporated, with a first inside layer of rootlets, a layer of fine moss compactly woven, and a final lining of soft vegetable down; placed in hollows or in dense moss on steep banks, occasionally in holes in dead trees. Eggs, 4 or 5, unspotted white. Average size of 30 eggs 15.4 × 12.4 mm (Baker). Building and incubation by both sexes; incubation period unrecorded.

MUSEUM DIAGNOSIS. See Field Characters; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	50-58	11-13	17-19	38-49 mm (SA, BB)

Weight 6 ♂♂ (winter) 6-8 g (SDR, SA).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible dark brown, lower yellow. Legs and feet yellow.

SEICERCUS BURKII (Burton)

Key to the Subspecies

	Page
1 Upperparts brighter, green..... <i>S. b. whistleri</i>	182
2 Upperparts duller, olive..... <i>S. b. burkii</i>	183
3 Upperparts darker, greener than 2..... <i>S. b. tephrocephalus</i>	184

WARBLERS

183

BREEDING. Season, chiefly June and July. Nest and eggs as in 1615.

MUSEUM DIAGNOSIS. Differs from the nominate race (1615) in having the upperparts bright green, less olive, and the underparts paler yellow, less washed with olive on the flanks.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1615.

1615. Eastern Blackbrowed Flycatcher-Warbler. *Seicercus burkii burkii* (Burton)

Sylvia burkii Burton, 1836, Proc. Zool. Soc. London: 153 (Himalaya Mts, restricted to Sikkim by Ticehurst, 1925, Bull. Brit. Orn. Cl. 46: 23) *Seicercus burkii nemoralis* Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 17 (Sangau, Lushai Hills)

Baker, FBI No. 889 (part), Vol. 2: 487

Plate 87, fig. 2

LOCAL NAME. *Inshushia-gaaba* (Kacha Naga).

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. No wing-bar. Above, olive-green including supercilium and sides of head. Two black stripes on crown. A conspicuous, complete, yellow eye-ring. Below, deep yellow. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Common summer visitor (except in the lower zone where summer and winter ranges overlap). The Himalayas from western Nepal through Darjeeling, Sikkim, Bhutan and Arunachal Pradesh, thence south through the Patkai Range, Meghalaya, Nagaland, Manipur and the Mizo hills. Breeds between c. 2000 and 3700 m, mostly above 2400 m (also on the northern slopes of the Himalayan ranges) and above c. 1000 m in the hills south of the Brahmaputra. Winters (October to April) from c. 2100 m (lower during cold weather) down to the foothills and in the plains south to lower Bengal, Orissa (Koelz, SA) and the Chittagong region.¹ Affects the upper evergreen forest of oak, rhododendron and birch as well as mixed coniferous and deciduous forest.

Extralimital. Extends east through southern China and the northern Indochinese countries.

GENERAL HABITS. Haunts low undergrowth and the middle story in forest, rarely ascending into the canopy. In non-breeding season often met in small parties or among the roving mixed flocks of flycatchers, warblers, minias and other small babblers, etc. Actions and behaviour typically phylloscopine (SA).

FOOD. Insects.

VOICE and CALLS. As in 1614. Song period, end of March till at least end of July (Proud).

BREEDING. Season, early May to July (Himalayas), early April through June (Assam). Nest, a ball of moss, grass, bark fibres, bamboo leaves, dry pine needles or rootlets, neatly lined with fine moss and lichen; placed on sloping ground or among roots of fallen trees, usually well concealed in moss or weeds. Eggs, normally 4, unspotted white. A clutch of 7 found by Ludlow might be the laying of two females. Average size of 40 eggs 16.1 × 12.3 mm

¹ However, see 1615a.

182

SYLVIINAE

1614. Western Blackbrowed Flycatcher-Warbler. *Seicercus burkii whistleri* Ticehurst

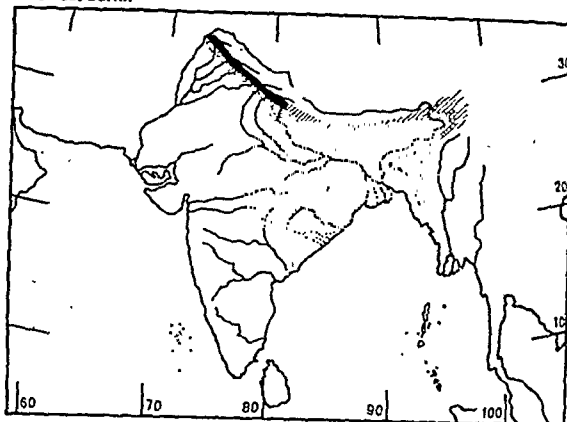
Seicercus burkii whistleri Ticehurst, 1925, Bull. Brit. Orn. Cl. 46: 22 (Dharmasala, Punjab Himalayas) Baker, FBI No. 889 (part), Vol. 2: 487

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1615, q.v.

STATUS, DISTRIBUTION and HABITAT. Summer (breeding) visitor, locally common. The western Himalayas from Murree and Kashmir (Dickinson, JBNHS 63: 204) east to Kumaon, between c. 1800 m and at least 3000 m, mostly in the upper zone of this range. Winters from c. 1800 down to the

Seicercus burkii

Distributional ranges

■ *whistleri* (1614).

▨ *burkii* (1615).

□ Winter

foothills and in the Peninsula as far as northern Maharashtra (Chikaldia, Kamptee) and northeastern Andhra Pradesh (Sankrametta). Affects dense deciduous or mixed forest.

MIGRATION. Passage at mid-elevations takes place mostly in April-May and in October.

GENERAL HABITS and FOOD. As in 1615.

VOICE and CALLS. Call-notes rendered as *pillip* or *wre-up* and a single sharp *chiw* uttered every few seconds while foraging. A fine song of loud, clear notes resembling the trill of a canary (A. E. Osmaston); leiothrix-like, and recalling also that of *Seicercus xanthochristus* (1617) — SA.

184

SYLVIINAE

(Baker); 4 eggs from Bhutan measure 16.5 × 12.7 mm (Ludlow). Incubation by both sexes; other details of breeding biology not recorded.

MUSEUM DIAGNOSIS. See Key to the Species. For distinction from *whistleri* see 1614; for details of plumage Baker, loc. cit. Postnuptial moult apparently in September.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	55-61	13-14	19-20	43-53 mm
♀♀	51-58			43-49 mm

(BB, Stresemann, SA, Stevens, Rand & Fleming)

Weight 10 ♂♂ (May-Oct.) 6.5-9.3 (av. 7.7); 1 ♀ (Oct.) 6.2 g — GD. 9 ♂♂ (Oct.-Nov.) 4-8 g (BB, SA).

COLOURS OF BARE PARTS. Iris very dark brown. Bill: upper mandible dark brown, paler near tip and yellowish on edges and extreme tip; lower mandible yellow or orange-yellow. Legs, feet and claws yellowish brown.

1615a. Burmese Blackbrowed Flycatcher-Warbler. *Seicercus burkii tephrocephalus* (Anderson)

Culiciveta tephrocephalus Anderson, 1871, Proc. Zool. Soc. London: 213

(Bhamo)

Baker, FBI No. 890, Vol. 2: 488

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1615, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Non-breeding specimens collected in Bangladesh (Sundarbans (Burigodini) and Chittagong Hill Tracts (Rangmati and near Manimukh)) in February, March and April (R. A. Paynter).

Extralimital. Burma (Chin Hills) east to northern Yunnan and southern Sikkim. Winters in N. Thailand.

GENERAL HABITS, FOOD, and CALLS. As in 1615.

BREEDING. Not recorded within our limits.

MUSEUM DIAGNOSIS. 'Darker green than nominate *burkii* (1615), coronal bands better indicated, lateral bands darker, dull black, central band ashy, more or less tinged with olive' (Vaurie).

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1615.

SEICERCUS XANTHOCRISTUS (Gray)

Key to the Subspecies

	Page
A Back green..... <i>S. x. tephroditis</i>	187
B Back grey	
1 Darkest; back slaty..... <i>S. x. fascicularis</i>	187
2 Intermediate..... <i>S. x. xanthochristus</i>	188
3 Paler; back grey..... <i>S. x. albopercularis</i>	185

WARBLERS

185

1616. Western Greyheaded Flycatcher-Warbler. *Seicercus xanthoschistos albosuperciliaris* (Jerdon)

Abornis albo-superciliaris 'Blyth' = Jerdon, 1863, Bds. India 2: 202 (Cashmere)

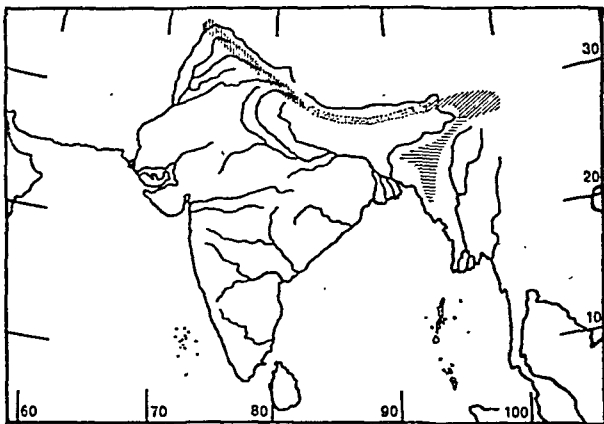
Baker, FBI No. 892, Vol. 2: 490

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1617, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to summer-winter vertical movements, locally common. The western Himalayas from N.W.F.P. and Punjab (Kohat, Murree) and Kashmir to west-central Nepal (Pokhara; specimens, R. A. Paynter, in litt.). Breeds between 900 and 2700 m, optimum

Seicercus xanthoschistos

Distributional ranges

albosuperciliaris (1616).

xanthoschistos (1617).

flavogularis (1618).

tephrodinus (1619).

zone 1500–2100 m, scarce and local below 1200 and above 2400 m. Winters commonly in the foothills, locally up to c. 2000 m, from October to early April. Affects well-wooded valleys, oak, pine and deodar forest in summer, extending to scrub jungle, gardens and orchards in winter.

GENERAL HABITS, FOOD and VOICE. As in 1617.

BREEDING. Season, March to June. Nest, globular, made of green moss and grass, lined with hair and fur; placed on grassy banks often protected by an overhanging bush. Eggs, normally 4, occasionally 5, unspotted white. Average size of 50 eggs 15.9 × 12.5 mm (Baker). Often brood-parasitized by *Cuculus saturatus*.

WARBLERS

187

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible dark horny to almost black, paler on tip and on edges; lower mandible brownish yellow. Legs, feet and claws pale horny to horny brown; soles white (BB) or lower mandible orange-yellow; legs and feet brownish flesh with a yellow tinge; claws pale flesh (SA).

1618. Mishmi Greyheaded Flycatcher-Warbler. *Seicercus xanthoschistos flavogularis* (Godwin-Austen)

Abornis flavogularis Godwin-Austen, 1877, Jour. Asiat. Soc. Bengal 46: 44 (neighbourhood of Saddya, Assam)

Abornis flavigularis Godwin-Austen, 1878, Jour. Asiat. Soc. Bengal 47: 19 (Sadiya)

Seicercus xanthoschistos pulla Ripley, 1948, Proc. Biol. Soc. Washington 61: 106 (Dening, Mishmi Hills, NE. Assam)

Baker, FBI Nos. 891 (part) and 903, Vol. 2: 489, 499

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1617, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to seasonal vertical movements. Arunachal Pradesh in the Abor and Mishmi Hills. Altitudinal distribution and habitat, probably as in 1617.

Extralimital. Northern Burma.

GENERAL HABITS and FOOD. As in 1617.

VOICE and CALLS. Call noted to be 'easily distinguishable from that of *albosuperciliaris*' (a local dialect? — SA).

BREEDING. Unrecorded, probably as in 1617.

MUSEUM DIAGNOSIS. Differs from *xanthoschistos* (1617) in being darker, slaty on crown and mantle, and somewhat more washed with olive on flanks.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1617.

1619. Assam Greyheaded Flycatcher-Warbler. *Seicercus xanthoschistos tephrodinus* Sick

Seicercus xanthoschistos tephrodinus Sick, 1939, Orn. Monatsb. 47: 78 (Mt Victoria, Chin Hills)

Baker, FBI No. 891 (part), Vol. 2: 489

LOCAL NAME. *Inakushia* (Kacha Naga).

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1617, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to seasonal vertical movements. In the hills south of the Brahmaputra, Nagaland and Manipur. Breeds between c. 900 and 1800 m in the Khasi Hills; probably higher in Nagaland (up to 2400 m on Mt Victoria). Affects open evergreen forest.

Extralimital. The Chin Hills of Burma.

GENERAL HABITS, FOOD and VOICE. As in 1616.

186

SYLVIINAE

MUSEUM DIAGNOSIS. Like the nominate race (1617) but grey and greenish of upperparts, and yellow of underparts, paler. Young, like adult but grey of upperparts washed with brown, green parts not so bright; underparts pale.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1617.

1617. Nepal Greyheaded Flycatcher-Warbler. *Seicercus xanthoschistos xanthoschistos* (Gray)

Phylloscopus xanthoschistos 'Hodgs.' = Gray, 1846, Cat. Mamms. Bds. Nepal: 65, 151 (Nepal)

Baker, FBI No. 891 (part), Vol. 2: 489

Plate 87, fig. 7

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. Above, crown and back grey; a long, white supercilium; rump and wings greenish yellow; inner web of outer rectrices white. Below, bright yellow. Sexes alike.

The white supercilium identifies this species. In flight rapidly opens and shuts tail scissors-wise, flashing the white rectrices which proclaim its identity.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to summer-winter vertical movements. From western Nepal east through Darjeeling, Sikkim and Bhutan, intergrading in Arunachal Pradesh with *flavogularis* (cf. Baker, 1913, *Rec. Indian Mus.* 8: 270). Breeds between c. 1000 and 2700 m, sparsely as low as 300 m; optimum zone 1200–2300 m. Winters from c. 2000 m down to the foothills. Affects rather open evergreen forest, coniferous or broad-leaved.

GENERAL HABITS. Similar to leaf warblers' and others of the genus *Seicercus*. Frequents mostly higher shrubs and the lower canopy of trees, usually hunting on the top side of branches and among leaves. In winter (October to March) commonly associates with the usual mixed hunting parties of small insectivorous birds. In summer keeps singly or in pairs.

FOOD. Insects, caterpillars and occasionally berries.

VOICE and CALLS. Call-note, a distinctive high-pitched, oft-repeated *pit-pit*. Alarm (?) a plaintive *tyee-tyee*. Has a 'pleasing and lively but monotonous song'. No description available, but noted as resembling that of *Seicercus burkii* (1614, SA). Song may be heard throughout the year with a main period from early March till end of June and a resumption in September and October (Proud).

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters. Postnuptial moult complete in September and early October.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	51–58	11–13	18–20	38–45 mm
♀♀	48–56			39–42 mm (BB, SA)

Weight 12 ♂♂ (May, Oct.) 6.8–5; 8 ♀♀ (May, Oct.) 6.2–7.6 g (GD). 15 ♂♂ (Oct.–Apr.) 6–7; 2 ♀♀ (Feb., Mar.) 6, 7 g (BB, SA).

188

SYLVIINAE

BREEDING. Season, April to August, chiefly May and June. Nest and eggs as in 1616. Average size of 50 eggs 15.7 × 11.9 mm (Baker). Building and incubation by both sexes though female has major share. Incubation period 10 or 11 days.

MUSEUM DIAGNOSIS. Differs from *flavogularis* (1618) in being darker above and in having a dark olive wash on flanks. Differs from *xanthoschistos* (1617) in having a green instead of grey back.

MEASUREMENTS

Wing 14 ♂♂ 51–55; 3 ♀♀ 50–51 mm (Stresemann, SDR)

Weight 6.5–7 g (SDR).

COLOURS OF BARE PARTS. As in 1617.

1620. Greycheeked Flycatcher-Warbler. *Seicercus poliogenys* (Blyth)

C. (ulicipeta) poliogenys Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 441 (Darjeeling)

Baker, FBI No. 893, Vol. 2: 491

Plate 87, fig. 9

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. A yellow wing-bar. Above, head and nape slaty with two black coronal bands and a conspicuous white eye-ring. Rest of upperparts olive-green; inner web of outer rectrices white. Below, chin and lower cheeks pale grey; rest of underparts bright yellow. Sexes alike.

General colour scheme rather similar to Greyheaded Flycatcher (*Culicicapa cydonensis*, 1449) but the darker slaty head and conspicuous white eye-ring, as in White-eye (*Zosterops*), are diagnostic.

STATUS, DISTRIBUTION and HABITAT. Resident in moderate numbers, subject to seasonal vertical movements; from central Nepal (Proud, JBNHS 53: 65) east through Darjeeling, Sikkim, Bhutan, Arunachal Pradesh and the hills south of the Brahmaputra, Nagaland?, Manipur and the Chittagong ranges of Bangladesh. Vertical distribution imperfectly known in the Himalayas: noted at 2400 and 3000 m in spring and from 1800 m down to the foothills in winter. South of the Brahmaputra it breeds from 1200 m to the tops of the hills. Affects open evergreen forest and dense bamboo jungle.

Extralimital. Extends to Yunnan and the northern Indochinese countries.

GENERAL HABITS. Phylloscopine; typical of the flycatcher-warblers. Recorded as moving through the leaves along the sunny surface of vines strung over undergrowth, occasionally clinging to the underside of a small twig like a titmouse (Fleming). Also noted as keeping to the upper branches of trees (Cripps).

FOOD. Insects.

VOICE and CALLS. Unrecorded.

BREEDING. Season, May and June. Nest, a ball of moss and grass, the latter scanty or sometimes wanting, lined with a felt-like pad of matted moss and moss roots; placed on the ground among moss, weeds, bracken, etc., or between moss-covered stones and boulders. Eggs, usually 4, unspotted white. Average size of 40 eggs 15.8 × 12.5 mm (Baker). Incubation by both sexes.

WARBLERS

189

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters. This species has three outer rectrices with white inner web. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	50-55	c. 9	c. 18	40-42 mm (Baker)

Bill from skull c. 12 mm

Weight 1 ♂ 7; 2 ♀ 6, 6 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible black, lower horny. Legs yellow, feet brownish yellow.

1621. Chestnut-headed Flycatcher-Warbler. *Scircus castaneiceps* (Hodgson)

Abornis castaneiceps Hodgson, 1845, in Blyth, Jour. Asiat. Soc. Bengal 14: 593 (Nepal)

Scircus castaneiceps negensis Kozel, 1951, Jour. Zool. Soc. India 3: 29

(Kohima, Naga Hills, Assam)

Baker, FBI No. 894, Vol. 2: 492

Plate 87, fig. 13

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Two yellow wing-bars. *Above*, crown chestnut with dark lateral bands becoming black on nape, and white spots on nape on either side and between the black bands. Nape and sides of head grey; a white eye-ring. Back and wings yellowish olive; rump bright yellow; outer rectrices with white inner web. *Below*, throat and upper breast bluish ash; rest of underparts bright yellow. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to seasonal vertical movements, locally distributed. The Himalayas from central Nepal east through Darjeeling, Sikkim, Bhutan and Arunachal Pradesh, and the hills south of the Brahmaputra, Nagaland, Manipur and around Chittagong. In the Himalayas, breeds from c. 1800 and 2400 m, wintering (November to March) from c. 2300 m down to the foothills; in the Khasi Hills breeds between 750 and 1800 m. Affects dense forest of oak etc.

Extralimital. Burma and Yunnan. The species extends east through the Indochinese countries, southern China to Fukien, and south through the Malay Peninsula to Sumatra and Borneo.

GENERAL HABITS. Outside the breeding season usually found in mixed itinerant hunting flocks of leaf warblers, flycatchers, nuthatches and small babblers, etc., usually keeping fairly high up in the substage or canopy foliage. Restless behaviour and habit of flicking wings nervously while hopping about identical with that of *Phylloscopus*.

FOOD. Insects.

VOICE and CALLS. A double call-note, *chi-chi* and a loud, wren-like *tsik* quite distinctive. Song undescribed.

BREEDING. Season, April to June. *Nest*, an oval ball of green moss compactly woven, with a dense lining of felted moss and tiny moss roots. Usually

WARBLERS

191

FIELD CHARACTERS. *Above*, forecrown brownish grey; a broad, white supercilium; sides of head mottled dark and pale grey. Rest of upperparts yellowish olive. *Below*, throat whitish, remainder bright yellow. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements; locally common. From central Nepal (Biswas, JBNHS 59: 423) east through Darjeeling, Sikkim, Bhutan and the hills south of the Brahmaputra, Nagaland, Manipur and Bangladesh south to the Chittagong ranges. Breeds at c. 500-900 m (Himalayas) and between 900 and 1800 m in Assam. Wanders into adjacent plains in winter. Affects mixed bamboo forest, secondary and scrub jungle especially where bamboo occurs, and in the vicinity of streams.

Extralimital. Adjacent hills of Burma.

GENERAL HABITS. Typically phylloscopine. Keeps to trees and high bushes; often makes short aerial sallies for insects. In the non-breeding season, usually in the roving mixed parties of 'tinies'.

FOOD. Insects.

VOICE and CALLS. Unrecorded. Song said to be 'short, sweet and clear'.

BREEDING. Season, April to June. *Nest*, a neat cup of fibres, rootlets or moss, resting on a base of a few small bamboo leaves, usually placed in hollows in bamboo stems within a couple of metres from the ground. Eggs, 3 to 5, white more or less tinted with pink, freckled with reddish brown spots, forming a ring or cap at the large end, or sometimes so densely covered with spots as to look uniformly pink, terracotta or rich red. Average size of 36 eggs 15.2 × 11.6 mm (Baker). Building and incubation by both sexes. Sometimes brood-parasitized by *Cuculus canorus*.

MUSEUM DIAGNOSIS. See Key to the Species. For details of plumage see Deignan, 1947, Proc. Biol. Soc. Washington 60: 20; for distinction from *drastius* see 1623.

Young, similar to adult but forecrown ash; green of upperparts a little darker; yellow of underparts duller. Postjuvénal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	50-60	12-13	18-21	39-49 mm
♀ ♀	46-48			36-40 mm (BB)

Weight 3 ♂ 6-7 g (BB).

COLOURS OF BARE PARTS. Iris brown. Bill horny brown, pinky plumbeous at base of lower mandible. Legs and feet brownish flesh.

1623. Arunachal Yellowbellied Flycatcher-Warbler. *Abroscopus superciliosus drastius* Deignan

Abroscopus superciliosus drastius Deignan, 1947, Proc. Biol. Soc. Washington 60: 20 (Margherita, Lakhimpur District, Assam Province, India)

Baker, FBI No. 896 (part), Vol. 2: 494.

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (4 in.).

FIELD CHARACTERS. As in 1622, q.v.

190

SYLVIINAE

placed on the ground, well concealed by overhanging moss and creepers, sometimes in hollows at the foot of trees and bushes, or on banks and steep hillsides. Eggs, 4 or 5, unspotted white. Average size of 50 eggs 14.6 × 11.6 mm (Baker). Building, incubation and care of young by both sexes. Frequently brood-parasitized by Emerald Cuckoo (*Chalcites maculatus*, 586).

MUSEUM DIAGNOSIS. See Field Characters. Young undescribed.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	48-53	10-11	16-17	40-43 mm
♀ ♀	47-50			35-38 mm (BB, SA, Stres.)

Weight 6 ♂ 4-6 (av. 5.3) g—SA, BB.

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible dark horny, paler on edge and tip; lower mandible yellowish brown. Legs, feet and claws pale greyish horny; soles white to yellowish white.

Genus *ABROSCOPUS* Baker

Abroscopus Baker, 1930, Fauna Brit. India, Bds. 7: 192. Type, by original designation,

Abornis superciliosus Blyth

Tickellia Blyth, 1861, Proc. Zool. Soc. London: 199.

Type, by monotypy, *Abornis? hodgsoni* Moore

Differs from *Scircus* in having ten rectrices instead of twelve.

Key to the Species

	Page
A Supercilium yellow.....	<i>A. schisticeps</i> 192
B No yellow on crown	
1 Crown grey.....	<i>A. superciliosus</i> 190
2 Crown rufous	
a Two black coronal bands.....	<i>A. albogularis</i> 194
b No coronal band.....	<i>A. hodgsoni</i> 195

ABROSCOPUS SUPERCILIARIS (Blyth)

Key to the Subspecies

Crown washed with olive-green, not clearly demarcated from nape.....	<i>A. s. flaviventris</i>
Crown brownish grey, more clearly demarcated from olive-green of nape.....	<i>A. s. drastius</i>

1622. Sikkim Yellowbellied Flycatcher-Warbler. *Abroscopus superciliosus flaviventris* (Jerdon)

Abornis flaviventris Jerdon, 1863, Birds India 2(1): 203 (Darjeeling, northern West

Bengal). New name for *Abornis albogularis* Blyth, 1861, preoccupied

Abornis albogularis Blyth, 1861, Proc. Zool. Soc. London: 200 (Sikkim). Not *Abornis*

albogularis Moore, 1854

Baker, FBI Nos. 896 (part) and 897, Vol. 2: 494, 495

Plate 87, fig. 6

LOCAL NAME. *Dastisha mini* (Cachari).

SIZE. Sparrow —; length c. 9 cm (4 in.).

192

SYLVIINAE

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements. Arunachal Pradesh, probably intergrading with *flaviventris* in eastern Bhutan. Breeds from the base of the hills probably up to c. 1500 m. Wanders into the adjacent plains in winter.

Extralimital. Northern Burma. The species extends east to Vietnam and south to Java and Borneo.

GENERAL HABITS, FOOD and VOICE. As in 1622.

BREEDING. As in 1622.

MUSEUM DIAGNOSIS. Similar to *flaviventris* but with the whole crown dark brownish grey, scarcely washed with olive-green, and much more clearly demarcated from the colour of the remaining upperparts (in *flaviventris* the top of crown is more or less washed with olive-green and not clearly demarcated from the olive-green of the hindcrown and nape). Olive-green of mantle more suffused with yellow; yellow of rump and lower underparts more golden.

MEASUREMENTS

Wing 14 ♂ 42-50 mm (Deignan)
COLOURS OF BARE PARTS. Iris brown. Bill black, lower mandible dark grey. Legs and feet whitish flesh to yellowish flesh.

ABROSCOPUS SCHISTICEPS (Gray)

Key to the Subspecies

Yellow restricted to throat.....	<i>A. s. flaviventris</i>
Yellow extending to breast.....	<i>A. s. schisticeps</i>

1624. Nepal Blackfaced Flycatcher-Warbler. *Abroscopus schisticeps schisticeps* (Gray)

Guliciceta schisticeps Gray, 1846, Cat. Mamm. Bds. Nepal: 67: 153 (Nepal)

Baker, FBI No. 899 (part), Vol. 2: 496

Plate 87, fig. 4

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (4 in.).

FIELD CHARACTERS. *Above*, crown, nape and ear-coverts slaty grey. Very conspicuous yellow supercilial stripes nearly meeting on forehead. Loins and round the eye black. Rest of upperparts olive. Inner webs of outer rectrices white. *Below*, yellow, tinged with olive on breast and paling to white on belly. Sexes alike.

The striking head pattern is diagnostic. On colour alone, could easily be confused with Yellowbellied Fantail Flycatcher (1450), but open, partially cocked tail and behaviour of latter distinctive.

STATUS, DISTRIBUTION and HABITAT. Resident, uncommon and local. Central Nepal, Darjeeling and Sikkim between 1500 and 2500 m. A withdrawal from the higher zone probably occurs in the cold weather. Affects forest of oak etc., with patches of scrub or bamboo.

GENERAL HABITS. Usually seen in mixed hunting parties, very commonly associated with *Parus modestus* and *Rhipidura hypoxantha*, along with miscellaneous small babblers and warblers. Keeps mostly to bushes but

WARBLERS

193

sometimes parties ascend lofty trees, especially those draped with climbers, soon dropping down into the undergrowth one after the other like a shower of falling leaves.

FOOD. Insects.

VOICE and CALLS. Little recorded. Said to make a continual chattering while feeding.

BREEDING. Season, about May and June. Nest (one described), a loose lining of bamboo leaves placed in the bottom of a cleft in a tree c. 150 cm from the ground. Eggs, 5, dull pinkish white profusely mottled and streaked with red; average size c. 14 × 10.5 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters; for details of plumage Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
11 ♂♂	45-49	10-11	42-44 mm
2 ♀♀	46, 47	11, 11	41, 43 mm (BB)

Tarsus 15-17 mm

COLOURS OF BARE PARTS. Iris red-brown. Bill pale brownish horny, 'a somewhat unusual colour for the bill in comparison with its near allies' (Stevens). Legs and feet dusky olivaceous.

1625. Assam Blackfaced Flycatcher-Warbler. *Abrosopus schisticeps flavimentalis* (Baker)

Abrosopus schisticeps flavimentalis Baker, 1924, Bull. Brit. Orn. Cl. 44: 63 (Mt Victoria)

Baker, FBI No. 901, Vol. 2: 497

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (4 in.).

FIELD CHARACTERS. As in 1624, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. Bhutan, Arunachal Pradesh (?), the Cachar hills of Meghalaya, Nagaland (?), and Manipur, from c. 1500 to 2400 m in the Himalayas, down to c. 600 m in Cachar. Affects glades and banks of streams in deep forest, especially where interspersed with tracts of bamboo, scrub-covered ravines and thin forest or open country near cultivation.

Extralimital. Southeastern Tibet and the adjacent hills of Burma to Mt Victoria (up to 2600 m). The species extends to Yunnan and northern Vietnam.

GENERAL HABITS, FOOD and VOICE. As in 1624.

BREEDING. Season, April, May and probably June; cf. also 1624. Nest (one described), a pad of moss and feathers lined with soft down, placed in a hollow in a burnt-out bamboo a few feet from the ground in bamboo jungle. Eggs, 4, densely freckled with reddish brown, forming a cap at the large end, measuring 15.1 × 11.1 to 15.4 × 11.3 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *schisticeps* (1624) in having the yellow paler and restricted to chin and throat; breast and belly white.

WARBLERS

195

1627. Broadbilled Flycatcher-Warbler. *Abrosopus hodgsoni hodgsoni* (Moore)

Abrosopus hodgsoni Moore, 1854, in Horsfield & Moore, Cat. Bds. Mus. E.I. Co. 1: 412 (Nepal)

Tickellia hodgsoni rupchandii Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 17 (Kohima, Naga Hills)

Baker, FBI No. 904, Vol. 2: 500

Plate 87, fig. 10

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Above, forehead and crown chestnut; lores and sides of head grey with a short ashy supercilium. Rest of upperparts olive-green tinged with yellow on rump. Inner web of two outermost rectrices white. Below, chin, throat and breast dark grey, becoming whitish on throat. Rest of underparts bright yellow. Sexes alike.



× c. 1

STATUS, DISTRIBUTION and HABITAT. Resident, possibly subject to some vertical movements, uncommon. Nepal (not recorded since Hodgson), Darjeeling, Sikkim, Bhutan, Arunachal Pradesh?, Nagaland (Koelz), Manipur? and south to Mt Victoria. Breeds between c. 1100 and 2700 m (2200-2600 m on Mt Victoria). Affects dense scrub and bamboo especially along forest edges.

Extralimital. Adjacent hills of Burma. The species extends to Yunnan and northern Vietnam.

GENERAL HABITS. Little recorded. Keeps to dense undergrowth, frequently in the mixed hunting parties of small birds.

FOOD. Insects.

VOICE and CALLS. 'Note [song?] a single long-drawn, very shrill whistle followed after an interval of 10 seconds or so by two notes, the second lower' (BBO). Also described as a very thin and sharp twitter or warble (Heinrich).

BREEDING. Season, about May and June. Nest (one described), egg-shaped with an entrance near the top, made of dry leaves, chiefly bamboo, lined with rootlets and a finer layer of soft, dry bamboo leaves. The three eggs were 'pale claret, spotted, streaked and speckled, chiefly at the larger end, with darker claret'. Average size of 3 eggs 16 × 11.9 mm (BBO).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	45-49	12-14	20-21	38-45 mm (Koelz, SA, BB, MD)

Weight 1 ♀ 5 g (SA). 1 ♂? 4 g (BB).

COLOURS OF BARE PARTS. Iris brown. Bill horny brown, paler and more yellow at base. Legs and feet pale yellow or fleshy horn colour.

Genus *REGULUS* Cuvier

Regulus Cuvier, 1800, *Leçons d'Anat. Comp.* 1, tab. 2.

Type, by tautonymy, *Metacilla Regulus* Linnaeus

Very small birds with dense, soft plumage. Bill small, straight, less than half the length of head. Rictal bristles present. Wing short and rounded. Tail shorter than wing. Tarsus relatively long.

194

SYLVIINAE

MEASUREMENTS. As in 1624.

Weight 1 ♂ 6 g (SA). 1 ♀, 1 ♂? 4, 4 g (BB).

COLOURS OF BARE PARTS. Unrecorded, probably as in 1624.

1626. Whitethroated Flycatcher-Warbler. *Abrosopus albogularis* (Horsfield & Moore)

Abrosopus albogularis 'Hodgson' = Horsfield & Moore, 1854, Cat. Bds. Mus. E.I. Co. 1: 340 (Nepal)

Baker, FBI No. 902, Vol. 2: 498

Plate 87, fig. 3

LOCAL NAME. *Destika mini* (Cachar).

SIZE. Sparrow —; length c. 8 cm (3½ in.).

FIELD CHARACTERS. Above, head rufous with two black superciliary bands to nape. Back and wings olive-green; rump yellowish white. No white in tail. Below, throat and belly white; a band across breast, and under tail-coverts yellow. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. Nepal (ride Biswas, JBNHS 59: 423), Darjeeling, Sikkim, Bhutan, Arunachal Pradesh, the hills of Meghalaya and Mizoram south to the Chittagong Hill Tracts, Nagaland (?) and Manipur; from c. 300 to 1200 m, in Cachar up to 1800 m, optimum zone 600-1200 m. Affects bamboo jungle, secondary scrub, and moist-deciduous forest.

Extralimital. The species extends to Szechuan, southern China, Formosa, Hainan and the Indochinese countries.

GENERAL HABITS. Usually keeps to lower growth in open country but may sometimes be seen high up in trees. 'Moves about in small parties, hovering at the tip of a branch or darting after flies.' At times spreads its tail like *Rhipidura*.

FOOD. Insects.

VOICE and CALLS. Little recorded. Keeps up a shrill twitter while moving about.

BREEDING. Season, early April to June. Nest, a layer of bamboo fibre, roots, bamboo leaves or scraps of grass on which is placed a pad of felted moss with a cup in the centre; built in a hollow in a bamboo 30 cm or so from the ground, almost always in the vicinity of streams. Eggs, 3 to 5, similar to those of *A. superciliosus* (1622, q.v.). Average size of 33 eggs 14.4 × 11.5 mm (Baker). Building and incubation by both sexes; period not recorded.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	43-47	7-8	c. 16	35-40 mm (Baker)

Bill from skull c. 11 mm

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible brown, lower light greyish flesh. Legs and feet yellowish brown.

196

SYLVIINAE

REGULUS REGULUS (Linnaeus)

Key to the Subspecies

	Page
A Palest; coronal bands grey..... <i>R. r. tristis</i>	196
B Coronal bands black	
1 Paler; median stripe less reddish..... <i>R. r. himalayensis</i>	197
2 Darker; median stripe more reddish orange..... <i>R. r. sikkimensis</i>	198
3 Darkest above; abdomen paler, without buff or fulvous tinge.... <i>R. r. yunnanensis</i>	199

1628. Turkestan Goldcrest. *Regulus regulus tristis* Pleske

Regulus tristis Pleske, 1882, Bull. Acad. Sci. St. Petersb. 35: 145

(Mey)

Baker, FBI No. 946, Vol. 2: 541

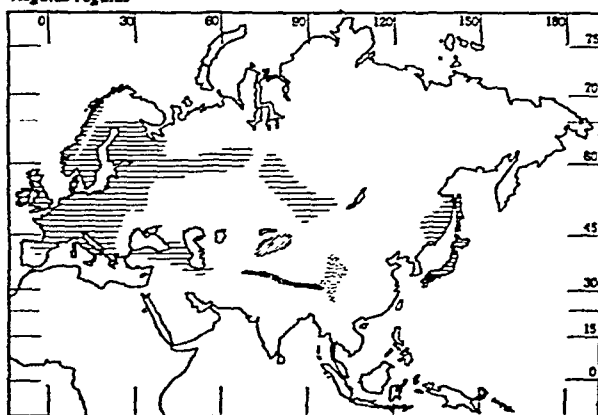
LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 8 cm (3½ in.).

FIELD CHARACTERS. As in 1629, q.v.

STATUS, DISTRIBUTION and HABITAT. A straggler to Ladakh in winter, so far recorded in September and April (Meinertzhagen, *Ibis* 1927: 415). Affects coniferous forest; in winter also orchards, poplar and willow groves.

Regulus regulus



Breeding ranges

- tristis* (1628).
- himalayensis* (1629).
- sikkimensis* (1630).
- yunnanensis* (1631).
- Other races, extralimital

Extralimital. Breeds in Turkestan, spreads over a wider area in winter. The species ranges from the Azores and Western Europe to Japan.
GENERAL HABITS, FOOD AND VOICE. As in 1629.
BREEDING. Extralimital.
MUSEUM DIAGNOSIS. Male like *himalayensis* ♂ but lateral coronal bands dark iron-grey instead of black; median stripe orange-and-yellow. Upperparts greyer. Underparts suffused more with fulvous than buffish yellow.
 Female like *himalayensis* ♀ but lateral coronal bands ashy, median stripe duller lemon-yellow. Rest of plumage as in ♂.
MEASUREMENTS
 Wing 16 ♂♂ 54-58 mm; 6 ♀♀ 53-57 mm (Dementiev)
COLOURS OF BARE PARTS. As in 1629.

1629. Himalayan Goldcrest. *Regulus regulus himalayensis* Bonaparte
Regulus himalayensis Bonaparte, 1856, Compt. Rend. Acad. Sci. Paris 42, No. 17: 767 ('les monts Himalaya,' restricted to Kotgarh, Simla Hill States by Deignan, 1956, Bull. Brit. Orn. Cl. 76: 106)
Regulus Himalayensis Jerdon, 1863, Bds. India 2: 206 (NW. Himalayas = Kotgarh vide Titchhurst, 1926, Jour. Bombay nat. Hist. Soc. 31: 499)
Regulus regulus salimalii Deignan, 1954, Bull. Brit. Orn. Cl. 74: 104 (Kotgarh).
 New name for *Regulus Himalayensis* 'Blyth' = Jerdon, 1863
 Baker, FBI No. 944 (part), Vol. 2: 539
 Plate 84, fig. 10

LOCAL NAMES. None recorded.
SIZE. Sparrow — ; length c. 8 cm (3½ in.).
FIELD CHARACTERS. A diminutive *Phylloscopus*-like bird with two yellowish white wing-bars.



Male. Above, greyish olive-green tinged with yellowish on rump; a dark patch on wing. Crown with an orange median stripe bordered by two broad black bands; a large whitish area around eyes. Below, pale greyish fulvous, tinged with olive on flanks.
Female. Similar to ♂ but with coronal stripe yellow *contra* orange.
 May be confused with *Phylloscopus proregulus* but always distinguishable by call-notes (q.v.).
STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, uncommon except in N.W.F.P. The Himalayas from the Safed Koh (possibly farther south), Astor, Gilgit and Kashmir east to central Nepal (intergrading here with *sikkimensis*). Breeds from c. 2200 m up to the limit of fir forest, c. 3600 m, locally 3900 m (Nepal). In winter between 1500 and at least 3000 m. Has straggled in winter to Quetta. Affects silver fir and deodar forest; in winter occasionally orchards or deciduous groves.
Extralimital. Adjacent ranges of Afghanistan.
GENERAL HABITS. Outside the breeding season usually seen in mixed parties of tits and leaf warblers. Keeps to the canopy of conifers, from the lowest branches to a fair height, hunting actively among the green foliage often hovering in front of sprigs.

Weight 1 ♂ (June) 5.5; 1 ♀ (Sept.) 6.4; 1 ♂ (June) 5 g (GD). 1 ♂ (Sept.) 6 g (SDR).
COLOURS OF BARE PARTS. Iris brown. Bill blackish brown. Legs, feet and claws pale horny brown.

1631. Yunnan Goldcrest. *Regulus regulus yunnanensis* Rippon
Regulus yunnanensis Rippon, 1906, Bull. Brit. Orn. Cl. 19: 19
 (Yangtze River, W. Yunnan)
 Baker, FBI No. 945, Vol. 2: 541

LOCAL NAMES. None recorded.
SIZE. Sparrow — ; length c. 8 cm (3½ in.).
FIELD CHARACTERS. As in 1629, q.v.
STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements. Northern Arunachal Pradesh from c. 2200 to at least 3500 m (in Tibet up to 4400 m). Affects dry, temperate conifer forest; in winter also evergreen oak.
Extralimital. Adjacent southeastern Tibet, and Yunnan.
GENERAL HABITS, FOOD AND VOICE. As in 1629.
MUSEUM DIAGNOSIS. Differs from *sikkimensis* (1630) in having the upperparts darker and the underparts paler.
MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1630.

Genus LEPTOPOECILE Severtzov
Leptopoeile Severtzov, 1872, Vertik. Turkest. Zhivotn.: 135, pl. 8.
 Type, by monotypy, *Leptopoeile Sophiae* Severtzov
Lophobasilus Pleske, 1890, Wiss. Result. Przev. Reise, Zool. Th. 2, Vög.: 95. Type, by monotypy, *Leptopoeile elegans* Przevalski
 Plumage very soft and copious. Bill very slender, straight and pointed. Rictal bristles present. Wing rounded. Tail graduated or rounded.

Key to the Species		Page
No crest; outer rectrices with white outer web.....	<i>L. sophiae</i>	201
A well-developed crest; no white in tail.....	<i>L. elegans</i>	199

1632. Crested Tit-Warbler. *Leptopoeile elegans* Przevalski
Leptopoeile elegans Przevalski, 1897, Zapiski Imp. Akad. Nauk, St. Petersburg. 55: 77 (upper Yellow River, southeast Tsinghai)
Lophobasilus elegans *musmeri* Schäfer, 1938, Proc. Acad. Sci. Philadelphia 69: 385 (Malashi country south of Litang, Sikkang)
 Not in Baker, FBI
 Plate 84, fig. 12
LOCAL NAMES. None recorded.
SIZE. Sparrow — ; length c. 10 cm (4 in.).
FIELD CHARACTERS. Male (adult). Above, forehead white becoming pale greyish lilac on crown and crest; lores black; sides of head and hind-collar

FOOD. Insects and their larvae.
VOICE AND CALLS. A distinctive high-pitched mouse-like squeaking *tsi-tsi-tsi-tsi*, oft-repeated, which usually gives the first indication of its presence among a mixed foraging party high up in the tree-tops. Song not described from the Himalayas.
BREEDING. Season, May to July. *Nest*, a pouch of green moss, lichen, spiders' web and cocoons, and rootlets, hanging at the extremity of a branch between 2 and 12 metres above the ground, well concealed and very difficult to find. *Eggs*, 4 to 7, white with large reddish spots, or pale creamy buff speckled with pink-buff around the large end. Average size of 13 eggs 14.3 × 10.7 mm (Baker).
MUSEUM DIAGNOSIS. See Field Characters. Young, like adult but crown lacking dark bands or flame-coloured patch. Upperparts browner; underparts greyer white. Postjuvinal moult of body, lesser and median coverts.

MEASUREMENTS		Wing	Bill	Tarsus	Tail
			(from feathers)		
♂♀		53-58	9-10	c. 17	c. 36 mm (Baker)

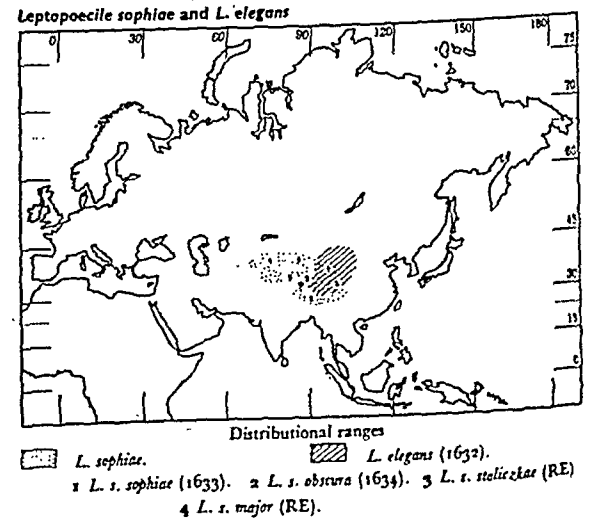
COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet dark greenish brown; soles paler, more yellowish.

1630. Sikkim Goldcrest. *Regulus regulus sikkimensis* R. & A. Meinertzhagen
Regulus regulus sikkimensis R. & A. Meinertzhagen, 1926, Bull. Brit. Orn. Cl. 46: 97 (Sikkim)
 Baker, FBI No. 944 (part), Vol. 2: 539

LOCAL NAMES. None recorded.
SIZE. Sparrow — ; length c. 8 cm (3½ in.).
FIELD CHARACTERS. As in 1629, q.v.
STATUS, DISTRIBUTION AND HABITAT. Uncommon resident, subject to vertical movements. Eastern Nepal (Stevens, JBNHS 29: 1014; Diesellhorst 1969: 287), Darjeeling, Sikkim, Bhutan and Arunachal Pradesh in the Daffa and Abor hills; from c. 2600 to 3800 m in winter, up to 4000 m (upper limit of fir forest). Affects mainly fir forest in the breeding season; at other times may be seen also in pine, oak or birch forest, even in buckthorn thickets.
GENERAL HABITS, FOOD AND VOICE. As in 1629.
BREEDING. As in 1629.
MUSEUM DIAGNOSIS. Differs from *himalayensis* (1629) in having the coronal stripe more reddish orange in male. Upperparts darker and duller. Underparts suffused more with fulvous brown than buffish yellow.

MEASUREMENTS		Wing	Bill	Tarsus	Tail
			(from skull)		
4 ♂♂	55-58	1 ♂? 10	19	36 mm	(Wing by Ludlow, rest SA)
4 ♀♀	51-53				

rich chestnut. Back dark dull blue becoming bright cerulean blue on rump wings and tail dull greenish blue. Below, throat pale chestnut; breast vinaceous; belly purplish blue; under tail-coverts chestnut.
Female (adult). Above, crown darker than in male, crest shorter. Back dark greenish olive; rump verditer-blue mixed with greenish olive. Cheeks sides of neck and underparts dirty white tinged with vinaceous, lower flanks washed with purple.
 Pointed pale-coloured crest and chestnut collar distinguish this species from *L. sophiae*. Female distinguished by different head pattern and lack of white in tail.
STATUS, DISTRIBUTION AND HABITAT. Resident in the Tsangpo bend area of SE. Tibet, therefore presumably also occurs in adjacent northern Arunachal Pradesh; between c. 3400 and 4300 m in summer, 2800 and 3900 m in winter. Affects fir forest, and juniper scrub above timber-line.



Extralimital. The mountains of western China and eastern Tibet.
GENERAL HABITS. Outside the breeding season, often found in mixed company with tits, goldcrests and *L. sophiae*. May be found high up in tree as well as in shrubs. Behaviour goldcrest-like (Schäfer).
FOOD. Insects.
VOICE AND CALLS. A soft peeping call-note and sometimes a shrill note reminding one of *Troglodytes* (Przevalski).
BREEDING. Unknown.

WARBLERS

201

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
1 ♂	53	11	19	45 mm (MD)
♂ ♀	52-56	10-11	20-21	c. 44 mm (Hartert)

COLOURS OF BARE PARTS. Iris red. Bill black. Legs and feet brown; claws darker.

LEPTOPOECILE SOPHIAE Severtzov

Key to the Subspecies

Belly pale fulvous.....*L. s. sophiae*
 Whole underparts lilac-purple.....*L. s. obscura*

1633. Turkestan Tit-Warbler. *Leptopoeile sophiae sophiae* Severtzov

Leptopoeile Sophiae Severtzov, 1872, Vertik. Turkest. Zhivotn.: 135, pl. 8
 (pinewoods at Issyk-Kul)

Baker, FBI No. 947, Vol. 2: 542

Plate 84, fig. 8

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Male (adult). Above, crown chestnut washed with lilac; a broad, whitish supercilium. Back grey; wings pale brownish grey; rump violet-blue. Tail blackish brown tinged with verditer; outer web of external rectrices white. Below, sides of head, throat and flanks violet-blue, the base of feathers rufous; belly pale fulvous. In summer the whole belly is vinous purple without the fulvous area (Biddulph).

Female (adult). Like male but paler and without blue except on rump. Sides of head and underparts pale fulvous. Flanks slightly washed with blue. Broad supercilium, lack of crest and absence of white in outer rectrices distinguish this species from 1632.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. Baltistan, Gilgit and Ladakh. Breeds between 3000 and 3900 m, descending to c. 1800 m in winter, seldom lower. Affects dwarf juniper scrub above timber-line and *Hippophae* thickets along rivers.

Extralimital. Extends to the Pamirs and Tien Shan systems. The species ranges to Kansu and Szechuan.

GENERAL HABITS. Outside the breeding season met in small restless parties, often in company with other small insectivorous species. Keeps to thick undergrowth, ceaselessly hopping or flitting about and difficult to observe. From time to time individuals climb to tops of bushes, call loudly with tails cocked like a Magpie-Robin, and fly down to the base of the next bush (R. L. Fleming, Jr.).

FOOD. Insects.



x c. 1

THRUSHES AND CHATS

203

Subfamily TURDINAE: Thrushes and Chats

For description and morphological details see Baker, E. C. S., 1924, FBI 2: 7 (Fam. Turdidae); Van Tyne, J. & Berger, A. J., 1959: 523 (Fam. Turdidae); Ripley, S. D., 1964, article 'Thrush' in Thomson, A. L. (ed.), *A New Dictionary of Birds*, London and New York.

Cf. Ripley, S. D., 1952, *Postilla*, Yale Peabody Museum, No. 13: 1-48.

Magpie-Robin (1661)

Genus BRACHYPTERYX Horsfield

Brachypteryx Horsfield, 1822, Trans. Linn. Soc. London 13: 157.Type, by original designation, *Brachypteryx montana* Horsfield*Heteroxenicus* Sharpe, 1902, Bull. Brit. Orn. Cl. 12: 55, new name for *Drymochares* Gould, 1868, Proc. Zool. Soc. London: 218.Type, by monotypy, *Brachypteryx (Drymochares) stellatus* Gould, nec *Drymochares* Mulsant, 1817

Wing short and rounded. Tarsus smooth, long and strong. Tail short, almost square. Bill slender, about half the length of the head. Rictal bristles well developed.

202

SYLVIINAE

VOICE AND CALLS. Call-note, a low, subdued *teet* uttered constantly (Ludlow); song ?, a sweet, loud, chirping call (Scully).

BREEDING. As in 1634.

MUSEUM DIAGNOSIS. See Field Characters.

Young. Above, grey with a vinaceous tinge on lower back; crown tinged ferruginous. Below, underparts dirty white.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	49-53	1 o? 11	20	53 mm
♀ ♀	48-51			

(Wing by Dementiev, rest MD)

COLOURS OF BARE PARTS. Iris bright red. Bill black. Legs and feet almost black (W. L. Abbott).

1634. Tibetan Tit-Warbler. *Leptopoeile sophiae obscura* Przevalski

Leptopoeile obscura Przevalski, 1887, Zapiski Imp. Akad. Nauk, St. Petersburg. 55: 80 [mountain forests of northeastern Tibet

(= upper course of the Di Chu)]

Baker, FBI No. 948, Vol. 2: 543

Plate 84, fig. 9

LOCAL NAME. *Chiu-thep-to* (Gyantse).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1633, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common in Tibet. Found in Tibetan facies north of the main range from the Tsangpo bend west at least to central Nepal, between 2800 and 4000 m at all seasons. One actual record within our territory: Kali Gandak Valley, west-central Nepal, 3600 m in December (Rand & Fleming, *Fieldiana* 41: 173, 1957). May be expected in Arunachal Pradesh on the northern slopes (cf. Ludlow, *Ibis* 1944: 205). Affects juniper, *Lonicera*, *Berberis*, *Caragana* and rhododendron scrub above timber-line, and thickets of *Hippophae* and willows along stream-beds.

Extralimital. The mountains of western China and eastern Tibet north to Kansu.

GENERAL HABITS, FOOD AND VOICE. As in 1633.

BREEDING. Season, April to July. Probably double-brooded. Nest, domed, oval or ball-shaped, made of moss, vegetable down and animal fur, feathers and shreds of grass, strengthened with cobweb, and decorated with bits of lichen and cocoons; lined, but apparently not always, with soft feathers. Placed low down in a bush usually under one metre. Eggs, 4 to 6, white spotted with reddish brown. Average size of 50 eggs 15.1 × 11.6 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *sophiae* in being darker throughout; purple pigment covers the whole of the underparts; rump more bluish, less lavender.

MEASUREMENTS

Wing ♂ ♂ 51-53; ♀ ♀ 49-51 mm (Kinnear)

COLOURS OF BARE PARTS. As in 1633.

204

TURDINAE

Key to the Species

		Page
A	Upperparts chestnut..... <i>B. stellata</i> ♂ and ♀	204
B	Upperparts deep blue..... <i>B. hyperythra</i> ♂	205
C	Upperparts slaty blue	
1	No white supercilium..... <i>B. major</i> ♂ and ♀	206
2	A white supercilium	
a	Chin and throat white..... <i>B. leucophrys</i> ♂	207
b	Whole underparts dark slaty blue..... <i>B. montana</i> ♂	209
D	Upperparts brown	
3	Chin and throat chestnut..... <i>B. hyperythra</i> ♀	205
4	Chin and throat whitish..... <i>B. leucophrys</i> ♀	207
5	Chin and throat brown..... <i>B. montana</i> ♀	209

1635. Gould's Shortwing. *Brachypteryx stellata stellata* Gould*Brachypteryx (Drymochares) stellatus* Gould, 1868, Proc. Zool. Soc. London: 218(Nepal = Sikkim)¹

Baker, FBI No. 486, Vol. 2: 16

Plate 88, fig. 1

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. A stub-tailed, long-legged, slaty grey robin, with bright chestnut upperparts.

Above, chestnut with black lores and a narrow grey supercilium. Lower rump slaty grey flecked with whitish. Below, slaty grey: finely vermiculated on throat and breast with grey and black and flecked with triangular white spots on belly. Flanks and vent tinged with rufous. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, very locally distributed and subject to vertical movements. Kumaon (JBNHS 53: 468), eastern Nepal (Stevens, JBNHS 30: 356, Fleming & Traylor, *Fieldiana* 35: 544), Sikkim, northeastern Bhutan (Ludlow, *Ibis* 1937: 265) and Arunachal Pradesh in the upper Subansiri region where common (Ludlow, *Ibis* 1944: 181); from c. 3300 to 4200 m in summer, and from c. 2000 to at least 3400 m in winter, once as low as 540 m in Sikkim (Schäfer). Affects dense rhododendron and bamboo growth in fir forest, dwarf rhododendron on hillsides; also rocks and boulders in the alpine zone away from all shrub growth 'where undoubtedly breeding' (Ludlow). In winter has been observed in a dark, damp streambed full of ferns and moss.

Extralimital. One record from Burma and one from northern Vietnam.

GENERAL HABITS. Not such a ground-skulker as other shortwings, and often absurdly tame. Will sometimes ascend to the tops of the bushes and stumps to gaze at an intruder in a most confiding manner. Meinertzhagen observed them running on the ground (not hopping) in and out of roots and fallen branches just like a mouse.

FOOD. Larvae, grubs and small coleoptera (Meinertzhagen); also seeds and grit (Stanford).

¹ The specimen is stated as coming from Sikkim by Sharpe, 1883: 31. Vide Bierwies, 1961, JBNHS 58: 653.

THRUSHES AND CHATS

205

VOICE and CALLS. Alarm-note tik-tik. Song unknown.

BREEDING. Unknown. Season, end of May to July (judging from juveniles and state of gonads).

MUSEUM DIAGNOSIS. See Field Characters.

Young, dark blackish brown on head and neck with paler brown shaft-streaks, which on mantle cover nearly the whole feather. Rump as in adult but without freckling. *Below*, throat and breast similar to head; abdomen greyish black with broad whitish, arrow-shaped markings which on flanks and abdomen are suffused with buff. As the bird becomes older the colour of the upperparts fades paler to reddish brown and the white arrow-marks and speckling on the lower parts become more suffused with buff while the dark edges to the breast-feathers fade to a buffy brown. Postjuvinal moult in September.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	73-76	10-15	29	41 mm
♀♀	70-72			

(Wing by Kinnear and Stresemann, rest MD)

COLOURS OF BARE PARTS. Iris dark brown. Bill black; inside of mouth black. Legs and feet fleshy horn.

1636. *Rustybilled Shortwing*. *Brachypteryx hyperythra* Jerdon & Blyth*Brachypteryx hyperythra* Jerdon & Blyth, 1861, Proc. Zool. Soc. London: 201 (Darjheeling)

Baker, FBI No. 487, Vol. 2: 17

Plate 88, fig. 2

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. Male (adult). *Above*, lores and a frontal line black. A short and rather concealed white supercilium. Rest of upperparts deep blue. *Below*, entirely ferruginous.Female. *Above*, olive-brown. *Below*, pale ferruginous; centre of belly whitish.♂ very similar to Blue Chat, *Eritacus brunneus* (1650) but white supercilium less conspicuous. Could be confused also with ♂ Redbreasted Blue Flycatcher, *Muscicapa hyperythra* (1417) but its noticeably long tarsus and more terrestrial habit usually diagnostic.

STATUS, DISTRIBUTION and HABITAT. An endemic species, but rare and little known. Recorded from Sikkim, Arunachal Pradesh (Dafila Hills and Margherita) and Nagaland (Asalu, Godwin-Austen *vide* Hume). Winter records only from: base of Dafila Hills and adjacent plains in December and January, in forest undergrowth, scrub and reeds; Mangpu (Sikkim) at c. 1100 m; a sight record at Tonglo (Sikkim) 2900 m in January in dense *Arundinaria* bamboo (Stevens).

GENERAL HABITS. Frequents dense undergrowth and thickets. Quite fearless.

FOOD. Unrecorded.

VOICE and CALLS. Unrecorded.

BREEDING. Unknown.

THRUSHES AND CHATS

207

FIELD CHARACTERS. As in 1637, slaty blue above but with a pronounced bluish white band above the velvety black frontal line. Rufous brown of underparts replaced by slaty blue; centre of belly, vent and under tail-coverts greyish white. Sexes alike.

In interior of dark sholas may casually be confused with Whitebellied Blue Flycatcher, *Muscicapa pallipes* (1435), q.v.

STATUS, DISTRIBUTION and HABITAT. Fairly common resident. Western Tamil Nadu and southern Kerala from the Palni to the Ashambu hills; from c. 900 m to the highest summits. Haunts sholas and moist, densely wooded ravines in evergreen biotope.

GENERAL HABITS. Shy and retiring. Affects deep shade though not necessarily dense jungle. Mainly terrestrial; keeps singly or in pairs in undergrowth, rarely higher than about three metres above the ground. Most in evidence at dusk when it may be seen sitting on a bank by the roadside or hopping on to jungle paths, tail slightly cocked. On alarm, flies up into trees, soon descending again to resume feeding.

FOOD. Chiefly insects.

VOICE and CALLS. Has a loud chattering, and at times a faint high whistle. Song usually heard at dusk, described as of a few notes, beautiful, sustained, thrush-like in quality but less loud, higher pitched and with a narrower range of variations.

BREEDING. Season, March to June, chiefly in May after the rains have broken. Nest, a large, loose mass of green moss with a shallow cup lined with rootlets; placed in holes in roadside banks in sholas or hollows in trees, usually within a metre or so from the ground. Eggs, almost invariably 2, pale olive-brown, more or less completely covered with minute reddish brown freckling, in some eggs forming a ring or cap at the broad end. Average size of 14 eggs 23.9 × 16.8 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies. Plumage of young spotted.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	78-83	15	29	63-65 mm
♀♀	73-78			

(Baker)

COLOURS OF BARE PARTS. Adult. Iris deep buff to red-buff. Bill black. Legs and feet dark horny brown to plumbeous black. Immature. Iris bright khaki brown. Bill brownish black; mouth pale pinkish grey. Legs, feet and claws horny brown.

1639. *Lesser Shortwing*. *Brachypteryx leucophrys nipalensis* Moore*Brachypteryx nipalensis* 'Hodgson' = Moore 1854, in Horsfield & Moore, Cat. Bds. Mus. E.I. Co. 1: 397 (Nepal)*Brachypteryx leucophrys* gorkhale Koels, 1952, Jour. Zool. Soc. India 4: 41 (Karong, Manipur)

Baker, FBI No. 489, Vol. 2: 19

Plate 88, fig. 3

LOCAL NAME. *Ierni-fiji* (Kacha Naga).

SIZE. Sparrow —; length c. 13 cm (5 in.).

206

TURDINAE

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	63-64	c. 11	28-29	38-45 mm (Baker)

COLOURS OF BARE PARTS. Iris hazel brown. Bill black. Legs and feet fleshy light horny brown.

BRACHYPTERYX MAJOR (Jerdon)

Key to the Subspecies

Sides of abdomen olive-brown.....*B. m. major*
Sides of abdomen slaty blue.....*B. m. albiventris*

1637. *Rufousbellied Shortwing*. *Brachypteryx major major* (Jerdon)*Phainopepla major* Jerdon, 1844, Madras Jour. Lit. Sci. 13: 170 (Nilgieries)

Baker, FBI No. 481, Vol. 2: 10

Plate 88, fig. 4

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. *Above*, slaty blue; lores and frontal line black; a faint bluish line above this, extending back over eye. *Below*, throat and breast slaty blue; centre of belly white. Rest of lower plumage, including under tail-coverts, pale rufous; sides olive-brown. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Fairly common resident. The hills of southern Mysore (Bababudan, Brahmagiri and Nilgiri hills) from c. 1300 to 2100 m, mostly above 1600 m. Affects well-wooded sholas.

GENERAL HABITS, FOOD and VOICE. As in 1638.

BREEDING. Season, March to June, chiefly in May after the advent of rains. Also July and August (Betts). Nest and eggs as in 1638. Average size of 15 eggs 23.7 × 16.5 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
1 ♂	81	18	—	63 mm
2 ♀♀	76, 77	17, 18	—	59 mm
1 ♂?	84	20	29	70 mm

(HW, MD)

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet greyish brown.

1638. *Whitebellied Shortwing*. *Brachypteryx major albiventris* (Blanford)*Callene albiventris* Blandford, 1867, Proc. Zool. Soc. London: 833, pl. 39

(Palni Hills)

Baker, FBI No. 482, Vol. 2: 11

LOCAL NAMES. *Sandhyakkili* (Malayalam); *Kuruv jettai kūrūti* (Tamil).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

208

TURDINAE

FIELD CHARACTERS. Male (adult). *Above*, dark slaty blue. A white supercilium, often concealed. *Below*, throat and centre of belly white. A breast band and flanks smoky grey.Female. *Above*, rusty olive-brown. A white, usually concealed supercilium. *Below*, throat and belly white. A breast band and flanks rusty brown.

Many males appear to retain the brown plumage similar to that of the female.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements; scarce in the Himalayas, more common south of the Brahmaputra. Eastern Nepal, Darjeeling, Sikkim, Bhutan, Arunachal Pradesh, the hills of Meghalaya south to the Mizo Hills (Koels), Nagaland and Manipur. In the Himalayas from c. 1500 to 3900 m, in Assam from c. 900 m to the highest summits. Reaches the foothills in winter. Affects dense undergrowth in humid forest and secondary growth, especially in the vicinity of streams and in damp, shady glens.

Extralimital. Burma and western Yunnan. The species extends to Szechuan, Fukien, the Indochinese countries, the Malay Peninsula and the Sunda Islands to Timor.

GENERAL HABITS. Mainly terrestrial. Keeps singly or in pairs in low undergrowth, in the same habitat as *Tesia cyaniventer* (1471). Forages on the ground, running about among the dead leaves and decaying tree-trunks, tail carried erect. Quiet and unobtrusive; usually undetected unless singing.

FOOD. Chiefly insects.

VOICE and CALLS. A rather short and pleasant song recalling that of *B. montana* (1640) without the characteristic robin-like ending. Alarm, a loud single piping note ending with a *tek-tek-tek* (Heinrich).

BREEDING. Season, early April to late July. Nest, an oval ball with the entrance high up on one side, compactly built with bamboo and other leaves, and skeleton leaves, bound together with long roots and green moss, lined with a first layer of rootlets or fine fern stems and an inner layer of skeleton leaves mixed with a few scraps of grass, bark and fibre. It is wedged in among orchid clumps, twigs in low thick bushes, or among the moss growing on tree-trunks or rocks — in dense damp forest with plenty of undergrowth. Eggs, 3 or 4, pale olive-green, sea-green or, rarely, pale olive-brown, almost completely covered with tiny, light reddish brown specks and freckles. Average size of 60 eggs 19.5 × 14.6 mm (Baker). Building of nest and incubation by both sexes. Incubation period unrecorded.

THRUSHES AND CHATS

209

MUSEUM DIAGNOSIS. See Field Characters. Males often breed in brown female-like dress and some may possibly never acquire blue plumage; this needs determining.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	58-63	c. 15	c. 26	{ (1) 38 mm
♀♀	55-61			{ (1) 31 mm

(Wing by Koelz, Stevens and Stres.; rest MD)

Weight (Sept.) 1 ♂ imm. 19; 1 ♀ 22 g—SDR.

COLOURS OF BARE PARTS. Iris brown. Bill dark brown, lower mandible yellowish. Legs and feet fleshy white to purplish fleshy.

1640. Whitebrowed Shortwing. *Brachypteryx montana cruralis* (Blyth)*Calliope? cruralis* Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 929, 933

(Darjeeling)

Cf. Roonwal, M. L. & Nath, B., 1947, *Rec. Indian Mus.* 45: 321-8, Baker, FBI No. 488, Vol. 2: 17

Plate 88, fig. 5

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. Male (adult). Entirely dark slaty blue, ashy on belly; lores velvety black; a long white supercilium.



x c. 1

Female. Above, dark olive-brown; lores and eye-ring rusty. Below, paler olive-brown, fulvous on belly, rufescent on under tail-coverts.

Many males breed in brown female-like plumage; they may be told from the female by the white supercilium.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, fairly common. The Himalayas from Garhwal (JBNHS 11: 471) east through Nepal, Darjeeling, Sikkim, Bhutan and Arunachal Pradesh, the hills of Meghalaya south of the Brahmaputra, Nagaland? and Manipur (*Rec. Indian Mus.* 46: 135). Breeds between 1500 and 3300 m, mostly above 2000 m; recorded in winter between 300 and 2400 m. Affects damp, shady forest of oak and rhododendron with undergrowth of bracken etc., and dense brushwood in ravines or in the vicinity of streams.

Extralimital. Burma, Yunnan and Szechuan. The species ranges east to Fukien, Formosa and the Philippines, south to Borneo and the Sunda Islands to Flores.

GENERAL HABITS. Mainly terrestrial. Solitary, skulking, shy and difficult to observe. Keeps in low bushes or among the heads of saplings and bamboos, or on the ground where it hops rapidly, pausing for a moment, then continuing — behaving much like a robin.

FOOD. Chiefly insects.

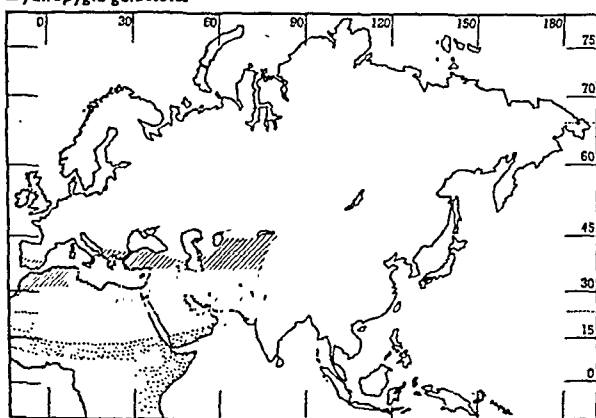
VOICE AND CALLS. Call-note, a quick *tek* accompanied by a flick of the wings. Alarm, a robin-like *tl-tl-tl-tl*. Song, variously described as 'a broken succession of very soft, very high-pitched notes in no recognizable pattern — just a broken, inconsequential rambling *see... see... see-ee* each note

THRUSHES AND CHATS

211

Confusingly like the Pale Brown and Rufous shrikes (*Lanius c. isabellinus*, 943, *L. c. phoeniceoides*, 942) on the wing, but the black-and-white-tipped rufous tail, spread out in flight and cocked upon alighting, are diagnostic.

STATUS, DISTRIBUTION AND HABITAT. Mostly an early autumn passage migrant en route to its winter quarters in Arabia and Africa. Pakistan east to Punjab (Jhang district) and northwestern India to Rajasthan (Jodhpur), N. Gujarat (Mt Abu, Deesa), Kutch and Kathiawar peninsula

Erythropgia galactotes

Distributional ranges

■ Breeding, ■ Winter
 ■ *E. g. familiaris* (1641). Other subspecies unnumbered.
 Dotted line: normal autumn 'extension' (passage) through India and Pakistan.

(Dwarka, Jasdan). Has strayed once to Ceylon in September (*Spolia Zeylanica* 30, pt. 2: 247-9, 1965). April records are restricted to Baluchistan and N.W.F.P. Breeds locally in Baluchistan (Chagai), and N.W.F.P. (Kohat). Affects dry scrub jungle, tamarisks and stony, broken country.

Extralimital. Extends to Lake Balkhash, Aral Sea and the Caucasus Mts. The species ranges west to Spain, Morocco, the Saharan savanna belt, and Ethiopia. Winters in southern Arabia and in the dry savannas of eastern Africa and southern Sahara.

MIGRATION. Recorded on breeding grounds from April to September. Autumn passage takes place mostly in September (first date 28 August, last date 11 October). Post-breeding dispersal may start in July. Spring passage in April and early May evidently by a different route almost entirely bypassing India. There is a record from Nasirabad (Baluchistan) on 1

210

TURDINAE

usually rising' (Lister); 'characterized by its compass of high and low notes, with odd sucking and popping noises thrown in' (Smythies); 'a pretty, short song of a few notes which, however, end up harshly' (Osmaston); 'a gentle merry little warble which might be syllabified as *hey did-dle did-dle the cat an'* (Proud).

BREEDING. Season, May to July. Nest, domed, made of moss and lined with rootlets, usually incorporated into the moss growing on rocks or tree-trunks; in most cases the lateral entrance-hole is parallel to the face of the rock or trunk concealed from view, giving effective camouflage to the nest. Eggs, normally 3, white. Average size of 31 eggs 22.7 × 16 mm (Baker). Sometimes brood-parasitized by *Cuculus poliocephalus*.

MUSEUM DIAGNOSIS. See Field Characters. Many males breed in brown female-like dress and may not acquire a blue plumage. They are, however, recognized by the white supercilium which the females lack. See Biswas, JBNHS 58: 653-4.

Young, head dark brown with pale centres to the feathers; back dark brown, rump tinged with yellowish, upper tail-coverts with a rufous wash. Throat and breast paler, each feather with a yellowish brown centre; belly yellowish brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	64-72	15-16	31-34	42-48 mm
♀♀	64-68	15-16	29-31	43-47 mm

(BB, Roonwal & Nath, SA)

Wing of 18 ♂♂ in brown plumage 64-67 mm; 24 ♂♂ in blue plumage 66-73 mm; 13 ♀♀ 63-70 mm (Kinnear).

Weight 2 ♂♂ 20, 23 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill blackish. Legs, feet and claws horny brown.

Genus *ERYTHROPGIA* A. Smith

Erythropgia A. Smith, 1836, Rep. Exp. C. Africa: 46. Type, by subsequent designation (Sharpe, 1883), *Erythropgia pectoralis* Smith = *Sylvia leucophrys* Vieillot

Agrobates Swainson, 1836, *Classif. Bds.* 2: 241.Type, by monotypy, *Sylvia galactotes* Temminck1641. Rufous Chat or Greybacked Warbler. *Erythropgia galactotes familiaris* (Ménétrières)*Sylvia familiaris* Ménétrières, 1832, Cat. Rais. Caucase: 32

(Kur, southern Caucasus)

Baker, FBI No. 794, Vol. 2: 386

Plate 89, fig. 1

LOCAL NAMES. *Sūrkh dūmāk* (Baluchi); *Rākhdi peeth* (Gujarati).

SIZE. Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. Above, sandy brown; a prominent whitish supercilium and a dark line through eye. Tail rufous with a dark brown sub-terminal band and broad white tips. Below, dull creamy white, breast more or less tinged with pale brown. Sexes alike.

212

TURDINAE

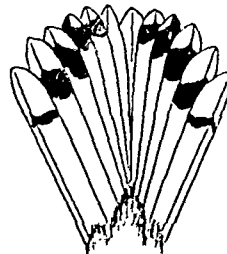
December and one from Quetta on 1 February suggesting that a few individuals may occasionally spend the winter in this area.

GENERAL HABITS. A confiding bird. Usually seen singly, running along the ground, hopping on to stones etc. with tail erect and wings partly drooping; tail fanned out and flicked up from time to time, sometimes almost touching back of head. Often perches on bushes, darting to the ground to take an insect. Resembles Indian Robin in many of its habits and behaviour.

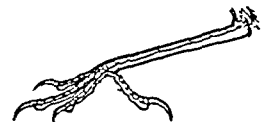
FOOD. Insects (grasshoppers, caterpillars, beetles and butterflies recorded).

VOICE AND CALLS. Alarm-note given as *wutch, wutch* (Whitehead). 'A sweet song' usually uttered from the top of a bush.

BREEDING. Season, April to July. Nest, a rather large, loose, cup-shaped structure made of fine twigs with an inner layer of shredded grass stalks, lined with vegetable down and small feathers; may possibly use old nests of *Pycnonotus leucogenys* and *Turdoides caudatus* (cf. JBNHS 23: 365 and Baker, *Nidification* 2: 351). Nest usually placed in bushes within a metre from the ground. Eggs, 3 to 5, very pale grey profusely covered with greyish brown specks, blotches and spots, generally more numerous at the large end. Average size of 70 eggs 20.9 × 15.4 mm (Baker). Building of nest by both sexes, incubation by female, fed on nest by male (Dementiev). The birds get very excited when an intruder discovers the nest, following him closely while uttering their alarm-note, sometimes hovering in the air within a few feet.



Tail, × c. 1 (After Hartert)



Foot, × c. 1



Wing, × c. 1

MUSEUM DIAGNOSIS. See Field Characters.

Juvenile resembles adult but has broad, pale edges to tertials and wing-coverts, and very thin brownish edges to breast-feathers. Postnuptial moult in July and August.

THRUSHES AND CHATS

213

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	85-90	16-18	24-27	61-67 mm
♀♀	85-87	15-16	24-25	63-66 mm
				(SA)

Weight 11 ♂♂ 19-27 (av. 21.7) g — SA.

COLOURS OF BARE PARTS. Iris brown. Bill brown above, paler below. Legs and feet flesh with a tinge of grey.

Genus ERITHACUS Cuvier

Erithacus Cuvier, 1800, *Leçons d'Anat. Comp.* I, tab. 2. Type, by monotypy, *Motacilla Rubecula* Linnaeus

Luscinia Forster, 1817, *Synopt. Cat. Brit. Bds.*: 14. Type, by monotypy, *Sylvia luscinia* = *Luscinia megarhynchos* Brehm

Cyanolygia Brehm, 1828, *Isis*, col. 920. Type, by monotypy, *Motacilla svecica* Linnaeus

Calliope Gould, 1836, *Bds. Europe* 2, pl. 118. Type, by tautonymy, *C. lathamii* = *Motacilla calliope* Pallas

Laricora Hodgson, 1837, *Jour. Asiat. Soc. Bengal* 6: 102. Type, by original designation, *Motacilla cyane* Pallas

Tarsiger Hodgson, 1845, *Proc. Zool. Soc. London*: 28. Type, by monotypy, *Tarsiger chrysaeus* Hodgson

Nemura Blyth, 1847, *Jour. Asiat. Soc. Bengal* 16: 132, new name for *Nemura* Hodgson, 1845, *Proc. Zool. Soc. London*: 27. Type, by original designation, *Nemura rufilatus* Hodgson, *nee Nemura* Latreille, 1789

Small, sparrow-size Turdidae with rather long tarsus. Bill slender, rictal bristles very short. First primary (as.) longer than primary coverts. Juveniles always spotted.

Key to the Species

	Page
I Plumage plain brown..... <i>E. megarhynchos</i> ♂♂	214

Males

II Plumage partly blue, red or yellow	
A Rump yellow..... <i>E. chrysaeus</i>	234
B No yellow on rump	
a Throat bright scarlet	
1 Breast black..... <i>E. pectoralis</i>	221
2 Breast pale brown..... <i>E. calliope</i>	215
b No scarlet on throat	
3 Base of tail white..... <i>E. pectoralis</i>	228
4 Base of tail rufous..... <i>E. svecicus</i>	217
5 No rufous or white in tail	
i Underparts white..... <i>E. cyane</i>	229
ii Underparts with some rufous or orange	
o A white supercilium	
a' Underparts rufous, centre of belly white..... <i>E. brunneus</i>	226
b' Underparts almost entirely yellowish rufous..... <i>E. indicus</i>	236

THRUSHES AND CHATS

215

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters. Postnuptial moult takes place from mid July to mid August.

MEASUREMENTS

	Wing	Tail
♂♂	87-95	82-88 mm
♀♀	86-93	
		(Dementiev)

Bill, from skull (one) 18 mm; tarsus 22 mm

Weight 4 ♂♂ 23-26.5 g (Dementiev).

COLOURS OF BARE PARTS. Iris hazel. Bill dark brown, paler below. Legs and feet light brown.

1643. Rubythroat. *Erithacus calliope* (Pallas)

Motacilla Calliope Pallas, 1776, *Reise Russ. Reichs* 3: 697 (Yenisei)
Baker, FBI No. 542, Vol. 2: 91

Plate 88, fig. 7

LOCAL NAMES. *Gangula* (Nepal); *Gumfigera* (Bengal).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult). Above, olive-brown, no white in tail. Lores black; a conspicuous white supercilium. Below, chin and throat scarlet bordered with a black line on sides of chin; a broad white malar stripe. Breast and flanks pale buffish brown; belly whitish.

Female like male, also with white supercilium, but throat white, sometimes faintly tinged with pink, without any black. Belly and under tail-coverts buff.

Male distinguished from Himalayan Rubythroat (1647) by the absence of black on breast. Female very similar to nightingale (1642) distinguished only by white supercilium; female Himalayan Rubythroat has a darker grey, not fulvous brown breast, contrasting with white belly and white-tipped tail.

STATUS, DISTRIBUTION AND HABITAT. Uncommon winter visitor. Assam, Nagaland, Manipur, all parts of Bangladesh and south to the Chittagong region, and eastern India from the Bhutan foothills, Bengal duars, Sikkim and Nepal [to west-central Nepal (Rand & Fleming, 1957)] and up to c. 1500 m (Dieselhorst, 1968) south through Bihar, Bengal, Orissa, eastern Madhya Pradesh and northeastern Andhra Pradesh (Godavari delta). Within this area, recorded as fairly common only in Hailakandi and Vishakhapatnam districts. West of this range, isolated examples recorded only in the Satpuras (date ?, SF 2: 413), Delhi (November, JBNHS 47: 280) and Bharatpur, Rajasthan (September, *Newsletter for Birdwatchers* 8(8): 7, 1967). Since then found to be a scarce but fairly regular visitor (on passage?) to Bharatpur, between September and December. Affects dense scrub in the vicinity of water, hedges near villages, underbrush along sides of country roads, long grass, sugarcane or reeds, and sometimes tea gardens.

Extralimital. Breeds in Siberia from the Ural Mts to Anadyr, Kamchatka and Hokkaido. Winters also through the northern Indochinese countries and southern China to Formosa and the Philippines.

214

TURDINAE

oo A blue supercilium

c' Centre of throat rufous..... <i>E. hyperythrus</i>	217
d' Centre of throat white..... <i>E. cyaneus</i>	215

Females

A Tips of tail white..... <i>E. pectoralis</i>	221
B Underparts ochre-yellow..... <i>E. chrysaeus</i>	234
C A dark collar on breast..... <i>E. svecicus</i>	217
D Underparts scaly..... <i>E. cyaneus</i>	229
E Underparts sullied white, flanks orange..... <i>E. cyaneus</i>	229
F Not as above	
1 Some bluish or slaty on rump..... <i>E. hyperythrus</i>	217
2 No bluish on upperparts	
a A white supercilium	
1 Throat whitish..... <i>E. calliope</i>	215
2 Throat rufous-ochre..... <i>E. indicus</i>	236
b No white supercilium	
3 Throat rich buff as rest of underparts..... <i>E. pectoralis</i>	221
4 Throat white or white with dusky specks. Under tail-coverts white..... <i>E. brunneus</i>	226

1642 Persian Nightingale. *Erithacus megarhynchos hafizi* (Severtsov)

Luscinia Hafizi Severtsov, 1872, *Vertik. Turkest. Zhivota* 6: 120 (Turkestan)

Luscinia Golzei Cabanis, 1873, *Jour. f. Orn.*: 79 (Turkestan)

Baker, FBI No. 540, Vol. 2: 87

Plate 88, fig. 6

LOCAL NAMES. *Bulbul* (Iran). The *bulbul* of Persian poetry and song.

SIZE. Bulbul —; length c. 18 cm (7 in.).

FIELD CHARACTERS. Above, uniformly brown, tail more rufous. A pale eye-ring. Below, throat, belly and under tail-coverts whitish. Sides of neck, breast and flanks pale brown. Sexes alike.

Resembles shortwings in carriage and movements.

STATUS, DISTRIBUTION AND HABITAT. Occasional visitor during migration: Western Baluchistan (Kacha and Robat in April — Christison, JBNHS 43: 481). Quetta once in October, once in April; also obtained there in February (JBNHS 31: 709). Has strayed to the Oudh terai in October (SF 4: 500). Affects bushes and gardens.

Extralimital. Breeds in Russian Turkestan, east to the Caspian Sea and south to Afghanistan and Iran. The species ranges west through Asia Minor to England, Spain and Morocco.

MIGRATION takes place mostly in April and early September.

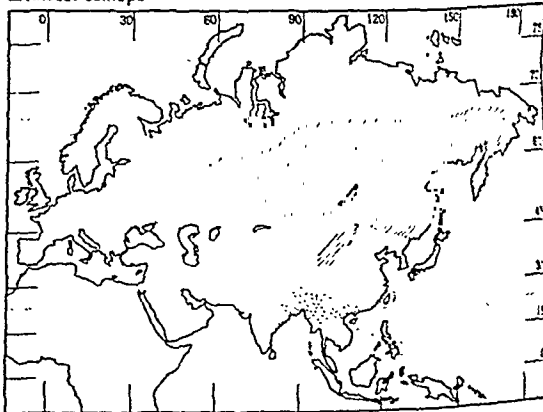
GENERAL HABITS. Very secretive. Haunts low bushes, usually within a couple of metres from the ground. Feeds on the ground, hopping with tail partly erect and flicked from time to time.

FOOD. Chiefly insects.

VOICE AND CALLS. Very silent during migration. On breeding grounds utters a soft but loud *hweet* and a croaking *krrrr* in addition to its magnificent song. For description of the song see Witherby, 2: 188.

216

TURDINAE

Erithacus calliope

Distributional range

■ Breeding

□ Winter

MIGRATION. Noted in winter quarters from 1 October until the last week of April. On migration (?) recorded at Dehra Dun (Seeborn coll.), Sikkim 26 September (JBNHS 1867: 453) and Sikkim, 4500 m on 19 September (Stevens). A strayed bird was recorded on board a ship 'a little south of Bombay' in November (SF 9: 405).

GENERAL HABITS. Usually found singly. Feeds mostly on the ground, but also among low bushes and reeds. Has a habit of flicking its cocked and semi-expanded tail over the back. Carriage and movements — running about rapidly in short spurts — also similar to those of the Himalayan Rubythroat (1647) and the Bluethroat (1645), qq.v.

FOOD. Insects and their larvae.

VOICE AND CALLS. Alarm-note, a loud rattling. Call-note a harsh *klrr* rather like Jungle Babbler's, sometimes followed by pleasant stretches of song. 'A plaintive whistling noise' given by male (JBNHS 1894: 49) may refer to this attempt at song in the winter quarters.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species. First winter birds are distinguished by ochraceous tips to greater coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	71-80	15-18	26-31	58-61 mm
				(HW, BB, SA, Rand & Fleming)

Weight 1 ♂ 23 g (SDR); 1 ♂ (Dec.) 19.5 g (RB); 1 ♂ (March) 21.5 g (RAF); 1 ♀ (March) 20.1 g (GD).

COLOURS OF BARE PARTS. Iris brown. Bill light brown to dark brown, paler at base. Legs and feet pale plumbeous or horny brown; claws darker.

THRUSHES AND CHATS

217

ERITHACUS SVECIACUS (Linnaeus)

Key to the Subspecies

	Page
A. Plastron darker blue	
1 Star smaller, bill longer (av. 17.5 mm).....	<i>E. s. abbotti</i> 220
2 Star larger, bill shorter (av. 16 mm).....	<i>E. s. svecicus</i> 217
B. Plastron paler blue	
3 Darkest of all races.....	<i>E. s. saturation</i> 221
4 palest of all races.....	<i>E. s. pallidogularis</i> 218

1644. Northern Bluethroat. *Erithacus svecicus svecicus* (Linnaeus)*Metacilla svecica* Linnaeus, 1758, Syst. Nat., ed. 10, 1: 187 (Sweden)*Cyanecula svecica robusta* Buturlin, 1907, Psov. Rush. Okh., No. 6

(Kolyma Delta)

Luscinia svecica weigoldi Kleinschmidt, 1924, Abh. Ber. Mus. Dresden 16 (2): 43

(Bago, Northern Chihli)

Baker, FBI Nos. 536 and 538, Vol. 2: 83 and 85

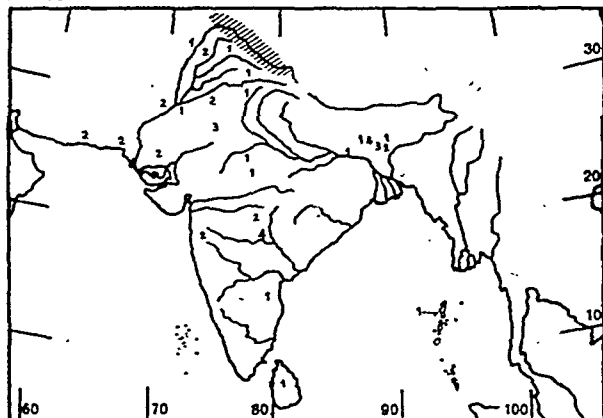
Plate 88, fig. 9

LOCAL NAMES. As in 1645.

SIZE. Sparrow \pm ; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1645, q.v.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor, locally common, scarce south of lat. 20°N. Pakistan and India from the Himalayan foothills

Erithacus svecicusBreeding (*abbotti*) Numerals, winter specimens identified1 *svecicus* (1644), 2 *pallidogularis* (1645), 3 *abbotti* (1646), 4 *saturation* (1646a).

THRUSHES AND CHATS

219

much reduced. First-winter female whiter below with large, dark brown spots and streaks on breast and sides of throat.

In both sexes black-tipped orange-chestnut tail conspicuous in flight and when spread out and cocked.

STATUS, DISTRIBUTION AND HABITAT. Common winter visitor. Pakistan from N.W.F.P. to Sind (where it is the prevailing race), central and coastal Makran, and India south at least to Bombay, Londa (Koelz, JBNHS 43: 14, subspecies not determined) and Nagpur, and east to the Bhutan foothills and Jalpaiguri duars. An abundant passage migrant in the western Himalayas west of Nepal; recorded as high as 4800 m (Henderson, 1873, *Lahore to Yarkand* p. 214, cf. Hellmayr, 1929: 115). Affects reeds, clumps of grass, tamarisk and other bushes near water, bushes around well-watered cultivation, and fields of maize, corn, sugarcane, etc. Also dry tidal mud-flats on the sea coast with salt-marsh vegetation.

Extralimital. Breeds from the southern Urals and Transcaspiia to Kirghizstan and Tadzhikistan. Winters west to Iran.

MIGRATION. First autumn migrants arrive in Baltistan and Himalayan foothills in early September (first dates 4 and 7 Sept.); migrants already noticed in the last week of August in Kohat (ssp.?). In Kashmir Valley passage is at its heaviest in the second part of September and early October. Northward movement begins in early March (Chagai, 4 March) and lasts until mid May (Himalayan foothills, HW) and end of May (Kohat, Whitehead). Most birds however have left the Peninsula by the first week of April. These data certainly include the other subspecies, *svecicus*, *saturation* and *abbotti*, as well.

GENERAL HABITS. Mainly terrestrial; skulking, shy and unobtrusive, thus often escaping observation. Keeps singly, like other robins and chats, feeding on damp ground under bushes with tail cocked and spread out, stopping every now and again to pick up a morsel. When alarmed or suspicious, slinks swiftly to cover with quick mincing steps, head lowered furtively, body dipped forward and tail cocked over back, sometimes nearly doubled over, seeming then as if the bird would topple heels over head; erects itself every couple of metres or so to have another look at the intruder before the next spurt. When flushed, usually dives behind another bush almost immediately, giving no more than a fleeting glimpse of the expanded rufous tail as the only clue to its identity. Roosts with swallows, wagtails, etc. in reed-beds and bushes in or near water.

FOOD. Insects: beetles, ants, caterpillars, cutworms, etc.

VOICE AND CALLS. As in 1646.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Differs from *svecicus* by paler blue colour of plastron. Upperparts often paler and somewhat greyer. Differs from *abbotti* in being paler above and having less black at lower end of blue plastron.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	70-75	15-16	25-27	55-58 mm
♀♀	70-74	15-16	—	— mm

(CBT, HW)

218

TURDINAE

south to Ceylon (cf. Phillips, W. W. A., *Spolia Zeylanica* 28: 190) and Andaman Islands (cf. Meinertzhagen, *Ibis* 1927: 591), and east to Assam (Stevens, JBNHS 23: 260). Given for all parts of Bangladesh as *abbotti* by Rashid, but subspecific identification virtually impossible in winter and these are probably *svecicus* or *saturation* since *abbotti* and *pallidogularis* appear to winter farther west. Affects sugarcane, cotton fields, grass jungle, reeds, bushes near water, gardens and fallow fields.

Extralimital. Breeds in northern Eurasia from Scandinavia to Chukotskiy Peninsula and western Alaska. Winters in North Africa, Iraq, Iran, the Indochinese countries and southern China.

MIGRATION. On spring and autumn passage throughout the Himalayas, mostly in April and September.

GENERAL HABITS, FOOD AND VOICE. As in 1645.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Key to the Subspecies. For details of plumages see Dementiev, translation Vol. 6, p. 696.

MEASUREMENTS

	Wing	Bill (from feathers)	Tail
76 ♂♂	68-79 (av. 72.8)	(13) 11-12 (av. 11.38)	55-58 mm (Dementiev)
10 ♀♀	64-73 (av. 69.4)	(3) 11-11.4	

Weight 13 ♂♂ 13.4-22.8 (av. 16.9) g (Dementiev).

COLOURS OF BARE PARTS. Iris brown. Bill black or brown; mouth bright yellow. Legs and feet blackish brown; soles yellow.

1645. Turkestan Bluethroat. *Erithacus svecicus pallidogularis* (Zarudny)*Cyanecula svecica* var. *pallidogularis* Zarudny, 1897, Mater. 1' poznaniu Fauny i Flory Ross. Imp. 3: 186 (Orenburg)*Cyanecula discissa* Madarász, 1902, Termész. Füzetek 25: 535 (Transcaspiia)*Cyanecula svecica arealensis* Zarudny, 1916, Izvest. Turkest. Otd. Russk. Geogr. Obsht. 12: 71 (delta of Syr-Darya)*Cyanalygia svecica kobdensis* Tugarinov, 1929, Ann. Mus. Zool. Acad. Sci., Leninigrad, 29 (1928): 9 (Uliassutai)*Cyanalygia svecica kaschgeriensis* Tugarinov, 1929, ibid.: 10 (Yarkand-Darya)

Baker, FBI No. 537, Vol. 2: 85

LOCAL NAMES. *Nyul hoi* (Kashmir), *Nil kánthi*, *Husaini pidda* (Hindi); *Dumbák* (Sind); *Gunpigerá*, *Gurpérá* (Bengali).

SIZE. Sparrow \pm ; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult). Above, brown; sides of tail rufous at base. A long, buffish supercilium. Below, throat and breast blue with a rufous, white, or rufous-and-white spot (or 'star') in the centre; plastron edged with black on breast and a broader rufous band. Centre of belly whitish; flanks and under tail-coverts buffish.

Female like male but without any blue, this colour replaced by buffish white and brown streaks on sides of throat. Rufous spot and breast-band

220

TURDINAE

Wing 100 ♂♂ 67-75 (av. 70.2); 17 ♀♀ 67-73 (av. 70.2) mm (Dementiev).

COLOURS OF BARE PARTS. Iris dark brown. Bill horny brown; gape yellow; mouth bright lemon-yellow. Legs, feet and claws horny brown; soles yellow.

1646. Ladakh Bluethroat. *Erithacus svecicus abbotti* (Richmond)*Cyanecula abbotti* Richmond, 1896, Proc. U.S. Nat. Mus. 18: 484

(Nubra Valley, Ladak)

Baker, FBI No. 539, Vol. 2: 86

LOCAL NAMES. As in 1645.

SIZE. Sparrow \pm ; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1645, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Summer (breeding) visitor, locally common. Gilgit, Baltistan, Ladakh, northern Kashmir (Fashgam, Zaskar Range, Liddar Valley) and Spiti (Koelz, *Ibis* 1937: 91), from 2600 to 3600 m. Affects bushes on swampy ground, especially patches of *Hippophae* and *Lonicera* in river beds and by streams. Winter range very little known: recorded in winter in Gujarat (Sálim Ali, JBNHS 52: 767), and at Nasirabad (Rajasthan) and Tista Bridge (northern Bengal) [Meinertzhagen, *Ibis* 1927: 591]. Habitat in winter as in 1645.

MIGRATION. Identified on passage through Kashmir in early May.

GENERAL HABITS AND FOOD. As in 1645. For display see below.

VOICE AND CALLS. Normal call-note a harsh *chur-r* or *chuck*, *chuck* like Blyth's Reed Warbler. Alarm-note *tick tick*. Song in breeding season variable, reminiscent of the nightingale's but shorter, less rich; usually uttered from the topmost twig of a bush with tail expanded. Occasionally flies up in the air and sings on the wing while descending, in the manner of a pipit. Song sometimes also heard in winter quarters in April from belated emigrants.

BREEDING. Season, May to August. Nest, a deep cup of grass, rootlets and leaves lined with finer grass and fibres; placed on the ground, well concealed in grass at the base of a bush. Eggs, normally 4, occasionally 3 or 5, pale olive-green, either plain or lightly suffused with pale rufous markings, especially at the broad end. Average size of 22 eggs 19.9 × 14.8 mm and of 20 eggs 19.1 × 14.3 mm (Osmaston); of 36 eggs 19.1 × 14.2 mm (Baker). Other particulars of breeding biology not recorded.

MUSEUM DIAGNOSIS. Differs from *pallidogularis* in being darker brownish above, in having the blue of plastron darker and the star smaller; the latter may vary from white to rufous-and-white or entirely rufous. Birds with white star appear to predominate (Hellmayr, 1929; Osmaston, *Ibis* 1925: 683). Bill averaging longer (17.5 mm — Vaurie) than in other races occurring in our territory (av. 16 mm). For details of plumage see Richmond, 1895, Proc. U.S. Nat. Mus. 18: 484.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂	71-72	—	27-28	56-57 mm
♂♀	72-74	16.7-17.5	—	(Richmond)
				— mm

(Hartert)

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet dark brown.

THRUSHES AND CHATS

221

1646a. Central Asian Bluethroat. *Erithacus specicus saturator* (Sushkin)

Cyanecula specica saturator Sushkin, 1925, List Distrib. Birds Russian Altai, p. 77 (Djoievo, near Minusinsk)
Cyanecula specica altaica Sushkin, 1925, ibid. p. 77 (Kosh Agach, Altai)
Cyanosylvia specica tianshanica Tugarinov, 1929, Annuaire Mus. Zool. Acad. Sci. URSS 29 (1928), p. 9 (Baim Gol, Tien Shan)
Cyanosylvia specica przewalskii Tugarinov, 1929, ibid. p. 11 (Zaganbuluk, Ala Shan Range)

Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1645, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Winter visitor. Two records: Siliguri, northern Bengal (Meinertzhagen, *Ibis* 1927: 592) and Asifabad, Andhra Pradesh (Meinertzhagen, in *epist.* reviewing Hyderabad Survey specimens). Also noted on passage in southeastern Tibet (Ludlow & Kinnear, *Ibis* 1937: 271). Habitat probably as in 1645.

Extralimital. Breeds in central Asia from the Pamirs and Tien Shan north to the Sayan Mts and northern Mongolia, and east to eastern Tibet.

GENERAL HABITS, FOOD and VOICE. As in 1645.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Like *specicus* but more smoky, browner or more fulvescent above; plastron and star as in *pallidogularis*, but upperparts darker even than *abbotti*.

MEASUREMENTS

	Wing	Bill (from skull)
5 ♂♂ (Tekkes area)	69-71	15.5-17 mm
12 ♂♂ (Tarim basin)	71-76	16.5-17 mm (one 18)
2 ♂♂ (Gyantse, passage)	73, 76	— mm
3 ♀♀ " "	71-73	— mm (Kinnear)

Hyderabad Survey Sp. No. 455 ♂ Wing 77 mm (SA)

COLOURS OF BARE PARTS. As in 1645.

ERITHACUS PECTORALIS (Gould)

Key to the Subspecies

		Page
A	A white malar streak.....	<i>E. p. tschebaiewi</i> 225
B	No malar streak	
i	Darker slate above.....	<i>E. p. confusus</i> 224
ii	Paler, brownish slate above.....	<i>E. p. pectoralis</i> 221

1647. West Himalayan Rubythroat. *Erithacus pectoralis pectoralis* (Gould)

Calliope pectoralis Gould, 1837, *Icones Avium*, pl. 4, text
(Himalayas = western Himalayas vide Hartert, 1909, Vög. pal. Fauna 1: 739)
Baker, FBI No. 543, Vol. 2: 92
Plate 88, fig. 8

LOCAL NAMES. *Gangula* (Nepal); *Yāqut hōt* (Kashmir).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

THRUSHES AND CHATS

223

scrub, hedgerows and cultivation affording sufficient cover; also marshy places.

Extralimital. Breeds also in Russian Turkestan north to Ala Tau, south to the Manasarovar region, W. Tibet (Sálim Ali, JBNHS 46: 299). For an excellent account of the breeding biology in the Tien Shan see Gavrilov, E. I. & Kovshar, A. F., 1970, JBNHS 67: 14-25.

MIGRATION. Recorded on breeding grounds from mid April until the end of September. Passage noted at mid elevations from Chitral to central Nepal Valley from early March till the third week of April, and in late September and October.

GENERAL HABITS. Solitary outside the breeding season. Usually very secretive. Feeds on the ground; ventures into the open but darts to cover on the slightest alarm. In the breeding season commonly perches in exposed situations to sing. Stance while singing upright, with tail loosely depressed (normally not cocked) and wings partly drooped. Otherwise actions and behaviour very similar to Bluethroat and typically robin-like: hops on longish legs or runs swiftly in spurts with tail erect and flicked up from time to time, wings drooping at sides. For display, see 1649.

FOOD. Chiefly insects and caterpillars; also spiders and molluscs. Lizards fed to young recorded.

VOICE and CALLS. A characteristic, loud, shrill but attractive song likened to an accented's or Pied Bushchat's, of three or four seconds' duration; usually given from the top of a shrub or prominent rock. Singing commences at early dawn and continues well into the dusk. Song repeated almost continuously — to point of monotony — for half to one hour at a time, the scarlet throat-patch scintillating with the pulsations and particularly eye-catching in poor light (SA). See also 1648. Call-note, a harsh *ké* like *Turdoides* (SA). Alarm-note near nest, *it... it... it...* similar to Black Redstart's (Desfayes).

BREEDING. Season, end of May to beginning of August. Double-brooded. Nest, usually domed with a large entrance on the side near the top, 'rather like a coconut with a good slice taken diagonally off a top quarter' (Bates & Lowther); sometimes a very deep cup in which the tail of the sitting bird nearly touches its head. The material consists entirely of dry grass with a lining of finer grass. Site: well concealed under shrubs, in a tuft of rank herbage among rocks and grass, or in patches of furze or juniper usually near their outer edge, and generally within c. 60 cm from the ground. Eggs, normally 4, occasionally 3, blue-green with a faint ring of reddish freckles at the large end. Average size of 100 eggs 21.6 × 15.4 mm (Baker); of 9 eggs 21 × 15.3 mm (BBO). Incubation chiefly by female; period undetermined. Both parents feed the young. Commonly brood-parasitized by *Cuculus canorus*.

MUSEUM DIAGNOSIS. Differs from *tschebaiewi* by lack of the white malar stripe. See also 1649. For distinction from *confusus* see 1648. Males in female-like plumage can be told by white base of tail. First-winter birds distinguished by pale tips to greater coverts and tertials, the male further by rusty-tinged tips of rectrices. Young greater coverts and tertials, the male further by rusty-tinged tips of rectrices. Young greater coverts and tertials, the male further by rusty-tinged tips of rectrices. Young greater coverts and tertials, the male further by rusty-tinged tips of rectrices.

222

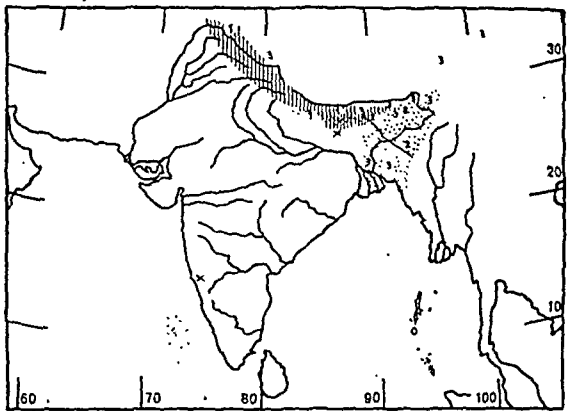
TURDINAE

FIELD CHARACTERS. Male (adult). Above, brownish slaty; forehead and supercilium white. Wings brown; tail blackish brown with white base and tips. Below, chin and throat scarlet; sides of throat and breast jet black; belly and under tail-coverts white.

Female. Above, grey-brown; a short supercilium and eye-ring whitish. Tail blackish brown with white tips. Below, breast smoky grey fading to whitish lower down. For distinction from the Siberian species *E. callise*, see 1643.

STATUS, DISTRIBUTION and HABITAT. Summer (breeding) visitor, fairly common. Baltistan, Gilgit, Kagan Valley, Kashmir, Pir Panjal to upper Suru Valley, Kishtwar, Zaskar, Rhotang range, east to Simla, Kumaon and central Nepal (Lowndes, JBNHS 53: 32; Desfayes, Thare Pati 3300 m, sight record of breeding bird). Recorded at 4500 m in Nepal in winter by Rand & Fleming. Breeds between 2700 m [Kagan Valley, *vide* Whitehead,

Erithacus pectoralis



Distributional ranges
Breeding
Isolated winter records, 1
1 *pectoralis* (1647). 2 *confusus* (1648). 3 *tschebaiewi* (1649).

and Gilgit (adult and juv. obtained at 2700 and 2800 m in July by Biddulph)] and 4500 m. Affects dwarf rhododendron, juniper and other scrub, beds of broken rocks, scree-fans and grassy hillsides, mostly above timber-line, but also high humid rhododendron forest (Nepal). Winter data very scanty: regular in Dehra Dun (BBO), uncommon in Nepal from c. 450 to 1500 m (Proud; Fleming & Traylor 1968; Rand & Fleming 1957; Scully). Two records from the Peninsula: Sultanpur, U.P. (Hume coll.) and Londa, Mysore (Koelz, JBNHS 43: 14). In this season frequents dense

224

TURDINAE

MEASUREMENTS

	Wing	Tarsus	Tail
♂ ♀	68-78	c. 30	56-64 mm (Baker)

Bill from skull 18 mm

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet black or brownish black.

1648. Eastern Rubythroat. *Erithacus pectoralis confusus* (Hartert)

Luscinia pectoralis confusa Hartert, 1909, Vög. pal. Fauna 1: 740 (Sikkim)
Baker, FBI No. 544, Vol. 2: 93

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1647, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Common summer (breeding) visitor. Eastern Nepal (Biswas, 1961; Diesselhorst, 1968) and Sikkim. Ludlow's Bhutan record, *Ibis* 1937: 272, is questioned by the author himself, ibid. 1944: 186. Intergrades with *pectoralis* in central Nepal. Breeds between 3600 and 4900 m. Affects dwarf scrub well above timber-line, especially the bare screes and boulder-strewn slopes in the alpine zone. Winters from the foothills of Darjeeling, Sikkim, Bhutan and Arunachal Pradesh (Hume, SF 11: 199) south through northern Bengal, Meghalaya, Cachar and Manipur (Baker, FBI), and the hills of Bangladesh south to the Chittagong ranges (Rashid). In this season affects dense scrub and long grass jungle.

MIGRATION. Little known. Periods apparently as in 1647.

GENERAL HABITS. As in 1647. Behaviour very Bluethroat-like. For display see 1649, under Voice and Calls.

FOOD. Mostly insects, some caterpillars and (once) grit (GD).

VOICE and CALLS. Song consists of some pure whistled notes mixed with many harsh ones, rather similar to that of the Bluethroat but not so rich, at times reminding one of the European Hedge Sparrow or of *Prunella strophiala* (1782) (Diesselhorst). For other calls see 1647 and 1649.

BREEDING. Season, June to August; in the latter month mostly late broods; fledglings being fed by parents observed in early September. It is not certain if all females have a second brood. Nest and eggs as in 1647. Only females have an incubation patch (Diesselhorst).

MUSEUM DIAGNOSIS. Male, like *pectoralis* but grey of upperparts darker in summer, a deep blackish slate; white on forehead wider. In autumn, fringes of upperparts darker compared with *pectoralis*.

Female, not always certainly distinguishable from *pectoralis*; in summer ear-coverts, sides of throat, and breast darker grey and contrasting more with white of throat and belly.

THRUSHES AND CHATS

225

Juvenile, dark warmer brown above; the spotting below heavier and darker than in *pectoralis*. (For distinction from *tischebaiewi* see 1649.) Juvenal plumage is worn for at least a month after the young has become full-fledged. Postnuptial moult takes place in September.

MEASUREMENTS. As in 1647.

Weight 9 ♂♂ (July-Sept.) 21.5-25.2; 4 ♀♀ (July-Sept.) 21.7-23.7; 8 juv. (Aug.-Sept.) 22-24.7 g (GD).

COLOURS OF BARE PARTS. As in 1647.

1649. **Tibetan Rubythroat.** *Erithacus pectoralis tischebaiewi* (Przevalski)

Calliope tischebaiewi Przevalski, 1876, Mongol. i Str. Tangut 2: 44 (Kansu)
Baker, FBI No. 545, Vol. 2: 94

LOCAL NAME. *Dao gulugajao* (Cachari).

SIZE. Sparrow \pm ; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1648 but with a conspicuous white moustache in male and an indication of same in female.

STATUS, DISTRIBUTION AND HABITAT. Summer (breeding) visitor, locally common. Breeds in Tibet, south to extreme eastern Ladakh [between Ralma and Tsaka La (Osmaston, JBNHS 31: 984 and *Ibis* 1925: 685)], northern Bhutan and northern Arunachal Pradesh both north and south of the main range (Ludlow, *Ibis* 1937: 272, 1944: 186 and 1951: 560). Breeds between 3900 and 4500 m. Affects juniper and rhododendron scrub and especially Tibetan furze (*Caragana*), often near streams. Winters from the foothills of eastern Nepal (Fleming & Traylor, *Fieldiana* 35: 545), northern Bengal, Bhutan, Arunachal Pradesh to the Mishmi hills, south through Assam and Bangladesh (Rashid). Arrives in September (first date 6 Sept.), leaves in March-April (last date 24 April) [Stevens]. In this season affects marshes and dense scrub.

EXTRALIMITAL. Tibet, Sikang, Kansu, Szechuan and northern Yunnan. Not known to winter in Burma though presumably does so.

MIGRATION takes place mostly in April and October. Recorded on passage in April in Kashmir (Meinertzhagen, *Ibis* 1927: 589), Nepal (Fleming & Traylor, *Fieldiana* 35: 545) and Sikkim (Mandelli).

GENERAL HABITS AND FOOD. As in 1648.

VOICE AND CALLS. Alarm-note given as a long-drawn *süü süü* (Schäfer); see also 1647. Male sings from a prominent twig, shifting its body in every direction when excited and flying in ecstasy from bush-top to bush-top. During display, head is held high, neck and red throat-patch puffed out, wings drooping at sides, tail fanned and held at a 45° angle, thus flashing its white base (Schäfer); cf. 1647.

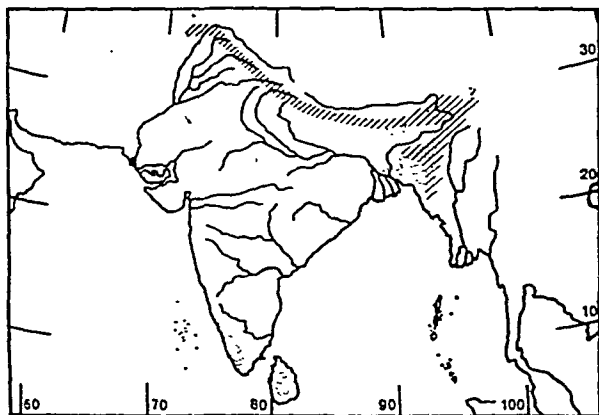
BREEDING. As in 1648.

MUSEUM DIAGNOSIS. Male distinguished from *pectoralis* and *confusus* by the broad white moustache; white at base of tail less extensive. White over base of bill not wider than supercilium as in *pectoralis*, but less wide than in *confusus*.

Female may also show white moustache, and some have crimson chin; whitish supercilium always present (sometimes almost absent in *confusus*) but not every specimen can be differentiated. Young (juvenile) very distinct: Upperparts

THRUSHES AND CHATS

227

Erithacus brunneus

▨ Breeding

■ Known winter range

MIGRATION. Arrives on breeding grounds in May, leaves in September; downward movement begins in August. Passage in the foothills lasts till the beginning of October; passage in the Peninsula mostly in October. Arrives in winter quarters in southern India and Ceylon in October, remains until April, a few individuals until May. Northward movement chiefly in April. Migration follows mostly in the forest-clad Western Ghats; in the Eastern Ghats recorded only in spring.

GENERAL HABITS. Terrestrial, forest-haunting and unobtrusive. Keeps singly, skulking in heavy undergrowth among the tangled stems and lowest branches, dropping to the ground and hopping along swiftly to snatch an insect, and back again. Flirts its tail like a redstart and spreads and jerks it up from time to time, with occasional flicks of the wings. When disturbed flies up into a low tree but descends almost immediately; otherwise seldom shows itself except in the breeding season when males come up to exposed bush-tops etc. to sing.

FOOD. Insects.

VOICE AND CALLS. Alarm-notes a guttural *tuck-tuck* and a high-pitched *tue* when near nest, punctuated by *chr-r*. Song consists of a few introductory notes, at first soft then growing louder, followed by a rapid trill or jumble of notes; rendered as *jerri-jerri-jerri quick-quick-quick* (Magrath). Also described as commencing with a loud *peep*, slowly and deliberately repeated 3 or 4 times in ascending scale, followed by an explosive trill of 4 or 5 quick-repeated sweet notes ending abruptly. Usually sings in the undergrowth or in the crowns of rhododendrons or pines; often from an exposed

226

TURDINAE

blackish brown, with cream spots and streaks (in *confusus* warm brown, in *pectoralis* greyish brown, with ochraceous spots and streaks); underparts very heavily spangled, as in *confusus*, and darker still (Titchhurst, *Ibis* 1940: 330). Colour of young, however, is variable as noted by Diesselhorst (1968: 289) for *confusus*.

MEASUREMENTS

	Wing	Tarsus	Tail
♂ ♀	73-81	33	58-66 mm (Baker)
♂ ♂	74-83	—	— mm
♀ ♀	68-71	—	— mm (HW)

Bill from skull 15-17 mm

COLOURS OF BARE PARTS. As in 1648.

1650, 1651.¹ **Indian Blue Chat.** *Erithacus brunneus* (Hodgson)

Larvicora brunnea Hodgson, 1837, Jour. Asiat. Soc. Bengal 6: 102 (Nepal)

Larvicora brunnea angamae Koelz, 1952, Jour. Zool. Soc. India 4: 41

(Teikhubama, Naga Hills)

Larvicora wickhami Baker, 1916, Novit. Zool. 23: 298 (Chin Hills)

Baker, FBI No. 484, Vol. 2: 14

Plate 88, fig. 11

LOCAL NAME. *Manzhil pho* (Lepcha).

SIZE. Sparrow \pm ; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult). Above, slaty blue. A conspicuous white supercilium; lores and cheeks black. Below, throat, breast and flanks bright chestnut or ochraceous; throat bordered with black. Centre of belly and under tail-coverts white.

Female. Above, olive-brown. Below, whitish washed with ochraceous on breast and flanks. Young dark brown with buff spots.

STATUS, DISTRIBUTION AND HABITAT. Common summer (breeding) visitor, scarce east of Nepal. The Himalayas from N.W.F.P. (Safed Koh) east to Bhutan, Arunachal Pradesh (Tsangpo gorge—Ludlow, *Ibis* 1951: 558), Nagaland (Koelz, loc. cit.), Manipur ?, and in the Cachar and Khasi hills, where very rare (Baker, JBNHS 8: 200 and 17: 788). Breeds between 1600 and 3300 m. Affects dense undergrowth of rhododendron, ringal bamboo, *Berberis* and other bushes in open oak or conifer forest. Winters in Ceylon (especially in the hills up to 2100 m), in the hills of southwestern India (western Mysore from Londa south to the Ashambu hills of Kerala), in the hills of Assam and Bangladesh and, occasionally at least, in the eastern Himalayan foothills [Sikkim, Darjeeling (Stevens, Mackintosh)]. Assam population apparently resident. In winter frequents almost exclusively evergreen forest; partial to *Rubus*, *Pandanus* and *Calamus* brakes along shady forest streams and in dank ravines; also cardamom and coffee plantation.

EXTRALIMITAL. Extends to Burma (Chin Hills), northwestern Yunnan, Szechuan and southwestern Kansu.

¹ *L. wickhami* was described from a single unsexed specimen which could be a male in 'retarded' plumage, or an old female. We follow Suresmann (Mitt. Zool. Mus. Berlin 24: 227, 1940) in considering it a synonym of *brunneus*.

228

TURDINAE

situation such as the top branches of a fir. Song period, mid April till mid July with a resumption in August and September; may sometimes also be heard in winter quarters until December, but bird very silent thereafter.

BREEDING. Season, May to July. Nest, a cup of moss, dry grass, dead leaves and lichen, lined with fur, hair, fine rootlets and often a few feathers; placed on the ground, generally on a bank, well concealed between roots, in a cavity among stones, etc. Eggs, normally 4, occasionally 3 (once 5), blue, unspotted. Average size of 5 eggs 20.4 × 14.8 mm (Osmaston); of 50 eggs 20 × 14.6 mm (Baker). Incubation apparently by female alone; nest-feeding by both sexes. Incubation period undetermined. Often brood-parasitized by *Cuculus micropterus*. For details of breeding in captivity see *Agricultural Magazine* 75: 265-70, 1969.

MUSEUM DIAGNOSIS. See Field Characters; for details of plumages Whistler, JBNHS 38: 283. Postnuptial moult complete, in August and September; summer and winter plumages alike, no spring moult. Young spotted. Postjuvenal moult of body-feathers, presumably about August-September.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	72-80	15-17	c. 26	{ 45-53 mm 44-50 mm (BB, HW, Koelz)
♀ ♀	71-76			

Weight 3 ♂♂ (May) 16.5-18; 3 ♀♀ (May) 17.5-20 g—GD. 4 ♂♂ (Oct., on passage) 14-19 g—SA.

COLOURS OF BARE PARTS. Iris brown. Bill black in summer, horny brown above and fleshy below in winter. Legs and feet brownish flesh.

1652. **Firethroat.** *Erithacus pectardens* (David)

C.(alliope) pectardens David, 1871, Nouv. Arch. Mus. Paris,

Bull. Cat. no. 167 *nom. nud.*

Calliope pectardens David, in David et Oustalet, 1877, Ois. de la Chine 1: 236

(Moupin = Paohing, eastern Sikang)

Luscinia Davidi Oustalet, 1892, Bull. Mus. Paris: 222 (Tatsienlu)

Luscinia deulias Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 12

(Phulbari, Garo Hills)

Not in Baker, FBI

Plate 88, fig. 10

LOCAL NAMES. None recorded.

SIZE. Sparrow \pm ; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult). Above, bluish slaty. Forehead, lores, round the eye, cheeks and sides of throat black; a whitish patch on sides of neck. Upper tail-coverts black; tail blackish brown, inner rectrices (except central) white at base. Below, chin, throat and breast flame-coloured widely bordered with black on sides. Belly white washed with buff, flanks brownish buff.

Female. Above, olive-brown. Below, throat pale ochraceous. Sides of head, neck, breast and flanks ochraceous brown. Belly white more or less washed with ochraceous; under tail-coverts ochraceous.

THRUSHES AND CHATS

229

Male, first-year. Above, like adult male. Below, like female but paler, less ochraceous; no black.

STATUS, DISTRIBUTION and HABITAT. Rare winter visitor; presumably regular but overlooked. One record: Garo Hills, 18 January 1950 (Koelz, loc. cit.). Affects dense bushes.

Extralimital. Breeds from Chumbi Valley (Brit. Mus. coll.), southeastern Tibet (Ludlow, *Ibis* 1944: 187 and 1951: 560) and northwestern Yunnan north through Szechuan to southwestern Kansu and Shensi, from c. 2800 m (Tibet) to 3700 m (Szechuan). On breeding grounds affects dense thickets of bamboo, rose and barberry in valley bottoms. May be expected to breed in northern Arunachal Pradesh.

GENERAL HABITS. An arant skulker; keeps to the densest thickets. Behaves more like a blue chat than a rubythroat.

FOOD. Probably insects.

VOICE and CALLS. Alarm-note resembles that of *Erithacus cyanurus* [1655] (Ludlow). Song unknown.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. See Field Characters. Young spotted; differs from that of *E. pectoralis* in the more uniform and darker colour of upperparts and absence of white tip to tail. For distinction from *E. obscurus* (extralimital) see Goodwin, D. & Vaurie, C., 1956, *Bull. Brit. Orn. Cl.* 76: 141-3, and Ripley, S. D., 1957, *Poistilla* 37: 1-3.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
12 ♂♂	69-73	16-17	26-28	48-53 mm
10 ♂♂	64-71	15-17	—	53-58 mm
1 ♂	70	16	28	72 [?] mm
		(from gape)		(Koelz)

COLOURS OF BARE PARTS. Iris black or brown (ad. ♂), grey (1st year ♂), brown (juv. in spotted plumage) [J. F. Rock]. Bill (dry skin) blackish (♂), dark brown (♀).

1653. Siberian Blue Chat. *Erithacus cyane cyane* (Pallas)

Motacilla Cyane Pallas, 1776, *Reise Russ. Reichs* 3: 697

(Dauria, southeastern Transbaikalia)

Baker, *FRI* No. 483, Vol. 2: 12

Plate 88, fig. 12

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult). Above, slaty blue. Lores and cheeks black. Below, white bordered with black on sides of throat, bluish slate on flanks. Pale flesh-coloured longish legs noticeable.

Female. Above, olive-brown, tinged with rufous on upper tail-coverts and tail. A pale buff eye-ring. Below, throat and centre of belly white; sides of throat, breast and flanks tinged with buff and scalloped with pale brown.



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THRUSHES AND CHATS

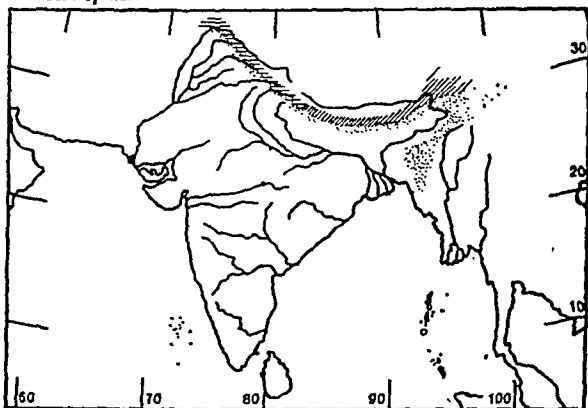
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Female. Above, olive-brown, bluish on rump and tail. A pale eye-ring. Below, as male but sides of throat grey-brown; flanks orange.

First-year male similar to female.

STATUS, DISTRIBUTION and HABITAT. Common altitudinal migrant. The western Himalayas from Safed Koh and Gilgit to Garhwal; very common in Kashmir. Breeds between 2700 and 3600 m; winters between c. 2600 and 1200 m, occasionally down to c. 750 m. Affects undergrowth in open forest of oak, pine, fir, birch or rhododendron, and thickets of barberry, *Viburnum*, etc. along edges of heavy forest. In winter frequently to be seen on roadside wire fences in quiet wooded hill-stations.

Erithacus cyanurus



Distributional ranges

pallidior (1654). rufilatus (1655). Winter

MIGRATION. Vertical movements very leisurely. Downward movement noted in September at 1800-2400 m but arrives at lower elevations (c. 1200 m) only in November. Upward movement begins early in March, few birds being seen at winter levels in April.

GENERAL HABITS. As a rule very shy and secretive. Hunts in shrubbery and low trees as well as on the ground, catching insects while hopping about like a robin or by launching sorties in the air after them. 'Very flycatcher-like in its movements' (Stanford). Strongly reminiscent also of Pied Bush Chat perching fairly upright on a low branch, flying down to the ground momentarily to pick up a morsel and back again to another perch. Constantly twitches wings and flicks tail open and shut, also very like bush chat. Male has been observed to 'freeze' on its perch with beak pointing upwards, and remain so all the time the observer was searching for the nest, although only three or four metres away (HW).

230

TURDINAE

STATUS, DISTRIBUTION and HABITAT. A straggler in winter and during migration. Haldibari duars, Bengal, 18-February 1932 (Ingis coll., Brit. Mus.); Manipur, a party in April (Hume).¹

Extralimital. Breeds in southern Siberia from the Altai to Amurland, Japan and northern China. Winters in Burma, Thailand, the Indochinese countries, southern China, Sumatra, Borneo and the Philippines.

MIGRATION. Recorded in Burma from October to April.

GENERAL HABITS. Mainly terrestrial. Found singly or in pairs, perhaps in small parties when migrating. Very secretive. Hops about on the ground in dense cover, quivering the tail up and down in a peculiar way.

FOOD. Insects.

VOICE and CALLS. Alarm-note a rapid *chuck-chuck-chuck*.

MUSEUM DIAGNOSIS. See Field Characters; for details of moults and plumages. (Dementiev).

MEASUREMENTS

	Wing	Bill (from skull)	Tail
10 ♂♂	70-76		
2 ♀♀	68, 71	16-17	47-50 mm
			(Dementiev)

Tarsus 25 mm

Weight 2 ♂♂ 14, 16 g (Dementiev).

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible blackish horny; gape and lower mandible bluish or livid white, dusky at extreme tip. Legs and feet pale fleshy white (Hume).

ERITHACUS CYANURUS (Pallas)

Key to the Subspecies

	Page
A Supercilium white.....	<i>E. c. cyanurus</i> 233
B Supercilium blue with a varying amount of white	
1 Paler.....	<i>E. c. pallidior</i> 230
2 Darker.....	<i>E. c. rufilatus</i> 232

1654. Kashmir Redflanked Bush Robin. *Erithacus cyanurus pallidior* (Baker)

Ianthia cyanura pallidiora Baker, 1924, *Fauna Brit. India*, Bds. 2: 101 (Simla) Baker, *FBI* No. 550, Vol. 2: 101

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult). Above, dark blue. Forehead, supercilium, shoulder-patch and rump sky blue. Below, centre of throat, breast and belly sullied white. Sides of throat dark blue; flanks orange-ochraceous.

¹ A specimen in the Pinwill coll. (Brit. Mus.) is labelled Simla but 'Simla is written in such a way that it evidently was not written at the time though it is Pinwill's writing' (Hume). It was taken at Hazara in June (JBNHS 18: 197) certainly one from Narkanda, c. 35 km NE. of Simla (von

232

TURDINAE

FOOD. Insects.

VOICE and CALLS. Alarm-notes given as a throaty *prot* or *tok* and a mournful *phoeu* (Whitehead, HW). Agitated notes, as when nest precincts intruded, a sharp *kek*, *kek* sometimes followed by a whistled *traveet* (SA). Song short, of three or four notes, the first and last on the same tone, the middle ones lower (BBO); has been rendered as *pray did he then?* See also 1655.

BREEDING. Season, May to July. Nest, a cup of moss, grass, rootlets and dead leaves lined with soft grass, hair (often musk deer's) or wool; placed in holes in banks or very steep slopes, among roots of fallen trees, or sometimes in hollows in decayed stumps. Eggs, 3 to 5, generally 4, white, usually freckled at the larger end with pink. Average size of 60 eggs 17.8 × 13.5 mm (Baker). Once brood-parasitized by a cuckoo 'apparently *saturatus*' (Davidson, *Ibis* 1898: 24). Incubation by female (only?), fed by male. Period unrecorded. Tending of young by both parents.

MUSEUM DIAGNOSIS. See Field Characters. Differs from *rufilatus* in being paler. Blue of back may vary from cyan to deep purplish blue; amount of white in blue supercilium variable, usually present, sometimes lacking. Males often breed in female dress but differ by darker colour, darker blue upper tail-coverts and more olive-grey, less buffy on sides of throat. In Kashmir blue males noted as being the exception (Davidson, *Ibis* 1898: 24). Plumage of young spotted.

MEASUREMENTS. As in 1655.

Weight 5 ♂♂ (Nov.) 13.3-15.3; 1 ♀ (Nov.) 14 g (RAP). 11 ♂♀ (Apr.-May) 11-14 (av. 12.8) g — SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill and feet black (Abbott).

1655. Eastern Redflanked Bush Robin. *Erithacus cyanurus rufilatus* (Hodgson)

N.(mura) rufilatus Hodgson, 1845, *Proc. Zool. Soc. London*: 27 (central and northern regions of hills, Nepal) Baker, *FBI* No. 549, Vol. 2: 99 Plate 88, fig. 14

LOCAL NAME. *Manzhil-pho* (Lepcha).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1654, q.v.
STATUS, DISTRIBUTION and HABITAT. Common altitudinal migrant. From western Nepal east through Sikkim, Bhutan and Arunachal Pradesh. Breeds between 3000 and 4400 m, optimum zone 3500-4000 m. Affects forest of spruce, pine or birch with scanty undergrowth, or dense rhododendron bushes in open forest; avoids pure deciduous stands, and scrub above timber-line. Winters at lower altitudes down to the foothills, and occasionally as high as 3800 m (November — Meinertzhagen); optimum zone 1500-2100 m. Also recorded in winter south of the Brahmaputra in the Khasi and Cachar hills and Manipur (possibly visitors from western China breeding grounds?).



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THRUSHES AND CHATS

233

Extralimital. Breeds in the mountains of western China north to Kansu and Shensi. Winters south to the northern Indochinese countries.

MIGRATION. In winter quarters from November to April (in the Chin Hills till early May).

GENERAL HABITS. As in 1654.

FOOD. Insects and caterpillars (GD).

VOICE AND CALLS. Alarm-notes *huu huu* and *tack tack* (Schäfer). A short song rendered as *tü trü tü trü* or *ty tür tür* (GD). See 1654 for further details. Song period, mid April till end of June (Proud). Song intensity diminishes rapidly after egg-laying, hardly any song being heard in the third week of June (GD).

BREEDING. As in 1654.

MUSEUM DIAGNOSIS. Differs from *pallidior* in being darker. Only a small percentage of breeding males are in blue plumage, most of them being in brown plumage (yet recognizable by blue rump) [GD]. Blue plumage apparently not acquired before two years old. Young spotted; postjuvinal plumage similar to that of adult female.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	*Tail
♂♂	78-87	13-15	24-27	65-70 mm
♀♀	76-83	13-16	24-27	56-65 mm

(Mayr, BB, NBK, Stres.)

Weight 8 ♂♂ (Nov.-Dec.) 13.6-15.5; 10 ♀♀ (Nov.-Dec.) 12-14.6 g (RAP, SDR). 9 ♂♂ (breeding) 12.2-16; 2 ♀♀ (breeding) 14.2, 16.7 g (GD).

COLOURS OF BARE PARTS. Iris brown. Bill horny brown or black. Legs, feet and claws blackish brown; soles whitish.

1656. Japanese Blue Chat. *Erithacus cyaneus cyaneus* (Pallas)

Metacilla Cyaneus Pallas, 1773, Reise Russ. Reichs 2: 709 (Yenisei)
Baker, FBI No. 548, Vol. 2: 98

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1654 but supercilium white.

STATUS, DISTRIBUTION AND HABITAT. Accidental winter visitor. One record: North Cachar (Baker, loc. cit.).

Extralimital. Breeds in Siberia west to Finland, east to Kamchatka and Japan. Winters mostly in southern China, Formosa and the northern Indochinese countries.

GENERAL HABITS, FOOD AND VOICE. As in 1654.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Distinguished from the Himalayan races by its white supercilium (r. blue) and cream-coloured underparts (r. greyish white).

Female differs in being browner above, cream-coloured below and having the lores paler (Scully).

THRUSHES AND CHATS

235

FIELD CHARACTERS. Male (adult). *Above*, crown and upper back olive-brown. A yellow supercilium and a black band from lores through eyes and cheeks. Scapulars, sides of back and rump orange. Wings olive-brown. Tail orange, central rectrices and terminal band black. *Below*, entirely orange with narrow, dusky, crescent-shaped markings, sometimes obsolete or absent.

Female. *Above*, olive. An ill-defined yellowish olive supercilium and a buff eye-ring. Whole underparts ochre-yellow.

STATUS, DISTRIBUTION AND HABITAT. Altitudinal migrant, moderately common. Kumaon (where intergrading with *whistleri*), Nepal, Darjeeling, Sikkim, Bhutan and Arunachal Pradesh (Ludlow, *Ibis* 1944: 188), thence south through Nagaland, Manipur and the Cachar and Khasi hills (scarce south of the Brahmaputra). Breeds between 3000 and 4600 m, optimum zone 3600-4200 m, above c. 1800 m south of the Brahmaputra. Winters from c. 3000 m down to the foothills (rarely), mostly between 1400 and 2000 m. Affects dense rhododendron in open conifer forest (Arunachal Pradesh), rhododendron, juniper and birch above timber-line, boulder-strewn slopes with sparse scrub growth, dwarf barberry thickets among boulders and screes, and occasionally scrubless screes in the alpine zone (central Nepal). Partial to the proximity of boulders. In winter affects dense undergrowth in evergreen forest.

Extralimital. Ranges east to northern Yunnan, north to Shensi.

GENERAL HABITS. A typical robin in actions and behaviour. Keeps solitary or in pairs according to season. Hops about quietly under thickets in search of food, jerking up tail and drooping wings, its presence within usually betrayed by its croaking alarm-note. As a rule very secretive when dense cover available; easier to observe on open ground such as screes and dwarf scrub when male often perches on boulders and bush-tops like a redstart.

FOOD. Insects.

VOICE AND CALLS. Alarm-note, a peculiar soft croak *trrr* which once known cannot escape notice; also *fit fit* (GD) and a wren-like *chick* (SDR). Also has a scolding *chirik-chirik* like *Procygna* and some other small babblers. The croaking sometimes of several syllables 'like the subdued grinding of a few stones of an old-fashioned watchman's rattle' (HW). Said to have a 'beautiful song' in breeding season; the same (presumably) as rendered *tee, tee, tee, tee, tee, tee, tee, tee, tee, tee* by Fleming.

BREEDING. As in 1657. Average size of 21 eggs 19.7 × 14.8 mm (Baker). *MUSEUM DIAGNOSIS.* See Field Characters. Young spotted. Postnuptial moult apparently in September-October.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	64-73	15-16	29-32	51-57 mm
♀♀	60-68	14-16	28-33	48-54 mm

(BB, SA, NBK, Stres.)

Weight 12 ♂♂ (July) 11.9-15.7; 5 ♀♀ (July) 13.4-16.4 g (GD, RAP). 1 ♂ (Feb.) 12, 4 ♂♂ (Oct.-Nov.) 13.5-14; 3 ♀♀ (Feb.-Mar.) 12.5-14, 1 ♀ (Oct.) 13 g (SDR, BB, SA). 2 ♂♂ (Oct.) 14, 15 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill dark brown, commissure and lower mandible yellow. Legs and feet pale fleshy, fleshy yellow or olive-yellow.

234

TURDINAE

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	74-80	c. 13	55-60 mm
♀♀	70-78		(Dementiev)

Weight 10 ♂♂ 12.2-12.5; 6 ♀♀ 12-17.8 g (Dementiev).

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet light brown.

ERITHACUS CHRYSAEUS (Hodgson)

Key to the Subspecies

Paler.....	<i>E. c. whistleri</i>
Darker.....	<i>E. c. chrysaeus</i>

1657. Western Golden Bush Robin. *Erithacus chrysaeus whistleri* (Ticehurst)

Tariger chrysaeus whistleri Ticehurst, 1922, Bull. Brit. Orn. Cl. 42: 121 (Simla)
Baker, FBI No. 547, Vol. 2: 97

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1658, q.v.

STATUS, DISTRIBUTION AND HABITAT. Altitudinal migrant, uncommon. The western Himalayas from Hazara to Garhwal. Breeds between 3000 and 3600 m; winters (early November till end of March) from c. 1800 m down to the foothills (rarely); optimum zone 1200-1500 m. In summer affects dwarf rhododendron and juniper near and above timber-line; in winter frequents thickets, undergrowth, gardens and tea plantations.

GENERAL HABITS, FOOD AND VOICE. As in 1658.

BREEDING. Season, May to July. Nest, cup-shaped, made mostly of moss with a few dead leaves and grass, lined with fine grass, hair or wool and occasionally a few feathers; placed in a hole or niche in a bank or sloping hillside, well concealed by grass and bushes. A nest has been found in a hole of a tree about 130 cm above the ground. Eggs, normally 4, sometimes 3, pale verditer blue, unspotted. Average size of 12 eggs 20.5 × 14.6 mm (Baker). Brood-parasitized by *Cuculus canorus* and *C. micropterus*.

MUSEUM DIAGNOSIS. Male like *chrysaeus* but paler olive above with few or no black bases to feathers of back. Orange colour paler.

Female like *chrysaeus* but greener above; upper tail-coverts and olive of tail greener. Underparts paler.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1658.

1658. Eastern Golden Bush Robin. *Erithacus chrysaeus chrysaeus* (Hodgson)

Tariger chrysaeus Hodgson, 1845, Proc. Zool. Soc. London: 28 (Nepal)
Baker, FBI No. 546, Vol. 2: 95
Plate 88, fig. 15

LOCAL NAME. Manzhil-pho (Lepcha).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

TURDINAE

236

1659. Whitebrowed Bush Robin. *Erithacus indicus indicus* (Vieillot)

Sylvia indica Vieillot, 1817, Nouv. Dict. d'Hist. Nat., nouv. éd., 11: 267
(India, ex Sonnerat = Darjeeling)
Baker, FBI No. 551, Vol. 2: 102
Plate 88, fig. 13

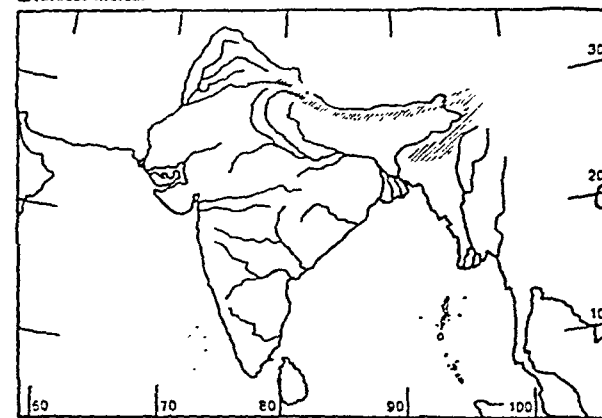
LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult). *Above*, slaty blue. A very conspicuous white supercilium. *Below*, orange-ochraceous. Male often breeds in brown female-like dress.

Female. *Above*, olive-brown. A partially concealed white supercilium and a pale eye-ring. *Below*, dull rufous-ochre, paler on belly.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements; locally common. The Himalayas from Garhwal to Arunachal Pradesh (Ludlow, *Ibis* 1944: 188), and south of the Brahmaputra in the Khasi Hills

Erithacus indicus

■ Breeding range *E. i. indicus* (1659).

(Baker) and Nagaland (Ripley, JBNHS 50: 489). Breeds between c. 3000 and 4200 m; winters from c. 3700 m down (uncommonly to the foothills), mostly between 2000 and 3000 m. Affects mixed subalpine forest of birch, fir, rhododendron and bamboo. In the Khasi Hills, inhabits steep ravines running through open pine, oak and rhododendron forest. In winter frequents undergrowth of seedlings and bracken etc. in heavy forest, usually near damp areas.

THRUSHES AND CHATS

237

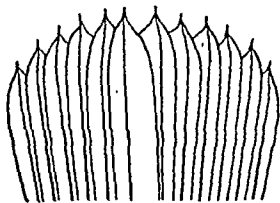
Extralimital. The species extends to northern Yunnan, Szechuan and Formosa.

GENERAL HABITS. Chiefly terrestrial; typically robin-like. Found singly in dense undergrowth, feeding on the ground or sometimes making sallies for insects from bushes or trees, or searching the leaves. Usually confiding and not difficult to watch if observer keeps still. Flicks tail.

Display. Male perched on a rock or bush, dropped his quivering wings to his feet; after quick bow, wings were slightly raised and quivered faster than before, whilst his tail was expanded and jerked several times up and down. This display was sometimes accompanied by a few dancing steps; after a few minutes feeding would be resumed or an advance made to the female (Baker).

FOOD. Insects and grubs.

VOICE AND CALLS. A croaking *trrr* which, once known, attracts attention. Call-note a sweet *tut-tut* answered by a sharper note. Song, a rapid repetition of this note on an ascending and descending scale (Baker). Song period mid April till early July (Proud).



Tail, $\times c. 1$

MUSEUM DIAGNOSIS. See Field Characters. Young spotted.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	79-84	(1) 14	(1) 28	64-72 mm
♀♀	73-79	—	—	— mm

(Baker, SA, Stevens, Stres.)

Bill from skull (1 ♂) 16; tarsus 30 mm (MD)

Weight 2 ♂♂ (July) 14.4, 14.6 g (GD). 2 ♂♂ (July) 13.2, 15.5; 1 ♀ (July) 15.2 g (RAP). 1 ♂ (Nov.) 14.5 g (SDR).

COLOURS OF BARE PARTS. Iris dark brown. Bill black or brownish black. Legs and feet greyish brown.

1660. **Rufousbellied Bush Robin.** *Erithacus hyperythrus* (Blyth)

Ianthia hyperythra Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 132 (Darjeeling)

Baker, FBI No. 552, Vol. 2: 103

Plate 88, fig. 17

LOCAL NAMES. *Aching-yon*, *Tsen-tsen-gai* (Naga).

SIZE. Sparrow —; length c. 12 cm (4½ in.).

THRUSHES AND CHATS

239

BREEDING. Unknown.

MUSEUM DIAGNOSIS. See Field Characters. Young, sooty brown above with small whitish streaks. Wings and coverts olive-brown tinged blue on outer webs. Chin and throat pale buff; rest of underparts pale buff with dark edges, producing a spangled appearance.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	79-83	c. 10	c. 25	54-56 mm
♀♀	75-79	c. 10	c. 24	c. 52-55 mm
		(from skull)		(Baker)
1 ♂	78	14	27	57 mm
				(SA)

Bill from skull (1 ♂) 15 mm; tarsus 25 mm (MD)

Weight 1 ♂ (March) 12 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet brown.

Genus **COPSYCHUS** Wagler

Copsychus Wagler, 1827, Syst. Av., *Gracula*: 306.

Type, by monotypy, *Gracula Saularis* Linnaeus

Notodula Lesson, 1830, *Traité d'Orn.*: 374. Type, by subsequent designation, Baker, 1930, Fauna Brit. India, Bds. 7: 112, 8: 622, *Turdus mindanensis* Gmelin

Kittacincla Gould, 1836, Proc. Zool. Soc. London: 7, Apl. 9. Type, by original designation, *Turdus macrourus* Gmelin = *Muscicapa malabarica* Scopoli

Tarsus stout. Bill stout and straight, little more than half the head in length. Rictal bristles short. Tail graduated, equal to or longer than wing; outer rectrices white or partly white.

Key to the Species

Outer rectrices all white.....	<i>C. saularis</i>	Page 239
Outer rectrices partly white.....	<i>C. malabaricus</i>	244

COPSYCHUS SAULARIS (Linnaeus)

Key to the Subspecies

A Female darker; male with greenish iridescence.....	<i>C. s. ceylonensis</i>	242
B Female paler; male with purplish iridescence.....		
1 Grey of flanks more extensive.....	<i>C. s. andamanensis</i>	243
2 Grey of flanks not extending to belly.....		
a Fourth rectrix with more black.....	<i>C. s. erimelas</i>	243
b Fourth rectrix with less black.....	<i>C. s. saularis</i>	239

1661. **Indian Magpie-Robin.** *Copsychus saularis saularis* (Linnaeus)

Gracula Saularis Linnaeus, 1758, Syst. Nat. 1: 109 (Asia = Bengal)

Baker, FBI No. 558 (part), Vol. 2: 113

Plate 90, fig. 4

LOCAL NAMES. *Dhājipāl*, *Dhājāyā* (Hindi, Bengali); *Dejōd* (Gujarati); *Dominga* (Marathi); *Kabré* (Bhil); *Kālī sooi chirā* (M.P.); *Zamīd-pho* (Lepcha); *Prāda nalanchi*, *Sarila-gadu* (Telugu); *Hatūtre* (Munda); *Dyōdlo* (Orson).

238

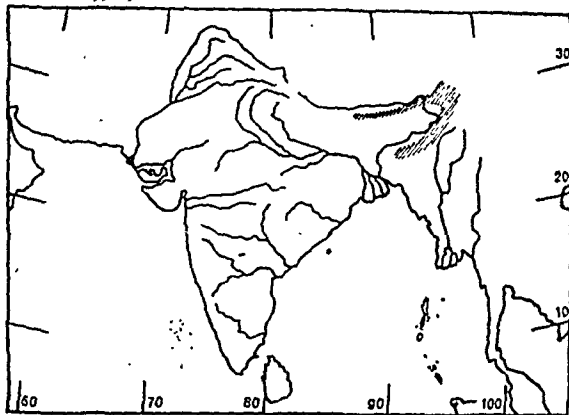
TURDINAE

FIELD CHARACTERS. Male (adult). Above, deep purplish blue. Forehead, supercilium, shoulders and lower rump bright ultramarine blue. Below, ochraceous or bright chestnut. Vent and under tail-coverts white.

Female. Above, dark olive-brown. Rump and upper tail-coverts slaty blue. Tail blackish edged with deep blue. Below, rich ochraceous, browner on breast, brightest at sides of belly. Centre of belly and under tail-coverts white.

STATUS, DISTRIBUTION and HABITAT. Altitudinal migrant, very scarce. Eastern Nepal (Stevens, JBNHS 30: 354; Fleming & Traylor, *Fieldiana* 35: 546), Sikkim, Bhutan (SA) and Arunachal Pradesh (Ludlow, *Ibis* 1944: 188; Baker, *Rec. Indian Mus.* 8: 277). Breeds between c. 3400 and 3800 m;

Erithacus hyperythrus



Distributional range

winters (September to March) from c. 3500 m down to the foothills. South of the Brahmaputra, recorded (winter only?) from Margherita, north Cachar and Khasi Hills. In summer inhabits the dwarf rhododendron zone; in winter affects bushes in rather open spaces at the edge of forest, along trails and especially along streams in forest.

Extralimital. Ranges east to northern Yunnan and southwestern Szechuan.

GENERAL HABITS. Little known. Typical robin; found singly, flitting from bush to bush, flicking its tail, sometimes catching insects on the wing. Rather confiding.

FOOD. Insects.

VOICE AND CALLS. Unrecorded.

240

TURDINAE

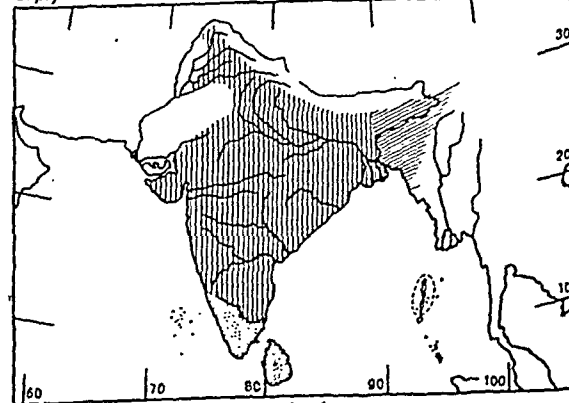
SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. A long-tailed black-and-white robin. Male (adult). Above, glossy blue-black. Wings blackish brown with a prominent long white patch. Tail black with white outer rectrices, graduated. Below, throat and breast blue-black; rest of underparts white.

Female, like male but blue-black replaced by slaty above and grey on throat and breast.

STATUS, DISTRIBUTION and HABITAT. Common and widespread resident. Northern Pakistan in the foothills east of the Indus, and adjacent plains south to Shahpur, Lahore, Bahawalpur, and India from the Himalayan foothills and Nepal east to Sikkim and western Bengal (where it intergrades with *erimelas*), west to central Rajasthan and the Kathiawar peninsula, and south to the Cauvery river (intergrading here with *ceylonensis*).

Copsychus saularis



saularis (1661). *erimelas* (1663). *ceylonensis* (1662). *andamanensis* (1664).

In the Himalayan foothills up to c. 1600 m (Sikkim, Nepal) or 2000 m (Simla, Dharmasala). Mostly a summer visitor (March-September) to higher elevations in arid northwest... human habitations — gardens, orchards and village groves, etc.; also in deciduous forest, and open secondary jungle.

THRUSHES AND CHATS

241

GENERAL HABITS. A familiar bird over most of India, usually seen near human habitations. Keeps singly or in pairs according to season. Feeds largely on the ground, hopping about in gardens, streets, lawns, etc., often perching on walls, gate-posts or roof-tops, holding itself erect, tail cocked and jerked upwards, wings slightly drooping at the sides. Usually fearless near habitations, but in non-breeding season becomes more quiet and secretive, skulking in undergrowth and brushwood. When feeding on ground commonly 'beats out' or stampedes lurking insects from crannies by suddenly flicking open its wings and tail. Flight undulating, tail flicked open at every dip, the white rectrices producing a curious flickering (stroboscopic) effect in the dim light of dusk when the bird is particularly active.

Display. During the breeding season male indulges in much ludicrous puffing out of chest, bill pointed stiffly skyward, and strutting and posturing in front of rivals; this accompanied by upward jerks of the fanned tail, cocked well over back till almost touching head. He becomes very pugnacious and vigorously defends his territory. Stoops diagonally down at intruder whether rival male or prospecting female, wings held open in a wide V above back and legs dangling — very like shrike pouncing on prey. At the end of a swoop shortly before alighting often fluffs out his plumage into a ball and almost floats down with a hovering wing-action. After chasing off the intruder the victor flies back to his own territory performing a 'victory roll', with body stiffly at an upward angle, head held high, and slow, deliberate wing-flaps.

FOOD. A wide variety of insects — ants, moths, grasshoppers, caterpillars, etc. (for some specific details see Mason & Lefroy, 1912). Also snails, earthworms, centipedes and small lizards and some vegetable matter. Flower nectar, e.g. of Silk Cotton (*Salmalia*) and Coral (*Erythrina*) trees.

VOICE AND CALLS. Song, a spirited, clear, rather thin and varied whistling, divided in short phrases repeated over and over again. Seems to have a new theme in a different combination each day though overall pattern of song individualistic and constant. Sings with wings partly drooping and tail depressed (not cocked or spread), more persistently in the morning and late afternoon, from some prominent exposed perch such as a tree- or roof-top, flag pole, fence post or radio aerial; occasionally mimicry of calls of other birds interlarded in the song. Local dialects clearly discernible in the song in different areas. May be heard throughout the year but main period of full song is March to August (Nepal), March to May (Hyderabad). A secondary song heard mostly in October and November (probably of young males) is described as 'an endless, intricate tune with imitations of other species, audible only at close range'; also some 'bursts of loud, sharp *chee-which-which* . . . *chee-chee-which-which-which*, very different from the tuneless song of the breeding season' (Neelakantan, JBNHS 52: 615-20). Call-note, a plaintive *swee-ee* or *swee-swee*; alarm or scolding note, a harsh *chr-r* (SA).

BREEDING. Season, overall February to August, mostly March to July with some local variation: March to June (western Maharashtra), March to July (M.P.), March-April (NE. Andhra), April to July (Bengal), May to August (Kathmandu Valley). Double-brooded. *Nest*, an untidy cup of grass, rootlets, leaves, twigs and a variety of odd materials: bits of rags, cotton, hair, etc., lined with similar material. Usually placed in holes in

THRUSHES AND CHATS

243

VOICE AND CALLS. Not different from 1661. Call-note, a shrill, loud, four-note chirp on a descending scale; alarm-notes, a scolding *chr* and a spitting sound (Henry).

BREEDING. Season, overall February to September with a peak in April and May in the hills, March and April in the low country. In Ceylon breeding begins in November but the chief months are March to May. Three successive broods have been recorded between April and August (S. India, Betts). *Nest* and *eggs* (c/3) as in 1661. For further details see Phillips, 1939, *Ceylon Jour. Sci.* 21: 259-69. Average size of 50 eggs 23.1 × 17.3 mm (Phillips). Female said to do all the building. Young leave nest when c. 14 to 18 days old.

MUSEUM DIAGNOSIS. Differs from *sularis* in that the female is darker above with more sheen; grey of breast darker.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	97-104	20-22	27-28	81-91 mm
♀♀	94-101	20-23	27-30	80-86 mm

Weight 1 ♂ 42 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill black; mouth yellowish flesh to slaty ink. Legs, feet and claws brown.

1663. Assam Magpie-Robin. *Copsychus saularis erimelas* Oberholser

Copsychus saularis erimelas Oberholser, 1923, Smiths. Misc. Coll. 76: 1-2
(Kaukarit, Houndraw Branch, Tenasserim)

Baker, FBI No. 558 (part), Vol. 2: 113

LOCAL NAMES. *Dari kâlārā* (Assam); *Uchināo* (Manipur); *Dao-gophu-gachim* (Cachari).

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1661, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Bangladesh, Bengal duars, Bhutan and Assam to Burma; in Bhutan up to c. 1900 m (Wamrong) and in the hills of Assam up to c. 1800 m. Habitat as in 1661.

Extralimital. The species ranges through Thailand, the Indochinese countries and China to Kiangsu south to the Philippines, Borneo and the Sunda Islands.

BREEDING. Season, February to July with a peak in April and May. *Nest* and *eggs* (c/4 or 5) as in 1661.

MUSEUM DIAGNOSIS. Differs from *sularis* in having more black on the fourth rectrix (from outer edge of tail).

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1661.

1664. Andaman Magpie-Robin. *Copsychus saularis andamanensis* Hume

Copsychus andamanensis Hume, 1874, Stray Feathers 2: 231 (Andamans)

Baker, FBI No. 561, Vol. 2: 116

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 20 cm (8 in.).

242

TURDINAE

trees, banks, walls, in rain-water drain-pipes and under eaves of buildings, etc. Nestboxes freely appropriated. Generally built between 1 and 10 metres above the ground, sometimes higher (once in the crown of a palm some 18 m up). *Eggs*, 4 or 5, occasionally 3, exceptionally 6, pale green, profusely blotched with reddish brown with underlying marks of pale lavender and purple-grey. Unspotted eggs are occasionally found. Average size of 100 eggs 21.9 × 17.1 mm (Baker). Building, incubation and care of young by both sexes. Incubation period 12 or 13 days.

MUSEUM DIAGNOSIS. See Field Characters. Young: white parts as in adult. Upperparts dark brown with traces of fulvous. Throat and breast with typical turdine spotting. Postjuvinal and postadult moult complete. No spring moult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	94-106	21-23	27-31	79-95 mm
♀♀	91-97	20-22	27-30	79-88 mm

(HW, BB, Koelz)

Weight 17 ♂♂ 31-40 (av. 35.6) g — SA. 2 ♂♂ (Oct.) 37.5, 42.5 g (GD). 1 ♂ (Oct.) 31.2 g (BB). 2 ♂♂ (Nov., Jan.) 38.2, 40.1; 2 ♀♀ (Jan.) 33.1, 35.8 g (RAP).

COLOURS OF BARE PARTS. Iris brown. Bill black; mouth greyish pink or pale flesh. Legs and feet slaty brown or black; soles pale yellow.

1662. Ceylon Magpie-Robin. *Copsychus saularis ceylonensis* Sclater

Copsychus ceylonensis Sclater, 1861, Proc. Zool. Soc. London: 186
(Ceylon)

Baker, FBI No. 560, Vol. 2: 115

LOCAL NAMES. *Mannattipechi* (Malayalam); *Peddalananchi*, *Savela-godu* (Telugu); *Gundoo-karitchan*, *Vannati-kūrūci*, *Patkari-kūrūci* (Tamil); *Folkizichā* (Sinhala).

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1661, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident in the hills, scarcer in the plains. Southern India, roughly south of the Cauvery river, and Ceylon in all zones up to c. 1800 m. In the hills of southwestern India up to c. 1200 m (recorded at Kodaikanal, Palni Hills, c. 2200 m — JBNHS 53: 266). Affects the neighbourhood of human habitations — gardens, orchards, wooded compounds, plantations, etc.; also scrub jungle.

GENERAL HABITS. As in 1661. 'Both sexes constantly indulge in a curious gesture; the black and white tail is raised in a series of jerks until it is vertical, then suddenly depressed and spread, the wings being simultaneously expanded downwards.' In defence of territory, 'the males show off before rivals with puffed-out breast feathers, depressed tail, and many absurd, pompous struttings and hoppings while trying to out-sing each other. Occasionally fierce combats take place' (Henry).

FOOD. Insects, caterpillars, dragonflies, small lizards. One bird was seen attacking and killing a young mouse (Betts). Also some vegetable matter such as boiled rice, bread crumbs and kitchen scraps, and fruit.

244

TURDINAE

FIELD CHARACTERS. As in 1661, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident, not abundant. South and Middle Andaman Islands. Affects scrub jungle and villages.

GENERAL HABITS, FOOD AND VOICE. As in 1661.

BREEDING. As in 1661.

MUSEUM DIAGNOSIS. Differs from *sularis* in having the grey on sides of lower abdomen extending towards the white centre; wing-quills darker; bill heavier in both sexes. Female with more sheen on upper plumage.

MEASUREMENTS AND COLOURS OF BARE PARTS. Probably as in 1661.

Weight 1 ♂ (Feb.) 35.1, 2 ♂♂ (April-May) 34.8, 39.3; 2 ♀♀ (April) 36.3, 37.5 g (RAP).

COPSYCHUS MALABARICUS (Scopoli)

Key to the Subspecies

	Page
A Belly white.....C. m. <i>albiventris</i>	247
B Belly rufous	
1 Female similar to male; rufous of belly paler.....C. m. <i>leggei</i>	245
2 Male black above, female grey above	
a Tail averaging longer.....C. m. <i>malabaricus</i>	244
b Tail averaging shorter.....C. m. <i>indicus</i>	246

1665. Malabar Shama. *Copsychus malabaricus malabaricus* (Scopoli)

Muscicapa malabarica Scopoli, 1786, Del. Flor. et Faun. Insubr. 2: 96

(Mahé, Malabar)

Baker, FBI No. 563 (part), Vol. 2: 118

Plate 90, fig. 1

LOCAL NAMES. *Shāmā* (Hindi); *Shyāmā* (Gujarati); *Shāmākkili* (Malayalam).

SIZE. Bulbul, with a long tail; length c. 25 cm (10 in.).

FIELD CHARACTERS. Male (adult). *Above*, head and back glossy black; rump white. Tail strongly graduated: outer rectrices largely white, conspicuous, especially in flight; central rectrices black and elongated. *Below*, throat and breast glossy black; belly and under tail-coverts rufous.

Female similar but black replaced by grey; underparts paler; tail shorter.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally distributed. The western Indian Peninsula from Gujarat (Surat Dangs) south along the Western Ghats complex (including Nilgiri, Palni and associated hills) to southern Kerala and Tamil Nadu south of the Cauvery river; plains level and up to c. 700 m. Affects dense secondary undergrowth and particularly bamboo facies in deciduous foothills forest.

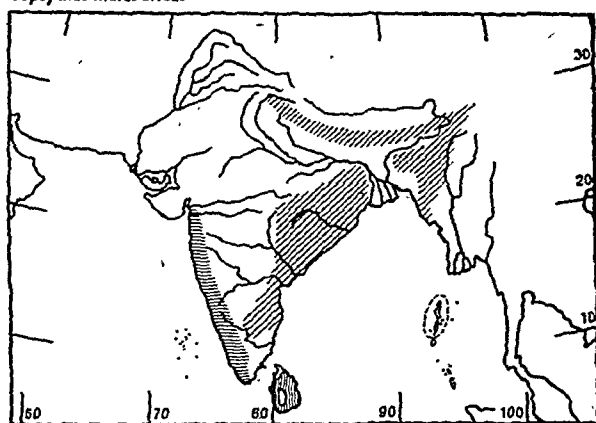
GENERAL HABITS. As in 1667.

FOOD. Grasshoppers, grubs, caterpillars and other insects.

VOICE AND CALLS. A magnificent song of several rich flutey notes alternated with long pauses, rather like that of *Muscicapa tickelliae* (1442) but louder, richer and more thrush-like. Casually confusable with song of Whitethroated Ground Thrush (1734). Song period: from February until

THRUSHES AND CHATS

245

Copsychus malabaricus

Distributional ranges

- malabaricus (1665). leggei (1666).
 indicus (1667). albiventris (1668).

well into the monsoon. Alarm: a loud note 'like the creaking of two branches rubbing together in the wind' (Betts).

BREEDING. Season, April to June, occasionally until September. Nest and eggs as in 1667.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

Young. Upperparts and sides of head dark brown with fulvous spots, large on scapulars, small elsewhere; flight-feathers edged with fulvous. Throat and breast fulvous with dusky edges to feathers; belly creamy white.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	94-99	18-21	24-27	160-207 mm
♀♀	87-90	18-20	23-24	113-137 mm (SDR, HW)

Weight 4 ♂ 28-32 g (SA).

COLOURS OF BARE PARTS. Iris dark brown. Bill black; mouth pale yellowish pink. Legs, feet and claws pale flesh.

1666. *Ceylon Shama*. *Copsychus malabaricus leggei* (Whistler)

Kittacina malabarica leggei Whistler, 1941, Ibis: 319 (Uragaha, Ceylon)
 Baker, FBI No. 563 (part), Vol. 2: 118

LOCAL NAMES. *Wāi-pōkicheā* (Sinhala); *Sōlai pādi* (Tamil).
SIZE. Bulbul, with a long tail; length c. 25 cm (10 in.).

THRUSHES AND CHATS

247

certain quiet well-wooded hill-stations, e.g. Matheran in Maharashtra. Distinctly crepuscular, hunting actively well into the dusk. Has a curious habit, chiefly in the breeding season, of striking the wings together as it flies across open ground, producing a clicking sound.

FOOD. Insects and their larvae.

VOICE AND CALLS. Song, of spasmodic, rich melodious phrases, rendered as *oi-o-lee-nou* (Fleming), mostly given in the morning and at dusk. Assam birds said to whistle freely in longer runs like magpie-robin and with fewer pauses than those in SW. India (Betts). Main song period March to May. Call-notes, a musical *chir-chur* and *chur-chi-churr*. Alarm, a harsh scolding. See also 1665.

BREEDING. Season, March to August, chiefly May and June; in some dry areas, breeding correlated with monsoon as in Manbhum dist. (Bihar) where it does not begin before the rains have set in (June). Nest, a pad of rootlets and leaves placed in hollows in trees or bamboo, usually within a couple of metres of the ground; sometimes hidden in rubbish accumulated at the base of a bamboo clump. Eggs, normally 4, occasionally 5 or 3, pale bluish green densely marked all over with umber-brown. Average size of 64 eggs 22 × 17.2 mm (Baker). Nest-building and incubation apparently by female only. Incubation period undetermined. Both parents feed the young, who leave the nest about 12 or 13 days from hatching.

MUSEUM DIAGNOSIS. Differs from *malabaricus* in having, on average, a shorter tail.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	86-99	17-22	25-28	108-200 mm
♀♀	84-93	18-22	25-27	102-131 mm

(HW, SDR, SA, Rand & Fleming)

Weight 1 ♀ (August) 30 g (RAP). 4 ♀♀ 30-32 g (SA, BB).
COLOURS OF BARE PARTS. As in 1665.

Miscellaneous. This species is highly prized as a cage-bird for its rich voice, longevity and ready acclimatization to captivity. It is well-known in aviaries outside as well as within its natural range.

1668. *Andaman Shama*. *Copsychus malabaricus albiventris* (Blyth)

Kittacina albiventris Blyth, 1859, Jour. Asiat. Soc. Bengal 27: 269
 (Andamans)

Baker, FBI No. 564, Vol. 2: 119
 Plate 90, fig. 2

LOCAL NAMES. None recorded.

SIZE. Bulbul, with a long tail; length c. 25 cm (10 in.).

FIELD CHARACTERS. As in 1666 but lower breast and centre of belly white.

STATUS, DISTRIBUTION AND HABITAT. Fairly common in the more densely forested parts of the Andaman Islands. Affects dense jungle, gardens and scrub at the edge of paths and clearings.

246

TURDINAE

FIELD CHARACTERS. As in 1665 but female similar to male.

STATUS, DISTRIBUTION AND HABITAT. Resident. Ceylon in the low country and lower hills up to c. 900 m; fairly common in the Dry zone, rare and local in the Wet zone. Affects scrub and dense undergrowth in forest.

GENERAL HABITS, FOOD AND VOICE. As in 1667.

BREEDING. Season, January to July, chiefly April and May. Nest and eggs (c/3 or 4) as in 1667. For details see Phillips, 1939, *Ceylon Jour. Sci.* 21: 262.

MUSEUM DIAGNOSIS. Differs from the Indian races in having the lower plumage paler rufous in male. Female similar to male, i.e. with upperparts, throat and breast glossy black.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	89-98	19-22	25-27	140-181 mm
♀♀	85-88	19-20	25-26	114-130 mm (HW)

Weight 1 ♂ 32 g (SDR).

COLOURS OF BARE PARTS. As in 1665.

1667. *Indian Shama*. *Copsychus malabaricus indicus* (Baker)

Kittacina malabarica indica Baker, 1924, Fauna Brit. India, Birds 2: 118
 (Bhutan duars)
 Baker, FBI No. 563 (part), Vol. 2: 118

LOCAL NAMES. *Shāmā* (Hindi, Bengali); *Shāmā sorāi* (Assam); *Poda nalanchi*, *Tenka nalanchi* (Telugu); *Sōlai pādi* (Tamil).

SIZE. Bulbul, with a long tail; length c. 25 cm (10 in.).

FIELD CHARACTERS. As in 1665, q.v. In poorly lit forest interior at dusk the flickering white rump and outer tail-feathers as the bird flies about are diagnostic.

STATUS, DISTRIBUTION AND HABITAT. Resident, unevenly distributed. The Himalayan terai, duars and foothills in Nepal, Sikkim, Darjeeling and Jalpaiguri districts, Bhutan and Arunachal Pradesh; the foothills of Meghalaya, Nagaland, Manipur and Bangladesh south to the Chittagong region. Also northern Uttar Pradesh from c. 79°E. in Kumaon (Ramnagar, Osmaston, JBNHS 36: 427) eastward through Gonda and Gorakhpur districts; Bihar (Madhubani, Rajmahal hills, Lohardaga), eastern Maharashtra and Madhya Pradesh (Chanda, Balaghat, Raipur, Bastar districts), and the Eastern Ghats complex from Orissa south to the Cauvery river. Affects undergrowth in forest, especially bamboo or mixed bamboo forest, on low hills and broken ground.

Extralimital. The species ranges east through Burma, Thailand and the Indochinese countries to Hainan and south to Java and Borneo. Introduced on Kauai (Hawaii).

GENERAL HABITS. In effect the forest counterpart of the magpie-robin, otherwise almost identical with it in ecology and behaviour, q.v. Shyer and more retiring; normally not found near human habitations except at

TURDINAE

248

GENERAL HABITS, FOOD AND VOICE. As in 1667. 'Hand-reared young copied tunes whistled to them with great accuracy' (Osmaston).

BREEDING. Season, at least May and June. Nest and eggs as in 1667. Recorded taking readily to nest-boxes placed in thick forest (Osmaston, JBNHS 17: 160).

MUSEUM DIAGNOSIS. Male differs from *indicus* in having the lower breast, centre of belly and vent white; flanks tinged with ferruginous; tail shorter. Female like male but less glossy on chin and throat.

MEASUREMENTS

Wing 85-89 mm. Tail 91-105 mm (Baker)
COLOURS OF BARE PARTS. As in 1665.

Genus *PHOENICURUS* Forster

Phoenicurus Forster, 1817, Synopt. Cat. Brit. Bds.: 16, 53.

Type, by tautonymy, *Molacilla Phoenicurus* Linnæus

Adelura Bonaparte, 1854, Compt. Rend. Acad. Sci. Paris 38: 8.

Type, by original designation, *Phoenicurus caeruleocephalus* Vigors

Bill short and slender; rictal bristles short. Wing pointed. Tail rather long, more than or nearly twice the length of tarsus, largely rufous in all but *P. caeruleocephalus*. Tarsus fairly long. Sexes not alike.

Key to the Species

	Males	Page
I A white patch on wing		
A Throat rufous	<i>P. erythronotus</i>	249
B Throat not rufous		
1 Cap ash or blue	<i>P. schisticeps</i>	260
a A white throat-patch		
b No white on throat	<i>P. hodgsoni</i>	257
i Tail rufous	<i>P. caeruleocephalus</i>	251
ii Tail all black		
2 Cap and nape white, more or less tinged grey	<i>P. amurensis</i>	262
c White wing-patch restricted to secondaries	<i>P. erythrogaster</i>	264
d White wing-patch including primaries		
II No white patch on wing	<i>P. frontalis</i>	258
C Tips of outer rectrices black		
D Outer rectrices entirely rufous		
3 A white band between grey crown and black forehead	<i>P. phoenicurus</i>	256
4 No white on crown	<i>P. pectoratus</i>	253
	Females	
I A white or buff patch on wing		
A A white patch on throat	<i>P. schisticeps</i>	260
B No white on throat	<i>P. amurensis</i>	262
1 Buffish white on secondaries		
2 Buffish white on tips of coverts	<i>P. erythronotus</i>	249
a Outer rectrices rufous	<i>P. caeruleocephalus</i>	251
b Outer rectrices brown		

THRUSHES AND CHATS

249

Page

- II No white on wing
- C Wing over 90 mm.....*P. erythrogaster* 264
- D Wing under 90 mm
- 3 Tips of outer rectrices black.....*P. frontalis* 258
- 4 Outer rectrices entirely rufous
- c Breast grey.....*P. hodgsoni* 257
- d Breast greyish fulvous
- i Outer web of 6th primary emarginated.....*P. ochrurus* 253
- ii Outer web of 6th primary not emarginated.....*P. phoenicurus* 256

1669. Eversmann's Redstart. *Phoenicurus erythronotus* (Eversmann)*Sylvia erythronota* Eversmann, 1841, Add. Pallas Zoogr. Rosso-Asiat. 2: 11

(Altai)

Baker, FBI No. 529, Vol. 2: 73

Plate 89, fig. 2

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult) summer. Above, head and nape grey. A black band from lores through ear-coverts and sides of neck. Back and rump rufous-chestnut. Wings blackish brown with a large, longitudinal white wing-patch and a smaller white patch near outer edge. Tail rufous with brown tips, dark brown central rectrices and brown outer web of outer rectrices. Below, entirely rufous, centre of belly whitish.

Male in winter has a pale brown head and nape (grey colour being concealed by brown feather-tips). Chestnut of back partly concealed by brown tips. Below, rufous-chestnut partly concealed by whitish tips giving a hoary aspect. By mid-winter, brown and whitish tips wear off, giving place to nuptial plumage.

Female. Above, brown with a pale eye-ring. Lower rump and tail rufous. Below, paler brown, whitish fulvous on belly. Distinguished from other species likely to occur in the same range by broad fulvous-white edges to wing-coverts and tertials. Distinguished from female Blueheaded Redstart (1670) by rufous tail (v. brown).

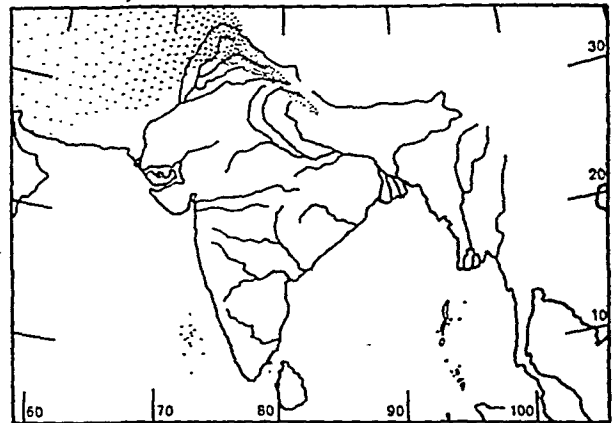
Tail flirled up and down, not shivered, a good field mark.

STATUS, DISTRIBUTION and HABITAT. Winter visitor in variable numbers, as a rule not abundant. The western Himalayas in Gilgit, Kashmir Valley, Kulu, Simla, west-central Nepal (easternmost record: Kali Gandak Valley, c. 83°30'E. — Rand & Fleming, *Fieldiana* 41: 151); the plains and hills of northern Pakistan south to the Jhang District, N.W.F.P. south to Dera Ghazi Khan, and northern Baluchistan (Quetta, Nushki, Chagai). Usually found near the base of hills but noted up to c. 2100 m (Nepal record at 2800 m). Affects arid country — waste land, scrub jungle, olive groves, orchards, dry river-beds, wooded compounds, and avenues and groves of *Acacia*, *Prosopis* and suchlike trees.

Extralimital. Breeds from the Tien Shan to Lake Baikal. Winters from Turkestan to southern Iraq.

250

TURDINAE

Phoenicurus erythronotus

Winter range

MIGRATION. Recorded in winter quarters from October till end of March, mostly December to February. Numbers vary from year to year and month to month, indicating that the species does not have fixed winter quarters, but is nomadic according to weather conditions.

GENERAL HABITS. Solitary. Usually seen perched on a stone or lower branch of a tree or thorn bush, descending momentarily to pick up an insect, and back again to the same or a nearby perch. Does not quiver its tail but flirts it up and down; otherwise a typical redstart.

FOOD. Insects.

VOICE and CALLS. Alarm, a croaking *gre-er* (Whitehead). Call-note, a softer slurred version of same. Song undescribed.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Key to the Species. Young spotted. Postjuvenile moult of body, lesser and median coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	84-89	14-16	23-26	64-75 mm
♀♀	81-86	15-16	23-27	64-72 mm (HW)

Weight 4 ♂♂ 17.7-20.6 g (Dementiev).

COLOURS OF BARE PARTS. Iris dark brown. Bill black; mouth yellowish (flesh-colour in one). Legs and feet black.

THRUSHES AND CHATS

251

1670. Blueheaded Redstart. *Phoenicurus caeruleocephalus* (Vigors)

Phoenicurus caeruleocephalus Vigors, 1831, Proc. Zool. Soc. London: 35
(Himalayas = Simla-Almora area *vide* Ticehurst & Whistler, 1924, *Ibis*: 411)

Baker, FBI No. 553, Vol. 2: 104

Plate 89, fig. 5

LOCAL NAMES. None recorded.

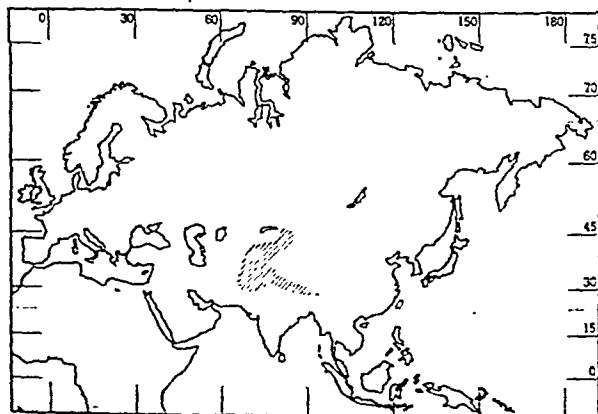
SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult), summer. Above, crown and nape bluish ashy. Rest of upperparts, including tail, black with a large white patch on wing. Below, throat and breast black. Belly white. In winter, bluish and black colours masked by pale brown fringes to feathers, especially on upperparts.

Female. Above, brown with a pale eye-ring. Wing-coverts and tertials broadly edged and tipped with fulvous-white. Lower rump and upper tail-coverts ferruginous. Tail brown narrowly edged with ferruginous. Below, pale brown tinged with fulvous, becoming white on belly and under tail-coverts.

Female could casually be mistaken for Rufoustailed Flycatcher (1409); in the distance and with naked eye, both sexes respectively also for Pied Bush Chat (*Saxicola c. bicolor*, 1700).

STATUS, DISTRIBUTION and HABITAT. Mostly an altitudinal migrant; on the whole fairly common, scarcer east of Garhwal. The Himalayas from Saled Koh, Chitral, Hunza, Gilgit and Baltistan east to Bhutan

Phoenicurus caeruleocephalus

Distributional range

252

TURDINAE

(Pemberton). Breeds between c. 2400 and 3900 m, optimum zone 2700-3600 m. Winters from c. 3500 m down to the foothills, chiefly between 1200 and 2600 m. In the breeding season prefers rocky ground, steep rocky hillsides, avoiding tall tree forest (Osmaston). Frequents mostly junipers but also open pine forest. In winter affects open pine woods and the more open parts of nullahs and hillsides, olive-groves and gardens.

Extralimital. Breeds also in adjacent parts of eastern Afghanistan and north to the Altai.

MIGRATION. Somewhat irregular in its appearances in winter. Arrives in November and December (earliest date 26 October), reaching peak numbers in January. Upward movement mostly in the first half of March (last date 22 March). On summer (breeding) grounds from the third week of March till the end of September.

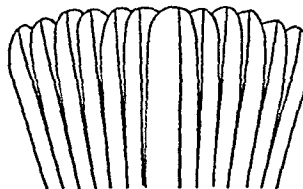
GENERAL HABITS. Has been described as 'partly redstart, partly robin' in behaviour, but Meinertzhagen affirms that 'the bird is exactly similar to the true redstarts in habits'. Usually seen singly, fluttering about the branches of trees and bushes, picking insects, then sitting still for a while. Descends to the ground to pick up a titbit, flying up to a perch immediately thereafter. Movement of tail 'more of a shake than the quiver of the redstart' (Whistler). Not a skulker.

FOOD. Insects.

VOICE and CALLS. Call-note *tik-tik* similar to that of a Robin Redbreast (H. G. Alexander). Alarm, near nest, a continual plaintive piping note *tit, tit, tit*... while flitting anxiously about (Whistler). Song strongly reminiscent of *Emberiza cia stracheyi* [2052] (Jones); usually delivered from the top of a bush or a tall juniper.

BREEDING. Season, May to August. Nest, a cup of moss, leaves, dry grass, juniper bark fibre, lined with hair, wool and some feathers. Placed in

recesses or hollows under boulders or fallen logs, among exposed roots of trees, in banks, concealed behind a screen of herbage; occasionally off the ground in a wall or in a hollow at the junction of juniper trunks. Eggs, 3 or 4, pale bluish green with a ring of fine, pale reddish specks at the larger end. Average size of 30 eggs 19.3 × 14.4 mm (Baker).



Tail, × c. 1

MUSEUM DIAGNOSIS. See Field Characters. Brown fringes of male's winter plumage apparently wear off in mid-winter or early spring. Summer plumage of female darker and light edges to wing-coverts worn off (HW). Postnuptial moult apparently in August. Young spotted (for details of plumage see *Ibis* 1925: 175). Young male in spotted plumage readily distinguished from female by white outer margins of inner secondaries (Scully). Postjuvenile moult of body-feathers, lesser, median and inner greater coverts. First-year birds distinguished by browner flight-feathers and primary-coverts, and by fulvous tips to outer greater coverts.

THRUSHES AND CHATS

253

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	80-84 }	(1) 15	c. 22	c. 65 mm
♀♀	76-84 }			

(MD, wing by Rand & Fleming)

Weight 6 ♂♂ (Dec.) 14-17; 5 ♀♀ (Nov.-Dec.) 14.1-16.6 g — RAP. 4 ♂♂ (Apr.-June) 13-16; 2 ♀♀ (Apr.-May) 13, 14; 1 ♀ (June, with oviduct egg) 17 g — Paludan, Afghanistan.

COLOURS OF BARE PARTS. Iris dark brown. Bill blackish brown. Legs and feet black. Young (in spotted plumage): Iris dark brown. Bill livid, darker above; mouth and gape yellow. Legs and feet livid steel colour; claws black; soles yellowish.

PHOENICURUS OCHRURUS (Gmelin)

Key to the Subspecies

Crown grey.....	<i>P. o. phoenicuroides</i>
Crown black.....	<i>P. o. rufiventris</i>

1671. Kashmir Black Redstart. *Phoenicurus ochruros phoenicuroides* (Moore)

Ruticilla phoenicuroides Moore, 1854, in Horsfield & Moore, Cat. Bds. Mus. E.I. Co. 1: 301 (Shikarpore)
Baker, FBI No. 531, Vol. 2: 76
Plate 89, fig. 4

LOCAL NAMES. *Sin-tick* (Ladakh); *Thirithra* ('shaker'), *Thirith-kämpä* (Hindi); *Thārtāro* (Gujarati).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult), summer. Above, forehead, round the eye, sides of neck and upper back black; crown and lower back grey. Wings brown. Rump and tail rufous; central rectrices dark brown. Below, throat and breast black; rest of underparts rufous. In winter, black parts fringed with grey.

Female. Above, pale brown with a paler eye-ring. Tail rufous, central rectrices dark brown. Below, pale fulvous-brown. But for habitat and behaviour could be mistaken for Rufoustailed Flycatcher (1409).

Males often breed in brown, female-like plumage.

STATUS, DISTRIBUTION AND HABITAT. Abundant summer (breeding) visitor: Pakistan and the western Himalayas from northern Baluchistan and N.W.F.P. through Gilgit, Ladakh and Kashmir to Rupshu, Lahul and Spiti. Breeds between 2100 and 3100 m (Baluchistan) and between 2400 and 4800 m (Himalayas), locally up to 5100 m, in the arid Tibetan facies; optimum zone 3000-4000 m. Winters from the foothills (c. 1400 m) south throughout Pakistan and in northwestern India (including Kutch and Kathiawar) at least to a line running from Baroda (Gujarat) to Etawah (central U.P.). Winter birds from Punjab and Sind 'much smaller than Kashmir breeding series and probably do not come from there' (Whistler). In summer (breeding) affects desolate rocky country and boulder-strewn

THRUSHES AND CHATS

255

sound resembling that made by pouring shot into a bottle' (BBO). Call-note *tue-tue tititititit*; also 'a mousy *whit...whit...whit*...like a squeaking uncoiled bicycle wheel revolving at moderate speed' (SA). Alarm-notes *ee-tick* or *ee-tick-tick*.

BREEDING. Season, from the beginning of May until early August. Nest, a cup of grass stems, moss, juniper bark and rootlets, lined with fine grass, hair and feathers; placed in piled stone walls, buildings, under stones or in rock crevices, etc. Eggs, 3 to 6, usually 4 or 5, pale blue, sometimes almost white, occasionally very faintly marked with reddish. Average size of 28 eggs 20.1 × 14.8 mm (Osmaston), of 60 eggs 19.9 × 14.3 mm (Baker). Brood-parasitized by *Cuculus canorus*. Incubation mostly by female, but to some extent apparently also by male.

MUSEUM DIAGNOSIS. Male differs from *rufiventris* (1672) in having more grey on upperparts, especially on crown. Winter series most satisfactorily separated on somewhat smaller size: Male ♂♂ majority under 85 mm v. majority over 85 mm in *rufiventris*. First-year male keeps brown plumage but has a few rufous feathers on lower breast. Young spotted; for details of plumage see Richmond, 1895, p. 82.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	80-89 }	15-16	23-24	{ 60-65 mm 55-60 mm (HW, SA)
♀♀	77-81 }			

Weight 12 ♂♂ 13-17 g (SA). 1 ♂ (December) 17.3 g (RAP).

COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet black.

1672. Eastern Black Redstart. *Phoenicurus ochruros rufiventris* (Vieillot)

Oenanthe rufiventris Vieillot, 1818, Nouv. Dict. d'Hist. Nat., nouv. éd., 21: 431
(S. Africa *errone* = Gyantse, Tibet side Baker, 1921, Hand-list: 85)
Baker, FBI No. 532, Vol. 2: 77
Plate 89, fig. 3

LOCAL NAMES. *Thirithra*, *Thirith-kämpä* (Hindi); *Phirira*, *Lal-girdi* (Bengali); *Nius bundi gadu* (Telugu); *Kankal* (Munda).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1671, q.v.

STATUS, DISTRIBUTION AND HABITAT. Summer (breeding) visitor: the northern Himalayas from Garhwal east through Nepal and Sikkim. Breeds between 3300 and 5200 m in Tibetan steppe facies. Habitat as in 1671. Recorded on passage in the Himalayas as high as 6000 m (Mt Everest). Winters from the foothills of Kumaon, Nepal, Sikkim, Bhutan and Arunachal Pradesh south through Assam, Manipur, Bangladesh, and the Peninsula to Mysore and Tamil Nadu [Palni Hills (c. 10°N.), Nichols, JBNHS 44: 394]. Specimens intermediate between *rufiventris* and *phoenicuroides* recorded in Uttar Pradesh, Bihar and western Bengal (Whistler MS.). Winter habitat as in 1671.

MIGRATION. As in 1671.

GENERAL HABITS, FOOD AND VOICE. As in 1671.

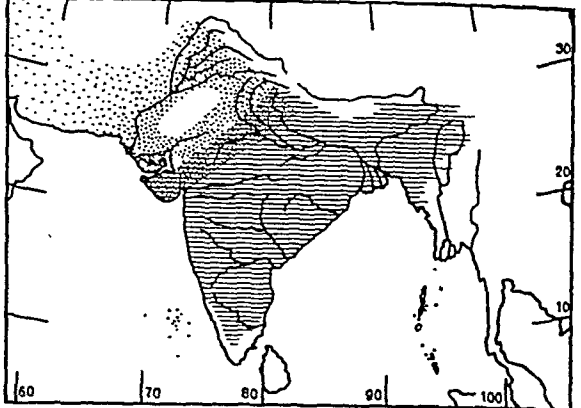
BREEDING. As in 1671. A pair observed with two concurrent nests c. 8 metres apart; while the male was feeding half-grown young in one nest, the

254

TURDINAE

ground above timber-line; also upland villages and, to a lesser extent, juniper forest. In winter frequents stony, sparsely scrubbed, broken country, dry water-courses and the neighbourhood of villages and cultivation.

Phoenicurus ochruros



Winter ranges (for breeding ranges see text)

phoenicuroides (1671).

rufiventris (1672).

Extralimital. Ranges east to the Caspian Sea and north to the Sayans and Altai. The species extends from western Europe and Morocco to Mongolia and western China. Winters in the southern parts of the range to Somalia, Arabia and Iraq.

MIGRATION. Arrives in winter quarters (very punctual locally) in the second half of September — first date in the foothills 30 August. Males appear to precede females by about three weeks. The majority leaves about the end of March (last date 10 May in Kashmir Valley). Noted on breeding grounds from end of March till October.

GENERAL HABITS. Solitary outside the breeding season. Has feeding territories in winter quarters, the same neighbourhood being occupied year after year and often even the same perches for roosting; males appear to greatly outnumber females. Perches on a rock or other low vantage-point shivering its tail and bobbing up and down every little while before darting to the ground to pick up an insect. Also hops on the ground to feed, preferably in shady spots, occasionally entering bungalow verandas. A common and familiar species on its summer grounds where 'every house has its pair'.

FOOD. Insects, largely small beetles.

VOICE AND CALLS. Song, a loud pleasing trill of six or seven notes followed by a wheezy jingle reminiscent of a *Prinia's* — 'a curious husky

256

TURDINAE

female was feeding younger chicks in the other (SA, JBNHS 46: 298). Average size of 100 eggs 20 × 14.6 mm (Baker); of 4 eggs 21.2 × 14.2 mm (Ludlow).

MUSEUM DIAGNOSIS. Male differs from *phoenicuroides* in having the crown and back entirely black. Wing larger, mostly over 85 mm v. under 85 mm in *phoenicuroides*, q.v.

Female like *phoenicuroides* but much darker overall and tinged with orange-brown on belly and flanks.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	84-93 }	14-15	{ 25-26 24-25	{ 60-65 mm 56-64 mm (HW)
♀♀	82-88 }			

Weight 2 ♂♂ (Apr.) 14, 18.5, 1 ♂ (July) 17.7 g (GD).

COLOURS OF BARE PARTS. Iris brown. Bill blackish brown; gape and mouth yellow. Legs and feet brownish black; soles yellow.

1673. Whitefronted Redstart. *Phoenicurus phoenicurus phoenicurus* (Linnaeus)

Motacilla Phoenicurus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 187
(Europa = Sweden)

Phoenicurus phoenicurus turkestanicus Zarudny, 1910, Orn. Monatsb. 18: 189
(Bokhara)

Not in Baker, FBI

Plate 89, fig. 6

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult), summer. Above, forehead and sides of neck black. Forecrown white; rest of crown and back grey. Wings brown. Rump and tail rufous; central rectrices dark brown. Below, throat black; breast and flanks rufous. Centre of belly whitish; under tail-coverts buff. In winter, grey of upperparts fringed with rusty brown; flight-feathers fringed with whitish and rusty; black of lower throat fringed with white as is also the rufous of underparts.

Female very similar to that of *ochruros* (1671) but belly and under tail-coverts whitish buff, not fulvous. Not distinguishable in the field.

Male distinguished from Black Redstart by white forecrown and grey back; black of throat not extending to breast.

STATUS, DISTRIBUTION AND HABITAT. Passage migrant, probably regular: northwestern Baluchistan (Robat — Christison, JBNHS 41: 434) and Chitral (Mastuj Valley, 1650 m — Perreau, *ibid.* 19: 909). Affects gardens and better wooded localities than Black Redstart.

Extralimital. Breeds in the western and central Palearctic from the British Isles to Lake Baikal, north to the limit of trees. Other subspecies from Turkmenia to Turkey and in Morocco. Winters in Africa south of the Sahara.

THRUSHES AND CHATS

257

MIGRATION. Recorded during spring passage, 1 and 22 April in Baluchistan, and middle of May in Chitral. A nocturnal migrant, pausing during the day.

GENERAL HABITS. Solitary. Carriage and movements as in the Black Redstart but more arboreal in habits. Usually perches on top of bushes, trees, fences or wires making short descents to the ground for insects.

FOOD. Insects.

VOICE AND CALLS. Ordinary call-note *weet* very similar to that of Chiffchaff (1574) or Northern Leaf Warbler (1572). Song more melodious than that of Black Redstart, without any grating notes.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
150 ♂♂	76-85 (av. 79.1)	13-14	55-64 mm
70 ♀♀	73-84 (av. 77.4)		

(Dementiev)

Tarsus 20-23 mm (Witherby)

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet dark brown.

1674. Hodgson's Redstart. *Phoenicurus hodgsoni* (Moore)

Ruticilla Hodgsoni Moore, 1854, in Horsfield & Moore, Cat. Bds. Mus. E.I. Co. 1: 303 (Boottan)

Baker, FBI No. 530, Vol. 2: 74

Plate 89, fig. 7

LOCAL NAME. *Thār-cāpni* (Nepal).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult). *Above*, forehead to ear-coverts black; forecrown whitish becoming ashy grey on crown, nape and mantle. Wings brown with a conspicuous white patch. Rump and tail rufous, central rectrices dark brown. *Below*, entire throat and breast black. Rest of underparts rufous.

Female. *Above*, greyish brown; no wing-patch; rump and tail as in male. *Below*, throat and breast pale grey-brown becoming whitish on belly.

Male distinguished from Black Redstart (1671) by grey back (v. black) and white patch on wing. Female differs from female of *ochruros* by grey-brown breast contrasting with whitish belly (v. uniform fulvous-brown underparts in *ochruros*).

STATUS, DISTRIBUTION AND HABITAT. Winter visitor, unevenly distributed, locally common. The lower Himalayas from Naini Tal (Meinertzhagen, *Ibis* 1927: 586) east through Nepal, Sikkim, Bhutan and Arunachal Pradesh; from the foothills to c. 2800 m, mostly in the foothills and sometimes adjacent plains; also south of Brahmaputra river in the Patkai hills, Nagaland, and Manipur and Cachar hills. Records from Kashmir and Ladakh appear to be erroneous. May be expected to breed in northern Arunachal (north of the

THRUSHES AND CHATS

259

FIELD CHARACTERS. Male (adult), summer. *Above*, forehead and supercilium bright blue becoming darker blue on crown and back. Wings brown. Rump rufous; tail rufous with central rectrices, outer edge of outer rectrices, and a broad terminal band nearly black. *Below*, throat dark blue forming a rounded bib on breast; rest of underparts orange-chestnut.

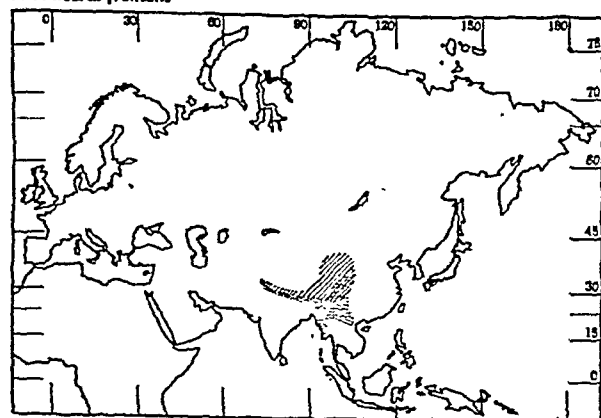
Winter plumage similar but crown and back fringed with rusty brown and tertials edged with buff.

Female. *Above*, olive-brown, darker than most redstarts. A pale buffish eye-ring. Tail pattern as in male. *Below*, throat and breast olive-brown; rest of underparts orange-brown.

The black-centred tail with broad black terminal band distinguishes both sexes as well as the young in spotted plumage from all other redstarts.

STATUS, DISTRIBUTION AND HABITAT. Common altitudinal migrant. The Himalayas from Safed Koh, Chitral and Hunza east to Arunachal-Pradesh (Ludlow *Ibis* 1944: 182). Breeds between c. 3000 and 4500 m [on Duala Dhar down to 2700 m, locally to 2000 m (HW); in Nepal up to 5300 m (BB)]. Winters from c. 2700 m down to c. 1000 m, mostly between 1500 and

Phoenicurus frontalis



Distributional range

■ Breeding □ Winter

2400 m; winters also in the hills south of the Brahmaputra, Nagaland and Manipur, south to the Chittagong ranges. In summer affects dwarf rhododendron, juniper, birch and other scrub at and above timber-line, and boulder-strewn slopes in the alpine zone. In winter (October to April)

258

TURDINAE

main range) as it does in adjoining SE. Tibet between 2900 and 4200 m. Has been recorded on the south side of the Tsangpo Valley by Ludlow (Sang, Chayul Dzong). In summer affects dry, barren uplands in the same biotope as *P. ochruros* as well as open cultivation, light forest and valley floors at lower elevations (Schäfer). In winter has a strong predilection for dry or partly dry river-beds in forest or cultivation; occasionally also in scrub, grassland and open parkland.

Extralimital. Breeds in the mountains of western China (in Tibetan steppe facies) and eastern Tibet (western limit unknown). Winters in adjacent regions of Szechuan, Yunnan and northern Burma.

MIGRATION. Arrives in winter quarters about the end of September and October, leaves in the first half of April. On summer grounds from end of March to October, most birds leaving before the end of September.

GENERAL HABITS. Typical of the genus. In winter found in widely separated pairs near streams, or bushes in the outskirts of neighbouring forest. Actions and behaviour on rocks and driftwood in streams particularly reminiscent of Plumbeous Redstart (1679). In summer also frequents high poplars, flitting among branches and catching insects in the manner of a flycatcher.

FOOD. Insects and berries (GD).

VOICE AND CALLS. Normal note a single clicking *prii*, like Bluefronted Redstart, q.v. Alarm-note, a rattling *trrr*, *tschrrr*. Song, short, almost tinny, with little modulation (Schäfer).

BREEDING. Season, May to August. *Nest*, a cup of dry grass, fibres and moss, lined with hair and wool; placed in stone walls, holes in banks, clefts in rocks or underneath a boulder. *Eggs*, 4 or 5, rarely 6, pale blue, as a series decidedly darker than those of *ochruros*, sometimes faintly freckled with reddish. Average size of 50 eggs 20.4 × 14.7 mm (Baker); of 6 eggs 21.2 × 15 mm (Ludlow).

MUSEUM DIAGNOSIS. See Field Characters. First-year male similar to female.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	82-88	15-17	23-25	63-71 mm
♀♀	76-84	14-17	22-24	60-70 mm

(BB, SA)

Weight 7 ♂♂ (winter) 16-19.5; 6 ♀♀ (winter) 14.5-18.5 g (SA, BB, SDR).

COLOURS OF BARE PARTS. Iris dark brown. Bill very dark horny to black. Legs, feet and claws very dark horny to black; soles grey.

1675. Bluefronted Redstart. *Phoenicurus frontalis* (Vigors)

Phoenicurus frontalis Vigors, 1832, Proc. Zool. Soc. London: 172

(Himalayas = Garhwal, vide Baker, 1924 (April), FBI 2: 69)

Phoenicurus frontalis perates Koelz, 1954, Contrib. Inst.

Regional Exploration, No. 1: 13 (Karong, Manipur)

Baker, FBI No. 526, Vol. 2: 69

Plate 89, fig. 8

LOCAL NAME. *Tak-tirri-pha* (Lepcha).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

260

TURDINAE

frequents cultivation clearings, gardens, terraced fields, scrub pasture and open forest.

Extralimital. The mountains of western China and eastern Tibet north to Kansu. Winters at lower elevations and south to northern Burma and northern Vietnam.

GENERAL HABITS. Usually solitary, sometimes in small, loose parties after breeding or when migrating. Descends to ground from boulder or bush for insects or hops from branch to branch in bushes, occasionally catching insects in the air. Tail wagged up and down in the manner of Whitecapped Redstart (1716) not shivered as in the Black.

FOOD. Insects, berries and seeds.

VOICE AND CALLS. Call-notes, a single clicking *tik* or *prii*. Alarm-note a soft frequently repeated *ee-tit-tit* or *ti-ti-ti-ti* from a perch as well as in flight, 'which sounds like a noisy watch being wound up a few cogs at a time' (Lister). Song 'typically redstart', a series of sweet warbling and harsh grating notes recalling that of *P. ochruros* (GD) but less wheezy. Main song period is over by mid June, only occasional song being uttered into July.

BREEDING. Season, May to August. *Nest*, a cup of moss and grass lined with a few rootlets, hair and feathers, usually placed in a hollow in a bank, between stones, or in a wall, sometimes in holes in trees up to about seven metres from the ground (once under the eaves of a house). *Eggs*, 3 or 4, pale pinky grey or light buffy, densely covered with minute specks of pale reddish. Average size of 50 eggs 19.4 × 14.7 mm (Baker). Sometimes brood-parasitized by *Cuculus canorus*.

MUSEUM DIAGNOSIS. See Field Characters. First-year birds recognized by ochraceous tips to greater coverts. Postnuptial moult complete, in August and September.

Juvenile in spotted plumage dimorphic according to Diesselhorst: 1. Spots ochre, edges of inner flight-feathers golden brown; underparts ochre, 2. Spots white or nearly white, edges of inner flight-feathers whitish ochre to almost white; underparts whitish ochre. Intermediate plumages occur.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	84-93	15-17	24-25 (once 28)	65-76 mm
♀♀	80-87	14-16	21-25 (SA, BB, SDR.)	64-70 mm

Weight 14 ♂♂ (May-Sept.) 15-19; 5 ♀♀ (May-Sept.) 14.3-17 g (GD).

11 ♂♂ (Oct.-Apr.) 14.5-17.5; 13 ♀♀ (Oct.-Apr.) 12.5-18 g (BB, SA).

COLOURS OF BARE PARTS. Iris brownish black. Bill, legs and feet black.

1676. Whitethroated Redstart. *Phoenicurus schisticeps* (Gray)

Ruticilla schisticeps Gray, 1846, Cat. Mamms. Bds. Nepal: 69, 153

(Nepal)

Baker, FBI No. 527, Vol. 2: 70

Plate 89, fig. 9

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 15 cm (6 in.).

THRUSHES AND CHATS

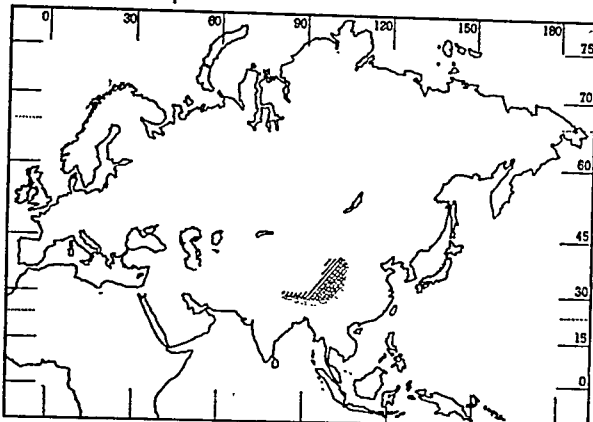
261

FIELD CHARACTERS. Male (adult), summer. *Above*, head dull indigo blue, brighter on forehead. Sides of head and back black. Tips of tertials and rump chestnut. Wing blackish brown with a large, longitudinal white patch. Tail almost entirely black except base of outer rectrices which are chestnut. *Below*, chin and sides of throat black with a large white patch on centre of throat. Rest of underparts chestnut; lower belly whitish. Winter plumage similar but crown and back fringed with rusty brown.

Female. *Above*, dark brown with buff eye-ring. A large whitish patch on wing. Rump and sides of tail chestnut. *Below*, olive-brown, paler than back, with a white throat-patch; belly whitish fulvous.

The white throat-patch easily identifies both sexes. Young in spotted plumage already has a large white wing-patch.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to rather small altitudinal movements, locally common. The Himalayas from west-central Nepal (Rand & Fleming, 1957) east to Arunachal Pradesh (Ludlow, *Ibis* 1944: 183). Breeds between 2700 and 4900 m (2800 to 3100 m in Arunachal, 3000 to 4900 m in central Nepal). A high-level redstart, recorded in winter

Phoenicurus schisticeps

Distributional ranges

Breeding

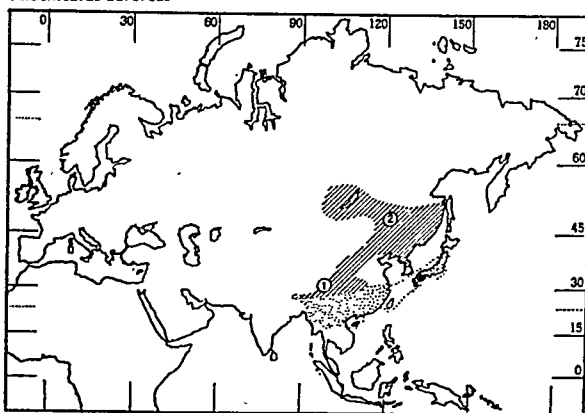
Winter

between 1400 and 4200 m. In summer affects open, park-like forest, scrub oak on ridges, juniper scrub in open conifer forest, and shrubs in semi-dry areas; favours stream banks. This species is strongly differentiated ecologically from other redstarts (Schäfer). In the Himalayas, appears to replace *P. frontalis* as the two species are not found in the same areas. In winter affects open meadows and scrub, sparsely scrub-covered hillsides with boulders and rock outcrops, occasionally forest.

THRUSHES AND CHATS

263

STATUS, DISTRIBUTION AND HABITAT. Summer (breeding) visitor to south-eastern Tibet and adjacent parts of Arunachal Pradesh, between 2800 and 3700 m, mostly 2800–3300 m. Winters in the Himalayan foothills west to Sikkim and Darjeeling and in the hills of Bangladesh, Assam, Nagaland and Manipur. In summer affects open forest, valley floors, cultivation and trees around upland villages. Does not occur in the arid Tibetan steppe facies. In winter found in open country, vicinity of villages, secondary jungle, tea gardens, along roads and tracks in forest, and bushes by streams.

Phoenicurus aureus

Distributional ranges

Breeding

Winter

1 *leucopterus* (1677). 2 *aureus* (RE).

Extralimital. Breeds in western and northern China, north to Ussuriland and the Lake Baikal region. Winters in southern China, Japan, Formosa, Hainan and northern Indochinese countries.

MIGRATION. Recorded in winter quarters from October to March. A party on migration observed in northern Sikkim at c. 4200 m in December (Meinertzhagen).

GENERAL HABITS. Usually solitary or in pairs, occasionally in small loose parties when migrating. Like 1676 feeds much in the manner of a flycatcher and on bushes and medium-sized trees, descending little to the ground. Territorial in winter as well as in summer. Tail flitted nervously.

FOOD. Insects and berries.

VOICE AND CALLS. Alarm-note *tek-tek* (Schäfer). Song undescribed; said to be 'cheerful'. Very silent in winter.

BREEDING. Season, May to August. *Nest*, a cup of moss, grass strips, feathers and hair placed on the ground under exposed roots of trees, or in a

262

TURDINAE

Extralimital. The mountains of western China and eastern Tibet north to Kansu. Winters at lower elevations in same area.

GENERAL HABITS. Keeps singly or in separated pairs; in scattered groups when just arrived on migration. Restless, and usually very wild. Perhaps more arboreal than most redstarts, finding its food largely in bushes or by aerial flycatching sorties. In winter feeds much on left-over berries on shrubs.

FOOD. Insects, berries (of *Hippophae* etc.) and small seeds.

VOICE AND CALLS. Alarm-note, a long-drawn *zieh* followed by a rattling note (Schäfer). Song unrecorded.

BREEDING. Little known and details not recorded within our limits.

Season, May to August (in Tibet, Schäfer). *Nest*, a cup of moss and grass lined with hair, feathers, soft grass stems, vegetable down or rootlets; placed in a hollow in a tree or stream bank, or in a rock cleft concealed by bushes, within a couple of metres from the ground. *Eggs*, 3, of three types: reddish cream with fine orange freckles, evenly distributed or forming a cap at the large end; unspotted pale reddish clay; or pale greenish grey with dense, but almost invisible, fine, clay-coloured flecking. Average size of 10 eggs 19.3 × 14.6 mm (all breeding data by Beick, *J. Orn.* 85: 561–2).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	81–87	15–17	24–25	66–70 mm
♀♀	76–85	15–17	23–25	64–73 mm

(SA, BB, NBK, Rand & Fleming)

Weight ♂♂ (Feb.) 17.7–20.6; 1 ♀ (Sept.) 18.5 g (Beick). 2 ♂♂ (Feb.) 16.5, 17.5; 3 ♀♀ (Feb.–Mar.) 16–17 g (BB, SA).

COLOURS OF BARE PARTS. Iris brown. Bill, legs, feet and claws black.

1677. Daurian Redstart. *Phoenicurus aureus leucopterus* (Blyth)

Phoenicurus leucopterus Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 962

(Malay peninsula)

Baker, FBI No. 528, Vol. 2: 71

Plate 89, fig. 11

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult), summer. *Above*, crown, nape and upper back slate-grey; centre of back black. Wings black with a prominent white patch. Rump and tail rufous, central rectrices blackish. *Below*, sides of neck and throat black. Rest of underparts rufous. In winter, grey and black of upperparts fringed with brown.

Female. *Above*, olive-brown, rump and tail rufous; a buff eye-ring and a small but distinct cream-coloured wing-patch. *Below*, breast fulvous-brown, throat paler; centre of belly cream-colour; flanks, vent and under tail-coverts ochraceous.

Male somewhat similar to *erythrogaster* (1678) but distinguished by smaller size and black central rectrices (v. all chestnut). Female recognized by whitish wing-patch.

264

TURDINAE

hollow in banks or walls. *Eggs*, 3 or 4, very variable in colour; one variety is described as pale green with a ring of light brown spots at the large end and a few elsewhere (Ludlow); for details of eggs from China, see Baker, *Nidification* 2: 67. Average size of 4 eggs 18 × 14.5 mm (Ludlow).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Tarsus	Tail
♂♀	70–77	23	58–60 mm

(Baker)

Bill from skull c. 15 mm

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet black.

1678. Guldenstadt's Redstart. *Phoenicurus erythrogaster grandis* (Gould)

Ruticilla grandis Gould, 1850, Proc. Zool. Soc. London: 112

(Afghanistan and Tibet)

Ruticilla Vigors Moore, 1854, in Horsfield & Moore, Cat. Bds. Mus. E.I. Co. 1: 304

(Bhutan)

Baker, FBI No. 533, Vol. 2: 78

Plate 89, fig. 10

LOCAL NAMES. None recorded.

SIZE. Sparrow +; length c. 16 cm (6½ in.).

FIELD CHARACTERS. Male (adult), summer. *Above*, forehead and round the eye black; crown and nape white. Back and wings black; a large white wing-patch. Lower rump and tail chestnut. *Below*, throat and breast black, rest of underparts chestnut. In winter, white of crown and black of back and breast fringed with ashy.

Female. *Above*, pale brown; a whitish eye-ring. Lower rump rufous; tail brownish rufous. *Below*, pale fulvous-brown; lower breast and flanks ochraceous buff; centre of belly whitish.

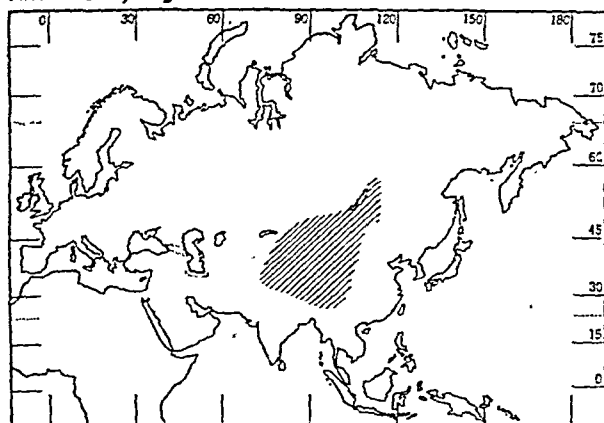
Striking colour pattern of male superficially resembles Whitecapped Redstart (1716), but larger size, conspicuous white wing-patch and uniformly chestnut tail diagnostic.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to altitudinal movements. Breeds in Chitral, Gilgit, Baltistan, Ladakh and along the northern Himalayan slopes (sporadic on southern slopes) through Kumaon, Nepal (Diesselhorst, 1968), Sikkim, Bhutan and Arunachal Pradesh. Breeds between c. 3600 and 5200 m (in Tibet up to 5500 m), optimum zone 3900–4800 m. Winters in the valleys at lower elevations from c. 1500 m (seldom lower) up to 4800 m (Sikkim—Meinertzhagen, 1927); scarce south of the main range in winter when recorded in Kashmir, Chamba (down to 900 m), Nepal and Sikkim. In summer affects river-beds and boulder-strewn meadows and slopes in dry, barren alpine country above the dwarf scrub zone and in Tibetan facies. In winter frequents rocky moraines and river-beds, and sparsely scrubbed hillsides, usually in the vicinity of streams; very partial to *Hippophae* thickets in valley bottoms.

Extralimital. Breeds also in Tibet, Turkestan and western China, north to the Lake Baikal region. Nominate race in the Caucasus and southern Caspian mountains.

THRUSHES AND CHATS

265

Phoenicurus erythrogaster

Distributional ranges

■ *grandis* (1678). □ *erythrogaster* (RE).

MIGRATION. Met with at lower elevations between September and April, but movements irregular and dependent on weather conditions; lowest levels usually reached in January.

GENERAL HABITS. A very hardy species often remaining at very high altitudes even during severe weather conditions. Males apparently harder than females, the latter deserting entirely their high summer grounds (Schäfer). Very shy. Usually 'keeps to itself, but at times may be seen in loose company with other species, when forced down by bad weather to lower levels. Actions and behaviour typically redstart. Flies from rock to rock or perches on boulders or scrub making short descents to the ground to pick insects, or hawking flying insects in the air. Replaces Whitecapped Redstart at high altitudes, taking insects amongst boulders along glacier torrents.

Display. Male soars from a prominent rock with outstretched quivering wings, showing off his striking plumage (Schäfer).

FOOD. Small beetles, ants and other insects. In Tibet often observed searching for insects inside carcasses of dead transport animals. In winter feeds almost exclusively on berries of juniper, *Berberis*, and especially the bountiful *Hippophae*.

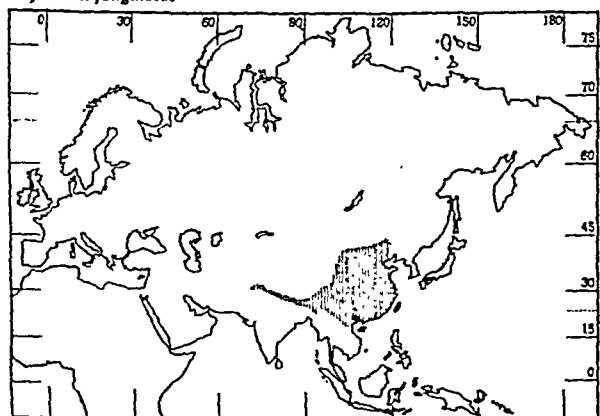
VOICE AND CALLS. Little recorded. Song short and clear, delivered from a prominent perch or during display flight (Schäfer).

BREEDING. *Season*, May to August. *Nest*, a cup of dry grass shreds lined with wool, hair and a few feathers, placed in hollows between stones or in walls. *Eggs*, 4, white with pale reddish freckles. Average size of 9 eggs 22.7 × 17.4 mm (Osmaston).

THRUSHES AND CHATS

267

western Nepal, and 4400 m in Manangbhot (Lowndes), but in eastern Nepal not over 3000 m (Diesselhorst) and down to c. 1500 m in Kathmandu Valley. In Sikkim and Bhutan does not ascend over 3700 m and may breed as low as 600 m (Sálim Ali, *Birds of Sikkim*); south of the Brahmaputra breeds between 1000 and 1800 m. Winters (October to March) from c. 2400 m down to the foothills and terai (chiefly 1000-1800

Rhyacornis fuliginosus

Distributional ranges

□ *fuliginosus* (1679). ■ *affinis* (RE).

m), east of Nepal extending for c. 20 km into the plains along the larger streams; also winters in the foothills of Bangladesh south to the Chittagong region, and along the Burma border. Females and young apparently winter at lower levels than males (Schäfer). Affects rushing torrents and streams, chiefly in a wet climatic zone; does not breed north of the main range.

Extremal. Ranges east to northern Vietnam, Hainan and China, north to Hoph and Kansu. Another subspecies in Formosa.

GENERAL HABITS. Solitary or in pairs. Confined to mountain streams where it flits from boulder to boulder, catching insects by making short sallies in the air or pursuing them with rapid steps over stones, sometimes hovering for an instant and snatching them from the surface of the water. When perched, the tail is continuously opened and shut rapidly with a scissors-like action and simultaneously wagged up and down. Very crepuscular, hunting late into the dusk till too dark to be seen but for the twinkling white in the female's tail. This twinkling produces the exact effect of water cascading over stones in a torrent, and even in good daylight often obliterates the bird against its background in an astonishing way. Maintains jealously guarded feeding territories in winter, demonstrating aggressively against

266

TURDINAE

MUSEUM DIAGNOSIS. See Field Characters. Postnuptial moult in July and August. Plumage of young spotted, variable and with a brown and a whitish phase (GD) as in *frontalis*. Young males recognizable by white wing-patch. Postjuvénal moult in September.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	101-115	17-18	28-30	70-75 mm
♀♀	95-106	15-17	27-28	71-75 mm

(SA, Ludlow, Schäfer)

Weight 1 ♀ ad. (Aug.) 25.2, 5 ♀♀ juv. 25.4-30.1; 6 ♂♂ juv. 26.5-30.8 g (GD).

COLOURS OF BARE PARTS. Iris black or brown. Bill, legs, feet and claws brownish black to black.

Genus RHYACORNIS Blanford

Rhyacornis Blanford, 1872, Jour. Asiat. Soc. Bengal 41: 51.

Type, by monotypy, *Phoenicurus fuliginosus* Vigors

Differs from *Phoenicurus* by shorter tail and especially by very different plumage of female and immature, both having a considerable amount of white in tail. Rectal bristles well developed.

Cf. Deshayes, M., 1969, *Ibis*: 245.

1679. Plumbeous Redstart. *Rhyacornis fuliginosus fuliginosus* (Vigors)

Phoenicurus fuliginosus Vigors, 1831, Proc. Zool. Soc. London: 35

(Himalayas, restricted to Simla-Almora area by Ticehurst & Whistler, 1924, *Ibis*: 471)

Baker, FBI No. 535, Vol. 2: 81

Plate 89, fig. 12

LOCAL NAMES. *Kola tirio* (Kashmir); *Siradum parbo-pho* (Lepcha); *Chubbia nakki* (Bhutanese).

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. Male (adult). Entirely bluish slaty with chestnut tail and rufous lower belly.

Female. Above, dark grey-brown with two rows of white spots on wing and a pale eye-ring. Base of tail white; rectrices partly white, tipped broadly and edged with brown. Below, mottled slate and white.

Expanded white tail of female exposes a brown triangle with the terminal end as its base.

Males often breed in female-like plumage.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to altitudinal movements. The Himalayas from N.W.F.P. eastward through Arunachal Pradesh, thence south through Nagaland, Manipur and the Khasi hills. Vertical distribution uneven. Breeds between c. 1200 and 2100 m in Chitral (one record from Gilgit); c. 1200 to 3900 m from the Sutlej Valley to Simla, mostly above 1800 m but down to 900 m in the Kulu Valley (HW); up to 4300 m in Garhwal, to 3200 — locally to 3600 m — in

268

TURDINAE

intruders of its own kind while tolerating other species, e.g. Whitecapped Redstart and forktails etc. Cranes neck forward, tail fully fanned out and depressed, and utters a sharp, angry, prolonged *kreee* (SA). If this warning unheeded, attacks and chases intruder back to its own borders. Very territorial also in the breeding season, each pair staking out a stretch of river (Diesselhorst, Bates, Schäfer) and assiduously keeping off interlopers. However, Baker (*Nidification* 2: 77) states that two pairs may be seen feeding on the same stretch of water, while nests are often placed within a short distance of one another. If so, this must be exceptional.

Display. Flies almost vertically up in the air some 5 or 6 metres, then swoops down in a wide spiral to its original position (Cranbrook). Also described (if different from above), a slow and fluttering flight with tail fully spread out (Smythies), and a slow flight with rapidly vibrating wings in a short parabola from rock to rock (Whistler). Display very like that of wheatears (Baker).

FOOD. Chiefly insects, occasionally berries (Diesselhorst).

VOICE AND CALLS. Call-note, a sharp *ziet, ziet* (Schäfer); threat call, a sharp *kreee* (above). Song, a sharp, creaky and metallic jingle of about five seconds' duration exactly like a cricket's chirping and similarly rising in pitch (SA); uttered from a boulder or during display flight (q.v.). Song period, mainly February to June (Proud) but may occasionally be heard in winter.

BREEDING. *Season*, April to July. Double brooded. *Nest*, a cup of green moss, grass, rootlets and a few dead leaves lined with rootlets, fibres, hair or wool; usually placed on a ledge of rock, in a crevice or hole in stream banks, in the stonework of bridges, occasionally under the eaves of a streamside house, in hollows in trees or stumps — rarely even against the trunk of a tree up to c. 4 metres above the ground. Seldom built more than 50 metres or so away from streams. *Eggs*, 3 to 6, normally 4, very pale grey-green with reddish brown markings usually forming a ring or cap at the large end. Average size of 14 eggs 19.8 × 14.6 mm (BBO); of 100 eggs 18.7 × 14.5 mm (Baker). Construction of nest by both sexes; incubation by female alone, period undetermined. Both sexes tend the young. Brood-parasitized by *Cuculus canorus* and *C. fugar*.

MUSEUM DIAGNOSIS. See Field Characters. Young. Above, grey-brown with small whitish spots (buffish on wing). Upper tail-coverts white; rectrices except distal half of central rectrices and outer margins of outermost rectrices which are dark brown. Below, throat, breast and flanks grey-brown densely spotted with whitish; belly white with dusky fringes; under surface of tail white except for brown tip. Young moult into brown female-like plumage. Males often breed in this brown dress and apparently do not acquire adult plumage until the second year.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	72-80	13-16	22-24	50-57 mm
♀♀	68-83	13-14	21-24	46-53 mm

(BB, SA, CBT, Stres.)

Weight 3 ♂♂ (spring) 17.7-19 g (GD). 5 ♂♂ (Nov.-Dec.) 16.6-19.1; 4 ♀♀ (Oct.-Dec.) 14.8-16.8 g (RAF). 5 ♂♂ (Oct.-Apr.) 14-21; 4 ♀♀ (Oct.-Apr.) 15-18 g (SA, BB).

THRUSHES AND CHATS

269

COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet blackish brown; soles white.

Genus *HODGSONIUS* Bonaparte

Hodgsonius Bonaparte, 1850, *Consp. Gen. Av.* 1: 300. Type, by monotypy, *Brachypterus phoenicuroides* 'Hodgs.' = *Brachypterus phoenicuroides* [sic] Gray. Wing short and rounded. Bill as in *Brachypteryx*. Rictal bristles weak. Tarsus and tail long.

1680. *Hodgson's Shortwing* or *Whitebellied Redstart*. *Hodgsonius phoenicuroides phoenicuroides* (Gray)

Brachypterus phoenicuroides [sic] Gray, 1846, *Cat. Mamms. Bds. Nepal*: 70, 153 (Nepal)

Baker, FBI No. 491, Vol. 2: 21

Plate 89, fig. 13

LOCAL NAMES. None recorded.

SIZE. - Bulbul; length c. 19 cm (7½ in.).

FIELD CHARACTERS. Male (adult). Above, slate-blue with two small white spots on wing. Tail long and graduated, blackish, base of outer rectrices rufous. Below, throat and breast slate-blue; belly white; under tail-coverts blackish tipped white.

White wing-spots conspicuous in flight and when wings drooped.

Female. Above, brown; tail with rufous patch at base as in male. Below, fulvous, centre of belly whitish.

First-year male like female but much darker brown; often breeds in this plumage.

STATUS, DISTRIBUTION and HABITAT. Altitudinal migrant. Summer (breeding) visitor, locally common: the Himalayas from the Indus river (Kagan) east through Arunachal Pradesh. Breeds between 2400 m (isolately) and 3900 m, in Nepal up to 4400 m. Winters (September to May) from at least 1500 m down to the foothills. Affects dense thickets of birch and juniper, chiefly near and above timber-line. In winter frequents bush jungle, undergrowth and edges of forest.

Extratropical. Extends east to Yunnan. The species ranges north to Kansu and Shensi and winters south to the northern Indochinese countries.

GENERAL HABITS. Robin-like; very shy and retiring. Makes short flights from bush to bush; feeds on the ground. Tail often erected almost vertically and expanded, especially when calling, displaying the rufous base otherwise concealed or inconspicuous.

FOOD. Insects; in autumn berries are also taken (Schäfer).

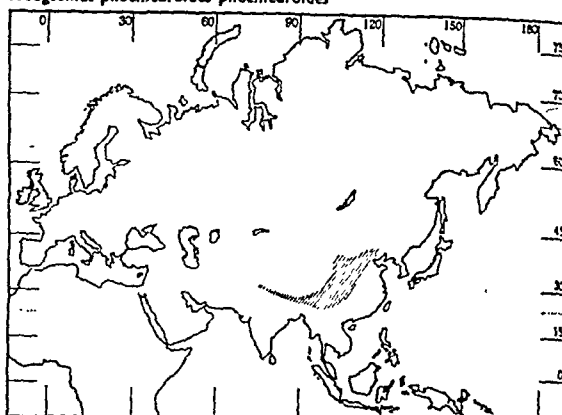
VOICE and CALLS. Song, a complacent-sounding, loud, rather melancholy whistled phrase of three notes, the middle one prolonged and highest, the last a half-tone lower than the first (BBO), rendered as *pe-pee-pit* (SA) or *he did so* (Whitehead). Usually given from a bush-top or tree early morning and late evening — even during moonlit nights. Song period June to August. Alarm-note a robin-like *tsiep tsiep tk tk* or *tek tek sie* (GD). Other notes described as a monosyllabic *chuck*.

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270

TURDINAE

Hodgsonius phoenicuroides phoenicuroides

Distributional range

BREEDING. Season, June to August. Nest, a deep cup of grass and dead leaves, lined with moss or fine grass, hair and a few feathers; reminiscent of a nightingale's. Placed in low bushes within 30 to 50 cm from the ground, or even on the ground itself. Eggs, normally 3, sometimes 2, rarely 4, deep blue-green. Average size of 31 eggs 22.2 × 16.1 mm (Osmaston); of 60 eggs 22.7 × 16.1 mm (Baker). Often brood-parasitized by *Cuculus canorus*. Incubation apparently by female alone; period undetermined. Both sexes tend the young.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
2 ♂♂	72, 74	18-19	77, 79 mm
4 ♀♀	69-72		76-78 mm (BB, SA)

Tarsus c. 30 mm

Weight 2 ♂♂ (July) 22.5, 22.7; 4 ♀♀ (August) 22-24.8 g (GD). 1 ♀ (Nov.) 24 g (SA).

COLOURS OF BARE PARTS. Iris dark brown. Bill black (♂), brown (♀). Legs and feet brown, soles paler.

272

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Order PASSERIFORMES (cont.)

Family MUSCICAPIDAE (cont.)

Subfamily TURDINAE: Thrushes and Chats (cont.)

Genus CINCLIDIUM Blyth

Cinclidium Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 181. Type, by monotypy, *C. frontale* Blyth

Muscivora Hodgson, 1845, Proc. Zool. Soc. London: 27. Type, by original designation, *M. leucura* Hodgson *vs.* *Muscivora* Agassiz, 1841 (*vide* Mayr, 1938, Ibis: 293)

Myiornis 'Hodgk' = Gray, 1846, Gen. Bds. 1: 178. New name for *Muscivora* Hodgson

Gallus Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 136. New name for *Cinclidium* Blyth, 1842

Tail considerably longer than tarsus. Bill fairly stout, rictal bristles short. Tarsus strong, moderately long.

Key to the Species

Tarsus over 32 mm.....*C. frontale*
Tarsus under 32 mm.....*C. leucurum*

1681. Whitetailed Blue Robin. *Cinclidium leucurum* (Hodgson)

M. (musivora) leucura Hodgson, 1845, Proc. Zool. Soc. London: 27 (Nepal)

Notodula leucura shipidura Koelz, 1952, Jour. Zool. Soc. India 4: 41

(Tekhubarna, Naga Hills)

Baker, FBI No. 554, Vol. 2: 106

Plate 89, fig. 14

LOCAL NAME. *Mengshia* (Lepcha).

SIZE. Bulbul —; c. 17 cm (6½ in.).

FIELD CHARACTERS. Male (adult). Above, lores, round the eye and sides of head black. Forehead, short supercilium and shoulders blue. Rest of upperparts dark indigo. Tail blackish with two white patches on basal half (prominent only in flight). Below, throat and breast black; a white patch on each side of neck, usually concealed. Belly dark indigo.

Female. Above, rufous olive-brown; a ferruginous eye-ring. Tail dark brown edged ferruginous, and with white patches as in male. Below, throat ochraceous; breast rufous-brown; belly greyish brown. The conspicuous white patches in the tail of both sexes diagnostic.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical seasonal movements, locally common. From central Nepal east through Arunachal Pradesh, thence south through the Patkai Range, Nagaland, Manipur and

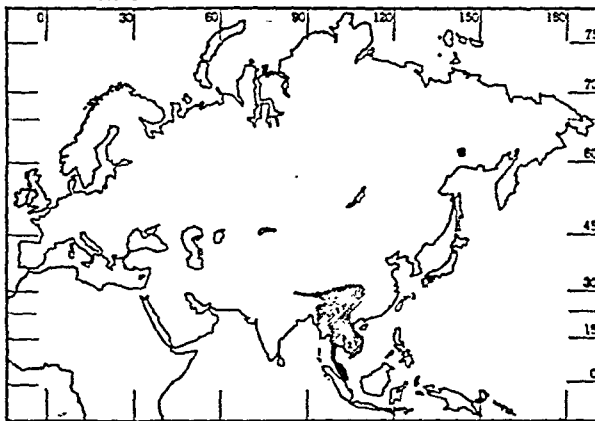


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TURDINAE

Meghalaya in the Cachar, Khasi and Garo hills. Breeds between 1200 and 2700 m; winters from c. 1500 m down to the foothills and, in Meghalaya, adjacent plains. Affects undergrowth in shady, broad-leaved evergreen forest, usually in the vicinity of small streams.

Cinclidium leucurum

Distributional range 1 *leucurum* (1681) 2 *leucurum* (RE)
3 *frontale* (RE)

Extralimital. Extends east to Hupeh, Kweichow and Vietnam, and south through the Malay Peninsula.

GENERAL HABITS. Solitary and as a rule very secretive. Feeds on the ground and in bushes. When disturbed flies on to a dead log or low branch where it sits opening and closing its tail. Presently descends again to hop about and feed, flicking aside and turning over dead leaves in the quest.

FOOD. Insects and, at least in autumn, berries (GD).

VOICE AND CALLS. A clear, liquid song of robin quality — several phrases, each given separately with a considerable pause between: *te-ile-i-te-ux-i* *ti-yi-ya-we-i* (Lister). Often sings from an exposed perch. 'The bird would perch on a twig while singing and lean forwards, at the same time spreading the tail ... One continually raised and depressed its tail quite slowly while singing and at the same time expanded and contracted it' (Lister). Song period, mid March to mid September (Proud). Other notes unrecorded.

BREEDING. Season, April to August, chiefly May and June. The majority of birds have two broods, using the same nest for both (Baker). Nest, a deep cup when sheltered from above, often domed or semi-domed when in open banks; made mostly of rootlets mixed with some dead leaves and green

THRUSHES AND CHATS

3

moss lined with rootlets, placed in a crack or hole in some vertical rock near streams or in a grassy or mossy bank, sometimes among boulders or exposed roots of trees overhanging a stream. Eggs, 3 or 4, almost white to pale pink, some with a faint darker coronal band at the large end and an indistinct indication of a speckled pattern; rather similar to eggs of Large Niltava (1428). Average size of 65 eggs 22.9 × 17 mm (Harrison & Parker, Bull. Brit. Orn. Cl. 86: 71-3). Building of nest by both sexes. Incubation mostly by female, also by male.

MUSEUM DIAGNOSIS. See Field Characters. Young very dark brown (♂) or olive-brown (♀) spotted with ferruginous; white patches in tail as in adult. Post-juvenile moult of body, lesser and median coverts. First-year birds distinguished by retention of ochraceous tips to greater coverts. Postnuptial moult apparently in September (fresh plumage in October).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	89-100	18-19	27-29	69-85 mm
♀♀	88-91	—	—	— mm

(SDR, BB, SA)

Weight 5 ♂♂ (Oct.-Nov.) 24-30 g (GD, SA); 1 ♀ (winter) 26 g (SDR).

COLOURS OF BARE PARTS. Male. Iris brown. Bill, legs and feet black. Female. Iris brown. Bill horny. Legs and feet brown.

1682. Bluefronted Robin. *Cinclidium frontale frontale* Blyth

Cinclidium frontale Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 181 (Sikkim)

Baker, FBI No. 555, Vol. 2: 107

Plate 89, fig. 15

LOCAL NAMES. None recorded.

SIZE. Bulbul ±; length c. 19 cm (7½ in.).

FIELD CHARACTERS. Male (adult). Above, lores, frontal band and round the eye black. Forehead, short supercilium and shoulders cobalt-blue. Rest of upperparts deep slaty blue. Below, deep slaty blue; centre of belly and under tail-coverts whitish.

Female. Whole plumage rufous brown; a pale eye-ring. Centre of belly and vent whitish.

Both sexes very similar in coloration to *C. leucurum* but tail greatly graduated and without any white, and tarsus considerably longer.

STATUS, DISTRIBUTION AND HABITAT. A rare and little known species. Recorded only from Nepal (probably extreme eastern part), Sikkim and Darjeeling. In the latter district taken in June at Palrajua, 2250 m, about 5 km northeast of Tonglu (Paynter, *in litt.*). Affects subtropical wet forest.

Extralimital. Another subspecies in northern Vietnam and Laos.

GENERAL HABITS, FOOD AND VOICE. Unknown. Specimens have been taken in heavy forest near the ground.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. See Field Characters.

4

TURDINAE

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	83-91	14-15	37-38	75-80 mm
♀♀	81-82	13	—	78 mm

(Baker)

2 ♂♂ 87, 88 13 38, 40 63, 67 85, 86 mm
(Eddie, Glasgow Univ. Hunterian Mus.)

Weight 2 ♂♂ (June) 25.5, 26.2; 2 ♀♀ (June) 25, 25 g (RAP).

COLOURS OF BARE PARTS. Male. Iris, bill, legs and feet black. Female. Iris very dark brown. Bill black. Legs and feet fleshy grey.

Genus GRANDALA Hodgson

Grandala Hodgson, 1843, Jour. Asiat. Soc. Bengal 12: 447.

Type, by monotypy, *Grandala coelicolor* Hodgson

Wing very long and pointed, first primary (as.) minute, second longest or equal to third. Tail square. Upper tail-coverts very long, about two-thirds of tail. Bill about half the length of the head, rather slender. Rictal bristles short and weak.

1683. *Grandala coelicolor* Hodgson

Gr. (Grandala) coelicolor [sic] Hodgson, 1843, Jour. Asiat. Soc. Bengal 12: 447 (Nepal)

Baker, FBI No. 541, Vol. 2: 89

Plate 90, fig. 3

LOCAL NAMES. None recorded.

SIZE. Bulbul +; length c. 23 cm (9 in.).

FIELD CHARACTERS. Male (adult). Entirely bright purple-blue with a silky sheen, except for lores, wings and tail which are black.

Female very different. Above, head and neck brown streaked with fulvous white. Rest of upperparts brown. Tips of tertials and a patch on wing white, the latter conspicuous in flight. Rump and upper tail-coverts tinged with blue. Below, brown streaked with fulvous white, more so on throat and breast.

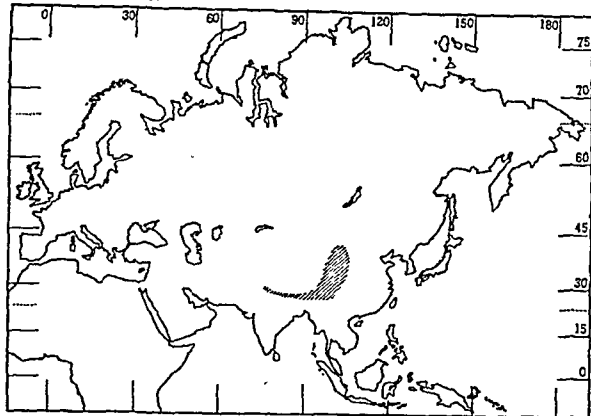
STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, locally plentiful. The Himalayas from Kashmir (Kishenganga and Liddar valleys) east through Arunachal Pradesh. Found in summer between 3900 and 5400 m, chiefly above 4300 m. Winters mostly above 3000 m and up to at least 4300 m, irregularly descending to lower levels (c. 2200 m) in bad weather. In summer affects boulder-strewn alpine meadows, rocky slopes, screes and cliff above the dwarf scrub zone. In winter frequents

* For systematic position based on osteology see Pycraft, 1927; for affinities based on habits see Meise, 1927; Deshayes, 1965 and Dixon, 1968.

THRUSHES AND CHATS

5

ridges and rocky mountainsides. Both in winter and summer has a preference for rain-swept ridges and heights.

Grandala coelicalor

■ Distributional range

Extralimital. Extends to Yunnan, Szechuan and north to Kansu.

GENERAL HABITS. In summer keeps at the highest elevations in loose flocks of 5 to 60 individuals, presumably breaking up into pairs in late June (cf. Diesselhorst, 1968: 309) and flocking again towards the end of August. A preponderance of adult males over brown-plumaged birds has been noted by Schäfer, Sâlim Ali and Deshayes. However, flocks composed almost entirely of brown-plumaged birds have been recorded by Meinertzhagen and Diesselhorst, thus supporting the view of a segregation of the sexes and brown-plumaged individuals. In winter congregates in restless swarms of several hundred birds (once estimated at over 1000). 'This swarm kept circling high over the valley, chiefly gliding, with occasional wing-beats. The cloud appeared as though wafted here and there by the wind. From time to time the birds would drop steeply like rain more or less in unison to settle on tall leafless trees, covering the top branches in dense clusters. Every little while, for no apparent reason, the swarm would suddenly take wing, circle aloft and tumble again into another tree in a restricted "beat" of rocky mountainside' (SA). 'Their flight is buoyant, beautiful and effortless, and even in the strongest winds they seem to do exactly as they please, wheeling sometimes like flocks of scattered waders and at other times taking the strong, direct flight of a rock-thrush' (Meinertzhagen). Flight sometimes likened to that of starlings or even bee-eaters; this comparison however is superficial and rests upon its long-winged, slim aspect and the formation of large flocks; on closer observation, its movements and carriage

THRUSHES AND CHATS

7

Characterized by long, graduated and deeply forked tail (except *scouleri* in which tail is short, square and only slightly forked), and by convex lower mandible. Bill strong and fairly stout. Rictal bristles well developed. Wing long, first primary (as.) about half the length of second.

Key to the Species

	Page
A Tail under 8 cm..... <i>E. scouleri</i>	7
B Tail over 8 cm	
1 Back spotted..... <i>E. maculatus</i>	13
2 Back unspotted	
a Back slaty..... <i>E. schistaceus</i>	10
b Back black	
i Black of underparts restricted to upper throat.... <i>E. immaculatus</i>	9
ii Black of underparts extending to breast..... <i>E. leschenaulti</i>	12

1684. Little Forktail. *Enicurus scouleri scouleri* Vigors

Enicurus Scouleri Vigors, 1832, Proc. Zool. Soc. London: 174 (Himalayas = Simla)
Baker, FBI No. 525, Vol. 2: 65

Plate 90, fig. 5

LOCAL NAME. Ooong-sumbrek-pho (Lepcha).

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. Above, forehead white; rest of head, neck and upper back black. A conspicuous white 'triangular' bar across wing. Lower back and base of tail white, a black band across rump. Tail blackish brown, slightly forked, outer rectrices white. Below, throat black; rest of underparts white smeared with black on breast and flanks. Legs fleshy white. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to seasonal vertical movements; locally common. The Himalayas from N.W.F.P. and Gilgit east through Arunachal Pradesh, thence south to Nagaland and Meghalaya in the Cachar and Khasi hills, Manipur (?) and Bangladesh in the Chittagong ranges. Breeds chiefly between 1800 and 3300 m, uncommonly down to 1000 m (below Mussooree — Rattray; Cachar — Baker) or up to 3700 m (headwaters of Khola river, central Nepal — Deshayes). Winters (October to March) mostly between 1000 and at least 2000 m, locally down to c. 300 m. Affects torrential rocky streams and waterfalls.

Extralimital. Extends west to Tadzhikistan and Kirghizstan, east through China and south to northern Vietnam. Another subspecies in Taiwan.

GENERAL HABITS. Rather similar to those of Plumbeous Redstart (1679), q.v. Met with perched singly or in pairs along small rocky hill streams, usually in the vicinity of waterfalls — its favourite hunting ground — commonly in loose association with Plumbeous and Whitecapped Redstarts, but with some rivalry for coveted stances. Incessantly wags its stumpy tail slowly up and down and rapidly opens and shuts it with a rhythmic, scissors-like action, the flickering black-and-white pattern producing the exact effect of water rippling over the roughnesses of the rocks. Picks insects off the surface of the slippery wet rocks or the water flowing

6

TURDINAE

appear decidedly turdine and do not show the least resemblance to starlings (GD); its flight approaches nearest that of the rock thrush, while on the ground it also resembles the rock thrush (Meinertzhagen). Finds most of its food on the ground, hopping about and often jumping chat-like on to a rock. Feeding territory often several hundred metres away from nest. Probably spends nights in cliffs as birds have been observed at dusk to fly toward mountainside crags. In autumn and winter readily perches on trees and bushes. Has a habit of flicking open its tail and wings simultaneously.

FOOD. Insects, caterpillars, tipulid larvae (GD), pupae, moths, seeds and berries; in autumn berries of *Vaccinium* and in winter those of *Hippophae*. Large flocks occasionally raid cultivated fruit-trees in autumn and cause some damage.

VOICE and CALLS. A very silent bird. Call-note *tji-u* or *tji-ti*. Song, a mere variation of the call-note, a soft, clear *tji-u tji-u ti-tu* audible at close range only, uttered occasionally even in summer; given from a rock or boulder (Deshayes).

BREEDING. *Season*, second half of June and July. *Nest*, a large, neat cup of dry grass covered with moss, lined with feathers and other soft material, placed on a ledge of rock in a vertical or overhanging cliff (Whymper, JBNHS 20: 1158 and 22: 196; Sheriff, *Ibis* 1944: 185). *Eggs*, apparently only 2, greenish white marked all over with reddish brown blotches and purplish secondary markings. Two eggs measure 29.7 × 19.4 and 27.3 × 21 mm (Baker). Young fed by both parents. Breeding biology imperfectly known.

MUSEUM DIAGNOSIS. See Field Characters. Young similar to female but streaks larger, ground colour darker; streaks extend well on to mantle but are faint on rump and upper tail-coverts which are not tinged with blue. First-winter male (after postjuvinal moult) similar to female but streaks narrower. Possibly breeds in this dress? Blue plumage assumed on first postnuptial moult in the second year when plumage shows a mixture of blue and brown feathers; moult apparently starts on abdomen and under tail-coverts. At this time brown rectrices and remiges are also replaced by black. Postnuptial moult complete, in August and September.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	140-152	20-22	29-31	84-91 mm
♀♀	135-147		29-30	77-87 mm
				(NBK, SA)

Weight 4 ♂♂ (July) 42-46, 2 ♂♂ (August) 50, 52; 1 ♀ (July) 38; 4 juv. 43.7-51 g (GD).

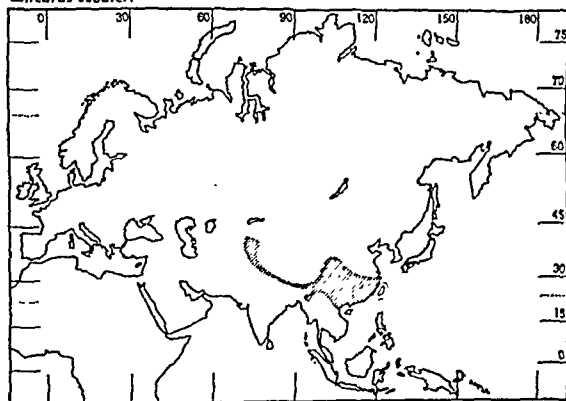
COLOURS OF BARE PARTS. Male. Iris dark brown. Bill black; gape and inside of mouth bright orange-yellow (summer, MD); inside of mouth of both sexes bright lemon-yellow (winter; possibly a seasonal variation? — SA). Legs, feet and claws black.

Genus *ENICURUS* Temminck

Enicurus Temminck, 1822, Pl. col. (19), pl. 113. Type, by monotypy, *Enicurus coronatus* Temminck (= *Turdus leschenaulti* Vieillot)

Microcichla Sharpe, 1883, Cat. Bds. Brit. Mus. 7: 312, 322. Type, by monotypy, *Enicurus scouleri* Vigors

TURDINAE

Enicurus scouleri

Distributional ranges

■ *scouleri* (1684)

□ *fortis* (RE)

over them, occasionally flying (hovering) out over the spray in their pursuit. Sometimes plunges into a foaming torrent, like a dipper, apparently running along the bottom against the current (Perreau, JBNHS 19: 908). Feeds chiefly in the morning and evening, usually resting in between in nearby scrub. As a rule frequents smaller and more turbulent streams than the larger forktails, but in winter sometimes seen well out in wide slow-flowing rivers.

FOOD. Aquatic insects and their larvae.

VOICE and CALLS. Unrecorded.

BREEDING. *Season*, April to June. *Nest*, a compact cup of green moss lined with skeleton leaves, placed on a ledge or cleft in rock, often behind a waterfall, or in a hole in moss-covered banks. *Eggs*, normally 3, occasionally 2, rarely 4, white, sparsely speckled with light reddish. Average size of 25 eggs 20.1 × 15 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. Young: whole crown, sides of head and back sooty brown. Underparts white, feathers of throat and breast with dark margins. Rest as in adult but black replaced by sooty brown. Postjuvinal moult of body, lesser, and median coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	72-79	13-15	24-26	41-51 mm
				(Sices, SA, BB)

Weight 2 ♂♂ (Oct.-Nov.) 17, 18.6; 3 ♀♀ (Oct.-Nov.) 12-16 g (RAF, SA, BB).

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet fleshy white.

THRUSHES AND CHATS

9

1685. Blackbacked Forktail. *Enicurus immaculatus* (Hodgson)

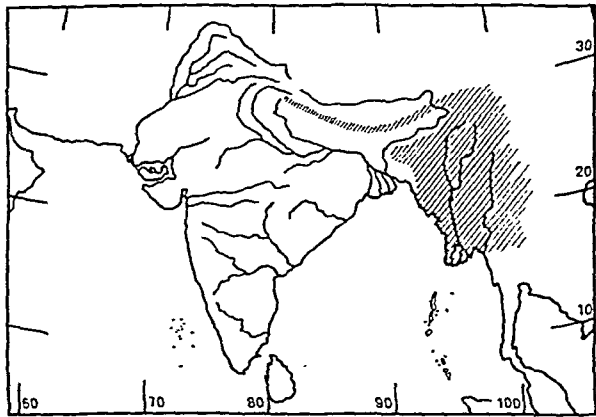
Motacilla (*Enicurus*) *immaculatus* Hodgson, 1836, *Asiat. Res.* 19: 190 (Nepal)
Baker, *FBI* No. 520, Vol. 2: 61
Plate 90, fig. 7

LOCAL NAME. *Inruidiba gejeba* (Kacha Naga).

SIZE. Bulbul, with a long tail; length c. 25 cm (10 in.).

FIELD CHARACTERS. General effect of a pied wagtail. *Above*, forehead and supercilium white. Rest of head and back black. Rump white continued as a white band across black wings. Tips of secondaries white. Tail long, very deeply forked and graduated; outer rectrices white, inner ones black with white tips emphasizing the graduated aspect. *Below*, upper throat black, rest white. Sexes alike.

Leschenault's Forktail (1687) is similar but larger and with a black breast. STATUS, DISTRIBUTION AND HABITAT. Resident, scarce west of Sikkim, commoner eastwards. The Himalayan foothills below c. 1450 from Garhwal east through Arunachal Pradesh, the foothills of Meghalaya, Nagaland,

Enicurus immaculatus

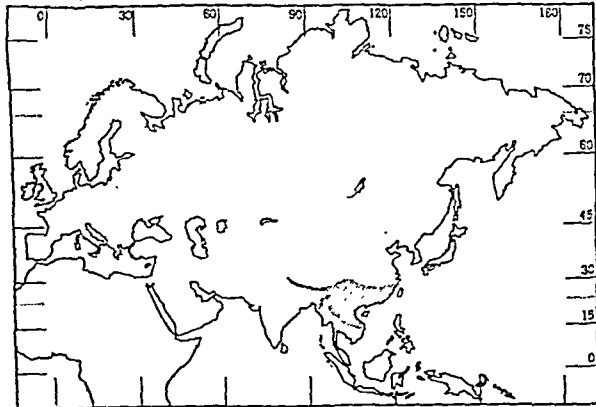
▨ Distributional range

Manipur, Mizoram and Bangladesh south to the Chittagong region; in the latter areas breeds below 900 m, mostly below 500 m, and in the adjacent plains in wooded terrain. Affects rocky hill streams and muddy or sandy banks of rivers where current is still rapid, and almost always flowing through dense damp forest; in Nepal restricted to streams running through deciduous forest.

Extralimital. Ranges east through Burma and Thailand.

THRUSHES AND CHATS

11

Enicurus schistaceus

□ Distributional range

Extralimital. Ranges east through the Indochinese countries and southern China to Fukien.

GENERAL HABITS. A low-altitude forktail. Keeps solitary or in pairs on wooded rocky streams. Hops or flits from stone to stone over the surface of water, or trips lightly over boulders in search of insects. Rarely if ever forsakes a streambed. When disturbed and driven to the limit of its territory (which may extend over a 120-metre stretch) the bird promptly doubles back to the stream in a semicircle behind the observer; sometimes seeks shelter in thickets. Often seen in company with *E. immaculatus* (Nepal). Flight and behaviour very reminiscent of a wagtail; flight somewhat less undulating.

FOOD. Insects (beetles and others — GD).

VOICE AND CALLS. Largely as in 1685 and 1688. A high-pitched single note (Smythies).

BREEDING. Season, April to June. *Nest*, a cup of green moss lined with skeleton leaves or rootlets, placed among boulders, on ledges or in crevices of rocks, in hollows in banks, or among the roots of trees and holes in dead stumps overhanging a stream. *Eggs*, 3 or 4, generally the latter, pale bluish white, sparsely but boldly speckled with dark reddish brown with secondary markings of lavender. Average size of 100 eggs 21.4 × 16.3 mm (Baker). Building and incubation by both sexes; incubation period undetermined.

MUSEUM DIAGNOSIS. See Field Characters. Young: slaty parts of adult replaced by brown. No white on forehead. Feathers of underparts margined with slaty brown. Postjuvinal moult of body, lesser, median and greater coverts and tail.

10

TURDINAE

GENERAL HABITS. Those of the genus (cf. 1686, 1688). Solitary. Frequents stones and boulders in and along wooded streams, incessantly wagging its tail.

FOOD. Insects.

VOICE AND CALLS. Call-note a sharp *cutt-see*, the second syllable two notes higher than the first (Fleming); sometimes only the first note is given. Has 'a short song'.

BREEDING. Season, end of March to May. *Nest*, a cup of green moss with a few roots and dead leaves, lined with skeleton leaves; placed on ledges or in crevices of rock, often where water is dripping, or in hollows in fallen trees or stream banks. *Eggs*, normally 3, pinkish, feebly marked with reddish brown specks and irregular blotches, sometimes forming a cap at the large end. Average size of 28 eggs 20.8 × 15.8 mm (Baker). Building and incubation by both sexes; incubation period undetermined.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species. Young has head, neck and back sooty brown; no white on forehead. Underparts white, breast-feathers with blackish margins. Tail as in adult but shorter and feathers narrower. Postjuvinal moult of body, lesser, median and greater coverts and apparently the tail (HW).

MEASUREMENTS

	Wing	Bill (from skull)	Tail
3 ♂♂	86-98	20	{ 124 (one msd.) mm
2 ♀♀	86, 90		{ 127 (one msd.) mm
			(Rand & Fleming)

Tarsus c. 26 mm

Weight 1 ♀ (October) 25 g (GD); 1 ♂ (Oct.) 26 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet pale fleshy white.

1686. Slatybacked Forktail. *Enicurus schistaceus* (Hodgson)

Motacilla (*Enicurus*) *schistaceus* Hodgson, 1836, *Asiat. Res.* 19: 189 (Nepal)
Baker, *FBI* No. 519, Vol. 2: 59
Plate 90, fig. 6

LOCAL NAME. *Inruidiba* (Kacha Naga).

SIZE. Bulbul, with a long tail; length c. 25 cm (10 in.).

FIELD CHARACTERS. *Above*, a narrow frontal band and short supercilium white. Crown and back slaty. Wings black with a broad white band across, a smaller white patch on primaries and white tips to tertiaries. Rump white. Tail as in *immaculatus* (1685). *Below*, chin and sides of throat black. Rest of underparts white, slaty on sides of breast. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements; rare west of Sikkim. The Himalayan foothills from Kumaon east through Arunachal Pradesh and the foothills of Meghalaya, Nagaland, Manipur, Mizoram and Bangladesh south to the Chittagong region. Breeds between c. 300 and 1600 m. In winter extends down to the base of the hills and adjacent plains. Affects rocky torrents in dark dense forest, although it appears to be less a forest bird than *maculatus* (1688), and also frequents nullahs running through cultivated areas; also prefers larger streams.

12

TURDINAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail inner outer
♂ ♀	91-104	19-23	28-32	43-48 117-140 mm
				(HW, SA, BB)

Weight 4 ♂♂ 29-30; 2 ♀♀ 26, 27 g (SA, BB).

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs, feet and claws whitish grey to fleshy white.

1687. Leschenault's Forktail. *Enicurus leschenaulti indicus* Hartert

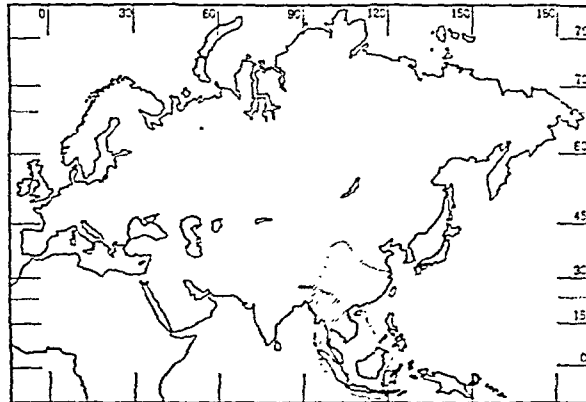
Enicurus leschenaulti indicus Hartert, 1909, *Vög. pal. Fauna* 1: 760
(Margherita, Upper Assam)
Baker, *FBI* No. 521, Vol. 2: 62
Plate 90, fig. 9

LOCAL NAME. *Inruidiba gediba* (Kacha Naga).

SIZE. Myna, with long tail; length c. 28 cm (11 in.).

FIELD CHARACTERS. The largest and blackest of the forktails. Very similar to *immaculatus* (1685, q.v.) but larger; white of forehead extending to top of crown, not as a supercilium, and black of underparts extending to breast and flanks. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to seasonal movements, scarce except in eastern Assam where common. The Himalayan foothills from Darjeeling and Sikkim east through Bhutan and Arunachal

Enicurus leschenaulti

Distributional ranges

□ *indicus* (1687)

□ Extralimital subspecies

THRUSHES AND CHATS

13

Pradesh, thence south through Meghalaya, Nagaland, Manipur and the foothills of Assam and Bangladesh south to the Chittagong region. Found up to c. 300 m in Assam, 600 m in Sikkim. In winter extends a few kilometres into the plains along rivers. Affects rushing torrents and the larger rivers in dense evergreen forest; also tiny rivulets in heavy and dark forest. Sometimes close to plantation labour barracks.

Extralimital. Ranges east to northern Vietnam. The species extends north to Shensi, east to Chekiang, south to Hainan, Malaya, Borneo and the Sunda islands.

GENERAL HABITS. Those of the genus. When disturbed at a jungle stream takes to the forest at once. Often met with along narrow paths in damp forest.

FOOD. Insects.

VOICE and CALLS. 'Has a very sharp single note (uttered in flight) not unlike the sound produced by turning sharply and jerkily the stopper in the neck of a glass bottle' (Davison).

BREEDING. Season, April to June. Nest, a cup of green moss mixed with some dead leaves, rootlets and fibres, lined with skeleton leaves or rootlets, placed in steep banks covered with ferns or other rank vegetation, or in hollows in trees, rocks, or between boulders; usually in very damp situations, the nest often being soaking wet. Eggs, normally 4 sometimes 3, pale cream to deep rich buff densely marked with brick-red or brownish red specks and freckles, with secondary lavender specks. Average size of 40 eggs 24.6 x 17.7 mm (Baker). Share of the sexes in the domestic chores, and period of incubation, not recorded.

MUSEUM DIAGNOSIS. See Field Characters.

Young: Head and back dark smoky brown, no white on forehead; tips of wing-coverts buff; rest of upperparts as in adult. Throat and breast dark smoky brown with fulvous shaft-streaks. Upper belly white mixed with brown; centre of belly white; flanks brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	98-114	26-29	30-32	128-150 mm (HW, Baker)

Weight 1 ♂ '1.89 oz.' (= c. 53.5 g) — Hume.

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet fleshy white.

ENICURUS MACULATUS Vigors

Key to the Subspecies

- Black feathers of breast with white tips.....*E. m. maculatus*
Feathers of breast without white tips.....*E. m. guttatus*

1688. **Western Spotted Forktail.** *Enicurus maculatus maculatus* Vigors

Enicurus maculatus Vigors, 1831, Proc. Zool. Soc. London: 9 (Himalayas = Simla)
Baker, FBI No. 517, Vol. 2: 57
Plate 90, fig. 8

LOCAL NAMES. *Khānjān* (N.W.F.P.); *Shakel-lōt* (Kashmir).

THRUSHES AND CHATS

15

of this graceful swaying of the tail. When disturbed flies swiftly up or down stream with dipping wagtail-like flight uttering a sharp single note, alighting a short distance off to resume feeding. If followed, repeats this three or four times then suddenly veering off into the forest and circling back to the stream behind the intruder. Sometimes submerges completely like a dipper while feeding. Commonly met at rills and trickles alongside forest roads where it behaves just like a Grey Wagtail (*Motacilla caspica*), flying in repeated spurts ahead of an oncoming car for considerable distances, finally looping back through the forest to the original spot.

FOOD. Aquatic insects and small molluscs.

VOICE and CALLS. A shrill rasping *kreee* or *tseek*, very like a Whistling Thrush's (*Myiophonus*), uttered in flight. A sharp, creaky *cheek-chik-chik-chik* uttered at rest as well as on wing, almost identical with one of the calls of the Blue Magpie (1027). Song undescribed.

BREEDING. Season, April to July. Nest, a cup of green moss, rootlets, hair and fibres, mixed with clay and lined with skeleton leaves; placed on a rock-ledge or crevice, a niche in a steep stream bank or between boulders, often concealed by overhanging ferns etc. Eggs 3 or 4, pale cream or very pale green marked with light reddish brown freckles or spots. Average size of 50 eggs 24.8 x 17.6 mm (Baker). Building, incubation and nest-feeding by both sexes. Female fed on nest by male. Incubation period undetermined. Often brood-parasitized by *Cuculus canorus*.

MUSEUM DIAGNOSIS. See Field Characters.

Downy chick (3 or 4 days old): slaty black, the down tipped with greyish brown. 'When brood lying huddled in nest gave a perfect illusion of an old deserted nest spun across the top with spiders' webs' (SA).

Young (imm.): Above, head and back smoky brown, no white on crown; rest of upperparts as in adult. Below, throat and breast smoky brown with fulvous shaft-streaks; belly white suffused with brown. Postjuvénal moult of body, lesser, median (and greater?) coverts, in August and September.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	108-111	24-25	c. 30	146-150 mm
♀ ♀	99-110	22-24	—	129-139 mm (BB, Rand & Fleming)

Weight 1 ♂ (September) 46 g (GD); 1 ♀ (October) 38.5 g (RAP).

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet fleshy white.

1689. **Eastern Spotted Forktail.** *Enicurus maculatus guttatus* Gould

Enicurus guttatus Gould, 1865, Proc. Zool. Soc. London: 664
(Sikkim = Darjeeling)
Baker, FBI No. 518, Vol. 2: 58

LOCAL NAMES. *Oong-jam ching-pho* (Lepcha); *Chuko-leka* (Bhutia).

SIZE. Bulbul, with long tail; length c. 25 cm (10 in.).

FIELD CHARACTERS. As in 1688, q.v. See Museum Diagnosis.

14

TURDINAE

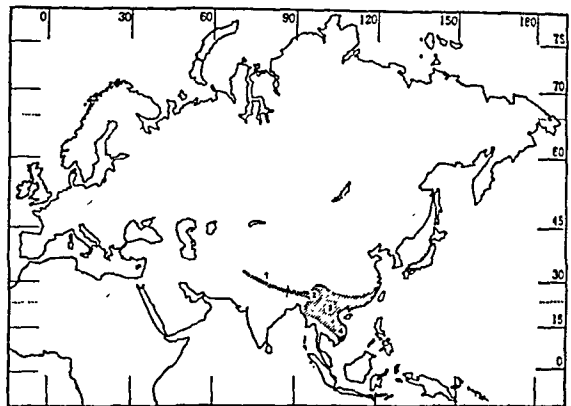
SIZE. Bulbul, with long tail; length c. 25 cm (10 in.).

FIELD CHARACTERS. Above, forehead and forecrown white. Round the eye, sides of head and nape black. Back black spotted with white. A broad wing-bar and rump white. Tertiaries tipped with white. Tail deeply forked and graduated; outer rectrices white, the others black tipped with white. Below, throat and breast black; belly white. Sexes alike.



STATUS, DISTRIBUTION and HABITAT. Common resident but rather capricious: the western Himalayas from Chitral to eastern Nepal. Breeds between 1200 and 3000 m, locally up to 3600 m (Sutlej Valley) or down to 900 m (Chamba, Dehra Dun). Some withdrawal from upper levels in winter when recorded at least up to 2300 m and down to 600 m. Affects boulder-strewn, shady nullahs and streams running through forest and narrow gorges, usually shunning large rivers.

Enicurus maculatus



- Distributional ranges 1 *maculatus* (1688) 2 *guttatus* (1689)
3 *bacatus* (RE) 4 *robinsoni* (RE)

Extralimital. Adjacent parts of Afghanistan (Nuristan).

GENERAL HABITS. Movements and behaviour superficially very wagtail-like though essentially turdine. Keeps singly or in separated pairs, tripping lightly over slippery or moss-covered stones at the water's edge, or hopping from stone to stone in the torrent, the long forked tail raised horizontally well off the ground and gently swayed up and down rather than wagged. Pivots slowly on its perch, facing this way and that, to the accompaniment

16

TURDINAE

STATUS, DISTRIBUTION and HABITAT. Common resident, from eastern Nepal east through Arunachal Pradesh thence south through Meghalaya, Nagaland, Manipur and the hills of Mizoram south to the Chittagong ranges. Breeds between 600 and 3000 m, optimum zone apparently 1400-2600 m. Affects small streams in dense forest; in winter may be seen in wide river-beds at the base of the hills.

Extralimital. Extends to Burma, Yunnan and southern Szechuan. The species ranges east to Vietnam and through southern China to Fukien.

GENERAL HABITS. As in 1688. Display (threat or courtship?): 'Two birds careered up and down the stream for several minutes, flying so close to each other as almost to touch. They then landed on a large stone over which they ran with the tail held perpendicular, and half-turning their backs on one another. After a few seconds of this display the chase began once more and continued in ever-increasing tempo until the whole performance ended abruptly and both birds went off in different directions'. (For details see Stonor, 1943, *Ibis* 85: 344.)

FOOD and VOICE. As in 1688.

BREEDING. As in 1688. For details see Baker, *Nidification* 2: 53. Average size of 100 eggs 24.9 x 17.3 mm.

MUSEUM DIAGNOSIS. Differs from *maculatus* (1688) in having no white spots on breast, fewer and smaller white spots on back, and in being somewhat smaller.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	95-106	21-23 (once 27)	28-31	118-143 mm (Baker, SA, BB)

Weight 1 ♂ (August) 34 g (RAP). 1 ♂ (winter) 39 g (SDR). 12 ♀ (Oct.-Mar.) 35-48 g (SA, BB).

COLOURS OF BARE PARTS. As in 1688.

Genus COCHOA Hodgson

Cochoa Hodgson, 1836, Jour. Asiat. Soc. Bengal 5: 359.
Type, by original designation, *Cochoa purpurea* Hodgson

Nostrils large, exposed and oval. Rictal bristles obsolete. Tarsus strong and short. Wing long and pointed, first primary minute. Tail very slightly graduated. Sexes dissimilar. Young spotted.

Key to the Species

- Crown lavender.....*C. purpurea*
Crown azure-blue.....*C. tridius*

1690. **Purple Cochoa.** *Cochoa purpurea* Hodgson

Cochoa purpurea Hodgson, 1836, Jour. Asiat. Soc. Bengal 5: 359 (Nepal)
Baker, FBI No. 617, Vol. 2: 184
Plate 90, fig. 11

LOCAL NAMES. *Cocho* (Nepal); *Lo-nyun-pho* (Lepcha).

SIZE. Myna +; length c. 28 cm (11 in.).

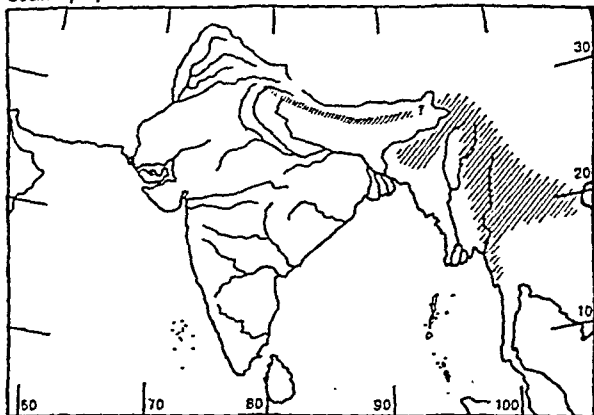
THRUSHES AND CHATS

17

FIELD CHARACTERS. Male (adult). *Above*, crown lavender-blue. Supercilium, ear-coverts and nape black. Back brownish purple. Wing purple-lavender with black tip and edge, a paler lavender patch near shoulder and one in the middle. Tail purple-lavender with a black terminal band. *Below*, uniform brownish purple.

Female like male but brownish purple parts replaced by reddish brown above, paler (brownish clay) below.

STATUS, DISTRIBUTION AND HABITAT. Resident, rare and little known. The Himalayas from Kumaon (Almora, Naini Tal) east through Nepal, Darjeeling, Sikkim and Bhutan (SA); Meghalaya in the Khasi Hills, and

Cochoa purpurea

▨ Distributional range

Manipur. Recorded between 1000 and 3000 m. Affects dense humid evergreen forest, and undergrowth in ravines running through pine forest (Khasi Hills).

Extralimital. Ranges east to Yunnan and northern Vietnam.

GENERAL HABITS. A very quiet and secretive thrush of dense undergrowth. Keeps singly or in pairs. Feeds on the ground as well as in trees, ascending into the tops for berries.

FOOD. Berries and insects; molluscs (D'Abreu, Jerdon) and aquatic insects; slugs—one c. 2 cm long (SA).

VOICE AND CALLS. A low chuckle, the only sound recorded.

BREEDING. Season, early May to mid July. *Nest*, a rather shallow cup of green moss with some dead leaves, rootlets and scraps of fibres, lined with fine black rootlets, lichen, and white thread-like fungus, the latter apparently being distinctive of the nests of this genus; usually placed in a horizontal fork in small trees between two and six metres above the ground, sometimes

18

TURDINAE

in bushes. *Eggs*, normally 3, occasionally 4, pale sea-green blotched with bright reddish brown and with secondary blotches of lavender and grey, usually more numerous at the large end where they sometimes form a cap. Another type has a pale, reddish stone ground with similar markings. Average size of 50 eggs 31.3 × 21.6 mm (Baker). Incubation by both sexes. Very shy at nest and slips off noiselessly while intruders are still at some distance.

MUSEUM DIAGNOSIS. See Field Characters.

Young male. *Above*, crown-feathers white with black tips. Sides of head black. Back dull purplish brown edged with blackish on mantle and tipped with ferruginous on upper tail-coverts. *Below*, rich rusty ochraceous with bold black bars; throat ochraceous; under tail-coverts brownish; median and lesser wing-coverts dull purple tipped with ochraceous; greater coverts dull purple. Rest of wing and tail as in adult.

Young female, like young male but tips of crown-feathers brown; sides of head brown. Feathers of back brown with darker tips and small ochraceous centres. Greater coverts brown; median and lesser coverts brown with ochraceous tips. Postjuvinal moult of body, lesser and median coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	140-145	23-24	28-31 (Baker, BB, SA, Strcs.)	95-105 mm

Weight 1 ♂ (Oct.) 100 g (SA); 1 ♀ (August) 106.5 g (RAP).

COLOURS OF BARE PARTS. Iris crimson-brown or red-brown; orbital skin lavender. Bill black. Legs slaty black.

1691. Green Cochoa. *Cochoa viridis* Hodgson

Co. (choa) Viridis Hodgson, 1836, Jour. Asiat. Soc. Bengal 5: 359-60 (Nepal)

Cochoa rothschildi Baker, 1924, Fauna Brit. India, Bds. 2: 186 (Sikkim)

Baker, FBI Nos. 618 and 619, Vol. 2: 185, 186

Plate 90, fig. 10

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 28 cm (11 in.).

FIELD CHARACTERS. Male (adult). *Above*, crown to nape sky-blue. Lores and supercilium black. Ear-coverts dark blue. Back and wing-coverts deep green obsoletely barred with black; rump and upper tail-coverts deep green. Wing black with a broad, pale blue band, black tips of coverts forming a narrow black bar across the pale blue, and small black patch. Tail blue, outer rectrices and terminal band black. *Below*, deep green washed with blue on throat and belly. Under surface of tail black.



x c. 1

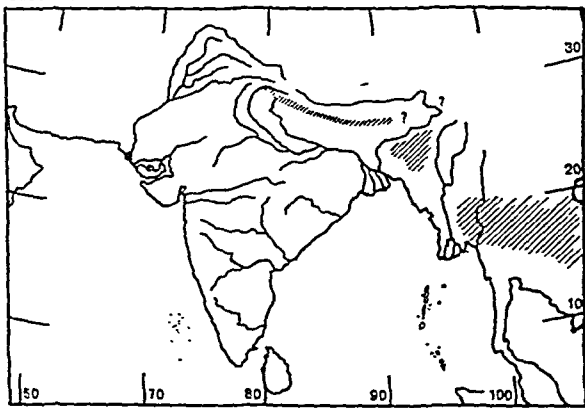
Female similar to male but greater coverts and secondaries marked with yellowish brown instead of blue.

STATUS, DISTRIBUTION AND HABITAT. Rare resident. Kumaon (Naini Tal), Nepal (not recorded since Hodg-

THRUSHES AND CHATS

19

son), Darjeeling, Sikkim, Bhutan(?); Meghalaya and Manipur. Breeds between c. 700 and 1500 m (doubtful records at 3000-3300 m in Sikkim); optimum zone in Manipur 1000-1500 m. Affects undergrowth in dense

Cochoa viridis

▨ Distributional range

evergreen forest watered by small streams and usually on precipitous ground.

Extralimital. Ranges east to Vietnam; a record from Fukien.

GENERAL HABITS. Little known. Keeps singly or in pairs, sometimes in small flocks. Very shy. Often feeds on the ground but at times high up in trees. A bird has been observed flying out after insects from the top of a tall tree.

FOOD. Insects and berries; molluscs.

VOICE AND CALLS. 'A harsh note' is the only sound recorded.

BREEDING. Season, May to July. *Nest*, similar to that of *purpurea* (1690, q.v.), placed in same situations but nearly always near water. *Eggs*, 2 or 3, rarely 4, indistinguishable from those of *purpurea*. Average size of 42 eggs 30.4 × 21.3 mm (Baker). Incubation by both sexes; period undetermined.

MUSEUM DIAGNOSIS. See Field Characters.

Young. Crown-feathers black with a white subterminal bar; ear-coverts similar but white more apparent. A long, black supercilium. Body-feathers, above and below, black with ochraceous centres. Wings and tail as in adult of respective sex. Postjuvinal moult (July to October) of body-feathers, lesser, median, and inner half of greater coverts.

First-year birds with dark shaft-streaks on body-feathers. Male darker than adult, brownish green above and without any blue below. Female paler than male, yellowish green below; under tail-coverts ochraceous green.

20

TURDINAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
1 ♂	145	23	27	120 mm (SA)
		(from feathers)		
♂ ♀	135-145	12.5-13.5	25-26	98-117 mm (Baker)

Weight 5 ♂♂ 3.08-3.5 oz. (c. 88-99 g); 2 ♀♀ 4.12, 4.32 oz. (c. 117, 122 g) — Hume.

COLOURS OF BARE PARTS. Adult: Iris brownish orange to deep crimson or maroon-brown. Bill black; gape and orbital skin pink. Legs and feet fleshy brown to horny brown. Young: Iris dark brown. Bill black. Legs blackish brown.

Genus *CERCOMELA* Bonaparte

Cercomela Bonaparte, 1856, Compt. Rend. Acad. Sci. Paris 42: 766. Type, by original designation, *Cercomela aethiops* Bonaparte = *Saxicola melanura* Temminck

Bill like that of *Oenanthe*. Wing rather blunter; first primary (as.) about equal to half of second. Tail much shorter than wing. Tarsus rather short.

1692. Brown Rock Chat. *Cercomela fusca* (Blyth)

Saxicola fusca Blyth, 1851, Jour. Asiat. Soc. Bengal 20: 523 (Muttra)

Cercomela fusca ruinaria Koelz, 1939, Proc. Biol. Soc. Washington 52: 66

(Sanchi, Bhopal State)

Baker, FBI No. 516, Vol. 2: 54

Plate 89, fig. 18

LOCAL NAMES. *Dawra* (U.P.); *Kālo patheral piddo* (Gujarat); *Shēmā* (Hindi in M.P.).

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. A plain brown bird, rufous-brown below, with darker wings and blackish tail. Sexes alike.

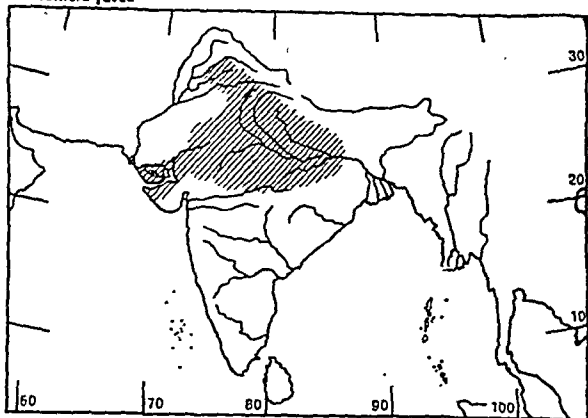
Young (juvenile), much darker brown without the rufous wash of the adult plumage.

At rest could be confused with female Indian Robin (1717), but is larger and lacks the chestnut patch under tail. In flight-silhouette, and while alighting, could be mistaken for female Blue Rock Thrush (1726).

STATUS, DISTRIBUTION AND HABITAT. An endemic species. Resident; common but capriciously distributed and with some seasonal local movements. (Arrives Dehra Dun mid February departs c. October — SA.) Northeastern Pakistan east of the Chenab river, from the foothills of Jammu south nearly to the Chenab-Jhelum confluence, and India from the Punjab foothills (Kangra, locally up to 1300 m) south through eastern Rajasthan to northern Gujarat (including Kathiawar and Kutch), Madhya Pradesh to the Narmada river, Uttar Pradesh and Bihar to western Bengal. Affects boulders and scarps in rocky hills, ravines, quarries, ruins, old buildings, walls and bungalows in towns and suburbs.

THRUSHES AND CHATS

21

Cercomela fusca

▨ Distributional range

GENERAL HABITS. Keeps singly or in pairs. Usually tame and confiding. May often be seen flitting in and out of gaping windows of ancient palaces and forts, perching on the cornices of tombs and mosques, even fearlessly entering occupied habitations to pick up some titbit, or to shelter from the midday heat or roost at night on rafters and girders. Feeds on the ground, flying down to pick up an insect, often flicking open its wings and tail suddenly to flush out one lurking in a cranny. Has a characteristic habit of flexing its legs, partly spreading its tail and slowly raising it above the level of the back, and bobbing the forepart of its body in a comical curtsy. Is rather pugnacious near nest and will readily attack squirrels, rats, lizards and birds intruding into the vicinity.

FOOD. Beetles, ants and other insects.

VOICE AND CALLS. A short whistling *chee* while bobbing forepart of body and doing a rapid 'bend-stretch'. Alarm-note, a harsh *check-check*. In breeding season a sweet thrush-like song, but less full and of something of the quality of the Striolated Bunting, with snatches of other birds' songs interlarded. Delivered from a wall, cornice or roof-top, sometimes for well over twenty minutes at a stretch with short pauses. Is a good mimic: has been recorded imitating to perfection songs of Yellow-eyed Babbler (1231), Tickell's Blue Flycatcher (1442) and Cuckoo-Shrike (1077) (SA).

BREEDING. Season, February to August, chiefly April to June. Regularly rears two broods, often three. Nest, a rough cup of rootlets, grass bents, wool, hair and sundries, lined with wool, hair or feathers, usually surrounded by a rampart of small pebbles and lumps of earth; placed on ledges or in clefts of rock, hollows in walls or on window sills in ruins, outhouses, garages, etc., often occupied ones. Eggs, 3 or 4, pale blue marked

THRUSHES AND CHATS

23

1693. *Stoliczka's Bush Chat*. *Saxicola macrorhyncha* (Stoliczka)

Pratincola macrorhyncha Stoliczka, 1872, Jour. Asiat. Soc. Bengal 41: 238 (Rapur and Bhuj, Kachh [Kutch])

Baker, FBI No. 499, Vol. 2: 32

Plate 91, fig. 1

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 15 cm (6 in.).

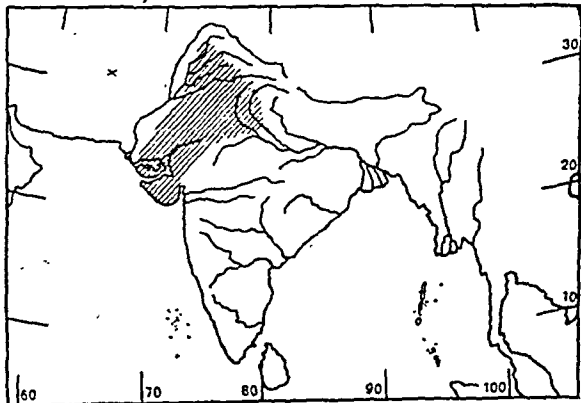
FIELD CHARACTERS. Male (adult), winter. Above, sandy buff streaked with brown. A broad pale buff supercilium. Ear-coverts rufous-buff marked with dark brown. A white wing-patch. Upper tail-coverts white or rufous white. Tail dark brown, outer rectrices white. Below, throat white, rest of underparts pale buff.

In summer the pale margins on upperparts are worn off and the bird appears to be sooty brown. Supercilium becomes white.

Female, similar to male but lacks white wing-patch and has no white in tail.

Distinguished from other chats by longer, slimmer build, long tail and conspicuous long black bill. Tail pattern of male in flight—whitish with dark central feathers and ends—confusable with female of some of the wheatears (*Oenanthe*).

STATUS, DISTRIBUTION AND HABITAT. Resident, rare and very local, but not uncommon in some areas. Pakistan east of the Indus river, Haryana (Hissar dist.), eastern Uttar Pradesh (Aligarh), eastern Rajasthan and

Saxicola macrorhyncha

▨ Distributional range

⊗ Extralimital record

Gujarat (Deesa, Kutch and Kathiawar). A desert-loving chat affecting *pāis* in wide, waterless desert studded with *Caparris*, *Calotropis* and other shrubs.

22

TURDINAE

at the large end with rusty specks and spots, often forming a ring. Average size of 50 eggs 20.5 × 15.5 mm. Incubation apparently by female only; period undetermined. Young leave nest 14/15 days after hatching. One ringed bird bred when under 12 months old.

MUSEUM DIAGNOSIS. See Field Characters. Summer plumage made paler by wear. Young is dull brown with faint darker edges. Postjuvinal moult of body-feathers, inner tertials and all wing-coverts except primary.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	87-95	18-19	25-27	65-72 mm
♀♀	85-90	18-19	25-26	61-69 mm

(SA, Koelz)

Weight 1 ♀ (October) 12.7 g (BB).

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet black.

Genus *SAXICOLA* Bechstein

Saxicola Bechstein, 1803, Orn. Taschenb., (1802), 1: 216. Type, by subsequent designation, Swainson, 1827, *Monticola Rubicola* Linnaeus

Oreicola Bonaparte, 1854, Compt. Rend. Acad. Sci. Paris 38: 6. Type, by original designation, Gray, 1855: 143, *Saxicola Pyrrhonota* Müller

Rhodophila Jerdon, 1863, Bds. India 2: 128

Type, by monotypy, *Rhodophila melanoleuca* Jerdon

Bill rather less than half the length of head, notched, broad at base. Rictal bristles strong. Wing pointed, first primary (as.) varying from half to one-third the length of the second. Tail equal to or shorter than wing, slightly rounded. Sexes dissimilar.

Key to the Species

		Page
I	Plumage black and white	
A	Breast black.....	<i>S. caprata</i> ♂ 31
B	Breast white.....	<i>S. jerdoni</i> ♂ 36
II	Not as A	
C	Throat black	
1	Inner webs of rectrices white.....	<i>S. leucura</i> ♂ 30
2	Rectrices mostly black.....	<i>S. torquata</i> ♂ 25
D	Throat not black	
3	Inner webs of rectrices white.....	<i>S. macrorhyncha</i> ♂ 23
4	Outer rectrices entirely rufous.....	<i>S. ferrea</i> ♀ 37
5	Rectrices mostly blackish brown or black	
a	Wing over 80 mm.....	<i>S. insignis</i> ♂ ♀ 24
b	Wing under 80 mm	
i	A conspicuous white or buff supercilium	
o	Ear-coverts black.....	<i>S. ferrea</i> ♂ 37
o'	Ear-coverts rufous buff.....	<i>S. macrorhyncha</i> ♀ 23
ii	Throat white.....	<i>S. jerdoni</i> ♀ 36
iii	Throat buff or brown	
o''	Back plain brown.....	<i>S. caprata</i> ♀ 31
o'''	Back streaked	
a ¹	Upper tail-coverts paler rufous.....	<i>S. leucura</i> ♀ 30
a ²	Upper tail-coverts darker rufous.....	<i>S. torquata</i> ♀ 25

TURDINAE

24

Extralimital. Two records from Kandahar, Afghanistan (cf. JBNHS 31: 706).

GENERAL HABITS. Solitary or in pairs; at times fairly tame, at others excessively wild. Perches on exposed tops of bushes like other members of the genus, descending to the ground to pick up a titbit. Occurs in same biotope as Desert Wheatear (*Oenanthe deserti*) and Short-toed larks (*Calandrella*).

FOOD. Insects.

VOICE AND CALLS. 'A little sharp *chip, chip* note heard now and then' (Hume). Song unrecorded.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species; for details of plumages H. Whistler, *Ibis* 1922: 302.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	70-77	11-12	24	50-54 mm (Baker)

COLOURS OF BARE PARTS. Iris brown. Bill black, paler at base.

1694. *Hodgson's Bush Chat*. *Saxicola insignis* Gray

Saxicola insignis Gray, 1846, Cat. Mamm. Bds. Nepal: 71, 153 (Nepal)
Baker, FBI No. 500, Vol. 2: 33

Plate 91, fig. 4

LOCAL NAME. Gar-gugga (Patna, Bihar).

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Male (adult), winter. Very similar to ♂ Indian Bush Chat (1697) and easily mistaken for it; but larger size and greater amount of white in the wing distinctive. Above, head black with narrow fulvous fringes. Lores and ear-coverts black. Back black with broad fulvous edges. A large white wing-patch. Upper tail-coverts white. Tail blackish with narrow rufous edges. Below, throat white. Rest of underparts ferruginous, paler on belly; often a few black spots on upper breast.

In summer the pale fringes are worn off the upperparts which become wholly black.

Female. Above, brown; forehead and a faint supercilium fulvous. Two broad fulvous wing-bars. Below, pale rusty fulvous, darker on throat and breast.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor; rare and little known. Occurs mostly in the Gangetic plains of Uttar Pradesh and Bihar from Ambala in the west to northern Bengal in the east; also the Nepal terai (where known only from the type specimen), the Sikkim foothills and the Jalpaiguri duars. Affects heavy grassland, reeds and tamarisks along river beds, and cane fields.

Extralimital. Breeds very locally in the alpine and subalpine zones of the mountains of Kazakhstan, western Mongolia and Inner Mongolia (Ala Shan).

THRUSHES AND CHATS

25

26

TURDINAE

Page

- 2 Smaller; wing usually under 71 mm
 a Paler, more white at base of tail.....*S. t. maura* 26
 b Darker, less white at base of tail.....*S. t. indica* 28
 Cf. Ticehurst, C. B., 1938, *Ibis*: 338-40.

1695. West Siberian Collared Bush Chat. *Saxicola torquata maura* (Pallas)

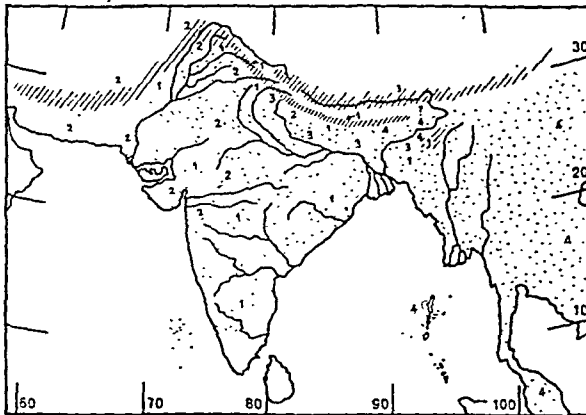
Muscicapa maura Pallas, 1773, Reise Russ. Reichs 2: 428, 708
 (Karassun, Ishim River, W. Siberia)
 Baker, FBI No. 495 (part), Vol. 2: 28

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1697, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Mostly a winter visitor but also breeds in Pakistan: Kohat and Chitral (JBNHS 12: 339 and 19: 907; *Ibis* 1909: 216), Murree hills (JBNHS 16: 427; *Ibis* 1930: 85) and northern

Saxicola torquata

Distributional ranges

Breeding

Winter

1 *indica* (1697) 2 *maura* (1695) 3 *przewalskii* (1696) 4 *stejnegeri* (1698)

Baluchistan (JBNHS 31: 706). Winters in Pakistan, Nepal (Paynter, specimens in Yale Peabody Mus.) and northern India south to northern Maharashtra (Nasik). Affects dry scrub-covered hillsides (summer); damp areas, meadows, pasture land, fallow fields and tamarisk jungle (winter).

Extralimital. Adjacent parts of Afghanistan, Turkistan north to Lake Baikal, and western Siberia to the Urals. Winters south to Egypt and

28

TURDINAE

1697. Indian Collared Bush Chat. *Saxicola torquata indica* (Blyth)

Pratincola indica Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 129
 (India = Calcutta)
 Baker, FBI No. 495 (part), Vol. 2: 28

Plate 91, fig. 2

LOCAL NAMES. *Dofa tirio* (Kashmir); *Mendio piddo* (Gujarati); *Khārpiddā* (Hindi, Monghyr); *Adavi-campa-nalanchi*, *Adavi-campa-jilla* (Telugu); *Rob line* (Munda).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. Male (adult) summer. Above, black except for white rump and white wing-patch. Below, throat black. A large white patch on sides of neck and breast (the 'collar'). Breast rufous-chestnut paling to buff on belly.

In summer plumage looks strongly pied — black and white — sometimes deceptively like Pied Bush Chat (1700) in the distance. In winter, feathers of upperparts broadly edged with rufous brown, and white feathers of rump tipped with rust colour.

Female. Above, rufous-brown streaked with dark brown. A white wing-patch. Rump pale rufous; tail blackish brown. Below, pale fulvous, rufous on breast.

STATUS, DISTRIBUTION AND HABITAT. Common summer (breeding) visitor to N. Baluchistan, and the Himalayas from Gilgit and Kashmir east to Arunachal Pradesh (Stevens, JBNHS 23: 257); also North Cachar (JBNHS 9: 130) and Nagaland (*Nidification* 2: 21). Breeds mostly between 1500 and 2500 m, locally up to 3000 m; in Nepal down to the duns (Biswas, JBNHS 58: 666). Winters from c. 2200 m down to the foothills and south through the Peninsula to southern Karnataka, east through the Bhutan foothills, Jalpaiguri duars, Bangladesh and Assam. In summer affects open country, terraced cultivation, pastures and sparsely scrubbed grassy hillsides. In winter frequents reed-beds bordering tanks, tamarisk jungle and sparse scrub on stony wasteland and around fallow fields; also sea-holly and other bushes on dry mudflats along tidal creeks, and on sand-dunes by seashore.

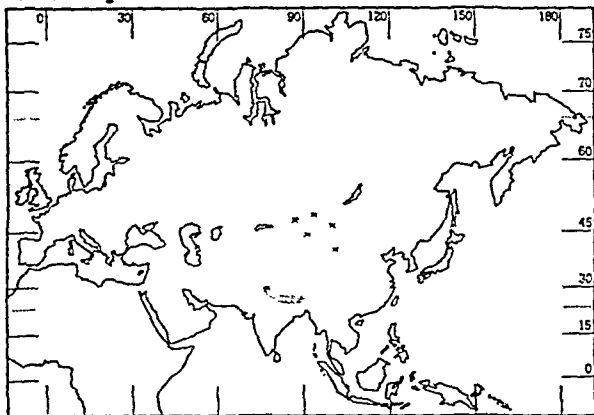
MIGRATION. Occurs in winter quarters from September to early April and on summer grounds from March to September or October. Passage in northern India noted in September and April.

GENERAL HABITS. Keeps singly or in pairs. Usually seen perched on top of a low bush making short descents to the ground for insects, returning to the same perch or flying low to another. Also catches insects in the air. Tail constantly flicked open and jerked loosely up and down.

FOOD. Chiefly ants and small beetles (Hingston); also locusts and other insects and larvae.

VOICE AND CALLS. A short but lively song often mixed with mimicked calls of other birds; delivered from a perch or in slow display flight with wings 'clapping' over back as in a pigeon but noiselessly (SA), or while flying up in the air to a height of some four to six metres and then sailing down with wings outspread (Bates & Lowther). Song period in Nepal, end of March till end of June (Proud). Alarm-notes rendered as *check-check*, and *pet-tack*.

BREEDING. Season, March to July; at least two broods. Nest, a cup of grass, moss, fibres and rootlets, lined with hair, fur and a few feathers;

Saxicola insignis

Winter range

Summer records

MIGRATION. Arrives in October (first date 27) leaves in March or early April (last date 10).

GENERAL HABITS. Solitary. A typical bush chat in habits, perching on top of bushes and descending to the ground for insects. Appears to feed mostly on the ground, not flycatching as other bush chats often do.

FOOD. Insects (mostly beetles) and their larvae; also some vegetable matter.

VOICE AND CALLS. Alarm-note, a metallic *teek teek*.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	83-92	13	27	49-54 mm (Baker)
		(from nostrils)		
♂ ♂	81-89	8-10	26-28	54-66 mm
♀ ♀	80-84	9-10	25-28	54-58 mm (Kozlova)

COLOURS OF BARE PARTS. Iris deep brown. Bill, legs and feet black.

SAXICOLA TORQUATA (Linnaeus)

Key to the Subspecies

Page

- A Base of tail (male) usually black.....*S. t. stejnegeri* 29
 B Base of tail with more or less white
 1 Darkest and largest; wing usually over 71 mm.....*S. t. przewalskii* 27

THRUSHES AND CHATS

27

Somalia. The species ranges over most of the Palaearctic, Africa south of the Sahara, and Madagascar.

GENERAL HABITS, FOOD AND VOICE. As in 1697.

BREEDING. As in 1697.

MUSEUM DIAGNOSIS. Paler than other races. Has more white at base of tail than *indica*, and a slightly longer wing.

MEASUREMENTS

Wing: 90 ♂♂ 64-73 (av. 67.7) mm; 30 ♀♀ 64-71 (av. 67) mm (Dementiev)
 Weight 1 ♂ (Nov.) 13.5; 1 ♀ (Nov.) 13.1 g (RAP); 5 ♂♂ (June) 12-14 (av. 13.0); 1 ♀ (June) 14; 11 ♂♂ (Sept.-Oct.) 11-15 (av. 12.7); 10 ♀♀ (Sept.-Oct.) 11-13 (av. 12.1) g — Paludan, Afghanistan.

COLOURS OF BARE PARTS. As in 1697.

1696. Tibetan Collared Bush Chat. *Saxicola torquata przewalskii* (Pleske)

Pratincola maura var. *Przewalskii* Pleske, 1889, Wiss. Res. Przewalskii's Reise,
 Th. Vög. 2: 46, pl. 4 (Kansu)
 Baker, FBI No. 496, Vol. 2: 30

Plate 91, fig. 3

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1697, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor. The Himalayan foothills from Kangra in Himachal Pradesh (c. 76°E.) to Arunachal Pradesh and Assam (Sadiya) south to the Ganges river, Meghalaya and Nagaland (SDR); in the hills up to c. 1300 m. Affects high grass, paddyfields, etc. as *indica*.

Extralimital. Breeds in Tibet and in the mountains of western China.

MIGRATION. Arrives in September, leaves in March. Abundant on passage in the high Himalayas in September and October (Ladakh — Meinertzhagen; Spiti — Koelz; Nepal — Diesselhorst, Polunin); on Mt Everest up to 5100 m (*Ibis* 1922: 511); 'Thousands passed through Nepal Valley between 5 and 14 April. No large scale passage in autumn' (subspecies presumed. Proud, JBNHS 48: 702); also in southeastern Tibet (Ludlow, *Ibis* 1937: 268, given as '*indica*').

GENERAL HABITS AND VOICE. As in 1697.

FOOD. Insects and their larvae, occasionally berries (GD).

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Larger than other races and darker, especially below. Axillaries black with only obsolete white tips.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂ ♂	71-76	15-17	53-57 mm
♀ ♀	68-73	16-17	51-54 mm (BB)

Weight 8 ♂♂ (Sept.-Dec.) 13.1-17.8; 10 ♀♀ (Sept.-Dec.) 13-15.5 g (RAP, GD).

COLOURS OF BARE PARTS. As in 1697.

placed on the ground at the foot of a bush, in a hollow in grassy banks, or in piled-stone boundary walls in terraced cultivation; sometimes a little above the ground among dense vegetation. Eggs, 4 or 5, pale greyish blue, marked with faint, pale reddish spots forming a ring around the large end. Average size of 93 eggs 17.3 × 13.5 mm (Osmaston), of 100 eggs 16.9 × 13.5 mm (Baker). Incubation apparently by female alone; period c. 13 days. Often brood-parasitized by *Cuculus canorus*.

MUSEUM DIAGNOSIS. See Key to the Subspecies. First-winter male may be found in two phases of plumage: either indistinguishable from female though tending to be slightly darker, or similar to adult male except that primary-coverts, primaries and secondaries and narrow rectrices of juvenal plumage are retained (HW). No spring moult.

MEASUREMENTS				
	Wing	Bill (from skull)	Tarsus	Tail
♂♂	64-73	13-14	21-23	{ 46-53 mm 44-50 mm
♀♀	62-70			
(BB, Rand & Fleming, SA, CBT)				

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet black. Mouth pink, yellowish pink or pinkish slate.

1698. East Siberian Collared Bush Chat. *Saxicola torquata stejnegeri* (Parrot)

Pr.(atincola) rubicola Stejnegeri Parrot, 1908, Verh. Orn. Ges. Bayern 8: 124 (Etorofu = Iturup [Kuriles], and Hokkaido) Baker, FBI No. 497, Vol. 2: 30

LOCAL NAMES. None recorded.
SIZE. Sparrow —; length c. 13 cm (5 in.).
FIELD CHARACTERS. As in 1697, q.v. See Museum Diagnosis.
STATUS, DISTRIBUTION AND HABITAT. Winter visitor to Assam west to the Bhutan foothills and Jalpaiguri duars, and the hills of Bangladesh south to the Chittagong region. Birds from the Andamans, where it is rare (cf. Abdulali, JBNHS 61: 564), may better be assigned to this subspecies. Habitat as in 1697.

Extralimital. Breeds in eastern Asia from the Yenisey to Manchuria, Japan and Kuriles. Winters in southeast Asia south to the Malay Peninsula and Borneo, east to the Philippines.

MIGRATION. Recorded in Assam from the end of August to the end of April (Stevens, JBNHS 30: 67).

GENERAL HABITS, FOOD AND VOICE. As in 1697.

BREEDING. Extralimital.
MUSEUM DIAGNOSIS. Darker above than *maura* or *indica* but paler than *przevalskii*, with a stouter bill. Base of tail usually black in males. Second primary (as.) usually longer than seventh.

in winter only), the Gangetic plain in Bihar, northern Bengal, northern and eastern Bangladesh, the plains of the Brahmaputra, Cachar and Manipur. Breeding range does not overlap that of *S. torquata*. Recorded in winter from Peshawar and Orissa. Essentially a bird of the plains, barely reaching c. 700 m in the foothills. Affects high grass, reeds and tamarisks on damp or inundated ground, especially in the vicinity of large rivers. Appears to be confined to areas subject to seasonal inundation.

Extralimital. Burma lowlands.

GENERAL HABITS. As in 1697. Usually perches on top of some high grass, reed or bush descending to the ground for insects. When perched moves tail slowly up and down, at the same time fanning it rapidly, exposing the white on the lateral rectrices. Generally quite shy. When approached, drops off its perch and darts away unseen through the grass. Found singly or in loose parties of 4 or 5; pairs form in February.

FOOD. Insects.
VOICE AND CALLS. Alarm-note given as *peep-cha-a*. Song 'short and lark-like' (Bell *apud* Ticehurst, *Ibis* 1922: 630).

BREEDING. Season, March to May, before the summer floods. Probably double-brooded. Nest, similar to that of *torquata*, usually well concealed in a heap of dead tamarisk leaves, under a clod, among the roots of a grass tussock or in a tangled mass of grass brought down by floods and stranded; almost always found near water. For breeding purposes prefers 4- or 5-foot high vegetation rather than tall grass or reeds. Eggs, normally 3, similar to those of *torquata* but as a whole rather more reddish. Average size of 24 eggs 18 × 14 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Species. For details of plumages see *Ibis* 1922: 20, or Baker, loc. cit. Female has the upperparts uniform earthy grey-brown without any rufous tinge; upper tail-coverts grey-brown, not rufescent as in *torquata*. Tail uniform pale brown, paler than in *torquata*. Some males breed in female-like plumage.

MEASUREMENTS				
	Wing	Bill (from skull)	Tarsus	Tail
6 ♂♂	67-71	14-15	c. 21	{ 49-52 mm 48-52 mm (CBT)
3 ♀♀	65-67			

COLOURS OF BARE PARTS. Unrecorded, probably as in 1697.

SAXICOLA CAPRATA (Linnaeus)

Key to the Subspecies

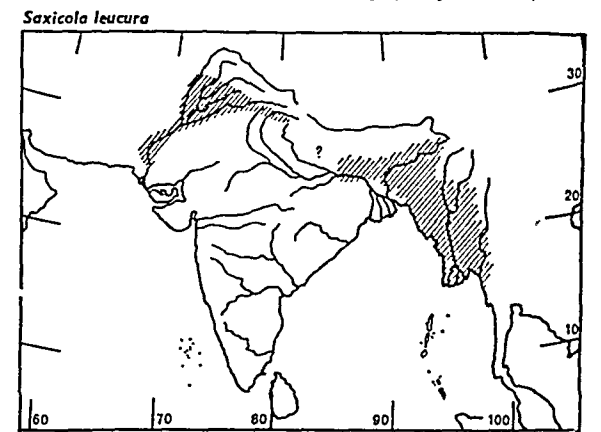
	Page
A White of lower parts extending to abdomen and lower breast.....	32
..... <i>S. c. bicolor</i>	
B White of lower parts restricted to vent and under tail-coverts	
1 Size smaller; bill finer and shorter, 13-15 mm..... <i>S. c. burmanica</i>	34
2 Larger; bill longer, 18-20 mm..... <i>S. c. atrata</i>	35
3 Intermediate between 1 and 2..... <i>S. c. nilgiriensis</i>	34

MEASUREMENTS			
		Wing	Bill (from skull)
22	♂♂	65-70 (av. 67.5)	c. 14 mm
14	♀♀	64-68 (av. 68)	
(Dementiev)			
Weight 1 ♂ (winter) 14.5 g (SDR). 3 ♂♂ (summer) 13.1-15.4; 2 ♀♀ (summer) 13.4, 14.4 g (Dementiev).			
COLOURS OF BARE PARTS. As in 1697.			

1699. Whitetailed Bush Chat. *Saxicola leucura* (Blyth)

Pratincola leucura Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 474 (Upper Scinde) Baker, FBI No. 498, Vol. 2: 31 Plate 91, fig. 7

LOCAL NAMES. None recorded.
SIZE. Sparrow —; length c. 13 cm (5 in.).
FIELD CHARACTERS. As in 1697 but tail largely white; rufous of breast not extending to belly.
Female much resembles Spotted Flycatcher rather than a chat (Stanford).
STATUS, DISTRIBUTION AND HABITAT. Resident, subject to local movements; locally fairly common. The plains of the Indus river system in Pakistan and Punjab, Kumaon terai (Whymper), Nepal terai ? (recorded



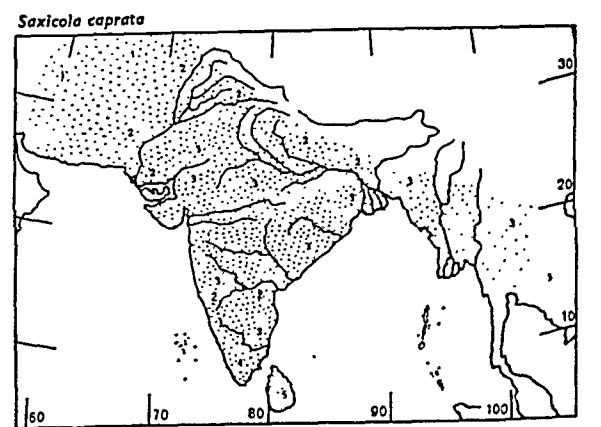
Distributional range

1700. Northern Pied Bush Chat. *Saxicola caprata bicolor* Sykes

Saxicola bicolor Sykes, 1832, Proc. Zool. Soc. London: 92 (Dukhun) *Saxicola caprata rupchandi* Koelz, 1939, Proc. Biol. Soc. Washington 52: 65 (Londa, Bombay Presidency) Baker, FBI No. 494, Vol. 2: 26

LOCAL NAMES. *Piddi* (Sind, Hindi); *Kālā piddā* (Hindi).
SIZE. Sparrow —; length c. 13 cm (5 in.).
FIELD CHARACTERS. Male (adult). Above, jet black with a white wing-patch and white upper tail-coverts. Below, black with white belly and under tail-coverts. In winter the black feathers are fringed with brown. White wing- and rump-patches very conspicuous in flight. Female. Above, lores buff; head and back brown. Wing brown with buff edges. Upper tail-coverts rusty. Tail blackish brown. Below, fulvous, breast and belly tinged with rusty; vent and under tail-coverts buff.

STATUS, DISTRIBUTION AND HABITAT. Partial migrant, fairly common. Pakistan and northern India, from Baluchistan, N.W.F.P. and Kashmir,



Distributional ranges 1 rossorum (RE) 2 bicolor (1700) 3 burmanica (1701) 4 nilgiriensis (1702) 5 atrata (1703)

THRUSHES AND CHATS

33

east through Punjab, Uttar Pradesh, Nepal and Bihar to northern Bengal; in the hills normally up to c. 1500 m, in Nepal locally up to c. 2100 m. In the more northern parts and at higher levels, mostly a summer (breeding) visitor, arriving in February or March, leaving in September or October; however, may be found as high as 1400 m in winter. Recorded as a winter visitor from Gujarat (including Kutch and Kathiawar), Madhya Pradesh, Maharashtra, northern Karnataka and Andhra Pradesh. A winter record from Gilgit (Scully). Affects cultivated fields about villages, sparsely scrubbed hillsides, tamarisk growth, reeds and coarse grass in the neighbourhood of tanks, canals, jheels and cultivation.

Extralimital. The species extends west to Aral Sea and eastern Iran, and east to the Philippines, Indonesia (except Borneo) and New Guinea.

GENERAL HABITS. Usually seen singly, but invariably with its mate somewhere near at hand, perched on a bush-top, weed stalk or telegraph wire, tail twitched open now and then; darts to the ground from time to time to pick up a creeping morsel or sometimes makes aerial sallies after flying insects. Very territorial, actively resisting intrusion into its feeding as well as breeding area by its own species or other chats.

Display. Flies up in the air with tail spread widely, wings flapping slowly and deliberately ('delayed action') and held high above the head, or sails slowly downwards in an arc to another perch with outspread wings, the white wing-patches and rump feathers conspicuously fluffed out, singing the while. Also displays before his mate by crouching on the perch, wings and tail outspread, singing loudly. During threat display, wings are drooped flaunting the white patches 'menacingly', tail depressed and spread, rump fluffed out and neck stiffly craned forward to the accompaniment of excited snatches of song (SA).

FOOD. Ants, beetles, larvae and some vegetable matter (Hingston); also grasshoppers and other insects, and spiders.

VOICE AND CALLS. Alarm-note, a harsh *chek-chek* ending in a subdued musical *truel*. Has a short whistling song beginning with a double *chick-chick*, recalling that of the Indian Robin and the Crested Bunting; rendered as 'we are tea for two' (highest note on *tea*) — Holmes & Wright. Uttered from a perch, occasionally a roof-top, tail depressed, wings partly drooping at the sides, displaying the white patches. In his excitement the singing bird sometimes takes short ludicrous leaps of a metre or so in the air and returns to the same perch. Song also given in display flight, q.v.

BREEDING. Season, overall March to August, in the northern parts usually not beginning before April; double-brooded. *Nest*, a cup of grass and rootlets lined with finer grass and hair; placed on the ground, under tufts of grass, in holes in walls or in the sides of wells, or in hollows in banks. *Eggs*, 3 to 5, pale blue, marked mostly at the broad end with deep reddish brown blotches and freckles. Average size of 100 eggs 17.6 × 13.9 mm (Baker). Building of nest and care of young by both sexes. Incubation chiefly by female; period 12/13 days. Often brood-parasitized by *Cuculix canorus*.

MUSEUM DIAGNOSIS. Differs from *atrata* (1703) in being smaller and having the white of underparts extending well on to the abdomen and lower breast.

THRUSHES AND CHATS

35

FIELD CHARACTERS. As in 1700, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The hills of southern India from the Nilgiris southward, chiefly above 900 m, commonest at c. 1500 m. Affects grassy hillsides sparsely interspersed with dwarf wild date-palms (*Phoenix*) or 'nelli' trees (*Emblia*).

GENERAL HABITS, FOOD AND VOICE. As in 1700.

BREEDING. Season, February to May. *Nest* and *eggs* as in 1700. Average size of 50 eggs 19.5 × 15.2 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *atrata* (1703) in having a smaller bill, but larger than in *burmanica*.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	73-79	15-17	25-27	60-67 mm
♀♀	69-75	15-16	25-26	59-63 mm

(SA)

COLOURS OF BARE PARTS. Iris brown. Bill, legs, feet and claws brownish black. Mouth yellowish pink, greyish pink or brownish pink, apparently varying with age.

1703. Ceylon Pied Bush Chat. *Saxicola caprata atrata* (Kelaart)

Pratincola atrata Kelaart, 1851, in Blyth, Jour. Asiat. Soc. Bengal 20: 177 (Newera Elia, Ceylon)

Baker, FBI No. 493 (part), Vol. 2: 25

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1700, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The hills of Sri Lanka above c. 1000 m, mostly on the drier side. Affects open, grassy areas with scattered bushes.

GENERAL HABITS AND FOOD. As in 1700.

VOICE AND CALLS. Alarm-note, a sharp, scolding *chuh* 'like scraping a quill against sandpaper'. Song, a brisk whistle, *chip chep-chee-eechu*. Young, when beginning to fend for themselves, utter a curious, rasping chirp *creek, creek* (Henry).

BREEDING. Season, end of February to May. *Nest* and *eggs* as in 1700. For details see Phillips, 1939, p. 254.

MUSEUM DIAGNOSIS. Differs from *nilgiriensis* (1702) in having a longer and coarser bill.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
3 ♂♂	77-80	18	23	53-56 mm
2 ♀♀	76	—	—	53 mm

(HW, SDR)

8 ♂♂ in Brit. Museum have bills (from skull) 17-20 mm (HW)

Weight 2 ♂♂ 22.5, 23; 1 ♀ 22 g (SDR).

COLOURS OF BARE PARTS. As in 1701.

34

TURDINAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	66-67	13-15	20-24	50-55 mm
♀♀	64-75	13-15	20-23	49-53 mm

(HW, SA, Rand & Fleming)

Weight 3 ♂♂ (Oct.-Dec.) 12.9-16.1 g (RAP). 1 ♂ 13; 1 ♀ 12 g (Roonwal). 3 ♂♂ (April) 13-14; 1 ♀ (March) 15.5 g (GD).

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet black.

1701. Burmese Pied Bush Chat. *Saxicola caprata burmanica* Baker

Saxicola caprata burmanica Baker, 1923, Bull. Brit. Orn. Cl. 43: 9 (Pegu)

Baker, FBI No. 492, Vol. 2: 24

Plate 91, fig. 5

LOCAL NAME. *Kumpa nalanchi* (Telugu).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1700, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to small seasonal movements. Breeds south of the range of *bicolor*, from Gujarat south to Karnataka and Tamil Nadu to the Cauvery river, east through Madhya Pradesh, southern Bihar, Bengal, Assam, Meghalaya, Nagaland, Manipur, Mizoram and Bangladesh; in the hills up to c. 1200 m (Eastern Ghats), 1800 m (Meghalaya) and 2100 m (Nagaland). Population of central India increased in winter by influx of *bicolor* from the northwest. Affects open fields, scrub land, cultivation; partial to hedges of *Agave*.

Extralimital. Extends eastward through Burma, Thailand and the Indo-chinese countries. For range of the species see 1700.

GENERAL HABITS, FOOD AND VOICE. As in 1700.

BREEDING. As in 1700. Average size of 62 eggs 16.8 × 13.9 mm (Baker).

MUSEUM DIAGNOSIS. The smallest race. Coloration as in *atrata*, i.e. white of lower parts less extensive than in *bicolor*.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	67-77	13-15	20-22	48-62 mm
♀♀	68-72	13-15	20-22	47-51 mm

(HW)

Weight 12 ♂♂ (May) 15-17 (av. 15.7); 7 ♂♂ (July-Aug.) 13-16 (av. 14.4) g — SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill: ♂, black, base of lower mandible brownish; ♀, dark brown; mouth pale pink. Legs, feet and claws black.

1702. Nilgiri Pied Bush Chat. *Saxicola caprata nilgiriensis* Whistler

Saxicola caprata nilgiriensis Whistler, 1940, Bull. Brit. Orn. Cl. 60: 90

(Ootacamund)

Baker, FBI No. 493 (part), Vol. 2: 25

LOCAL NAMES. *Chuttental-kili* (Malayalam); *Kallu kūrūri* (Tamil).

SIZE. Sparrow —; length c. 13 cm (5 in.).

36

TURDINAE

1704. Jerdon's Bush Chat. *Saxicola jerdoni* (Blyth)

Oreicola jerdoni Blyth, 1867, Ibis: 14, new name for *Rhodophila melanoleuca* Jerdon, 1863, Bds. India 2: 128 (Purneah) nec *Omanthe melanoleuca* Vieillot, 1818

Baker, FBI No. 501, Vol. 2: 35

Plate 91, fig. 6

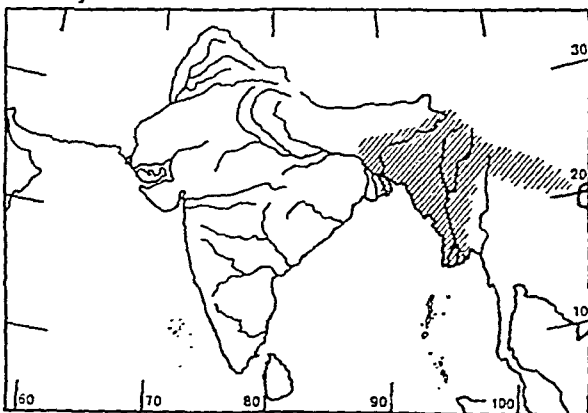
LOCAL NAME. *Dootisha-gashim* (Cachari).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male. *Above*, entirely glossy black. *Below*, entirely white.

Female. *Above*, brown tinged with rufous, especially on rump. *Below*, throat white, rest of underparts pale fulvous, darkest on breast and flanks.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to short seasonal movements; locally common. Arunachal Pradesh, Assam, Meghalaya,

Saxicola jerdoni

▨ Distributional range

Nagaland, Manipur, Mizoram, Tripura and Bangladesh, west to Bengal and eastern Bihar (Purneah). Affects the vast expanses of *ekra* grass in the plains and foothills up to c. 700 m.

Extralimital. Extends east through Burma and northern Laos to northern Vietnam.

GENERAL HABITS. Typical of the bush chats. Keeps singly or in pairs; usually very shy. Perches on reed-stems or bushes, darting to the ground for insects, sometimes foraging among the rootstocks of grass and reeds. The tail is constantly expanded and flirled.

FOOD. Insects.

THRUSHES AND CHATS

37

VOICE and CALLS. A very silent bird. Only note recorded is a low *chit-churr*, and a *chirrr* of alarm (Baker).

BREEDING. *Season*, February to end of May. *Nest*, a cup of rootlets and fine grass lined with same but finer material; placed on the ground, among the roots of a grass tuft or in a hollow in a bank. *Eggs*, normally 4, less often 3, deep turquoise, unspotted. Average size of 30 eggs 16.2 × 13.3 mm (Baker). Incubation apparently by female alone.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	67-69	11	23	{ 61-69 mm
♀♀	64-68			{ — mm
				(Baker)

Bill from skull (1 ♂) 15 mm (MD)

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet black.

1705. Dark-grey Bush Chat. *Saxicola ferrea* Gray

Saxicola ferrea Gray, 1846, Cat. Mamms. Bds. Nepal: 71, 153 (Nepal)
Oreicola ferrea haringtoni Hartert, 1910, Vög. pal. Fauna 1: 711
(Lien-kiang near Fu-tschau, China)
Baker, FBI Nos. 502 and 503, Vol. 2: 36, 38

Plate 91, fig. 8

LOCAL NAME. *Sarrek-chak-pho* (Lepcha).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult), summer. General effect pied black and white. *Above*, dark ashy grey with black streaks; a white supercilium; sides of head black. Tail black with whitish outer edges. A concealed white shoulder-patch visible in flight. *Below*, throat white, breast and flanks pale grey, belly whitish.

In winter feathers of crown, back, breast and flanks tipped with rufous brown.

Female. *Above*, rufous brown faintly streaked with darker brown; a pale supercilium; sides of head dark brown; upper tail-coverts rusty; tail dark brown, outer rectrices rusty. *Below*, chin and throat white, rest of underparts fulvous, darkest on breast.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to altitudinal and short-range seasonal movements. The lower Himalayas from N.W.F.P. to Arunachal Pradesh, thence south through Nagaland (?), Manipur, Meghalaya and Mizoram. Breeds between 1500 and 3300 m, optimum zone 1800-3000 m. Winters from c. 2400 (mostly below 1200 m) down to the foothills and into the Gangetic plain south to the Yamuna river, and throughout Assam and Bangladesh. Affects open, scrub-covered hillsides particularly along fringes of forest, glades, and in the neighbourhood of terraced cultivation; in central Nepal noted in barberry and juniper scrub on dry hillsides. Tolerates denser vegetation than other bush chats.

THRUSHES AND CHATS

39

rarely 6, pale blue marked with reddish freckles, mainly at the large end. Average size of 100 eggs 17.9 × 14.2 mm (Baker). Incubation by female alone. Often brood-parasitized by *Cuculus canorus*.

MUSEUM DIAGNOSIS. See Field Characters. Postnuptial moult complete in August and September. Nuptial plumage acquired by wear of brown tips of winter plumage. Young spotted. Postjuvinal moult of body-feathers and all coverts except primary- and outer greater coverts. First-year birds recognized by retention of juvenal primary- and outer greater coverts; male also by rusty tips of tail. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	64-71	14-16 (once 12)	21-24	54-65 mm
				(SA, BB)

Weight 3 ♂♂ (May-Sept.) 13.8-15 g (GD). 6 ♂♂ (winter) 14.1-16; 2 ♀♀ (winter) 13.1, 15 g (RAP, SDR). 8 ♂♂ (Nov.-Apr.) 14-16; 1 ♀ (Mar.) 16 g (BB, SA).

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs, feet and claws black or blackish brown; sole grey.

Genus *OENANTHE* Vieillot

Oenanthe Vieillot, 1816, Analyse nouv. orn.: 43. Type, by monotypy, 'Motteux' Buffon = *Turdus leucurus* Gmelin ex Latham

Cf. Vaurie, C., 1949, *Amer. Mus. Novit.*, No. 1425: 1-47

Meinertzhagen, R., 1954, *Bds. Arabia*: 235-54.

Bill about half the length of the head, slender and not widened at the base. Rictal bristles few and weak. Wing pointed, first primary (as.) about one-third the length of the second. Tail shorter than wing, nearly square. Tarsus rather long and slender.

Key to the Species

Page

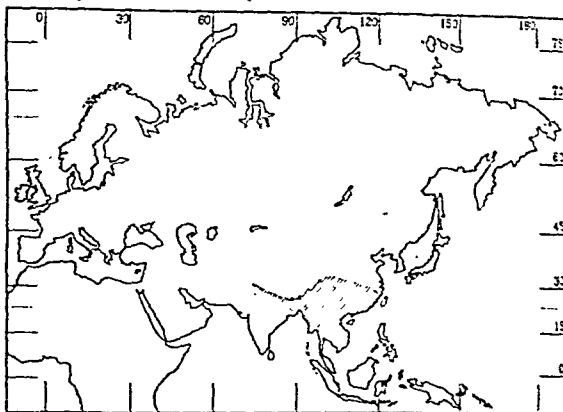
- I Throat black
- A Crown black
- 1 Belly black.....*O. picata* phase *opistholeuca* ♂ 50
- 2 Belly white
- a Larger; wing mostly over 100 mm, black glossy, restricted to throat.....*O. alboniger* ♂♀ 53
- b Smaller; wing mostly under 100 mm, black dull, extending to upper breast.....*O. picata* phase *picata* ♂ 50
- B Crown white, back black
- 3 Outer rectrices broadly tipped with black
- c Black on outer webs of all rectrices extending farther down towards base than black of inner webs.....*O. picata* phase *capistrata* ♂ 50
- d Black on outer webs extending farther down on outermost rectrices only.....*O. pleschanka* ♂ 55
- 4 Outer rectrices only marked with brown towards tip *O. monacha* ♂ 52
- C No black on crown or rump
- 5 Black part of outer rectrices over 25 mm.....*O. deserti* ♂ 45
- 6 Black part of outer rectrices under 25 mm.....*O. finchii* ♂ 48

38

TURDINAE

In winter frequents cultivated country, tea-gardens and grassland, especially *ekra* grass along rivers.

Saxicola ferrea



■ Breeding □ Winter

Extralimital. Ranges east through southern China south to the northern Indochinese countries.

MIGRATION. Occurs on summer grounds from March to September or October and in winter quarters from November to March.

GENERAL HABITS. Very parochial, frequenting the same spot day after day. Keeps singly or in pairs, sometimes in loose parties in winter. Usually perches on bush-tops or telegraph wires where available in typical bush chat fashion, flitting its tail. Drops to the ground for insects from time to time; frequently takes them also on the wing like a flycatcher.

FOOD. Insects and some seeds.

VOICE and CALLS. Call-note *prrei* (rising); alarm-notes *zee-chunk* repeated at short intervals, and a sharp *tak-tak-tak*; also a *tic-tic-brzezzee* (Fleming). Song typically chat-like: a short, pleasant but rather feeble trill *tiriririri* or *siriri-swirri*, the final *swirri* a rolling whistle, with some variations (SA). Generally uttered from a tree-top or other perch, or in the air during display flight. Song period, early April till end of June with a resumption from early September to end of October (Proud).

BREEDING. *Season*, February to May in Meghalaya, early April to July in the Himalayas. *Nest*, a cup of fine grass lined with finer grass-stems, rootlets, hair and sometimes a few feathers; usually placed in a little depression on sloping ground, well concealed by grass, sometimes under a stone or clod, rarely in holes in rock-clefts or stone revetments of hill roads. *Eggs*, 4 or 5,

TURDINAE

40

- II Throat not black
- D Ear-coverts black
- 7 First primary shorter than primary-coverts.....*O. oenanthe* ♂ 44
- 8 First primary equal to or longer than primary-coverts.....*O. pleschanka* phase *ritata* ♂ 56
- E Ear-coverts not black
- 9 Outer rectrices buff marked with brown near tip...*O. monacha* ♀ 52
- 10 Black part of outer rectrices over 25 mm
- e Tarsus over 28 mm.....*O. isabellina* ♂♀ 40
- f Tarsus under 28 mm
- i Under surface of tail white on basal half only...*O. deserti* ♀ 45
- ii White on under surface of tail nearly reaching tip of inner rectrices.....*O. pleschanka* ♀ 55
- 11 Black part of outer rectrices under 25 mm
- g Throat earthy brown or sooty brown....*O. picata* ♀ (all phases) 50
- h Chin and throat buff or greyish buff
- iii Rump rufous.....*O. xanthopyrma kingi* ♂♀ 42
- iv Rump white or buffish
- o' Tarsus over 26 mm.....*O. oenanthe* ♀ 44
- o'' Tarsus under 26 mm.....*O. finchii* ♀ 48

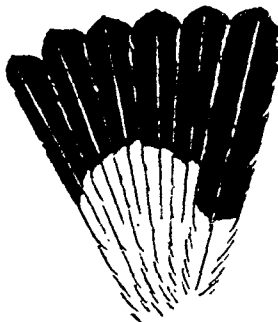
1706. Isabelline Chat. *Oenanthe isabellina* (Temminck)

Saxicola isabellina Temminck, 1829, Pl. Col. (79), pl. 472, fig. 1 (Nubia, Africa)
Baker, FBI No. 512, Vol. 2: 49
Plate 91, fig. 10

LOCAL NAMES. *Gidik* (Brahui, all wheatears); *Pilo piddo* (Gujarat).

SIZE. Sparrow +; length c. 16 cm (6½ in.).

FIELD CHARACTERS. *Above*, sandy brown with a pale supercilium and eye-ring. Wings dark brown with buff edges. Upper tail-coverts and base of tail white; rest of tail blackish brown with narrow buff tips. *Below*, pale creamy buff, darker on breast and flanks. Sexes alike.



Half of tail, × c. 1

Distinguished from female *O. deserti* (1710) by its plumper build, heavier head, longer legs and absence of black in upper wing-coverts. In flight the white subterminal band on tail is noticeably broader, and more glistening white or buffy white in *deserti*.

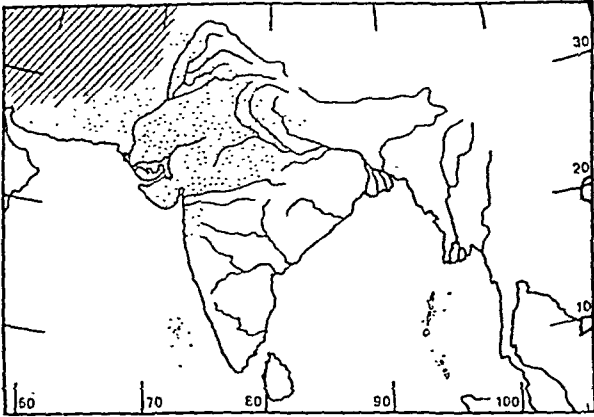
STATUS, DISTRIBUTION and HABITAT. Mostly a winter visitor, fairly common. Breeds in northern Baluchistan (Chagai, Quetta) and in N.W.F.P. (Thall, Parachinar). Winters in all parts of Pakistan and the plains of northwestern India including N. Gujarat (with Kutch and Kathiawar).

THRUSHES AND CHATS

41

straggling east and southeast to Varanasi and Schore, and south to Ahmednagar (Fairbank, Blanford) and Poona, c. 18°30'N. (Abdulai & Pimento, JBNHS 65: 489). A passage migrant in Gilgit and other parts of Pakistan and northern India. Recorded in the Maldive Islands in November

Oenanthe isabellina



▨ Breeding ▤ Winter

(Phillips, JBNHS 60: 58). Affects sandy semi-desert and waste land with sparse *Capparis*, *Suaeda* and suchlike bushes, and old plough land. Prefers more sandy plains and not so much stony desert as *O. deserti*. Although found up to 3000 m (Afghanistan) it requires large, flat and desolate areas (Paludan).

Extralimital. Breeds west to Turkey, north and east to Lake Baikal, Manchuria and Kansu. Winters also in Baluchistan and west through Arabia and northeastern Africa south to Tanzania.

MIGRATION. Occurs on breeding territory from March to October. Arrives in winter quarters about the end of September (first date 4 August in Jhang District — HW), leaves in March (last date 29 April). Passage recorded in Gilgit in March and April.

GENERAL HABITS. Solitary, or in widely separated pairs. Very territorial, actively resenting intrusion by other chats into its 'sphere of influence'. Runs about swiftly, feeding on the ground, bobbing and curtsying from time to time. Sits very upright on a clod or mound, infrequently on low bushes; however, in midday heat in scrubless country often noted perching on telegraph wires in the shade of the insulators, in some areas nearly every pole having its chat!

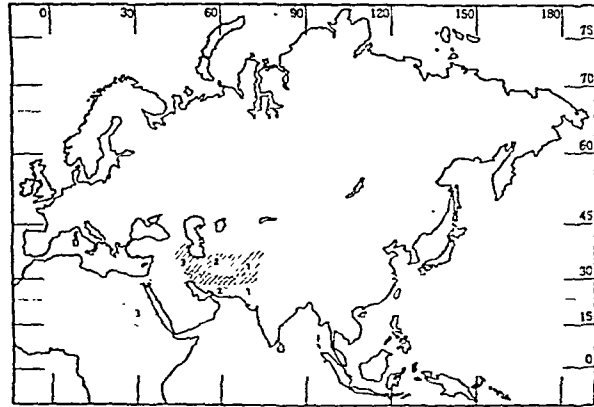
Display. 'With drooping wings and outspread tail, male approaches female, uttering the whole while a pleasant whistle. When within a foot or

THRUSHES AND CHATS

43

JBNHS 33: 604). [Alleged breeding near Thall (JBNHS 12: 339) proved to be of *Erythropygia* (loc. cit. p. 579).] Winters over most of Pakistan from N.W.F.P. and the northern foothills, south to Sind, Rajasthan (Mt Abu) and northern Gujarat. In Makran, from near sea level up to 3300 m. Recorded in autumn passage in Sairee 1500 m, Dharmsala 1350 m, and

Oenanthe xanthopyrmyna



Distributional ranges

▨ Breeding

▤ Winter

1 *kingi* (1707) 2 *chrysopygia* (RE) 3 *xanthopyrmyna* (RE)

Ranital 540 m. In winter affects semi-desert, flat, stony and sandy land with sparse *Capparis* and other xerophytic bushes, and sand dunes on the edge of desert; has a marked preference for the foot of rocky hillsides. In summer frequents arid rocky slopes especially in the vicinity of small, perennial streams, usually above 2100 m.

Extralimital. Breeds in Afghanistan and north to the Pamirs. The species ranges west to Iraq and Armenia.

MIGRATION. Occurs on winter grounds from the beginning of October till the end of March; in Kohat from September to mid April. Passage mostly in October and March, but movements also noted in December and February.

GENERAL HABITS. Usually seen singly, perching upright on clods or rocks, less frequently on low bushes, or running swiftly on the ground. Sometimes rapidly takes cover in gerbille holes and disappears down the subterranean tunnels. In winter almost everywhere in direct food competition with the more domineering *O. pinnata* by which it is mercilessly chivvied and chased.

FOOD. Ants and other insects.

42

TURDINAE

so of her rises about 18 inches off the ground and flutters in a rapid, oscillating motion . . . After this performance, alights near her and struts round with outspread wings and tail, singing all the time. He then shoots up into the air, hovers and performs aerial stunts, and descends to earth in a spiral motion' (C. H. Williams, JBNHS 33: 603). Display flight also described as follows: 'Soars into the air to a height of fifteen metres or so, hovers with beating wings and outspread tail, then sails gently downwards' (Ludlow). See also Meinertzhagen, 1934, *Birds of Arabia*, p. 245.

FOOD. Beetles and other insects; also some seeds.

VOICE AND CALLS. Little recorded. Song said to be very imitative (Dementiev) and louder than that of most chats. A low, sweet song may sometimes be heard in winter.

BREEDING. *Season*, March to June. Double-brooded. *Nest*, a shallow saucer made of grass stems, rootlets and wool, lined with hair and wool; placed in a hole, usually a rat's hole, sometimes a discarded bee-eater's burrow, about 50 cm or more from the entrance. *Eggs*, 4 to 6, generally 5, pale blue, occasionally with a few reddish brown spots at the larger end. Average size of 14 eggs from Baluchistan 21.9 × 16.7 mm (Williams); of 60 eggs 23.7 × 17.4 mm (Baker). Incubation apparently by female alone. Feeding of young by both parents.

MUSEUM DIAGNOSIS. See Key to the Species. Spring moult complete. Body moult noted in September and January (HW). Young has pale spots above, and dusky edges to breast-feathers. Postjuvenile moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	98-104	18-20	30-31	56-62 mm
♀♀	92-96	19-20	29-30	51-55 mm
				(SA)

Weight 8 ♂♂ 26-31; 5 ♀♀ 27.1-34 g (Dementiev, Cornwallis).

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet black.

1707. **Redtailed Chat.** *Oenanthe xanthopyrmyna kingi* (Hume)

Saxicola kingi Hume, 1871, Ibis: 29 (Jodhpur)

Baker, FBI No. 515, Vol. 2: 53

Plate 91, fig. 11

LOCAL NAMES None recorded.

SIZE. Sparrow +; length c. 16 cm (6½ in.).

FIELD CHARACTERS. Male (adult). *Above*, head and back pale grey-brown. A dull, greyish white supercilium. Rump rufous-ochre, upper tail-coverts and base of tail paler. Centre of tail and broad terminal band blackish brown. *Below*, whitish tinged with pink. Sexes alike.

The only chat or wheatear with rufous rump and base of tail, which together with greyish underparts make it distinctive in flight.

STATUS, DISTRIBUTION AND HABITAT. Mostly a winter visitor, locally common. Breeds in northern Afghanistan (Amran Khwajah and along Barshor hills — Christison, JBNHS 43: 479) and north of Quetta (Williams,

44

TURDINAE

VOICE AND CALLS. Alarm: a characteristic *thrrrr thrrr thrrr*, less harsh than of other wheatears (Lindon Cornwallis — for subspecies *chrysopygia*). Song said to be very imitative: a very loud warbling.

BREEDING. *Season*, April to June. *Nest*, placed in small hollows quite low down in a rock-face above water; or inside holes under stones or in walls — maybe up to 60 cm deep — generally on the steep sides of bare, rocky gorges. The shallow saucer of grass, lined with fine rootlets and grass fibres, rests on a foundation of flat pebbles — often a considerable quantity — and is protected by a rampart of same. *Eggs*, 4 or 5, pale blue with or without a few rusty spots. Average size of 22 eggs 20.7 × 16 mm (Christison, Williams). Other details of breeding biology not recorded.

MUSEUM DIAGNOSIS. See Field Characters. Young. Upperparts and sides of head a little browner than in the adult, no pale centres or dark edges. All wing-coverts with fulvous tips. Chin and throat grey, rest of underparts with a fulvous wash. Under tail-coverts paler fulvous than in adult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	92-97	18-20	25-26	56-65 mm
♀♀	90-92			59-64 mm
				(HW, Paludan, SA)

Weight 10 ♂♂ 20-25; 6 ♀♀ 20-29 g (Paludan, RAP).

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet black.

1708. **Wheatear.** *Oenanthe oenanthe oenanthe* (Linnaeus)

Motacilla Oenanthe Linnaeus, 1758, Syst. Nat., ed. 10, 1: 126 (Sweden)

Baker, FBI No. 511, Vol. 2: 48

Plate 91, fig. 9

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (adult), winter. *Above*, crown and back brownish grey. Lores to ear-coverts black. A white supercilium and white rump. Wings black. Centre of tail and terminal band black; base and sides white. *Below*, throat and breast pale to deep buff; rest of underparts cream-buff.

In summer crown and back become more pure grey, forehead white. First-winter male like female.

Female, winter. *Above*, crown and back rufous brown. A light supercilium. Ear-coverts brown. Rump white; tail as in male. *Below*, as in male.

In summer crown and back become greyer brown.

STATUS, DISTRIBUTION AND HABITAT. A straggling passage migrant through Pakistan and the northwestern Himalayas, which apparently lie on the extreme eastern fringe of its normal migration route; recorded in Chagai, Baluchistan (March and October, *Ibis* 1941: 541), Chitral (April, at c. 1200 m), Gilgit (March at c. 1500 m), and Wardwan Valley, Kashmir (September, JBNHS 18: 462); a vagrant also recorded once near Mhow in Madhya Pradesh (Jerdon). On migration affects open stony country and cultivation.

Extralimital. Breeds in Europe and the Middle Eastern countries, east through Afghanistan and central Asia to eastern Siberia and western Alaska. Winters in Africa south of the Sahara. Another subspecies in Greenland and Labrador.

MIGRATION. Spring migration takes place mostly in April, autumn migration in September and October.

GENERAL HABITS. Generally seen singly or in twos and threes during migration. Moves on ground in a quick succession of long hops, frequently halting on some little eminence such as clods or rocks; occasionally perches on bushes or low trees. Sometimes makes little dashes into the air for insects. Carriage upright, but seldom remains still, constantly bowing and bobbing, at same time spreading tail and moving it up and down.

FOOD. Mostly insects, sometimes seeds or berries.

VOICE AND CALLS. Alarm-note *chack-chack* or *weet-chack-chack*. Usually does not sing when migrating.

BREEDING. Extralimital. A single record from Chitral c. 1300 m (Perreau, JBNHS 19: 908).

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species. For details of plumages and structure (also bionomics) see Withersby, 1938, 2: 145-9.

MEASUREMENTS

	Wing	Tail
100 ♂♂	87-101 (av. 94.4)	50-60 mm (Dementiev)
40 ♀♀	86-95 (av. 91.7)	
	Bill (from skull)	Tarsus
♂♀	18-20	27-29 mm (HW)

Weight 8 ♂♂ 21-29; 1 ♀ 22.6 g (Dementiev).

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet dark brown to black; claws black.

OENANTHE DESERTI (Temminck)

Key to the Subspecies

White on inner web of second primary reaching quill.....	<i>O. d. oreophila</i>
White on inner web of second primary not reaching quill....	<i>O. d. deserti</i>

1709. **Tibetan Desert Wheatear.** *Oenanthe deserti oreophila* (Oberholser)

Saxicola oreophila Oberholser, 1900, Proc. U.S. Nat. Mus. 22: 221 (Ladak), new name for *Saxicola montana* Gould, 1865 (Tibet), *nee Saxicola montana* Koch, 1816 Baker, FBI No. 514, Vol. 2: 52

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

Extralimital. Breeds in southern Tibet from the Pamirs to the headwaters of the Yangtze. Winters in southern Iran, Arabia and eastern Africa (Ripley & Bond, 1966, *Smithsonian Misc. Coll.* 151: 29).

MIGRATION. Arrives on breeding grounds about the middle of April, remains till September. Passage takes place in March-April and September-October.

GENERAL HABITS AND FOOD. As in 1710.

VOICE AND CALLS. Alarm-note *chuck-chrr*. Song, a mournful yet melodious, three- or four-syllable *tee-ti-ti-ti* repeated monotonously by male all day long in the vicinity of the nest; occasionally given during short hovering flight of five seconds or so a few metres above nest site (SA).

BREEDING. Season, May to July. Nest, a cup of moss, grass and goat hair neatly lined with wool, hair and sometimes feathers; placed on the ground in deep hollows under boulders or in cairns of *mani* stones, chortens, etc. Eggs, normally 4 or 5, pale blue or bluish green with small reddish specks at the broad end. Average size of 11 eggs 22.3 × 16.6 mm (BB), of 8 eggs 21.4 × 15.5 mm (HW). Both parents tend the young. Share of the sexes in other chores, and incubation period, not recorded.

When nest approached (3 separate observations at different nests) the female, uttering alarm-note and flicking tail excitedly up and down, repeatedly attacked and drove off her fussing mate from the vicinity as if afraid of his betraying position of nest (SA).

MUSEUM DIAGNOSIS. See Field Characters. Differs from *deserti* (1710) in having a longer wing and the inner web of the second primary white to the quill. Birds from Afghanistan are intermediate (Paludan).

Juvenile. Upperparts greyish brown with darker edges; pale brown on mantle. Underparts dirty white with faint brownish edges to breast-feathers. Lesser and median wing-coverts brown with pale centres and tips; inner greater coverts like the rest, not white (HW).

Postjuvenile moult of body-feathers, lesser, median, and at least inner half of greater coverts. Postnuptial moult chiefly in August.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	96-106	18-19	26	{ 65-71 mm 61 mm (Paludan, SA)
♀♀	90-97			

Weight 3 ♂♂ (March-June) 19-20; 11 ♂♂ (Sept.-Oct.) 18-34 (av. 23) g (Paludan). 1 ♀ (Oct.) 17.3 g (RAP).

COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet black.

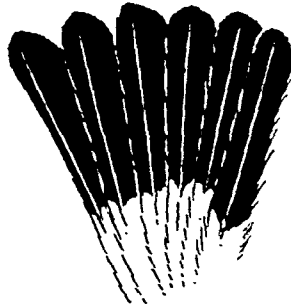
1710. **Central Asian Desert Wheatear.** *Oenanthe deserti deserti* (Temminck)

Saxicola deserti Temminck, 1825, Pl. col. (60), pl. 359, fig. 2 (Egypt)
Saxicola atrogularis Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 131 (Agra)
Baker, FBI No. 513, Vol. 2: 51

Plate 91, fig. 12

LOCAL NAME. *Rāna piddo* (Gujarat).

FIELD CHARACTERS. Male (adult), summer. Above, crown and back an dy buff; a pale supercilium. Upper tail-coverts and basal half of tail creamy white; rest of tail black. Wings blackish brown. Inner webs of remiges partly white, this character more pronounced in flight than in 1710. *Below*, throat and sides of head black; rest of underparts buffish white.



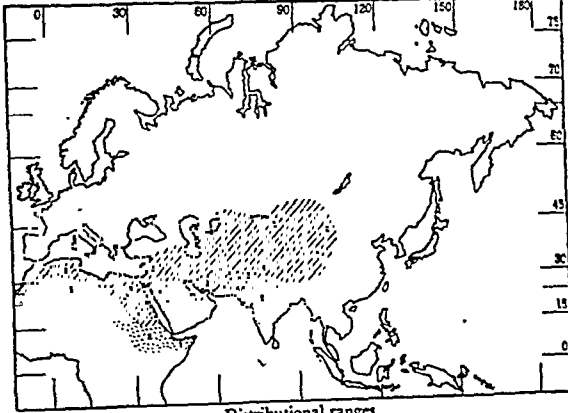
Half of tail, x c. 1

In winter the black parts are fringed with whitish.

Female. Above, like male but greyer; wings and tail a lighter brown. Ear-coverts rufous-brown. *Below*, whitish buff, breast darker.

STATUS, DISTRIBUTION AND HABITAT. Summer visitor, locally abundant. Breeds in Kashmir, Balistan, Ladakh, Lahul and Spiti, between c. 3000 and 5100 m, optimum zone 3600-4600 m. Winters in Baluchistan and possibly in Sikkim and Assam (Margherita, North Cachar — Baker, loc.

Oenanthe deserti



▨ Breeding

▤ Winter

1 *oreophila* (1709) 2 *deserti* (1710) 3 *homechroa* (RE)

cit.). An April record from Garhwal at c. 1800 m (A. E. Osmaston). On breeding grounds affects bleak rocky or sandy plateaux and hummocks covered with sparse furze (*Coragana*) bushes; usually avoids steep slopes.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1709, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Mostly winter visitor. Pakistan (fairly common) and India east to Bihar and south to central Maharashtra (Poona, Ahmednagar) and northern Andhra Pradesh (Nirmal). A few pairs breed in the Quetta area of N. Baluchistan (Marshall *apud* Baker, *Identification* 2: 44). Affects arid semi-desert broken tracts, either sandy or rocky, sometimes with sand dunes and scanty scrub; also freshly ploughed and fallow land in canal-irrigated colonies in desert.

Extralimital. Breeds in central Asia north of the range of *oreophila* and west to the eastern Mediterranean. The species ranges in North Africa to Morocco.

MIGRATION. Occurs in winter quarters from mid September to April in the northwest and chiefly from November to February over the rest of its Indian range.

GENERAL HABITS. Those of the genus. Often found in same terrain as other desert-loving chats and Short-toed larks. Usually perches on a small eminence or low bush whence it darts down to take its prey or flies up flycatcher-style for insects. Display flight as of *Or. isabellina*, (1706) q.v.

FOOD. Insects, chiefly beetles.

VOICE AND CALLS. Song variable and imitative; may occasionally be heard during winter months. Alarm-note *chi-ti-ti* (SA).

BREEDING. Season, April to June. Nest, a cup of grass, hair and wool lined with similar but softer material, placed in holes in bank or among stones. Eggs, 4 to 6 (Dementiev), very pale blue with a few faint markings at the large end. Average size of 30 eggs 19.7 × 15.4 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *oreophila*, q.v., in being smaller and having less white in wing (white area on inner web of second primary does not reach quill).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	94-99	16-20	25-27	60-69 mm
♀♀	87-94	16-18	25-27	54-64 mm (SA, HW)

Weight 19 ♂♂ (March-Oct.) 17-22; 9 ♀♀ (March-Nov.) 15-19 g (*deserti* and *oreophila*) — Paludan.

COLOURS OF BARE PARTS. As in 1709.

1711. **Barnes's Chat.** *Oenanthe finchii barnesi* (Oates)

Saxicola barnesi Oates, 1890, Fauna Brit. India, Bds. 2: 75
(Baluchistan and Afghanistan eastward [sic] to Persia = Kandahar)
Baker, FBI No. 510, Vol. 2: 47

Plate 91, fig. 15

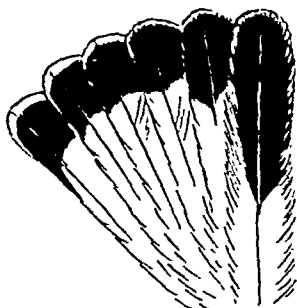
LOCAL NAMES. None recorded.

SIZE. Sparrow +; length c. 17 cm (6½ in.).

THRUSHES AND CHATS

49

FIELD CHARACTERS. Male (adult), summer. *Above*, crown and back dirty (buffish) white; rump and base of tail pure white. Central rectrices (except base) and terminal band of tail black, with a narrow white fringe to the lateral feathers. Wings black. *Below*, throat and sides of head black; rest of underparts buffish white.

Half of tail, $\times c. 1$

In winter, upperparts heavily fringed with grey buff, except white upper tail-coverts; black of throat barred with narrow rufous fringes; flight-feathers edged with pale rufous.

Female. *Above*, sandy brown, rump and upper tail-coverts white. Tail as in male. Wings dark brown with pale fringes. *Below*, sandy white, throat sometimes blackish.

Could be mistaken for female *deserti* (1710) but upperparts more greyish brown; throat and sides of

neck greyish brown (v. whitish buff); less buff on breast; tail white with only central rectrices and terminal band black (v. almost wholly black).

STATUS, DISTRIBUTION and HABITAT. Mostly winter visitor in northern Baluchistan where fairly common. Breeds in the Quetta Valley at about 1800 m (Williams, JBNHS 33: 603) and in the hills northeast of Nushki and north of Quetta (Christison, JBNHS 43: 479). Affects dry, stony foothills and desolate narrow valleys; in winter also found in arid semi-desert plains.

Extralimital. Extends north to Kirghiziya and west to northeastern Iran. Winters in southern Iran and southern Afghanistan. The nominate race breeds in Turkey and Israel. May be a race of *O. lugens* widespread in Africa (cf. Dementiev).

MIGRATION. Winter visitors arrive mostly in October.

GENERAL HABITS. Those of the genus. Very shy.

BREEDING. *Season*, April to June. *Nest*, a flat saucer of grass and sticks lined with finer grass and hair, placed in a hole in a bank or rock face, or under a heap of stones. *Eggs*, generally 5, deeper blue than 'other chats' eggs, with a zone of rusty spots at the large end and a few odd spots elsewhere. Average size of 14 eggs 19.3×15.4 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species.

Juvenile with stub tail, ready to leave nest. Pale earthy isabelline below and slightly darker above, with very broad margins to primaries and secondaries. Even paler than juvenile *isabellina* (1706) and lacks the spotting of the latter (Meinertzhagen).

MEASUREMENTS

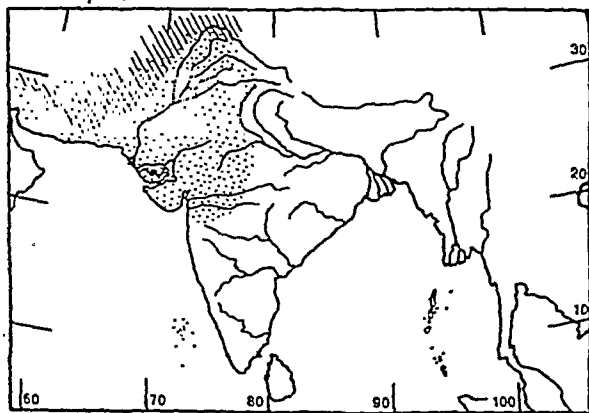
	Wing	Tarsus	Tail
♂♂	84-96	24-26	60-70 mm
♀♀	82-90	24-26	53-65 mm

(Dementiev, CBT, Paludan, Cornwallis)

THRUSHES AND CHATS

51

STATUS, DISTRIBUTION and HABITAT. Partly resident, chiefly winter visitor. Breeds commonly in northern Baluchistan [Kalat, Fort Sandeman, Sulaiman Range — SF 3: 206; JBNHS 31: 707 and 59: 962 (*picata*)], Quetta [JBNHS 14: 480 and 16: 750; *Ibis* 1920: 164 (*picata*)], Fort Munro [JBNHS 37: 689 (*picata*), and markedly less *opistholeuca*], Peshawar [JBNHS 32: 748 (*capistrata*)], Kohat and Kurram Valley [JBNHS 12: 339, 18: 192 and 20: 778; *Ibis* 1909: 217 (*capistrata* and *picata*)], Chitral [JBNHS 16: 50 (*capistrata* and *opistholeuca*)], Baltistan and Gilgit [*Ibis* 1881: 56, 441; *Ibis* 1927: 582; JBNHS 42: 659; SF 10: 112, 226 (*capistrata* and *picata* with every possible intergradation)]. Affects boulder-strewn barren country,

Oenanthe picata

Breeding

Winter

steep river banks, fallow fields, tumbledown buildings and precincts of villages, from c. 600 m (Peshawar) to 3300 m (Quetta, Chitral), optimum zone 1800-2400 m. Common and generally distributed in winter in Pakistan and northwestern India southeast to Delhi, central Madhya Pradesh and northern Maharashtra (Khandesh). In winter frequents stony semi-desert, and desert with sparsely scrubbed sand dunes, cultivation, ravines, outskirts of villages and nomadic encampments, cattle corrals, etc.; usually from almost sea level to c. 1200 m, but has been observed also at 2700 m in deep snow!

Extralimital. Ranges north to Turkmenia and west to northern Iran.

MIGRATION. Arrives on breeding grounds in March (Baluchistan) or mid April (Chitral), remains till September. May be seen in winter quarters from the beginning of August till the end of March.

50

TURDINAE

Weight 13 ♂♂ (winter) 19.5-29.5, 5 ♂♂ (breeding) 23-26; 5 ♀♀ (winter) 20.5-24, 2 ♀♀ (breeding) 22, 23 g — Cornwallis.

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet dark brown or black.

1712. Pied Chat. *Oenanthe picata* (Blyth)

Saxicola picata Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 131 (Scinde)
Saxicola opistholeuca Strickland, 1849, in Jardine's Contrib. Orn.: 60

(Northern India = Punjab)

Saxicola capistrata Gould, 1865, Bds. Asia 4, pl. 28

(Upper Provinces of Hindostan = Sind)

Baker, FBI Nos. 506, 507 and 508, Vol. 2: 42-4

Plate 91, fig. 17

LOCAL NAMES. *Monu* (Baluchi); *Kābāro piddo* (Gujarat).

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. A black-and-white polymorphic chat; intermediates occur especially in females (cf. Paludan, 1959, pp. 205-13).

*capistrata* phase ♂, $\times c. 1$

of tail which are white; central rectrices and terminal band of tail black.

Female has black parts replaced by sooty black.

2. White-bellied phase ('*picata*'). [The most common within our limits.] Male (adult). Like the preceding but belly white. Female similar to male but black parts replaced by greyish brown; belly more buffish.

3. White-crowned phase ('*capistrata*'). Male (adult). Like *picata*, with white belly and black throat, but crown and nape white. Female similar to male but black parts and crown earthy brown; belly more buffish.

N.B. The geographical dominance of the three types of females does not exactly correspond to the dominances of the three colour phases of the males (Paludan, p. 208).

Half of tail, $\times c. 1$

TURDINAE

52

GENERAL HABITS. Usually met with singly, perched on some prominent position such as walls, bushes or corner of a roof, bobbing and curtsying vehemently from time to time, especially when alarmed; darts down to the ground to seize insects and then moves off to another vantage point. Also makes aerial sorties after winged insects like a flycatcher. In the heat of the day sits quietly in some shady spot, often on doors and windows of occupied houses. Frequently roosts in a hole under the roof of a bungalow. Very territorial even in winter and resents intrusion of the same or other species with similar feeding habits; its persecution of the Indian Robin (1720) and Redtailed Chat (1707), in particular, markedly noticeable everywhere.

FOOD. Chiefly insects — ants, beetles, caterpillars, etc. Also berries of 'pipal' [*fic*] and *Grewia* (Waite).

VOICE and CALLS. Has a pretty song, something like the Magpie-Robin's. Is also a good mimic, taking off to perfection, among others, the Common Babbler, Indian Wren-Warbler, Tailor Bird, Redwattled Lapwing and Spotted Owlet; also the twittering song of the Swallow and the musical soliloquy of the Rufousbacked Shrike (SA). Sings from a perch or on the wing, making short flights from a projecting rock, flying with hovering wings, tail spread and a little drooped. Song, or snatches of it, may also be heard on its arrival in winter quarters, especially while chasing off food competitors. Other notes unrecorded.

BREEDING. *Season*, March to August. Double-brooded (Whitehead). *Nest*, a shallow saucer of grass, feathers, wool and bits of rag, lined with hair and wool; placed in holes in rocks, banks, walls, cairns or under stones, sometimes under the eaves of houses or among rafters, occasionally in a tree-hollow. Once placed on a foundation of flat stone chips (Waite, JBNHS 37: 689), cf. 1707. *Eggs*, 4 to 6, pale blue marked with reddish brown at the large end. Average size of 50 eggs 20.7×16 mm (Williams), of 92 eggs 20.5×15.4 mm (Baker). Young fed by both parents.

MUSEUM DIAGNOSIS. See Field Characters. For distinguishing male of phase 2 from *O. alboniger* see under 1714.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	86-93	15-18	25-26	60-73 mm
♀♀	86-95	14-18	22-26	60-74 mm

(HW, SA, Paludan)

Weight 41 ♂♂ (March-August) 21-25; 12 ♀♀ (March-July) 18-23 g (Paludan).
COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet black.

1713. Hooded Chat. *Oenanthe monacha* (Temminck)

Saxicola monacha Temminck, 1825, Pl. col. (60), pl. 359, fig. 1 (Nubia = Luxor)

Baker, FBI No. 504, Vol. 2: 40

Plate 91, fig. 16

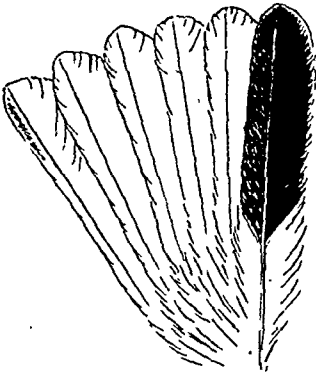
LOCAL NAME: *Monu* (Baluchi).

SIZE. Sparrow +; length c. 17 cm (6½ in.).

THRUSHES AND CHATS

53

FIELD CHARACTERS. Male (adult). *Above*, forehead, crown, rump, basal third of tail and outer rectrices white, the latter more or less marked with brown towards the tip. Middle of back and central rectrices black. *Below*, sides of head, throat and breast black, rest of underparts white.



Half of tail, x c. 1

Female. *Above*, sandy brown. Rump and upper tail-coverts creamy fawn. Tail as in male but white replaced by buff. *Below*, pale dingy buff.

Distinguished from *O. picata* and *O. pleschanka* by almost entirely white outer rectrices.

STATUS, DISTRIBUTION and HABITAT. Probably resident, very local and little known. Recorded only in the winter months from the Makran coast [Gwadar, Samán, Dasht (Baluchistan), Sehwan and Kirthar hills (Sind)].

All records are nineteenth-century, from Hume and Blanford. A bird of the most desolate desert ravines.

Extralimital. Extends west to the Dead Sea and the Red Sea coast of Egypt.

GENERAL HABITS, FOOD and VOICE. Practically unknown.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. See Key to the Species.

MEASUREMENTS			
	Wing	Bill (from feathers)	Tarsus
♂ ♀	101-106	16-17	c. 24
			67-70 mm (Baker)

Weight 1 ♀ (winter) 22.5 g — Cornwallis.
COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet black.

1714. **Hume's Chat.** *Oenanthe alboniger* (Hume)

Saxicola Alboniger Hume, 1872, *Stray Feathers* 1: 2
(Stony hills which divide Kelat from Sindh... and Mekran Coast)
Baker, FBI No. 505, Vol. 2: 40

Plate 91, fig. 14

LOCAL NAME. *Monu* (Baluchi).
SIZE. Sparrow +; length c. 17 cm (6½ in.).
FIELD CHARACTERS. *Above*, rump and base of tail white. Outer rectrices white with a broad black terminal band; central rectrices black. Head and rest of upperparts black. *Below*, throat black, rest white. Sexes alike.
Almost identical with male *O. picata* (white-bellied phase, q.v.). Doubtfully distinguishable from it in the field by plumage though black of throat

THRUSHES AND CHATS

55

found in Sind (*Birds of Arabia*, p. 254). Nest placed in holes in rocks, sometimes quite high in the face of cliffs; in Iran also recorded in walls and deserted mud buildings. Eggs, 4 or 5, very pale skim-milk blue, some spotless others with a few speckles of pale reddish. Average size of 20 eggs 22.5 x 16.8 mm (Baker).

MUSEUM DIAGNOSIS. Very similar to male *O. picata* phase 2, but black more intense and glossier. Black on underparts restricted to throat: 25-36 mm (from point of chin) v. 35-38 mm in *picata*. White on rump more extensive: 31-50 mm (from black of back to black of central rectrices) v. 16-23 mm in *picata*. Feet larger and stronger (Lindon Cornwallis pers. comm.).

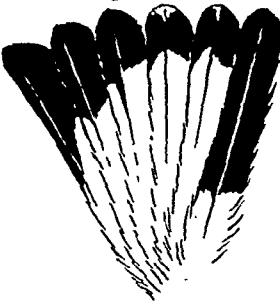
Postnuptial moult complete, June to August. Young similar to adult but black replaced by glossless black-brown, no spotting (Meinertzhagen).

MEASUREMENTS			
	Wing	Bill (from skull)	Tail
♂ ♂	100-108	20-22	62-76 mm
♀ ♀	95-104	17-22	58-69 mm
			(Vaurie, CBT)

Tarsus c. 27 mm (MD)
Weight 8 ♂♂ (winter) 24-28.5, 6 ♂♂ (breeding) 23-27.5; 7 ♀♀ (winter) 22-26.5, 5 ♀♀ (breeding) 23-27 g — Cornwallis.
COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet black.

1715. **Pleschanka's Chat.** *Oenanthe pleschanka pleschanka* (Lepechin)
Motacilla pleschanka Lepechin, 1770, *Novi Comm. Acad. Petrop.* 14: 503, pl. 14, fig. 2 (Saratov, lower Volga)
Motacilla leucomela Pallas, 1771, *Novi Comm. Acad. Petrop.* 14: 584, pl. 22, fig. 3 (Samara, Russia)
Baker, FBI No. 509, Vol. 2: 45
Plate 91, fig. 13

LOCAL NAME. *Monu* (Baluchi).
SIZE. Sparrow; length c. 15 cm (6 in.).
FIELD CHARACTERS. Male (adult), summer. *Above*, crown and nape white, more or less sullied by brown tips of feathers. Neck (all round), back and wings black. Rump and base of tail white. Central rectrices blackish; outer rectrices white with blackish terminal band, this colour extending on extreme outer web to about half the length of tail. *Below*, chin and throat black; rest of underparts white.



x c. 1

In winter the black of mantle and throat is fringed with pale brown. Underparts, from throat downwards, dirty white ('rufous-fawn').

Female. *Above*, brown. A buff supercilium. Wings dark brown edged with buff. Rump white. Tail pattern as in male. *Below*, throat and breast pale brown, rest of underparts buff.

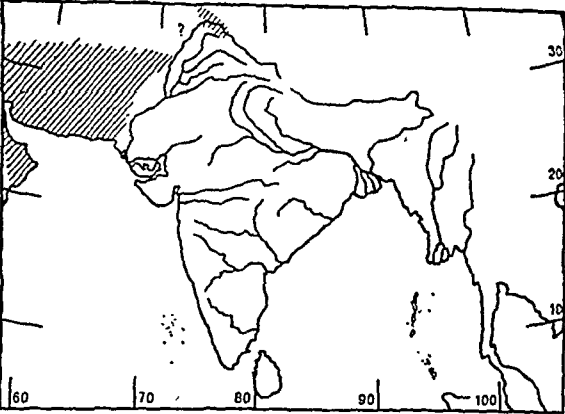
54

TURDINAE

does not extend as far down on breast. Is also somewhat larger and noticeably 'bull-headed', with usually a more upright stance when perched. Call-notes may differ but comparable details not available. The only pied chat with sexes alike — a useful clue to its identification when birds are paired.

STATUS, DISTRIBUTION and HABITAT. Fairly common resident, subject to some vertical movements. Sind in the higher Kirthar hills, Baluchistan from the Makran coast to Fort Sandeman, Balistan, Astor and Gilgit to

Oenanthe alboniger



Distributional range

Wanla Nala, a side nullah in the Suru Valley (BBO, JBNHS 34: 121). Breeds around 1500-1600 m. Affects steep boulder-strewn sides of nullahs.

Extralimital. Extends to Afghanistan, southern Iran, Muscat and Oman.

GENERAL HABITS. Little recorded. Field notes vitiated by likelihood of confusion with *O. picata*. Described as less shy and more 'stolid' (HW). Usually seen perching on large rocks, telegraph wires, etc. whence it darts to the ground for food.

FOOD. Insects.
VOICE and CALLS. Said to have a loud, melodious song, although not a very varied one. Call-note, a short, sharp, high-pitched whistle uttered three or four times. Alarm, a harsh grating note (Currie).

BREEDING. Season, April to June. *Nest*, a saucer of twigs plastered with mud into which chips of limestone are incorporated; poorly lined with soft grass, hair and feathers. 'In front of the nest was a barricade of stones, highest next the nest and then shelving off towards the entrance of the hole. This particular barricade weighed two pounds [= 910 g]' (Currie *apud* Baker). No such rampart was noticed by Meinertzhagen near two nests

TURDINAE

56

A rare colour phase ('*vittata*') occurs in which both male and female have a white throat.

STATUS, DISTRIBUTION and HABITAT. Common summer (breeding) visitor. N.W.F.P. in Kohat, Kurram Valley and Chitral, and the northwestern Himalayas from Gilgit through Ladakh to Lahul and probably Spiti. Breeds between 1500 and 3100 m [record of nests taken at 4500 m in Ladakh (Ludlow, JBNHS 27: 142) is believed to be erroneous and should be cancelled according to communication by the author to HW]. Affects stony wasteland. Often found in same biotope as *O. picata*.

Extralimital. Ranges east to Lake Baikal and Manchuria, west to Iran and the Black Sea. Replaced in the Mediterranean countries by the very similar *O. hispanica*. Winters in southern Iran, Arabia and Africa.

MIGRATION. A straggler or rare migrant in Kashmir and Punjab (April). Regular on passage in northern Baluchistan in March-April and September-October. An October record in the Indian Ocean halfway between Ceylon and the Somali coast, due south of the Makran. A straggler to the Maldive Islands (November and December — Phillips, JBNHS 60: 581), Sri Lanka (November — Henry, *Birds of Ceylon*, p. 25) and possibly Kanyakumari (Cape Comorin) (JBNHS 62: 558).

GENERAL HABITS. Those of the genus. Perches upright; wags tail up and down. Often flies a few metres straight up into the air in pursuit of winged insects.

Display. Male flies in circles at a considerable height, singing the while, sometimes ending the display by making a remarkable dive to earth at lightning speed.

FOOD. Chiefly insects, also berries.
VOICE and CALLS. A clear song, very variable and imitative, delivered from a rock or during courtship flight (described above).

BREEDING. Season, May to July. *Nest*, a cup of dry grass or weed stems well lined with rootlets and hair, placed in holes under stones or rocks. Eggs, 4 to 6, pale blue spotted with reddish at the large end. Average size of 40 eggs 19.6 x 15.1 mm (Baker). Young fed by both parents.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species.
Young. Head, back, median and lesser coverts pale brown with pale centres and dark edges. Rump and upper tail-coverts white. Underparts creamy white with faint dark edges. Young *picata* (1712) is much darker above and *deserti* (1710) much paler. Postjuvinal moult of body-feathers, median and lesser coverts, and most or all greater coverts.

MEASUREMENTS			
	Wing	Bill (from skull)	Tarsus
♂ ♂	86-98	15-17	22-23
♀ ♀	84-93		
			{ 57-65 mm 56-60 mm (Paludan, Dementiev)

Weight 20 ♂♂ (Feb.-July) 15-22 g (Paludan).
COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet black.

THRUSHES AND CHATS

57

Genus CHAIMARRORNIS Hodgson

Chaimarrornis Hodgson, 1844, in Gray's Zool. Misc.: 28.Type, by monotypy, *Phoenicurus leucocephala* VigorsCf. Deshayes, M., 1969, *Ibis* 111: 244-6 for affinities with African *Thammodia*.

Tail rounded. Wing long but with large first primary equal to half the length of second. Tarsus long and strong. Sexes alike. Young lightly mottled.

1716. Whitecapped Redstart or River Chat. *Chaimarrornis leucocephala* (Vigors)*Phoenicurus leucocephala* Vigors, 1831, Proc. Zool. Soc. London: 35

(Himalaya = Simla-Almora area)

Baker, FBI No. 534, Vol. 2: 79

Plate 89, fig. 19

LOCAL NAMES. *Chets tal*, Kumidi (Kashmir); *Gir-chaondia* (Hindi); *Kali-pholia* (Mohun Ghat, U.P.); *Mali-lap-pho* (Lepcha); *Chubia rati* (Bhutan).

SIZE. Bulbul; length c. 19 cm (7½ in.).

FIELD CHARACTERS. Above, crown and nape white. Forehead, sides of crown, sides of head, back and wings black. Rump and tail rich chestnut, the latter rounded and with black terminal band. Below, throat and breast black. Rest of underparts rich chestnut. Sexes alike.



x c. 1

The similarly patterned *Phoenicurus erythrogaster* (1678) has a white wing-patch.

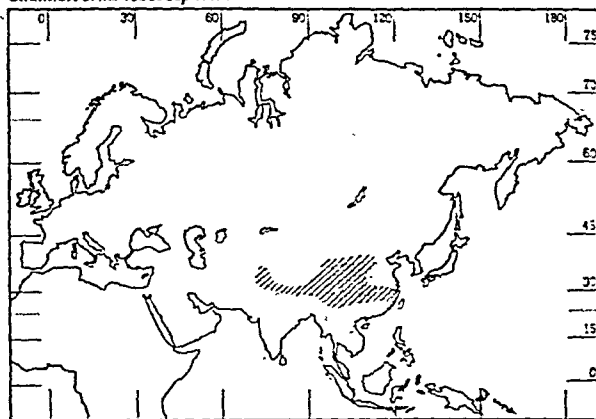
STATUS, DISTRIBUTION AND HABITAT. Common altitudinal migrant in the Himalayas from N.W.F.P. and Hunza east through Arunachal Pradesh. Thence south through Nagaland at least to the hills of Cachar and Manipur (Hume, no date given). Breeding zone: N.W.F.P. 1800 to 3600 m; Baltistan and Ladakh 2500-3300 m; Kashmir 2100-3600 m, on Pir Panjal above 2700 m; Duala Dhar 2400-3600 m; Lahul, Spiti and Garhwal 2400 to 3900 m; Nepal 1800-5300 m; Sikkim up to 5100 m; Bhutan 1800-4500 m. Overall optimum zone 2400-3300 m. Winters (September to April) mostly below 1500 m, sparsely up to 2100 m (Kashmir) or 2600 m (Nepal, Sikkim), down to the foothills; occasionally into the adjacent plains up to 10 km or so. Recorded in winter in northern Baluchistan (Quetta, Beeli, Manji) and in the Khasi Hills. Affects rocky or stony edges of large swift-running, often partially frozen, streams, usually avoiding smaller rivulets frequented by the Plumbeous Redstart. In forested areas remains close to water, but in open country such as the alpine zone, often found considerable distances away. In winter often along the edge of canals at low elevations, even sections running through towns (Dehra Dun, Roorkee).

EXTRALIMITAL. Ranges west to northeastern Afghanistan, Tadzhikistan and Pamirs, east in the mountains of eastern Tibet, western, northern and central China.

GENERAL HABITS. Keeps singly or in pairs, perching on boulders amidst torrents or rocky banks or sometimes on roofs of houses in the immediate vicinity of water. Captures insects borne along on the swirling current or

58

TURDINAE

Chaimarrornis leucocephala

Breeding

Winter

sallies into the air with quick twists and turns after winged quarry. Also flies out erratically over the torrent and zigzags in aerial pursuit of midges, returning to its base on outstretched, rapidly vibrating wings. When perched, and also upon alighting after a sortie, wags expanded tail jerkily and deliberately up and down two or three times from a cocked position until it almost presses on the perch, with wings drooping on either side. A deep bow or curtsy frequently accompanies this action. A pair's territory may extend to a 600-metre stretch of stream. Intrusion of this by forktails and other food competitors is vehemently resisted.

Display. Extraordinary behaviour described by M. J. Hackney (JBNHS 50: 655) as follows: '... this pool (about 5 feet in diameter) contained a slow circular eddy and was almost completely surrounded by small boulders. Its verge was occupied by four to five redstarts, all of them facing inwards and intent on the antics of two others which were floating in the pool. These two were leaning back on spread tails in the water, their heads held high and drawn back, their open wings thrust outwards and downwards into the water to maintain balance. In this position they sailed round and round the pool, facing one another across it; when the current drew them towards the pool centre, they fluttered together and collided breast to breast once or twice after which they drew apart again and repeated the whole performance ... Later I noted that one of the swimmers was apparently worsted and retired to a ring-side seat on the rocks, his place in the arena being immediately taken by a new entrant; and that at one period there were as many as three birds in the pool at the same time.' All birds were in adult plumage; the scene took place in early May.

THRUSHES AND CHATS

59

FOOD. Chiefly insects; also berries (Alexander, JBNHS 48: 106; also GD). VOICE AND CALLS. Alarm-note, a loud, shrill *tee* audible a long way off and above the roar of rushing water. Call-note, a short *sit sit*. Song, a long, melodious and somewhat melancholy whistle (Schäfer), apparently infrequently uttered.

BREEDING. Season, May to August, chiefly June and July. Double-brooded (Magrath, JBNHS 19: 149), at least in the lower zone. Nest, a deep, massive cup of moss, leaves, roots and grass, thickly lined with wool and hair; usually well concealed in holes in steep banks, under a boulder or a cavity in the face of rock close to water; also occasionally in road cuttings, holes in trees or old stumps, or under the eaves of streamside houses. Eggs, normally 3 or 4, sometimes 5, pale blue-green, profusely marked with dark reddish brown spots usually more numerous at the larger end where they occasionally form caps or rings. (For variants see Baker, *Nidification* 2: 75.) Average size of 50 eggs 24.6 × 16.8 mm (Baker). Building of nest and care of young by both sexes; incubation by female alone, period undetermined.

MUSEUM DIAGNOSIS. See Field Characters. Postnatal moult complete, in August and September. A spring moult of body-feathers and rectrices about March. Young not spotted in the manner of redstarts, but rather similar to that of some wheatears: mantle blackish brown, a few feathers fringed with fulvous. Crown white, the feathers fringed with blackish. Rump and tail as in adult. Underparts blackish, the feathers edged with rufous, more densely so on belly. Under tail-coverts chestnut.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	91-103	17-19	32-33	79-82 mm
♀♀	86-98			69-76 mm

(CBT, Paludan, BB, SA)

Weight 11 ♂♂ (March-Nov.) 30-36.6; 8 ♀♀ (Feb.-Dec.) 24-30.6 g (GD, Paludan, RAP). 5 ♂♂ (Nov.-Mar.) 31-37; 4 ♀♀ (Jan.-April) 29-30 g (BB, SA).

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet blackish brown.

Genus SAXICOLOIDES Lesson

Saxicoloides Lesson, 1832, in Bélanger, Voy. Ind.-Orient., Zool., pt. 4: 270. Type, by monotypy, *Turdus (Saxicoloides) erythrus* Lesson

Bill slender, slightly curved. Rictal bristles very small. Tarsus well developed and thrush-like but scutellated. Wings short and rounded.

SAXICOLOIDES FULICATA (Linnaeus)

Key to the Subspecies

A	Page
Upperparts glossy blue-black	
1 Bill heavier, chestnut on vent less extensive..... <i>S. f. leucoptera</i>	65
2 Bill more slender, chestnut on vent more extensive..... <i>S. f. fulvicata</i>	62
B Upperparts black washed with dark brown..... <i>S. f. intermedia</i>	62
C Upperparts entirely brown	
3 Brown paler, more greyish..... <i>S. f. cambaiensis</i>	60
4 Brown darker..... <i>S. f. erythra</i>	61

60

TURDINAE

1717. Brownbacked Indian Robin. *Saxicoloides fulvicata cambaiensis* (Latham)*Sylvia cambaiensis* Latham, 1790, Index Orn. 2: 554 (Guzerat, India)*Saxicoloides fulvicata munda* Van Tyne & Koelz, 1936, Occ. Papers Mus. Zool. Univ.

Michigan, No. 334: 5 (Bhadwar, Kangra Dist., Punjab, British India)

Saxicoloides fulvicata lucknowensis Koelz, 1939, Proc. Biol. Soc. Washington 52: 66 (Lucknow, U.P.)

Baker, FBI No. 557 (part), Vol. 2: 111

Plate 89, fig. 17

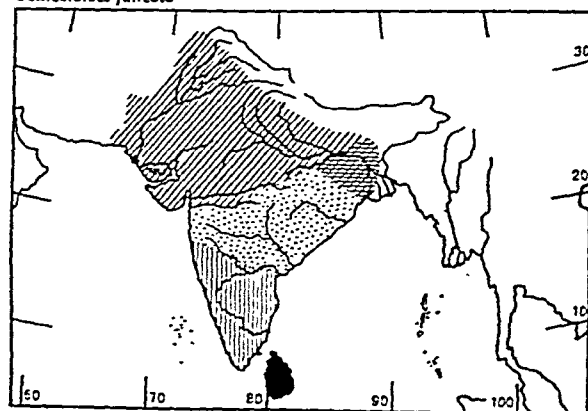
LOCAL NAMES. *Kālehuri* (Hindi); *Dakhko* (Bhil); *Dreli*, *Kāli dīra* (Gujarati).

SIZE. Sparrow; length c. 16 cm (6½ in.).

FIELD CHARACTERS. Male (adult). Above, crown, back and wing dark brown, the last with a conspicuous white patch. Tail black. Below, glossy blue-black with chestnut vent and under tail-coverts.

Female. Above, like male but lacks wing-patch; ear-coverts tinged with rufous. Below, grey-brown; under tail-coverts chestnut.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The plains of Pakistan from N.W.F.P. (Peshawar) and the Himalayan foothills south through Sind, west to the foothills (Fort Munro, Sibi and Las Bela plains) and east to the eastern Nepal terai (Rand & Fleming, 1957); northwestern India through Rajasthan, Gujarat, Uttar Pradesh, Bihar and Madhya Pradesh south to the Tapi (Tapti) river. In the Himalayan foothills up to

Saxicoloides fulvicata

Distributional ranges

cambaiensis (1717)

erythra (1718)

intermedia (1719)

fulvicata (1720)

leucoptera (1721)

THRUSHES AND CHATS

61

c. 1000 m, locally 1500 m. Affects open scrub jungle in arid and stony country, desert with scattered Euphorbias and camel-thorn bushes, tamarisk scrub and the edge of cultivation or near habitations, sometimes in damp *kandi* jungle.

GENERAL HABITS. Keeps singly or in pairs, hopping or running along the ground with quick mincing steps, now mounting a bush or termite mound, now descending to pick up some crawling insect. In the neighbourhood of villages tame and confiding, often perching on roofs or entering verandas in search of food within arm's length of the inmates. Tail carried erect and flipped up and down, sometimes tossed so far forward as almost to touch the head, especially in moments of excitement. A nearly full-fledged young has been noted to feign death when touched, 'in a very convincing manner, closing its eyes, extending its neck and maintaining its limpness when handled' (SA). For display see 1720, under General Habits.

FOOD. Chiefly insects and their larvae: grasshoppers, ants and other Hymenoptera. Partial to termites and is commonly in attendance on or near ant-hills.

VOICE AND CALLS. As in 1720.

BREEDING. Season, March to August. Nest and eggs as in 1720. Clutch size normally 4, often 3, occasionally 2. Average size of 100 eggs 21.1 × 14.9 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

Young. Not spotted. Similar to female but darker brown; throat lightly mottled.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	72-80	14-16	25-28	65-78 mm
♀♀	69-79		25-27	61-70 mm
				(HW, SA)

Weight 2 ♂♂ 17, 20; 2 ♀♀ 18, 19 g (BB). 10 ♂♀ (Nov.-Mar.) 17-21 (av. 15.9) g — SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet black.

1718. Bengal Black Robin. *Saxicoloides fulicata erythrura* (Lesson)

Turdus (*Saxicoloides*) *erythrura* Lesson, 1832, in Bélanger, Voy. Ind.-Orient., Zool., pt. 4: 270 (Bengale)

Saxicoloides fulicata stuartbakeri Koelz, 1939, Proc. Biol. Soc. Washington 52: 57 (Bodhgaya, Bihar)

Not in Baker, FBI

LOCAL NAME. Kāichuri (Bengali).

SIZE. Sparrow; length c. 16 cm (6½ in.).

FIELD CHARACTERS. As in 1717, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Eastern Bihar, Bengal, and adjacent areas of Bangladesh. Affects open country and cultivation.

GENERAL HABITS AND FOOD. As in 1717 and 1720.

VOICE AND CALLS. As in 1720.

BREEDING. As in 1720.

THRUSHES AND CHATS

63

SIZE. Sparrow; length c. 16 cm (6½ in.).

FIELD CHARACTERS. A sprightly glistening black robin with a conspicuous white patch on wings and chestnut under base of the jauntily cocked tail. Like 1717 (q.v.) but upperparts entirely blue-black v. dark brown. Female as in 1717.

STATUS, DISTRIBUTION AND HABITAT. Very common resident except on the humid west coast where less generally distributed. Southern India south of the Krishna river; plains and hills up to c. 900 m, locally up to 1800 m. Affects thin scrub jungle, dry deciduous forest, dry stony ground with short grass and a sprinkling of young date or *Borassus* palms; sparse bushes and ant-hills, fallow paddyfields bordered by *Lantana* thickets, and gardens in village precincts.

GENERAL HABITS. As in 1717.

Display. 'The male ran swiftly in front of the female, moving in a large semicircle and in short dashes of a few yards. As he ran he opened and drooped his wings slightly so that their tips trailed along the ground, flaunting thus the white shoulder-patches. The tail was very slightly spread and also trailed along the ground the chestnut at its base thus being completely concealed. At the same time the breast was puffed out, the neck stretched upwards, and the head and bill pointed into the air; once or twice during a short run they were lowered horizontally to the ground. After completing several runs in this manner, the male turned toward the female and ran up to within a few feet of her. As he approached, he took on a new and completely different form; by the time he stopped in front of her the tail had been raised up over the back, bringing into view the chestnut crissum, the feathers of which were puffed out to more than their normal prominence. The wings were kept very slightly open, keeping the shoulder-patch in view; the head and neck were drawn into their normal shape. He kept himself sideways on to the female, fluffed out his whole body and tilted slightly towards her, quivering excitedly all the while. He kept this position for a few seconds, then, slowly resuming his normal shape, hopped towards the female; pairing followed immediately. After the act he began to display once again in a manner and sequence identical with his first performance. The division of the display into two quite definite phases, wherein at first the male dances, with no attempt to show off his colours, but then relies entirely on its colour pattern and not on his dance is most striking' (C. R. Stonor, *Ibis* 1944: 91). In aggressive display male postures and struts against another trespassing on his territory — stretching his neck and bill nearly vertical, puffing out his belly-feathers, erecting and cocking forward his fanned tail till it almost touches the crown, and flicking it provocatively while the chestnut under tail-coverts are fluffed and sticking out in prominence. At the same time he half droops his wings flaunting the white patches in obvious defiance of the intruder. He flies from one perch to another in his territory with slow deliberate 'delayed action' wing-beats (SA).

FOOD. As in 1717.

VOICE AND CALLS. A short cheery warble of four to eight notes composed of shrill whistles gliding into each other; thinner and less varied than that

62

TURDINAE

MUSEUM DIAGNOSIS. Differs from *cambaiensis* in being a darker brown above and having slightly shorter wings and tail.

MEASUREMENTS

Wing 2 ♂♂ 71, 73; 2 ♀♀ 69, 70 mm (Koelz)

COLOURS OF BARE PARTS. As in 1717.

1719. Deccan Black Robin. *Saxicoloides fulicata intermedia* Whistler & Kinnear

Saxicoloides fulicata intermedia Whistler & Kinnear, 1932, Jour. Bombay nat. Hist. Soc. 36: 73 (Raburi, Ahmednagar)

Baker, FBI No. 557 (part), Vol. 2: 111

LOCAL NAMES. Kāichuri (Hindi); Kāidunnat, Chirak (Marathi); Nalanchi (Telugu); W'annati kūrūri (Tamil).

SIZE. Sparrow; length c. 16 cm (6½ in.).

FIELD CHARACTERS. As in 1717.

STATUS, DISTRIBUTION AND HABITAT. Very common resident. Central India from the Tapi river, southern Madhya Pradesh and Orissa south to the Krishna river; plains and hills up to c. 900 m. Affects gardens, groves village precincts, boulder and cactus country, cultivation and open scrub jungle, and stony deciduous forest.

GENERAL HABITS AND FOOD. As in 1717 and 1720.

VOICE AND CALLS. As in 1720.

BREEDING. As in 1720.

MUSEUM DIAGNOSIS. Differs from *cambaiensis* (1717) in having the black of back and crown heavily washed with a darker, chocolate-brown. Female similar to that of *fulicata* (1720).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	70-78	14-16	25-27	60-67 mm
♀♀	68-72			58-61 mm
				(HW, SA)

Weight 10 ♂♂ (Apr.-Aug.) 16-20 (av. 18.7) g — SA.

COLOURS OF BARE PARTS. Iris brown. Bill horny black; mouth brownish pink. Legs, feet and claws dark horny brown.

1720. Blackbacked Indian Robin. *Saxicoloides fulicata fulicata* (Linnaeus)

Merula fulicata Linnaeus, 1766, Syst. Nat., ed. 12: 336, ex Brisson, 1760, 'Le Traquet des Philippines.' (Philippines = Pondichéry vide Sresemann, 1952, *Ibis* 94: 515, 520)

Oenanthe ptymatura Vieillot, 1818, Nouv. Dict. d'Hist. Nat. 21: 435, ex Levaillant, 1805, 'Le Traquet à queue striée.' (Le Bengale = Pondichéry vide Whistler, 1935, JBNHS 38: 286)

Thamnobia ruficenter Swainson, 1832, Fauna Boreali Americana, Zool.: 489, ex Levaillant, 1805, 'Le Traquet à queue striée.' ('Le Bengale', restricted to Pondichéry by Ripley, 1952, Postilla, Yale Peabody Mus., No. 13: 35)

Baker, FBI No. 556 (part), Vol. 2: 109

Plate 89, fig. 16

LOCAL NAMES. Nalanchi (Telugu); W'annati-kūrūri, Kari-kūrūri (Tamil); Kālmennati (Malayalam).

TURDINAE

64

of the Magpie-Robin (Nichols). A secondary song heard in October is reminiscent of a Magpie-Robin's sub-song. Song uttered from the ground or a low perch with tail cocked high and wings partly drooping at the sides while the bird turns excitedly this way and that. A short monosyllabic whistle *uueech* or *sueet* repeated by male every second or two when agitated, as when nest approached by an observer; a harsh *chur-r, chur-r* of concern by both sexes when nest being handled.

BREEDING. Season, end of February to July; in humid Kerala December to April. Rears up to three broods. Nest, a shallow cup of grass, rootlets and rubbish, lined with hair, fibres and wool; in certain areas, bits of snake slough almost invariably used for nest lining. One nest examined was made entirely of human hair. Nest usually placed in holes in walls, earth banks or trees, under boulders or in rock crevices, occasionally inside buildings in a variety of situations like shelves etc., or sometimes in a derelict tin can or earthen water-pot. Once found in a thorn bush about 60 cm from the ground. Eggs, usually 3, sometimes 2, pale greenish, greyish or yellowish white, with specks or small reddish brown blotches and underlying marks of lavender, usually more numerous at the larger end. Laid in early morning at c. 24-hour intervals. Average size of 100 eggs 20.8 × 14.8 mm (Baker). Building of nest by both sexes. However, George (1963: 73) reports that in one case the male did not participate in building the second nest, having the complete charge of the first brood fledglings. Site of first nest generally used for subsequent broods, only a new lining being added. Same site often used year after year if undisturbed. Incubation chiefly by female. During very hot days (c. 40°C), a female was observed brooding only at night, leaving the nest unattended by day. Incubation starts with second egg; period, 11 or 12 days. Feeding of young and nest sanitation by both parents. Male excessively wary and elusive in approaching nest when both parents. Male suspicious of being observed. Brooding of young by female alone. Male brings food to brooding female who in turn feeds nestlings. For further details on breeding behaviour see J. C. George, 1963, *Paco* 1: 71-8.

MUSEUM DIAGNOSIS. Male has entire upperparts glossy blue-black, similar to that of *leucoptera* (1721); chestnut on vent more extensive. Female less dark, more greyish. In both sexes bill is less heavy than in Sri Lanka birds. Postnuptial moult complete, in August-September. When hatched, naked chick covered with blackish brown skin, later with black down.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	70-80	14-16	24-27	60-67 mm
♀♀	69-75	13-16	23-25	58-66 mm
				(HW, SA)

Weight 1 ♂ 20 g (SA).

COLOURS OF BARE PARTS. Adult. Iris brown. Bill, legs and claws brownish black. Mouth blackish brown, slaty pink or greyish pink (varying with age?). Juvenile. Iris olive-brown. Mouth bright yellow. Legs and feet greyish black; claws black.

THRUSHES AND CHATS

65

1721. Ceylon Black Robin. *Saxicoloides fulicata leucoptera* (Lesson)*Microtus leucopterus* Lesson, 1840, Rev. Zool.: 136

(Indes Orientales = Ceylon)

Baker, FBI No. 556 (part), Vol. 2: 109

LOCAL NAMES. *Kalu-polkichcha* (Sinhala); *Kari-kuruzi*, *Kaddukari-kuruzi* (Tamil).
 SIZE. Sparrow; length c. 16 cm (6½ in.).

FIELD CHARACTERS. As in 1717, but upperparts entirely glossy blue-black as in 1720. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Very common resident. Sri Lanka in all zones; up to c. 1500 m on the drier northeastern side, lower elevations in more humid districts. Affects scrub-land and gardens.

GENERAL HABITS and FOOD. As in 1717.

VOICE and CALLS. A merry *cheery-wee* and a harsh, scolding *chee*. Song as in 1720.

BREEDING. Season, in the hills from the end of March to June with a second period in August-September. Most pairs rear two broods during the first period and one in the second. In the low-country Wet zone from March to July with a peak in May. Nest, frequently built in cavities in the side of termite mounds. One was found in the old nest of a wren-warbler (*Prinia sylvatica*) in the crown of a low-growing date palm. Other usual sites as in 1720. Eggs, usually 2, sometimes 3, similar to those of *fulicata* (1720). For further details on breeding see Phillips, 1939, pp. 256-9.

MUSEUM DIAGNOSIS. Upperparts entirely glossy blue-black. Differs from *fulicata* (1720) in having a smaller amount of chestnut on vent, and a heavier and longer bill. Females are darker throughout. Complete postnuptial moult from August to December.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	73-79	15-17	25-27	61-69 mm
♀♀	70-74			57-62 mm
				(HW)

Weight 2 ♂♂ 17, 22 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet brownish black.

Genus MONTICOLA Boie

Monticola Boie, 1822, Isis 1: 552. Type, by subsequent designation,
Turdus saxatilis Linnaeus

Tail shorter than wing; tarsus long. Sexes dissimilar.

Key to the Species

	Page
I Some blue in plumage	
A Breast blue, concolorous with throat..... <i>M. solitarius</i> ♂	72
B Breast rufous or chestnut	
1 Breast chestnut..... <i>M. rufiventris</i> ♂	70
2 Breast orange-rufous	
a A white wing-patch..... <i>M. cinclorhynchus</i> ♂	67
b No wing-patch..... <i>M. saxatilis</i> ♂	66

THRUSHES AND CHATS

67

Winterquartiere der Steinmerle (*Monticola saxatilis* L.), Orn. Monatsb. 45(2): 33-41.

GENERAL HABITS. Keeps singly or in pairs according to season, rarely in loose parties during migration 'moving through the forest from tree-top to tree-top' (Titchhurst). Often perches on boulders, prominent rocks or tops of bare trees and bushes, descending to the ground and hopping about to forage for short periods.

Display. In song-flight male flutters up with spread tail and slow wing-strokes, and descends gently with extended wings to perch again.

FOOD. Chiefly insects; also berries (*Ibis* 1933: 463).

VOICE and CALLS. Very silent except near nest where alarm-notes may be heard, a repeated *whet* and occasional *tat-tak*. Song, a variable melodious warble, usually on a descending scale, uttered from a perch or in song-flight. Song period April to July, with occasional resumption in August (Desfayes).

BREEDING. Season, May and June. Single-brooded. Nest, a cup of grass stems and roots lined with rootlets, generally placed in rock crevices within three metres or so from the ground. Eggs, 4 or 5, deep turquoise. Average size of 92 eggs (from Europe) 25.9 × 19.5 mm (Witherby). Building of nest apparently by female alone. Incubation by female; period undetermined. Care of young by both sexes.

MUSEUM DIAGNOSIS. See Field Characters.

Young similar to female but paler, more mottled. Remiges with broad buff edgings. For details of plumages and structure (also bionomics) see Witherby, 1938, 2: 141-4.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	113-126	24-26	62-70 mm
♀♀	113-119		— mm
			(Dementiev)

Tarsus c. 28 mm

Weight 1 ♂ 48.8; 1 ♀ (highly developed ovary) 60.9 g (Dementiev).

COLOURS OF BARE PARTS. Iris brown. Bill dark brown, paler at base of lower mandible. Legs and feet brown.

1723. Blueheaded Rock Thrush. *Monticola cinclorhynchus* (Vigors)*Petrocincla cinclorhyncha* Vigors, 1832, Proc. Zool. Soc. London: 172

(Himalayan Mountains = Simla)

Baker, FBI No. 606, Vol. 2: 171

Plate 92, fig. 5

LOCAL NAMES. *Pela tirio* (Kashmir); *Krishen-patti* (Nepal); *Doozhagar* (Cachari); *Vakkil* (Mikir); *Hengghurine* (Kacha Naga); *Pirakkili* (Malayalam).

SIZE. Bulbul; length c. 17 cm (7 in.).

FIELD CHARACTERS. Male (adult), summer. A small blue, chestnut, and black thrush with a white patch on wings, conspicuous both at rest and in flight. Above, crown and nape blue. Back and a broad band from lores through ear-coverts, black. Shoulders blue; a white wing-patch. Rump

66

TURDINAE

II No blue in plumage		Page
C Tail largely rufous..... <i>M. saxatilis</i> ♀	66	
D No rufous in tail		
3 Back plain olive-brown..... <i>M. cinclorhynchus</i> ♀	67	
4 Back grey, lightly streaked or barred		
c Feathers of back with dark crescents..... <i>M. rufiventris</i> ♀	70	
d Feathers of back with dark shaft-streaks only..... <i>M. solitarius</i> ♀	72	

1722. Rock Thrush. *Monticola saxatilis* (Linnaeus)*Turdus saxatilis* Linnaeus, 1766, Syst. Nat., ed. 12: 294 (Switzerland)

Baker, FBI No. 612, Vol. 2: 177

Plate 92, fig. 7

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 19 cm (7½ in.).

FIELD CHARACTERS. Male (adult), summer. Above, head, nape and upper back pale blue. Back and rump white, more or less sullied with grey-blue. Tail rufous, central rectrices brown. Below, throat pale blue; rest of underparts orange-rufous.

In winter, feathers of upperparts are fringed with buff, those of belly with whitish. Easily recognized by white back.

Female. Above, grey-brown with dark shaft-streaks, most feathers tipped with whitish buff. Below, centre of throat white, sides streaked with dark brown. Rest of underparts buff, heavily marked with dark brown on breast, less on flanks and belly.

Both sexes distinguished from other rock thrushes by rufous tail, particularly noticeable when spread in flight.

STATUS, DISTRIBUTION and HABITAT. Fairly common passage migrant in autumn in Ladakh, Baltistan, Gilgit, N.W.F.P., northern Punjab, Baluchistan and the hills of Sind. Also recorded in Liddar Valley and at Lahore. Observed mostly above 2100 m; as high as 5000 m in the Karakoram. Has straggled to Sikkim *vide* Vaurie (1959). Rare on spring passage: Karachi (once), Ladakh (once, at 4100 m), the hills of Sind and Baluchistan (perhaps regularly). Breeds (sporadically?) in N. Baluchistan, Quetta region at c. 2000-3000 m [JBNS 31: 711; also a juvenile obtained in June (Hume coll.)]. Affects rocky hillsides.

Extratropical. Breeds in southern Europe and across central Asia to Mongolia and northern China. Winters in Africa.

MIGRATION. Autumn passage takes place from the end of August through September and sparingly till the end of October; in Sind till November. Spring passage from March to early May, ♂♂ leading the vanguard.

The Rock Thrush furnishes a classical example of exceptional E.-W. migration, similar to that of *Falco vespertinus* (220). The entire palaearctic population, which extends from the Iberian peninsula to NE. China, winters in Africa south of the Sahara. For northeastern birds this means an E.-W. journey of at least 7500 km each way. Contra Baker, no part of the total population winters anywhere in tropical Asia. For a full account of migration see Hermann Grote, 1937, 'Die Brutgebiete, Zugwege und

68

TURDINAE

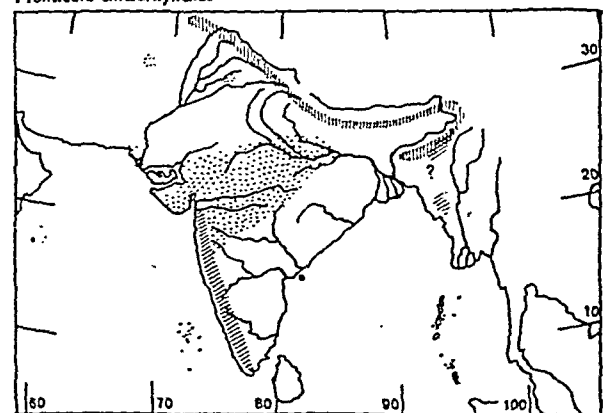
rufous; tail blackish narrowly edged with blue. Below, throat blue; rest of underparts orange-rufous.

In winter, black feathers of back edged with fulvous. White wing-patch identifies the male.

Female. Above, plain olive-brown. Below, squamated whitish and dark brown.

Distinguished from female *solitarius* (1725-6) by olive-brown upperparts and tail, and whitish under tail-coverts.

STATUS, DISTRIBUTION and HABITAT. Common summer (breeding) visitor: the Himalayas from N.W.F.P. and Kashmir east through Arunachal Pradesh thence south through Nagaland, Cachar, Khasi and Garo hills. Also breeds in Gilgit (Biddulph, *Ibis* 1880: 271 and SF 10: 262). Optimum breeding zone 1200-2200 m; occasionally down to 1000 m (Sikkim, Bhutan) or as high as 3000 m (Kashmir, Sikkim). A juvenile obtained at 3600 m in

Monticola cinclorhynchus

Distributional range

- Breeding
 Main winter
 Known but scarce winter occurrence

the Liddar Valley in August (LaPersonne coll.). Winters mostly in the Western Ghats from about the Tapi river (Dangs dist., Gujarat) south through Maharashtra, Karnataka, Kerala and western Tamil Nadu; also recorded in the cold weather in Madhya Pradesh (D'Abreu, JBNS 38: 97, Hewetson, *ibid.* 53: 608) and at Lucknow (U.P. — Reid, SF 10: 37) and Mt Abu (Rajasthan — Butler, SF 3: 470); also observed, early February, in Sialkot dist. and near Karachi (T. J. Roberts, pers. comm.); said to be a rare cold-weather visitor in Kohat (Whitehead, *Ibis* 1909: 223). Common

THRUSHES AND CHATS

69

in winter in North Cachar (Baker, JBNHS 9: 138) and probably other parts of Assam. Recorded in Sikkim in November and March. Winters occasionally in the plains but mostly in the foothills and up to the highest summits, frequenting moist-deciduous and secondary evergreen jungle, coffee and cardamon plantations in the hills, mango groves in the plains. In summer affects open forest, especially pine (*Pinus longifolia*), and rocky grass-covered slopes.

Extralimital. Breeds in adjacent parts of northeastern Afghanistan. Winters also in Arakan (Burma). *M. gularis*, often considered a subspecies, breeds in southeastern Siberia and northern China, and winters in southeastern Asia; nearest record, Mt Victoria (Heinrich).

MIGRATION. Begins to arrive on summer grounds about mid April, occasionally end of March, remains till September. Autumn migration in September-October recorded over most of the Peninsula west to Karachi. In winter quarters from mid October to end of March. Spring passage, chiefly in April.

GENERAL HABITS. A forest bird; usually quite secretive. Keeps singly or in pairs; in winter sometimes among the itinerant mixed flocks. Largely arboreal, finding most of its food in trees, in the form of insects picked off the trunks and branches (Betts), but also descends to the ground momentarily for some titbit or to rummage amongst the mulch like its congeners. When disturbed flies up silently into overhanging branches; perches bolt upright and wags tail slowly and deliberately up and down.

Display. 'Floats down from the top of a tree to a lower one with wings outstretched and singing all the time like a skylark' (Magrath).

FOOD. Chiefly insects; also other small animals such as frogs and lizards. Occasionally seeds and berries, and flower-nectar (*Erythrina*, *Salmalia*).

VOICE AND CALLS. A peculiar grating call-note, seldom uttered (Betts). Another call rendered as *peri-peri* (Fleming) and an alarm-note given as *goink-goink* (Magrath). Song, reminiscent of that of *Saxicola torquata*, but richer; has a recognizable thrush-like quality, though the notes are not very clear-cut: *tra-tree-treea-tra-prua-triri-prua-tri* (Lister); also rendered as *teu-li-di*, *teu-li-di*, *teu-li-di*, *teu* repeated with varying emphasis, but rather monotonously (Magrath). Delivered from the topmost branch of a fir or pine, or during the volplaning song-flight—commonly in the mornings and evenings. Song period mid March to mid June (Proud).

BREEDING. Season, May (exceptionally April) to July. Nest, a cup of grass, twigs, roots, pine needles and some moss, lined with fine rootlets; placed on sloping ground, under a rock, a tuft of grass or among the roots of a tree, or in rock crevices; once found in the top of a pollarded tree about three metres above the ground. Eggs, normally 4, sometimes 3, rarely 5, pale yellowish cream to deep buff densely freckled with reddish. Average size of 3 eggs 23.7 × 17.9 mm (BBO). Building of nest, incubation and care of young by both sexes. The bird is a very close sitter, but when disturbed leaves with swift, direct flight, usually straight downhill and without uttering a sound.

MUSEUM DIAGNOSIS. See Field Characters.

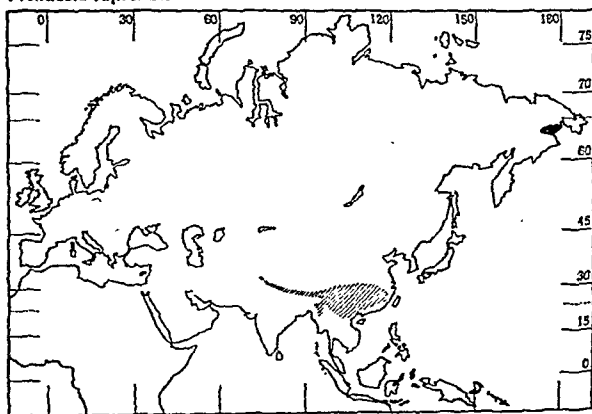
Young male. Above, head and back entirely spotted (buff with dark brown margins). Wing-coverts and tertials edged with buff. Upper tail-coverts rufous.

THRUSHES AND CHATS

71

with scattered trees; presence of rocks or cliffs appears to be essential to its requirements. In eastern Himalayas avoids deciduous forest.

Monticola rufiventris



■ Distributional range

Extralimital. Extends east through southern China to Fukien.

GENERAL HABITS. Keeps singly or in pairs; perches upright on bushes, trees and rocks swaying its tail slowly up and down. Feeds mostly on the ground; also hawks winged insects by aerial sorties in the manner of drongos. Often perches facing along the big branches rather than crosswise, and carries its tail high and cocked (SDR). Birds have been observed roosting in the gable of a bungalow roof and in a hole in the chimney.

FOOD. Beetles, tipulids, grasshoppers (GD), butterflies, moths and other insects. Also berries and seeds (the latter probably from berries).

VOICE AND CALLS. Alarm-note, a jay-like, harsh rasping indrawn rattle *chkhrrr* interspersed occasionally with a high shrill tick (SDR). Also a curious *quach*—apparently a contact note (Proud). Has a pleasant warbling song somewhat resembling that of *cinclorhynchus* (1723), rendered as *tetateutele-tetate* *teu* repeated several times with variations (Magrath); almost invariably uttered from the top of a tall tree. Song period, from the beginning of April till at least mid July (Proud).

BREEDING. Season, April to July, single-brooded. Nest, a cup of dry grass and pine needles or other material on a foundation of twigs, lined with rootlets and fine grass; usually placed in crevices or holes in the face of cliffs or on ledges, sometimes in hollows in banks or among the roots of trees. Eggs, 3 or 4, pale cream suffused with pink and finely but profusely freckled all over with light red-brown, usually forming a zone at the large end. Average size of 75 eggs 26.8 × 19.9 mm (Baker). Building of nest by both

70

TURDINAE

Tail slightly tipped with rufous. *Bleue*, like female but pale buff, not whitish. Under tail-coverts buff, not whitish marked with brown.

Young female similar but lacks rufous upper tail-coverts.

Postjuvénal moult of body-feathers in July–September. Postnuptial moult complete about August–September. No spring moult but wearing off of fringes makes summer plumage darker.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	99–108	23–25	25–26	65–71 mm
♀♀	96–103	22–25	24–27	64–71 mm

(HW, BB, Koelz)

Weight 2 ♂♂ (summer) 32, 35.6; 1 ♀ (May) 38 g (GD). 2 ♂♂ (March, April) 39.5, 32.5 g (BB). 15 ♂♀ (early May, prior to northward migration from Peninsula) 30–41 (av. 36.2) g—SA.

COLOURS OF BARE PARTS. Iris brown. Bill blackish (♂), dark brown (♀), paler at chin; gape and mouth yellow. Legs and feet greyish brown.

1724. Chestnutbellied Rock Thrush. *Monticola ruficentris* (Jardine & Selby)

Turdus erythrogaster Vigors, 1832, Proc. Zool. Soc. London: 171 (Himalayan mountains), nec *Turdus erythrogaster* Boddaert, 1783

Petrocincla ruficentris Jardine & Selby, 1833, Ill. Orn. 3, pl. 129, restricted to Simla by Ripley, 1961, Synopsis: 523)

Baker, FBI No. 605, Vol. 2: 170

Plate 92, fig. 1

LOCAL NAMES. Ningri-pho (Lepcha); Daohangar (Cachari).

SIZE. Myna ±; length c. 24 cm (9½ in.).

FIELD CHARACTERS. Male (adult). Above, brilliant cobalt-blue with some blackish on mantle. Lores, ear-coverts and sides of neck black. Below, throat blackish blue; rest of underparts chestnut.

Female. Above, back and rump olive-brown with dark crescent-shaped bars. Conspicuous buff eye-ring and buff patch on sides of neck. Ear-coverts dark grey-brown more or less mottled with buff. Below, centre of throat whitish or buff, sides of head dark grey mottled with buff; rest of underparts squamated dark brown and buff.

Distinguished from female *solitarius* (1725–6) by whitish throat-patch.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, fairly common: from the Murree hills and possibly Swat, Kohistan (sight record, 18 July, T. J. Roberts, pers. comm.) eastward along the Himalayas through Arunachal Pradesh (Ludlow, 1944) thence south through Nagaland, Manipur and Mizoram. Breeds between 1200 and 3300 m (a sight record at 3500 m in central Nepal—MD), optimum zone 1800–2400 m. Winters (October to March) from c. 1800 m down to the foothills and occasionally into the plains (Ambala); in Nepal and Garhwal up to 2300 m, in Bangladesh in the hill tracts of the Chittagong region. Affects open forest of pine, oak, fir and deodar on steep hillsides, and rocky slopes

72

TURDINAE

sexes. Incubation by female only (Jones, JBNHS 47: 239); period undetermined.

MUSEUM DIAGNOSIS. See Field Characters.

Young, both above and below with ochraceous spots and dark brown fringes. Postjuvénal moult of body-feathers, lesser, median, and inner half of greater coverts. First-year birds recognizable by ochraceous tips to primary-coverts and unmoulted greater coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	117–130	24–28	26–30	96–105 mm
♀♀	111–124	26–28		96–100 mm

(BB, SA, Rand & Fleming)

Weight 3 ♂♂ (summer) 50–53.2 g (GD). 4 ♂♂ (winter) 56–61; 4 ♀♀ (winter) 48–56 g (SDR, SA). 1 ♀ (summer) 48 g (RAP).

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs, feet and claws blackish brown; soles grey or yellowish grey.

MONTICOLA SOLITARIUS (Linnaeus)

Key to the Subspecies

Paler all over.....	<i>M. s. longirostris</i>
Darker all over.....	<i>M. s. pandoo</i>

1725. Iranian Blue Rock Thrush. *Monticola solitarius longirostris* (Blyth)

P.(etrocincla) longirostris Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 150 (from Scinde to Ferozpoore)

Monticola cyanus transcaucasicus Hartert, 1909, Bull. Brit. Orn. Cl. 23: 43 (Sirax, Ashabad near Tadjen)

Baker, FBI No. 607, Vol. 2: 173

LOCAL NAMES. None recorded.

SIZE. Bulbul +; length c. 23 cm (9 in.).

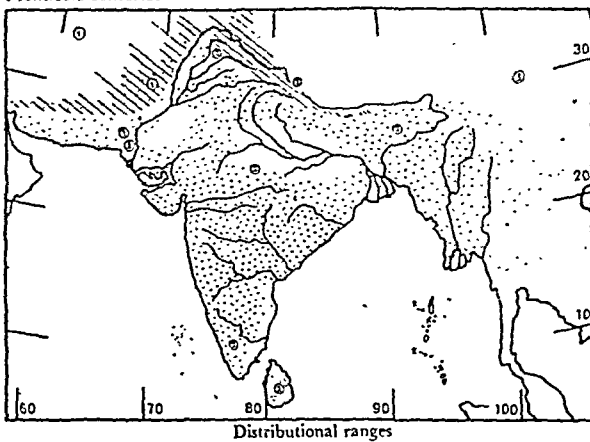
FIELD CHARACTERS. As in 1726, q.v.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor (October–mid April) to Pakistan from Kohat to northern Baluchistan where it appears to replace the breeding population in that season. Winter range extends to Sind and probably central and coastal Makran down to sea level. Breeds in northern Baluchistan between 2100 and 3000 m and N.W.F.P. north to Samana and Kurram Valley, above 1500 m in the latter localities, and occasionally in the Murree hills (T. J. Roberts, pers. comm.). Movements of local breeders not known. Intergrades with *pandoo* (1726) in the Safed Koh and eastern Afghanistan (Meinertzhagen, *Ibis* 1938: 682, Vaurie, 1965, and Paludan, 1959). Affects rocky and boulder-strewn country, generally in the vicinity of streams.

Extralimital. Extends west to northern Iraq and the Caspian Sea. The nominate race ranges through the Mediterranean countries to Spain and Morocco; *pandoo* occurs in the Himalayas, and *philippensis* eastward to Japan and Taiwan.

THRUSHES AND CHATS

73

Monticola solitarius

1 *longirostris* (1725) 2 *pandoo* (1726) 3 *philippensis* (RE)

GENERAL HABITS, FOOD AND VOICE. As in 1726.
BREEDING. As in 1726.

MUSEUM DIAGNOSIS. Differs from *pandoo* in being paler and slightly smaller.

MEASUREMENTS

Wing ♂♂ 116-127 mm; ♀♀ 113-125 mm (CBT, HW, Paludan)
Weight 6 ♂♂ (April-August) 43-53; 2 ♀♀ (June-July) 51, 53 g (Paludan).
COLOURS OF BARE PARTS. As in 1726.

1726. Indian Blue Rock Thrush. *Monticola solitarius pandoo* (Sykes)

Petrocincla Pandoo Sykes, 1832, Proc. Zool. Soc. London: 87 (Ghauts, Dukhun)

Petrocincla affinis Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 177

(Tenasserim and Darjeeling)

Baker, FBI Nos. 608 and 609, Vol. 2: 175

Plate 92, fig. 4

LOCAL NAMES. *Pāla tiriv* (Kashmir); *Pāndu* (♂), *Maal* (♀) (Marathi); *Podakachi pitta* (Telugu); *Pārakkili* (Malayalam); *Ningri-pho* (Lepcha); *Deohangar* (Cachari); *Hengmfrunsi* (Kacha Naga); *Vohitigle* (Mikir).

SIZE. Bulbul +; length c. 23 cm (9 in.).

FIELD CHARACTERS. Male. Whole plumage dark leaden blue, very bright, almost azure blue in summer. Wings and tail brown. In winter, feathers are fringed with fulvous above, brown on breast and white on belly.

Female. Above, grey-brown with fine dark shaft-streaks; barred with blackish on rump. A pale wing-bar particularly conspicuous in flight.

THRUSHES AND CHATS

75

FOOD. Chiefly insects (grasshoppers, termites, dragonflies, etc.), spiders and centipedes, lizards and small frogs. Also banyan and peepul figs, *Lantana* and other berries, and small seeds.

VOICE AND CALLS. Very silent in winter. Song, a soft, melodious, rather short whistle, 'at times reminiscent of English Blackbird [*Turdus m. merula*]' (E. A. Osmonston), uttered from a commanding position or during volplaning song-flight. Song period starts in March in winter quarters. Female with food in bill awaiting her turn to feed the chicks, announces her arrival to male within the nest-hole by a short impatient *peep* (like a redstart's) uttered repeatedly (SA). No other notes recorded.

BREEDING. Season, April to July. Nest, a cup of grass and roots lined with hair and rootlets, well concealed in crevices of rocks or holes in walls. Eggs, 3 to 5, pale blue usually with a few rusty blotches scattered over the surface. Average size of 14 eggs 26.7 × 19.7 mm (BBO), of 32 eggs 26 × 19.1 mm (Baker). Incubation apparently by female alone; period undetermined. Care of young by both sexes.

MUSEUM DIAGNOSIS. Differs from *longirostris* in being darker and slightly larger on average. Winter specimens from Assam, Meghalaya, etc.; often show a variable amount of rufous on vent, being intermediates between *pandoo* and east Asian *philippensis*.

Young male, sooty brown washed with bluish grey, feathers of crown, sides of face, chin, throat and upper breast with subterminal pale fulvous spots; rest of plumage faintly fringed with fulvous. Wings and tail as in adult male but greater coverts and tail with broader pale edges.

Young female, similar but paler and browner; wings and tail as in adult female. Postjuvinal moult about August-September, does not include primaries, primary-coverts, secondaries or the tail. These are not moulted till the second autumn. Adults undergo a complete moult about August to October. There is no spring moult. Both male and female show a certain amount of variation in the amount of spotting and barring of the body plumage (HW). Postnuptial moult complete about August to October. No spring moult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	111-136	25-29	25-32	77-95 mm
♀♀	112-121	25-29	25-30	75-88 mm
			(HW, SA, Roonwal)	

Weight 5 ♂♂ 44-52; 1 ♀ 45 g (Roonwal, SA, BB).

COLOURS OF BARE PARTS. Iris brown. Bill dark brown; mouth pinkish flesh or lemon-yellow. Legs, feet and claws black.

Genus MYIOPHONUS Temminck¹

Myiophonus Temminck, 1822, Pl. col. 2(29), pl. 170. Type, by original designation, *Myiophonus metallicus* Temminck = *Turdus flavirostris* Horsfield

Arreaga Lesson, 1831, Traité d'Orn.: 388. Type, by monotypy,

Turdus cyaneus = *Sitta glauca* Temminck

Cf. Delicour, J., 1942, Act 59: 246-64.

¹ On spelling of *Myiophonus* v. *Myiophonus*, see Deignan, H. G., 1965, Bull. Brit. Orn. Cl. 85: 3; also Bowers, 1961, JBNHS 58: 670, note.

74

TURDINAE

Below, whitish, cross-barred brown. In silhouette, both at rest and in flight, confusable with Brown Rock Chat (1692).

Female distinguished from that of *rufiventris* (1724) by less boldly barred underparts and lack of distinct throat-patch. Female *cinclorhynchus* (1723) is olive-brown above, not grey-brown, and has whitish not fulvous vent.

STATUS, DISTRIBUTION AND HABITAT. Common summer (breeding) visitor to the Himalayas, from Chitral, Hunza and Ladakh east to central (Lowndes, 1955, JBNHS 53: 32) and eastern Nepal (Mt Everest region — Hingston, JBNHS 32: 322 and Kinnear, *Ibis* 1922: 507). One observation from Darjeeling 1350 m in June (Lister, JBNHS 52: 41). No other summer data from Sikkim, or from Bhutan and Arunachal Pradesh, although the species is common then in the dry valleys of southeastern Tibet (Schäfer). From Chitral to Garhwal, breeds between c. 1500 m [locally 1300 m (Chitral) or 1200 m (Kangra, Kulu), up to c. 3000 m (Chitral)] and 4000 m (Ladakh to Garhwal). In Nepal apparently breeds only at high elevations: Manangbhot 3600 m, Kharta 3700 m. An observation at 4800 m in July in the Rongshar Valley. The latter two localities are in Tibet (east of Mt Everest) but in Himalayan facies; the species is absent from the Tibetan plateau. Winters from the Himalayan foothills, including Sikkim, Bhutan and Arunachal Pradesh, south throughout India, Sind, Bangladesh and Assam; also Sri Lanka in the hills. Two records from Andaman Islands and one from Car Nicobar (accidental?). In the Himalayan foothills recorded in winter up to c. 1200 m (Kangra), 1400 m (Nepal), 1000 m (Sikkim) and 600 m in Bhutan and Arunachal Pradesh; in the hills of southern India up to c. 2100 m. Absent or very scarce in flat country (Gangetic plain, coastal Tamil Nadu and coastal Sri Lanka). In the breeding season affects barren rocky hills and precipitous hillsides. In winter frequents broken, rocky country, boulder hillocks, cliffs and rocks along sea shore, quarries, brick kilns, precincts of villages, old forts, buildings both ruined or inhabited, often in otherwise untypical country.

Extralimital. Turkestan and southeastern Tibet. Winters also in Burma. For range of the species see 1725.

MIGRATION. Occurs on summer grounds from April to September or October. Arrives in winter quarters in September in the north, October in the south.

GENERAL HABITS. Solitary in winter, pairs in summer. Very shy in summer but more confiding in winter when it often takes up its quarters among human habitations, resorting to the same spot year after year, and even roosting on the identical beam or cornice in a veranda or living room. Sits bolt upright on a prominent rock or roof-top bowing, curtsying and flirting tail vigorously every now and again. Feeds mostly on the ground but will occasionally take insects on the wing by vertical sorties into the air.

Display. In breeding season male indulges in short volplaning flights from one rock to another, showing off his brilliant blue plumage to best effect, and singing. In a pair with nest-young 'male repeatedly volplaned down to settle on a rock c. 15 m from the nest-hole. Each time upon alighting he raised his wings over the back and slowly and deliberately flapped them to the accompaniment of a subdued pleasant little song of 3 or 4 notes' (SA).

TURDINAE

76

Bill stout, shorter than head, laterally compressed and hooked at tip. Wing rather rounded. Legs long and strong.

Key to the Species

		Page
1	Tail under 105 mm.....	<i>M. blighi</i> 76
2	Tail over 112 mm.....	
a	Bill mostly yellow.....	<i>M. caeruleus</i> 79
b	Bill black.....	<i>M. horsfieldii</i> 77

1727. Ceylon Whistling Thrush. *Myiophonus blighi* (Holdsworth)

Arreaga blighi Holdsworth, 1872, Proc. Zool. Soc. London: 444, pl. 19

(Banks of Lemastota-Oya, 4,200 ft, Haputale Dist., Uva, Ceylon)

Baker, FBI No. 616, Vol. 2: 182

Plate 90, fig. 12

LOCAL NAMES. None recorded.

SIZE. Myna; length c. 20 cm (8 in.).

FIELD CHARACTERS. Male. Whole plumage dark brown, head and neck nearly black; neck, breast, and back suffused with deep blue. A bright blue shoulder-patch.

Female. Whole plumage ferruginous brown, lighter below. A blue shoulder-patch as in male.

STATUS, DISTRIBUTION AND HABITAT. Species endemic to Sri Lanka. Resident in small numbers above c. 900 m, mostly between 1200

and 1800 m, in the hills of Central and Uva provinces. Affects damp, heavy forest, fern-clad ravines and gorges, especially those with a rapid torrent running through.

GENERAL HABITS. Keeps singly or in widely separated pairs, seldom far from a wooded stream. A lively and restless bird; runs rapidly and has a habit of frequently opening and shutting the tail. Quite crepuscular.

FOOD. Chiefly insects; also small frogs, geckos, etc. and possibly fruit.

VOICE AND CALLS. A shrill, sibilant whistle *streee . . .* often given by male in the evenings while flying to and fro above streams. Song [?], a 'long drawn plaintive though loud whistling note' (Legge).

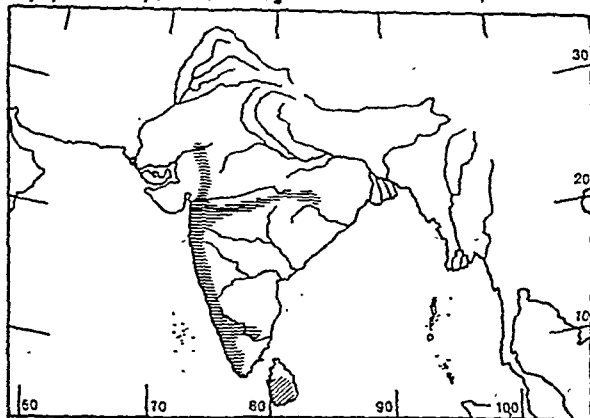
BREEDING. Season, March to June ('January to May' — Henry). Nest, a large, neat and compact structure of green moss with some weed stems and decayed leaves, lined with blackish fern rootlets. Usually placed on a ledge of rock flanking a torrent or waterfall, about one to three metres from the ground; once among twigs of a bamboo stem in a jungle ravine. Eggs, 2 or often 1, whitish green with a few faint reddish brown streaks or speckles round the large end. Average size of 10 eggs 30.8 × 21.8 mm (Baker). Young fed by both parents. Share of duties unknown though incubation apparently by female only; period undetermined.



× c. 1

THRUSHES AND CHATS

77

Myiophonus horsfieldii and *M. blighi*

blighi (1727)

horsfieldii (1728)

MUSEUM DIAGNOSIS. See Field Characters.

Young has brown upperparts, more rusty brown underparts, the feathers of head, neck and breast with ochraceous shaft-lines. Wings and tail brown with rufescent edges to the feathers. Young male differs in having a blue shoulder-patch.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
1 ♂ ad.	106	27	35	77 mm
1 ♂ ad.	103	23	37	81 mm
1 ♂ imm. } (c. 3	96	24	36	71 mm
1 ♀ imm. } mths	91	24	36	72 mm
1 ♀ imm. } old				

(SDR)

COLOURS OF BARE PARTS. Iris light to dark brown; orbital skin dark olive-green. Bill black; gape dark olive-green (ad.), yellow (imm.). Legs and feet dark brown to blackish.

1728. Malabar Whistling Thrush. *Myiophonus horsfieldii* (Vigors)

Myiophonus horsfieldii Vigors, 1831, Proc. Zool. Soc. London: 35

(Himalayan Mountains, restricted to Malabar by Baker, 1923, Hand-list: 93) - Baker, FBI No. 613, Vol. 2: 178

Plate 90, fig. 13

LOCAL NAMES. *Kāstūro*, *Indrārāj* (Gujarati); *Gogi* (Marathi); *Bhāngrāj* (Hindi, M.P.); *Gula-ukkee* (Kannada); *Singala karrai* (Telugu); *Chilakakka* (Malayalam); *Sikāram* (Tamil).

THRUSHES AND CHATS

79

2 or 3 (Kerala) often 4 (Maharashtra), pale clay colour sparsely covered with pale reddish specks, spots and small blotches. Average size of 46 eggs 33.1 × 23.9 mm (Baker). Building, incubation and care of young by both sexes. Incubation period 16 or 17 days.

MUSEUM DIAGNOSIS. See Field Characters.

Young. Whole upper- and underparts, lesser and median coverts dark sooty brown; wing and tail as in adult. Postjuvénal moult of body-feathers, lesser, median and innermost greater coverts and tertials. Postnuptial moult complete, September to November, beginning with remiges followed by rectrices, then body-feathers and lastly head; some body-feathers also fall during casting of remiges (McCann, JBNHS 35: 204).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	152-165	32-34	39-49	107-121 mm
♀♀	143-151	30-32		94-108 mm

(HW, SA, Koelz)

Weight 10 ♂♀ 101-130 (av. 116.9) g — SA.

COLOURS OF BARE PARTS. Iris hazel brown or dirty olive-green (Roonwal). Bill, legs, feet and claws black. Mouth pale yellow or creamy pink (ad.), orange-yellow (pull.). Soles dirty white.

Miscellaneous. Nestlings are commonly taken from the nest to be raised as cage-birds for their beautiful song and imitative ability. Birds have been taught to whistle an entire tune. The growing demand from fanciers and the attractive prices the birds fetch have caused a noticeable decline in numbers in many of its best-known haunts.

MYIOPHONUS CAERULEUS (Scopoli)

Key to the Subspecies

White tips to wing-coverts.....*M. c. temminckii*
No white tips to wing-coverts.....*M. c. eugeni*

1729. Himalayan Whistling Thrush. *Myiophonus caeruleus temminckii* (Vigors)

Myiophonus temminckii Vigors, 1832, Proc. Zool. Soc. London: 171
(Himalayan Mountains = Simla-Almora area)

Myiophonus caeruleus euterpe Koelz, 1943, Contrib. Inst. Regional Exploration, No. 1: 12
(Mawphlang, Khasi Hills)

Baker, FBI No. 614, Vol. 2: 180

Plate 90, fig. 14

LOCAL NAMES. *Hāzār dātān*, *Kāstūr*, *Kave kōstūr* (Kashmir); *Naral* (Kangra); *Kāstūra* (Himachal Pradesh); *Kuljeh*, *Keljit* (Duns); *Kholchere* (Paharia); *Chamang-pho* (Lepcha); *Tetimen* (Bhutaneese); *Süntang* (Khasia); *Di-deekat gashim* (Cachari).

SIZE. Pigeon; length c. 33 cm (13 in.).

FIELD CHARACTERS. A large Blackbird-like species entirely dark purple-blue spotted with glistening blue. Forehead, shoulders, edge of wing and

78

TURDINAE

SIZE. Myna; length c. 25 cm (10 in.).

FIELD CHARACTERS. Forehead bright cobalt blue; crown, neck, throat and upper breast dull black. Rest of plumage including wings and tail, glistening blue-black with bright cobalt blue shoulder-patch. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, fairly common. Confined to perennial hill streams in the dry season but spreading into the foothills and adjacent plains during the rains. The hills of western Gujarat (Mt Abu, Himmatnagar), the Surat Dang, the Satpura Range (Melghat, Pachmarhi) east to Chota Nagpur (Surguja) and extreme northwestern Orissa (Bonai, Sundargarh district). The Western Ghats complex (including the Nilgiris and Palnis) from Khandesh south through western Karnataka and Kerala to the Ashambu Hills, east to the Shevaroy Hills in Tamil Nadu (JBNHS 36: 80). Affects swift-running rocky hill streams in shady evergreen jungle, dark cardamom ravines, etc. up to 2200 m; seldom found away from streams as the Himalayan species frequently is.

GENERAL HABITS. Keeps singly or in pairs. Feeds on the ground or in shallow water along the edge of streams, or hops from stone to stone snatching food as it is borne past on the current. Sometimes seen on forest paths or in gardens and compounds. Often perches on trees and readily takes shelter in caves and rocks. Every now and then the bird does a 'bend-stretch' on its legs and raises and lowers its tail, sometimes very slowly and deliberately; it is fully fanned out on the downward movement when its tip almost touches the ground.

FOOD. Chiefly insects, snails, worms, crabs, small frogs, etc; also drupes of *Jasminum* and wind-fallen figs and berries. Snails and crabs are purposefully battered on stones before being swallowed.

VOICE and CALLS. Alarm-note, a long-drawn piercing high-pitched *kree-ee* somewhat reminiscent of a Hill Myna, uttered chiefly while flying off from one section of a stream to another. Also some harsh notes. Song, a loud, rich whistle rambling aimlessly up and down the scale, so human in quality that it has earned the bird its popular name of Whistling or Idle Schoolboy. The melody is far superior to that of the Himalayan *M. caerules* (SA). Song period, February to September, but song sporadically heard also in December and January. It is one of the earliest bird calls in the morning.

BREEDING. Season, chiefly May to September (monsoon); in the south sometimes starting as early as March or even February. Double-brooded. Nest, a bulky cup of moss, roots and grass often secured in place and reinforced with mud, especially when built on a sloping ledge, lined with rootlets or moss. Usually placed on a ledge of rock beside a waterfall or torrent, often continually soaked with the spray. In the ghats a favourite site is on ledges of the dripping wet rock walls flanking entrances to the railroad tunnels, regardless of the many trains constantly thundering past; also within dank ill-lit tunnels that carry the water mains through the hills. Will occasionally nest in the rafters of a coffee estate building such as a mill or a pulphouse in the vicinity of water, or even in a hole in a tree up to c. 12 metres. A pair may occupy the same territory year after year, building in the same site, often on the foundations of an old nest. A second successive brood is frequently raised in the same nest without rebuilding (Betts). Eggs,

80

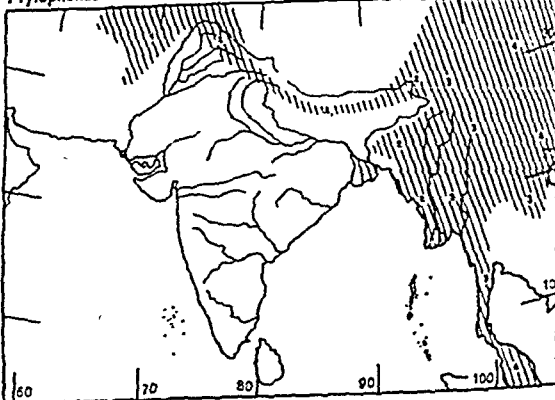
TURDINAE

tail brighter blue. A half-dozen white spots on median wing-coverts. Bill yellow. Sexes alike.



× c. 1

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. The mountain ranges of Pakistan from northern Baluchistan to Chitral, Gilgit and Hunza, the Indus Valley as far as Upshi, and from Murree and Kashmir eastward along the Himalayas through Nepal, Sikkim, Bhutan and Arunachal Pradesh to the Dibang river (c. 95°-96°E. long., intergrading here with *eugeni*); also the Garo, Khasi and Mizo hills south

Myiophonus caeruleus

Distributional ranges

1 *temminckii* (RE) 2 *temminckii* (1729)
3 *eugeni* (1730) 4 Other subspecies

to the Chittagong Hill Tracts, Nagaland and Manipur. Breeds mostly between c. 1000 and 3500 m, but altitudinal distribution varies with local conditions: in Baluchistan above 2700 m, in the western Himalayas between

THRUSHES AND CHATS

81

1200 m (or possibly a little lower) and 3600 m, optimum zone 1500-2400 m. In Nepal occurs up to 4200 m (Lowndes, Diesselhorst), exceptionally higher (5180 m — Biswas, JBNHS 58: 670). Upper limit coincides with tree-line. Winters from c. 2400 m (in Sikkim 2700 m) down to the foothills, in Pakistan to the Salt Range and Lahore along the better wooded nullahs (T. J. Roberts, pers. comm.). Affects rivers and torrents especially in heavy forest, ravines and gorges, sometimes streams with sparse bush or tree growth, but not in bare country.

Extralimital. The species extends west to northern Afghanistan and Turkestan north to Ala Tau, east through the Indochinese countries, south through Malaya and Sumatra to Java, and north in China to Kansu and Hoph.

GENERAL HABITS. Keeps singly or in pairs. A conspicuous bird of torrential hill streams running through jungle and cliffs, every gorge seeming to hold a pair. In the western Himalayas also frequently seen around hill-station bungalows, and everywhere partial to hill roads. Unlike *M. horsfieldii* (1728) often wanders considerable distances away from water. Hops rapidly from rock to rock amidst a rushing torrent to seize morsels floating past, or on the forest floor and bridle paths, turning over and flicking aside the leaves in search of food. Often perches in trees. Has a habit of fanning its tail upon alighting, raising and lowering it very slowly and deliberately. It is fully expanded on the downward movement. Progresses on ground in long hops, or runs in spurts with quick mincing steps. Feeding behaviour and movements typically Blackbird-like. Markedly crepuscular, often feeding and on the move till well after dusk.

Aggressive Display (e.g. when mobbing owl). Spreads tail, droops wings throws out chest and struts stiffly in front of intruder, striking bellicose postures.

FOOD. Mainly earthworms, snails, crabs, larvae and aquatic insects, but will also take hatchling birds and almost any small living creature; also berries and some vegetable matter (horsedung, SA). Snail shells purposefully battered against stones to get at the contents.

VOICE AND CALLS. Call-note, an 'exceedingly strident tzeet tze-tze-tzeet' which carries far above the roar of the waters' (Bates). Alarm-note, a loud, shrill *kreee* given both in flight and when perched. Song, often uttered on the wing, a sweet, rather thin whistle which follows a definite pattern with slight variations (Lister); very human in quality but clearer and more resonant, though far inferior as a melody to that of its southern congener (1728). Main song period, end of February till end of June, with a resumption from mid August to end of September; may occasionally be heard as early as January (Proud). Sub-song (Sept.-Oct.): a subdued creaky jingle very reminiscent of song of Rosy Pastor (*Sturnus roseus*) but richer and more musical, lasting c. 3 minutes or more, practically without a break (SA).

BREEDING. Season, end of April to August. Double-brooded. [One pair laid again 11 days after first brood left nest (Jones, JBNHS 47: 240).] Nest, a bulky cup of green moss lined with rootlets, sometimes with a variable amount of mud admixed. Placed on a ledge or in a hollow or crevice of a boulder overhanging or amid a rushing stream, often wetted by the spray; occasionally on beams and rafters in forest bungalows, outhouses, etc., rarely

82

TURDINAE

even in a tree-hollow or on a horizontal branch. Eggs, 3 or 4, pale olive-grey to pale creamy buff with very faint reddish freckling, seldom distinctly marked. Average size of 10 eggs 36.9 × 25.6 mm (BBO), of 200 eggs 35.8 × 24.8 mm (Baker). Building of nest, incubation and care of young by both sexes. Brood-parasitizing by Hawk-Cuckoo (*Cuculus sparverivides*) recorded (Baker, JBNHS 17: 360, 362).

MUSEUM DIAGNOSIS. Differs from *eugeni* by the presence of white spots on tip of median coverts. Feathers of rump and, to a lesser extent, of belly largely white along the shafts but this colour always concealed. Postnuptial moult complete, July to October.

Young. Upperparts and wing-coverts dull brown tinged with purple. Wings and tail as in adult. Underparts dull brownish black, a faint purple tinge on breast.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	167-192	33-36	50-55	129-140 mm
♀♀	155-184	33-35		(114) 120-127 mm
(BB, Rand & Fleming, SA)				

Weight 6 ♂♂ (summer) 135.8-193.8 g; 4 ♀♀ (summer) 156.5-181 g (GD, RAP, SDR). 5 ♂♂ (winter) 191.5-199.2; 2 ♀♀ (winter) 153.7, 159.7 g (RAP). 2 oo? (October) 158, 177 g (SA).

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible dusky yellow with blackish on base and culmen; lower mandible yellow. Legs, feet and claws black; soles yellowish grey.

1730. Burmese Whistling Thrush. *Myiophonus caeruleus eugeni* (Hume)
Myiophonus Eugeni Hume, 1873, Stray Feathers 1: 475
(Thayetmyo and the western Pegu Hills)
Baker, FBI No. 615, Vol. 2: 181

LOCAL NAMES. None recorded.

SIZE. Pigeon; length c. 33 cm (13 in.).

FIELD CHARACTERS. As in 1729 but lacks white spots on wing (median coverts).

STATUS, DISTRIBUTION AND HABITAT. Resident in the Mishmi Hills east of the Dibang river. Habitat as in 1729.

Extralimital. Burma south to Tenasserim, southern Yunnan and northern Vietnam.

GENERAL HABITS, FOOD AND VOICE. As in 1729.

BREEDING. As in 1729.

MUSEUM DIAGNOSIS. Differs from *temminckii* in lacking white spots on tips of median coverts.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1729.

Genus ZOOTHERA Vigors

Zoothera Vigors, 1832, Proc. Zool. Soc. London: 172.

Type, by monotypy, *Zoothera monticola* Vigors

Geocichla Müller, 1835, Tyds. Naturl. Gesch. Phys. 2, pl. 3: 348.

Type, by original designation, *Turdus citrinus* Latham

Oreocincla Gould, 1838, Synops. Bds. Australia, pl. 55, App.: 3.

Type, by monotypy, *Turdus varius* Horsfield

THRUSHES AND CHATS

83

Differs from *Turdus* in having the bases of secondaries and part of primaries white or buff, the well-demarcated patch clearly visible on the underwing.

Key to the Species

	Page
I Upper tail-coverts tipped with white	
A Plumage black and white..... <i>Z. wardii</i> ♂	83
B Plumage olive-brown..... <i>Z. wardii</i> ♀	83
II Upper tail-coverts not tipped with white	
C Plumage almost entirely slaty..... <i>Z. sibirica</i> ♂	85
D Belly orange-rufous..... <i>Z. citrina</i>	86
E Underparts spotted	
1 Bill (from skull) over 30 mm	
a Bill over 40 mm..... <i>Z. monticola</i>	101
b Bill between 30 and 40 mm..... <i>Z. marginata</i>	104
2 Bill (from skull) under 30 mm	
c Mantle spotted..... <i>Z. dauma</i>	97
d Mantle plain	
i Underparts spotted with olive-brown..... <i>Z. sibirica</i> ♀	85
ii Underparts spotted with dark brown	
o Tips of wing-coverts white..... <i>Z. spiloptera</i>	91
oo Tips of wing-coverts not white	
o' Forecrown with pale shaft-streaks..... <i>Z. dixonii</i>	95
o'' Forecrown without shaft-streaks..... <i>Z. mollissima</i>	92

1731. Pied Ground Thrush. *Zoothera wardii* (Blyth)

T.(urdus) Wardii Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 882
(Mysore)

Baker, FBI No. 584, Vol. 2: 145

Plate 93, fig. 1

LOCAL NAMES. *Daskat mibérang* (Cachari); *Kochikkili* (Malayalam).

SIZE. Myna ±; length c. 22 cm (9 in.).

FIELD CHARACTERS. Male. An unmistakable black-and-white thrush with a yellow bill. Above, black with a conspicuous white supercilium; wing and lower rump boldly spotted with white. Tail dark brown and white (central rectrices and outer webs of other rectrices dark brown, inner webs and tips white). Below, throat and breast black; rest of underparts white, flanks boldly barred with blackish.

Female. Above, olive-brown with a conspicuous buff supercilium. Wings spotted with buff. Tail olive-brown, tips of upper coverts white, outer rectrices partly white and with white tips. Below, throat buffish, sides mottled olive-brown and buff. Breast dark olive-brown with buff spots. Belly white, flanks and lower breast barred with brown.

The conspicuous supercilium, spotted wings and white in tail identify the female.

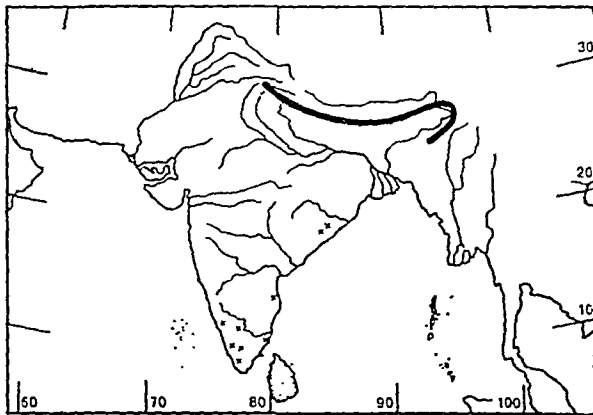
STATUS, DISTRIBUTION AND HABITAT. Uncommon summer (breeding) visitor to the Himalayas from Kulu Valley east through Mussooree hills, Simla, Garhwal, Nepal (Chitlang Valley — Biswas, JBNHS 58: 671;

84

TURDINAE

Dandeldhura, Trisuli and Kathmandu Valley — Fleming & Traylor, *Feldiana* 53: 182; Jaharpowah — Hodgson), Sikkim, Jalpaiguri duars and Bhutan foothills (on passage) and Arunachal Pradesh (Baker, *Nidification* 2: 127); also the Barail Range in North Cachar (Baker, loc. cit.). Breeds

Zoothera wardii



between 1500 and 2400 m, in Cachar down to 1200 m. Winters in Sri Lanka between c. 750 and 1500 m, where numbers fluctuate greatly from year to year. In summer affects well-wooded ravines and nullahs, edges of forest, small patches of forest and jungle in open country, even gardens (Naini Tal). In winter frequents forest, jungle in ravines, and well-wooded gardens.

MIGRATION. Arrives on breeding grounds in April, departs in September-October. Arrives in Sri Lanka in October-November, leaves in March. Passage noted in the Eastern Ghats and the hills of southern India, between 1000 and 2100 m, in October and in March-April (once in February). Point Calimere in Tamil Nadu (10°17'N., 79°52'E.) is one of the take-off points for Ceylon in autumn, but the bird evidently follows a different route on return passage in spring.

GENERAL HABITS. Keeps singly or in pairs according to season, sometimes in small flocks during migration. Feeds on the ground, hopping about among the mulch beneath undergrowth, turning over the dead leaves in search of food. Also ascends trees to feed on berries.

FOOD. Insects and berries.

VOICE AND CALLS. A strange, unmusical song of two notes (Brooks). A chirping call-note. Generally very silent.

THRUSHES AND CHATS

85

BREEDING. Season, May to July. Single-brooded. *Nest*, a deep, compact cup of green moss, grass and leaves with an inner layer of coarse roots cemented with a little mud, lined with rootlets and grass stems; placed in saplings between one and five metres above the ground, usually in a fork or on a horizontal branch near the trunk. *Eggs*, 3 or 4, white tinged with green, lightly speckled and blotched with pale reddish, sometimes over the whole surface, sometimes chiefly at the larger end. Average size of 30 eggs 26.3 × 19.4 mm (Baker). Building of nest, incubation and care of young by both sexes.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	110-119	25-28	26-28	{ 75-79 mm
♀♀	110-120			{ 74-82 mm
				(HW, MD, BB)

Weight 6 ♂♂ (October) 52-72 (av. 58.6) g—SA.

COLOURS OF BARE PARTS. Iris brown. Bill yellow (♂), brownish yellow (♀). Legs and feet pale brownish yellow.

1732. **Whitebrowed Ground Thrush.** *Zoothera sibirica sibirica* (Pallas)

Turdus sibiricus Pallas, 1776, Reise Russ. Reichs 3: 694
(Sibiriac = Dauria vide Hartert, i.e. SE. Transbaikalia)

Baker, FBI No. 585, Vol. 2: 146
Plate 93, fig. 3

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 22 cm (9 in.).

FIELD CHARACTERS. Male (adult). Entirely dark slaty with a conspicuous white supercilium to nape. Under tail-coverts and outer rectrices tipped with white.

Male (first-year). Upperparts slaty tinged with brown. Wings, tail, and primary coverts brown, with some black-tipped fulvous feathers. *Below*. Throat- and breast-feathers bluish with white centres.

Female. *Above*, olive-brown with a narrow buff supercilium. Wing-coverts tipped with ochraceous. Outer rectrices broadly tipped white. *Below*, throat buffish speckled with brown, a dark brown stripe on each side. Breast and flanks buff spotted with olive-brown. Centre of belly white.

Both sexes have a large underwing patch, white in male buff in female, noticeable in flight. The prominent supercilium identifies both sexes. Female *Z. wardii* has a more spotted wing, darker breast and flanks barred with blackish brown, not olive-brown.

STATUS, DISTRIBUTION AND HABITAT. Uncommon winter visitor to Manipur hills, locally not uncommon (Hume, SF 11: 132). One record for the Andaman Islands (ibid. 2: 223). Affects hill forest up to at least 1800 m.

Extralimital. Breeds in Siberia from the Yenisey to Amurland. A subspecies (*davisoni*) in Sakhalin and Japan. Winters in southern China, the

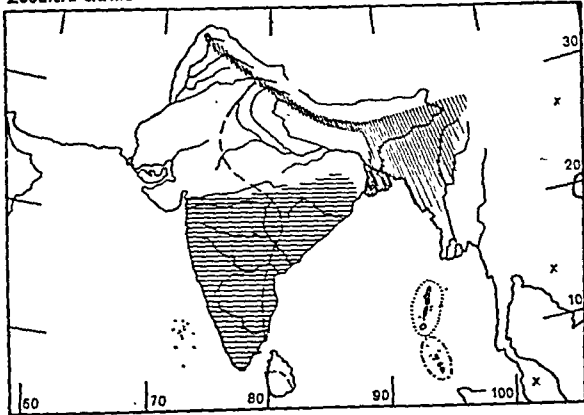
¹ A male collected recently (6 Apr. 1972) on Narcondam Island, c. 13° 25' N., 94° 15' E., identified as *Z. s. davisoni*. This differs from nominate *sibirica* in its darker colour, particularly of the upperparts which are almost black in adults instead of slaty grey, in having less white on the belly, and averaging slightly larger (Austin & Kuroda, 1953).

THRUSHES AND CHATS

87

Nepal up to 2300 m (GD). Very local in the plains and only in well-wooded areas. Withdraws from Himalayas in cold weather and winters from the duns and terai south through eastern Punjab (Rohtak), eastern Rajasthan

Zoothera citrina



Legend:
■ *citrina* (1733). Breeding
□ *citrina*. Winter; occasional in Ceylon
■ *cyanotus* (1734)
□ *endamanensis* (1735)
□ *albogularis* (1736)
X Extralimital subspecies

(Sambhar Lake), Uttar Pradesh and Madhya Pradesh (sparingly in all the preceding localities), Bihar, Bengal, Bangladesh and Assam; also the Eastern Ghats south to Russellkonda (Gumsur). Irregular further south in the Peninsula to Ratnagiri, Tamil Nadu, and Sri Lanka in the low-country Dry zone. Affects damp forest with plentiful but not too dense undergrowth often in the vicinity of streams, mixed secondary and bamboo jungle on valley slopes, and groves of trees near habitations and cultivated country.

Extralimital. The species ranges east through China to Anhwei and south through the Indochinese countries to Borneo and Bali.

MIGRATION. Where a summer visitor, arrives in April/May, leaves in September. On winter grounds from October to March. Passes through Point Calimere (Tamil Nadu), apparently to Sri Lanka, in October.

GENERAL HABITS. Keeps singly or in pairs. Usually shy and difficult to observe. Feeds on the ground hopping about in dense undergrowth, rummaging among fallen leaves and rubbish for insects. When disturbed flies up into a bush or tree where it sits silent and motionless. Feeds till late into the dusk.

86

TURDINAE

Indochinese countries, Burma, Malaya, Borneo (one record) and the Sunda Islands.

MIGRATION. Arrives in winter quarters in October, departs in April.

GENERAL HABITS. In winter usually keeps in small flocks, gathering in larger flocks (up to 60) before spring departure. Very shy and wary. Feeds on the ground, flying up into trees when disturbed.

FOOD. Chiefly insects and worms; fruit (*Ficus*) and berries.

VOICE AND CALLS. Nothing recorded in winter.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	114-120	22-25	31	84-90 mm
♀♀	113-115			
				(Dementiev, MD)

Weight 1 ♂ (summer) 60; 1 ♀ (summer) 70 g (Dementiev).

COLOURS OF BARE PARTS. Iris dark brown. Bill dark brown (♂), upper mandible dark brown, lower yellow, dusky at tip (♀). Legs and feet orange-yellow.

ZOOTHERA CITRINA (Latham)

Key to the Subspecies

	Page
A Two conspicuous dark stripes on cheeks..... <i>Z. c. cyanotus</i>	89
B No stripes on cheeks	
1 A white wing-bar..... <i>Z. c. citrina</i>	86
2 No wing-bar	
a Rufous colour paler; some whitish on throat.... <i>Z. c. andamanensis</i>	90
b Rufous colour darker, more chestnut; throat white.... <i>Z. c. albogularis</i>	90

1733. **Orangeheaded Ground Thrush.** *Zoothera citrina citrina* (Latham)

Turdus citrinus Latham, 1790, Index Orn. 1: 350 (India, Cachar)
Baker, FBI No. 587, Vol. 2: 148
Plate 92, fig. 2

LOCAL NAMES. *Mālagir* (Kangra); *Dāmā* (Bengali); *Dookat-gajaniaba* (Cachar).
SIZE. Myna —; length c. 21 cm (8½ in.).

FIELD CHARACTERS. Male. Entire head, nape and underparts orange-chestnut. Vent and under tail-coverts white. Rest of upperparts bluish grey; a white wing-bar; outer rectrices lightly tipped white.

Female. Like male but mantle strongly tinged with olive-brown.

STATUS, DISTRIBUTION AND HABITAT. A partial migrant, fairly common but locally distributed. The outer Himalayas from Murree east through Arunachal Pradesh and south through Assam, Manipur, Bangladesh to the Chittagong Hill Tracts, Bengal south to Calcutta (S. C. Law, *Ibis* 1931: 778), Bihar to the Rajmahal Hills (breeding?) and Uttar Pradesh to Gonda. In the Himalayas breeds from c. 1600 m down to the foothills; in

88

TURDINAE

Courtship Display. 'Male sat on branch motionless like a stuffed dummy, head bowed double till bill-tip almost touching his feet, wings loosely drooped at sides, back arched and tail depressed. Uttered snatches of normal song in soft undertone (almost sub-song), only the tips of his mandibles moving. Female sat about 40 cm away, passive but alert, changing her position abruptly now and again from facing her suitor to a sudden about turn, but entirely silent throughout the serenade. These proceedings, timed for over 15 minutes, were in progress when the observation started and may have continued longer if the birds had not been disturbed' (SA).

FOOD. Insects, worms (especially earthworms), berries and fruit; also leeches locally, but in spite of their great abundance these taken by a few individuals only (GD).

VOICE AND CALLS. A typical thrush song, loud, sweet and variable with some very high-pitched notes, reminiscent of the Blackbird's; contains many successive repetitions of strophes (as in European Song Thrush, *Turdus philomelos*) and faithful imitations of other birds' songs and calls. Uttered chiefly in the morning and evening while sitting motionless, wings drooping at the sides and tail held low; usually given from low trees or down in dense cover. Song period in Nepal, early April till end of August (Proud). A secondary song described as a 'very tuneful, remarkable low melody'. The bird is widely prized as a cage-bird for its song. Alarm-note likened to the shrill screeching noise produced by a pencil on a slate—a high-pitched *krree*.

BREEDING. Season, chiefly May and June (monsoon), occasionally until August. In Assam starts in early April. *Nest and eggs* (c/3 or 4, exceptionally 5) as in 1734. Average size of 100 eggs 25.6 × 19.3 mm (Baker). Brood-parasitism by Pied Crested Cuckoo, *Glammator jacobinus*, recorded (Baker, JBNHS 17: 894).

MUSEUM DIAGNOSIS. See Field Characters. For distinction from *cyanotus* see 1734, Museum Diagnosis.

Young. *Above*, head dull rufous-brown with pale centres and dark edges to the feathers. Upperparts dark grey with pale centres to scapulars. *Below*, pale yellowish rust with faint blackish tips to the feathers; tips of median and greater coverts rusty white. Wings and tail as adult. Postjuvinal moult complete, about October.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	113-126	23-25	29-33	{ 70-83 mm
♀♀	114-123			{ 72-81 mm
				(BB, HW)

Weight 5 ♂♂ (October) 56-66.5; 2 ♀♀ (October) 57, 67.5 g (GD, Nepal).
8 ♂♂ (October) 48-58 (av. 52.7); 8 ♀♀ (October) 50-60 (av. 54.4) g—SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill dark horny to black. Legs fleshy with brownish front, or light horny brown with yellowish behind; feet fleshy to light horny brown; claws fleshy to horny; toes fleshy or yellowish fleshy (BB).

THRUSHES AND CHATS

89

1734. **Whitethroated Ground Thrush.** *Zoothera citrina cyanotus* (Jardine & Selby)

Turdus cyanotus Jardine & Selby, 1828, Ill. Orn. I, pl. 46 (India, Bangalore)
Turdus citrinus emadoni Biswas, 1951, Jour. Bombay nat. Hist. Soc. 49: 661
 (Chanda, Central Provinces)¹
 Baker, FBI No. 588, Vol. 2: 150

Plate 92, fig. 3

LOCAL NAMES. *Mālagir kātīro* (Gujarati); *Kōzhikkili*, *Koori kaman kattupulleh* (Malayalam).

SIZE. Myna — ; length c. 21 cm (8½ in.).

FIELD CHARACTERS. As in 1733 but throat white and ear-coverts whitish with two oblique dark brown stripes. Wings have a white shoulder-bar and whitish edge. White-and-black head pattern is diagnostic.

STATUS, DISTRIBUTION and HABITAT. Resident and also local migrant; fairly common. Peninsular India from southeastern Gujarat (Navsari and Dangs districts, SA, JBNHS 52: 770; Shull, ibid. 59: 659), Madhya Pradesh (Satpura Range, apparently not in the Vindhya Range), 'Bihar' (Hodgson) and Orissa (Sambalpur, Mahendragiri, Jeypore) south through Maharashtra, Andhra Pradesh, Tamil Nadu, Karnataka and Kerala. In the hills up to c. 1200 m, locally 1500 m. Curiously not Sri Lanka where only the more northern nominate race is an occasional winter visitor. Affects forest, shady ravines and nullahs, dank cardamom sholas, coffee plantations, mixed secondary and bamboo jungle, and occasionally well-wooded gardens.

GENERAL HABITS. As in 1733. Quiet and unobtrusive. Markedly crepuscular; spends the day in shady thickets and bamboo jungle, often coming out at dusk to feed on forest roads and tracks, hopping about and flicking aside dry leaves etc. in the quest.

Display. 'Male stands very erect and rigid on a bough beside its mate, with head bent stiffly and tucked into the breast feathers as it sings vigorously' (Betts).

FOOD. As in 1733.

VOICE and CALLS. As in 1733. A clear rollicking song of several rich whistling notes and frequently reiterated phrases, into which are rolled the mimicked calls and songs of many other birds, e.g. Redwhiskered Bulbul, Tailor Bird, Quaker Babbler, Spotted Babbler, etc. Delivered chiefly in the mornings and evenings from well up in a tree. Alarm-note, a subdued high-pitched *kreeee*.

BREEDING. Season, May to September, chiefly June to August (monsoon). Nest, a thick pad or shallow cup of moss, roots and twigs, usually intermixed with a certain amount of mud, lined with rootlets and leaf stems; placed in a fork of a sapling, coffee bush or tree, between one and four metres above the ground; preferably in an open situation like forest edge rather than in the interior of shrubbery. Eggs, 3 or 4, pale green [or pale stone colour] speckled and blotched with reddish brown. Average size of 40 eggs 25 × 18.5 mm (Baker). Nest-building and incubation by both sexes but

¹ But see Abdullali, H., 1965, JBNHS 62: 305-6. Differences still seem clinal in character to me — SDR.

THRUSHES AND CHATS

91

FIELD CHARACTERS. As in 1735, also with white throat and no white on wing. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Fairly common resident: Nicobar Islands. Affects dank jungle, forest and village clearings.

GENERAL HABITS, FOOD and VOICE. As in 1733, q.v.

BREEDING. Unrecorded, probably as in 1735.

MUSEUM DIAGNOSIS. As *andamanensis* sex for sex but rufous colour darker, more chestnut, especially on head. Chin and throat white. No white on wing.

MEASUREMENTS

	Wing	Tarsus	Tail
♂ ♀	100-106	c. 31	66-72 mm (Baker)

COLOURS OF BARE PARTS. As in 1733.

1737. **Spottedwinged Ground Thrush.** *Zoothera spiloptera* (Blyth)

O. (trocinela) spiloptera Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 142 (Ceylon)
 Baker, FBI No. 602, Vol. 2: 165
 Plate 93, fig. 2

LOCAL NAMES. *Wāl arichchiyā*, *Gomā arichchiyā* (Sinhala).

SIZE. Myna — ; length c. 21 cm (8½ in.).

FIELD CHARACTERS. Above, olive-brown with two rows of white spots on wing. Cheeks whitish with two dark brown stripes. Below, creamy white boldly spotted with dark brown, especially on breast and upper belly. Flanks olive-brown. Sexes alike.

Distinguished from female *Z. wardii* (1731) by cheek-stripes, lack of prominent supercilium and spotted rather than barred underparts.

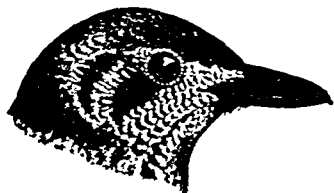
STATUS, DISTRIBUTION and HABITAT. Endemic to Sri Lanka. Resident in moderate numbers, but locally distributed; throughout the hills up to c. 1500 m (Phillips) or 1800 m (Henry), and in the low-country Wet zone to the south and southwest almost to the coast; optimum zone 600-1200 m. Very scarce in the Dry zone forests to the north. Affects forest or well-wooded country (e.g. cardamom jungle, cacao estates, etc.).

GENERAL HABITS. Solitary. Feeds on the ground, vigorously turning over dead leaves in search of prey.

FOOD. Worms, insects, etc., and probably also berries.

VOICE and CALLS. Has a rich, sweet and varied song, usually uttered from the lower branches of trees. A feeble call-note.

BREEDING. Season, two distinct periods: February to May and August to December, the second seemingly the principal breeding season. At least two broods are reared. Nest, a cup of green moss with a few twigs, decayed



× c. 1

90

TURDINAE

apparently more by female. Incubation period 13 to 14 days. Care of young by both parents. Young remain in nest for c. 12 days.

MUSEUM DIAGNOSIS. Differs from *citrina* (1733) in having the ear-coverts whitish with two dark brown oblique stripes, the crown suffused with olive, and the throat white.

Female, like male but mantle strongly tinged with olive.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	106-119	20-25	20-33	72-80 mm
♀ ♀	102-116	(mostly 23-24)	28-29	67-77 mm (HW, SA, Koelz)

Weight 20 ♂ ♀ 47-60 (av. 53.3) g — SA.

COLOURS OF BARE PARTS. Iris dark brown; bare skin behind eye slaty brown, base of lower mandible flesh; mouth fleshy pink, greyish pink or yellowish pink. Legs, feet and claws brownish flesh.

1735. **Andaman Ground Thrush.** *Zoothera citrina andamanensis* (Walden)

Geocichla andamanensis Walden, 1874, Ann. Mag. Nat. Hist. 14: 156 (Andamans)
 Baker, FBI No. 590, Vol. 2: 152

LOCAL NAMES. None recorded.

SIZE. Myna — ; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1733 but throat whitish; no white on wing.

STATUS, DISTRIBUTION and HABITAT. Common resident: Andaman Islands. Affects heavy forest.

GENERAL HABITS, FOOD and VOICE. As in 1733, q.v.

BREEDING. Season, May to July. Nest and eggs (normally c/3) as in 1734; for details see Baker, *Nidification* 2: 133. Average size of 100 eggs 25.1 × 18.5 mm (Baker).

MUSEUM DIAGNOSIS. Sex for sex like nominate *citrina* (1733) but rufous colour darker, chin and throat whitish; a trace of dark bars on cheeks; no white on wing. Size smaller.

Fledgling. 'Olive-grey above, head, neck and back streaked with buff, most broadly on neck; the two stripes below eye almost black and very distinct; upper breast with buff feathers edged with olivaceous; remaining lower parts buff' (Butler, JBNHS 12: 556).

MEASUREMENTS

	Wing	Tarsus	Tail
♂ ♀	100-107	30-31	70-71 mm (Baker)

COLOURS OF BARE PARTS. As in 1733.

1736. **Nicobar Ground Thrush.** *Zoothera citrina albogularis* (Blyth)

G. (geocichla) albogularis Blyth, 1847 Jour. Asiat. Soc. Bengal 16: 146
 (Nicobar Islands)

Baker, FBI No. 591, Vol. 2: 153

LOCAL NAME. *Chook-chyang* (Car Nicobar).

SIZE. Myna — ; length c. 20 cm (8 in.).

92

TURDINAE

leaves or other material and generally with ragged scraps of material dangling beneath the nest; lining mainly of black fern and moss rootlets and decayed leaves; generally placed in a low, exposed fork between one and three metres above the ground, in a sapling or small tree growing among undergrowth in heavy forest, in cardamom plants or in the tops of tea bushes, or sometimes on a ledge of moss-covered rock. Eggs, normally 2, pale buff densely covered with blotches, freckles and specks of light reddish brown. Average size of 20 eggs 26.8 × 19.7 mm (Baker). Incubation probably by both sexes; period unrecorded. Care of young by both parents.

MUSEUM DIAGNOSIS. See Field Characters.

Young (immature). Upperparts ferruginous brown, the feathers with fine fulvous shaft-streaks. Wing and tail as in adult but median coverts with fulvous spots. Sides of head marked as in adult but white replaced by fulvous. Underparts fulvous buff, the feathers of breast and upper abdomen with brown tips.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂ ♂	97-102	22-23	—	74-80 mm
1 ♀	96	23	33	78 mm (HW, SDR)

Weight 1 ♂ 70 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill horny black paler at base of lower mandible. Legs and feet dusky bluish grey or greyish fleshy.

ZOOTHERA MOLLISSIMA (Blyth)

Key to the Subspecies

- More olive-brown; crown concolorous with back.... *Z. m. whiteheadi*
 More rufescent; crown darker than back..... *Z. m. mollissima*

1738. **Western Plainbacked Mountain Thrush.** *Zoothera mollissima whiteheadi* (Baker)

Oreocincla whiteheadi Baker, 1913, Bull. Brit. Orn. Cl. 31: 79
 (Kagan Valley, Afridi Country, NWFP)

Oreocincla mollissima simlaensis Baker, 1924, Fauna Brit. India, Bds. 2: 164
 (Simla, Punjab)

Baker, FBI Nos. 600 and 601, Vol. 2: 163, 164

LOCAL NAMES. None recorded.

SIZE. Myna + ; length c. 27 cm (11 in.).

FIELD CHARACTERS. As in 1739, q.v.

STATUS, DISTRIBUTION and HABITAT. Altitudinal migrant; on the whole rather scarce, but locally may be common. The western Himalayas from Hazara (Kagan Valley) east to Kumaon, probably intergrading in the latter area with nominate *mollissima* (vide Rand & Fleming, 1957: 160). Affects dwarf rhododendron and rocky ground with scattered bushes near timber-line, open pasture interspersed with rocky ground, or bare rocky slopes above timber-line, between 3600 and 4000 m (Garhwal), 2700 and

THRUSHES AND CHATS

97

Young, more olive-brown, shaft-streaks and tips of wing-coverts yellow-buff. Below, generally paler; dark lines on either side of throat less pronounced than in *mollissima*, breast with fewer and narrower markings, and under tail-coverts yellowish with rusty edges, instead of white with dusky olive margins (NBK).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
6 ♂♂	131-141	24-27	37-39	112-113 mm
6 ♀♀	134-144	25	(1) 37	108-116 mm
			(MD, Stres., SA)	
26 ♂♀	132-147 (av. 138.6)	26-30 (av. 27.7)	37-40 (av. 38.2)	108-120 mm (av. 114.8)
				(Delacour)
25 ♂♀	131-146 (av. 140)	26-29 (av. 27)	—	94-110 mm (av. 102)
				(Vaurie)
22 ♂♀	132-143	24-28	—	107-116 mm (NBK)

Weight 3 ♂♂ (winter) 98-103; 4 ♀♀ (winter) 88.7-98 g (SDR, RAP). 1 ♀ (July) 71.5 g (RAP). 1 ♂ (June) 81; 4 juv. (July-Sept.) 70.4-99.8 g (GD, SDR).

COLOURS OF BARE PARTS. Iris brown; orbital skin green (imm.). Bill dark brown, yellow at base of lower mandible. Legs and feet flesh to dull yellow.

ZOOTHERA DAUMA (Latham)

Key to the Subspecies

	Page
A Upperparts with buff spots	
1 Tail always of 14 rectrices; size larger.....	<i>Z. d. aurea</i> 101
2 Tail usually of 12 rectrices; size smaller.....	<i>Z. d. dauma</i> 97
B Upperparts without buff spots; tail always of 12 rectrices	
3 Lower parts white.....	<i>Z. d. neilgherriensis</i> 100
4 Lower parts rufous buff.....	<i>Z. d. imbricata</i> 100

1741. Smallbilled Mountain Thrush. *Zoothera dauma dauma* (Latham)

Turdus Dauma Latham, 1790, Index Orn. 1: 362 (India = Kashmir)

Baker, FBI No. 595, Vol. 2: 158

Plate 93, fig. 8

LOCAL NAMES. None recorded.

SIZE. Myna + ; length c. 26 cm (10½ in.).

FIELD CHARACTERS. Above, olive-brown with buff and black crescent-shaped markings. Closed wings with buff and dark brown bars. A large buff wing-patch on the under surface of wing showing prominently in flight. Below, throat and belly white, breast and flanks buff boldly marked with dark brown crescentic spots. Sexes alike.

The only thrush with a spotted back.

STATUS, DISTRIBUTION AND HABITAT. Altitudinal and short-range migrant, fairly common. The Himalayas from Murree and Kashmir east to Bhutan

7

THRUSHES AND CHATS

99

dry leaves in quest of food. From time to time wags posterior part of body violently up and down, jerking open tail and suddenly opening and shutting wings in order to stampede lurking insects. Flies silently up into the lower branches of a tree when disturbed, remaining there motionless and difficult to spot. Flight reminiscent of Plaintive Cuckoo or Hawk-Cuckoo, with the same upward glide before alighting on a branch.

FOOD. Insects and their larvae, and berries.

VOICE AND CALLS. A fine loud song reminiscent of the Missel Thrush's but more disconnected, a long pause coming between each phrase: *chirrup* ... *cheewee* ... *chueu* ... *wiow* ... *we ep* ... *chirrol* ... *chup* ... *cheewee* ... *wiup* (Magrath). Also described as 'a few fine notes connected by a curious medley of squeaks and chuckles ... for hours together with very little variation' (Proud). Song period (in Nepal) early April to mid June. Other notes not recorded.

BREEDING. Season, end of April to June. Nest, a wide cup of green moss mixed with rootlets, leaves and grass, lined with rootlets or stalks of maiden-hair fern; placed in a fork of a tree or bush usually between one and six metres from the ground, occasionally in a bank among stones covered with moss and undergrowth.¹ Eggs, 3 or 4, pale clay to yellowish green densely freckled with pale reddish. Average size of 25 eggs 30.5 × 22.3 mm (Baker). Share of the sexes in the domestic chores, and incubation period, unrecorded.

MUSEUM DIAGNOSIS. See Field Characters. In summer the upperparts are greyer and the underparts lose some of the ochraceous tinge (HW). Rectrices 12; occasionally 14 in eastern part of range.

Young, very like adult but markings below are more bars than crescents. Upperparts with golden bars and black tips; lesser wing-coverts with more definite ochraceous streaks. Postjuvénal moult of body-feathers, lesser and apparently inner median and inner greater coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	137-150	26-31	34-36 (once 41)	91-107 mm
♀♀	135-150	21-29	34-35	97-102 mm
			(BB, SA, Rand & Fleming)	

Wing sometimes smaller: 3 ♂♂ 127, 130, 131 mm (SDR, Stres.)

Weight 6 ♂♂ (Oct.) 94.7-115.2; 3 ♀♀ (Oct.) 93.7-104 g (GD, SA). 3 ♂♂ (Feb.-March) 92-110; 2 ♀♀ (Mar.-April) 100, 100 g (SA). 1 ♂ 1st winter 130 g (SDR).

COLOURS OF BARE PARTS. Iris dark brown; orbital skin yellowish. Bill: upper mandible horny black; lower mandible pale brownish yellow on base, whitish on middle turning horny anteriorly until tip is horny black. Legs and feet pale horny brown; claws pale horny, paler on tip; soles yellowish white.

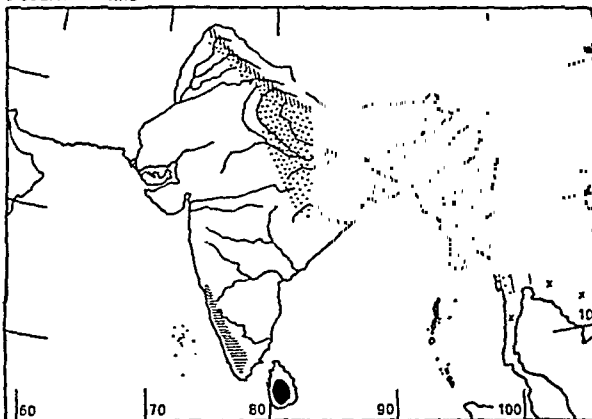
¹ However, nests described by Bates in JBNHS 30: 100 and quoted by Baker in *Nidifera* 2: 135 appear to belong to *Mentula cinerea-hyacin*.

98

TURDINAE

and Arunachal Pradesh (?); also in the Garo, Khasi and Cachar hills, and Manipur. Breeds above 2100 m around Murree, between 2400 and 3000 m in Kashmir, possibly up to 3600 (tree-limit) in Garhwal, and from 2400 to 3300 m in Bhutan. No summer data for Arunachal and Nepal (cf. Biswas, 1961; Diesselhorst, 1968). Winters (November to April) from c. 1800 m down to the foothills (once Peshawar), terai and sparingly south to Madhya

Zoothera dauma



Distributional ranges

	<i>dauma</i> (1741). Breeding		<i>dauma</i> , Winter; only India and Burma shown
	<i>neilgherriensis</i> (1742)		
	Extralimital subspecies		<i>imbricata</i> (1743)

Pradesh (Gwalior), eastern Maharashtra (Kamptec), Raipur, Orissa (Sambalpur, Simlipal Hills, Ganjam), Bihar (Madhubani), and southern Bengal; also the plains of the Brahmaputra, the Garo, Khasi and Mizo hills, and Bangladesh south to the Chittagong region. In the summer affects heavy forest of *kharshu* oak and silver fir; in winter dense forest with grassy clearings, dense jungle with undergrowth of bracken or seedlings, edges of pasture-land and sal forest; also well-wooded banks of streams, bamboo brakes, mango topes, etc.

Extralimital. Extends north through Szechuan, east to Kwangsi, Laos and Vietnam. Disjunct subspecies in southern India and Sri Lanka. Many other subspecies in the southern Indochinese countries, Indonesia, New Guinea, northern and eastern Australia and Tasmania; also Taiwan, Japan, Manchuria and southern Siberia from Amurland to the Ural Mts (ssp. *aurea*).

GENERAL HABITS. Keeps singly or in pairs. A quiet, retiring bird generally seen hopping about on the forest floor or along paths, turning over

100

TURDINAE

1742. Nilgiri Thrush. *Zoothera dauma neilgherriensis* (Blyth)

O. (rocincla) neilgherriensis Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 141 (Neilgherries)

Baker, FBI No. 596, Vol. 2: 159

LOCAL NAME. *Kozhikkilippunan* (Malayalam).

SIZE. Myna + ; length c. 26 cm (10½ in.).

FIELD CHARACTERS. As in 1741 but upperparts without buff spots.

STATUS, DISTRIBUTION AND HABITAT. Uncommon resident. The Western Ghats complex in southern India from Goa (?) and northern Karnataka (Londa, Koel, JBNHS 43: 15), the Biligirirangan Hills and Coorg district south through Kerala and western Tamil Nadu (Nilgiri, Palni and associated hills) from c. 600 to 2100 m. Affects dense evergreen sholas and forest.

GENERAL HABITS, FOOD AND VOICE. As in 1741, q.v.

BREEDING. Season, March to June. Nest, as in 1741. Eggs 2, rarely 3, similar to those of 1741 but as a series darker, duller and browner, and more feebly marked. Average size of 10 eggs 32.5 × 23.2 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *dauma* in being much darker above, lacking the golden-buff spots almost entirely.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	124-136	27-29	28-29	81-92 mm (Baker)

COLOURS OF BARE PARTS. Iris hazel to dark brown. Bill: upper mandible dark horny brown, lower pale horny brown, darker at tip. Legs and feet fleshy to horny white.

1743. Ceylon Scaly Thrush. *Zoothera dauma imbricata* Layard

Zoothera imbricata Layard, 1854, Ann. Mag. Nat. Hist. 13: 212 (Ceylon)
Baker, FBI No. 597, Vol. 2: 160

LOCAL NAME. *Wd' arichchiya* (Sinhala).

SIZE. Myna ± ; length c. 24 cm (9½ in.).

FIELD CHARACTERS. As in 1741 but upperparts olive-brown with black crescent-shaped marks, no buff spots. Lower parts rufous-buff.

The Spottedwinged Thrush (1737) is distinguished from it by its plain, unspotted back.

STATUS, DISTRIBUTION AND HABITAT. Resident, in small numbers in the hills of Sri Lanka between c. 600 and 1500 m, mostly above 900 m. Affects dense forest.

GENERAL HABITS, FOOD AND VOICE. As in 1741, q.v.

BREEDING. Season, March to May and July to October. Possibly double-brooded. Nest and eggs (c2), as in 1741. Average size of 6 eggs 30.5 × 21.2 mm (Baker). Incubation apparently by female only.

THRUSHES AND CHATS

101

MUSEUM DIAGNOSIS. Differs from the Nilgiri Thrush (1742) in being darker above and in having the underparts rufous-buff instead of white and the crescentic black edges to the feathers narrower.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	116-127	26-27	c. 27	75-78 mm (Baker)

COLOURS OF BARE PARTS. As in 1742.

1744. Golden Thrush. *Zoothera dauma aurea* (Holandre)

Turdus aureus Holandre, 1825, Faune dép. Moselle, Ann. de la Moselle: 60 (Metz) Baker, FBI No. 598, Vol. 2: 161

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 27 cm (12 in.).

FIELD CHARACTERS. As in 1741, q.v.

STATUS, DISTRIBUTION AND HABITAT. Winter vagrant, one record: Dibrugarh, Assam, 12 February 1905 (W. Moore, JBNHS 16: 502). The bird was obtained in *ekra* jungle.

Extralimital. See 1741. This subspecies winters in southern China and northern Indochinese countries.

GENERAL HABITS, FOOD AND VOICE. Probably as in 1741.

MUSEUM DIAGNOSIS. Similar to *dauma* but larger. Tail with 14 rectrices (v. usually 12). For details of plumage see Dementiev.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
11 ♂ ♀	151-165 (av. 156.9)	27-31	112-118 mm

Weight 3 ♂♂ 101, 146.5, 162 (av. 136.5); 1 ♀ 128 g — Dementiev.

COLOURS OF BARE PARTS. Iris brown. Bill brownish, yellowish at base. Legs and feet yellowish brown.

1745. Large Brown Thrush. *Zoothera monticola monticola* Vigors

Zoothera monticola Vigors, 1832, Proc. Zool. Soc. London: 172
(Himalayas = Simla-Almora area)

Zoothera monticola tenebrosa Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 13 (Sangau, Lushai Hills)
Baker, FBI No. 603, Vol. 2: 166
Plate 93, fig. 7

LOCAL NAME. Daokat-buku-loubi (Cachari).

SIZE. Myna +; length c. 28 cm (11½ in.).

FIELD CHARACTERS. A stout, short-tailed thrush with a very large, curved bill. Above, dark slaty brown; sides of head with pale shaft-streaks. Below, throat whitish with a few dark brown spots. Sides of throat, breast

THRUSHES AND CHATS

103

(Khasi Hills) and 2600-3000 m (Mt Victoria). Winters (November to March) between 1500 and 2000 m (Simla), down to c. 300 m (Nepal) and from the duars and foothills of Jalpaiguri district up to 2900 m in Sikkim and Bhutan. Affects small mountain streams running through dense forest, and dense, matted undergrowth of bamboo, rhododendron, etc. on swampy ground in damp forest.

Extralimital. Extends to the Chin Hills and the Myitkyina district of Burma. Another subspecies in northern Vietnam.

GENERAL HABITS. Keeps singly. Haunts dark dense forest undergrowth where its coloration is astonishingly obliterative, only movement giving it away. A quiet bird of crepuscular habits, feeding on the swampy margins of wooded streams and damp forest floor, tossing leaves about with its large bill, or turning over stones in stream-beds. It is a busy bird whilst feeding, moving back with its tail lowered when a stone is displaced, and then darting forward with its tail cocked and seizing any worm or insect exposed by the removal of the stone. The favourite hunting ground of this thrush appears to be accumulations of ooze and gravel at the base of boulders... The flight is generally up or down stream, but when much disturbed darts through thick underwood and makes for the next nullah... I have never seen one away from the immediate vicinity of a well-wooded nullah... Flight rapid, more like that of dipper than thrush' (S. J. Martin, JBNHS 26: 668).

FOOD. Insects and their larvae, snails, berries.

VOICE AND CALLS. Not adequately described. Said to have 'a beautiful mellow whistle'.

BREEDING. Season, May to July. Nest, a bulky cup of fresh damp moss mixed with earth and leaves with an inner layer of roots and twigs; lined with rootlets, lichen and soft fibres. Placed in a fork or horizontal branch of a moss-covered tree between two and five metres above the ground, sometimes up to seven metres. Occasional nests may be placed among moss and ferns against tree-trunks (once against the face of a huge boulder). Eggs, 3 or 4, pale grey-green to pale olive-green, or pale cream to warm buff, marked with reddish brown specks or small blotches. Average size of 50 eggs 30 × 21.3 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

Young. Upperparts blackish brown with pale shaft-streaks; lesser, median and greater coverts with ochraceous tips. Underparts much as in adult. Postjuvinal moult of body-feathers, lesser, median and inner greater coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	132-150	41-46	35-36	78-93 mm
♀♀	130-141	41	—	83 mm
		(1 msd)		(1 msd)
			(Koelz, HW, BB, MD, SA)	

Weight 1 ♂ 122; 1 ♀ 131 g (SA, BB).

COLOURS OF BARE PARTS. Iris dark brown. Bill dark brown. Legs and feet light horny brown.

102

TURDINAE

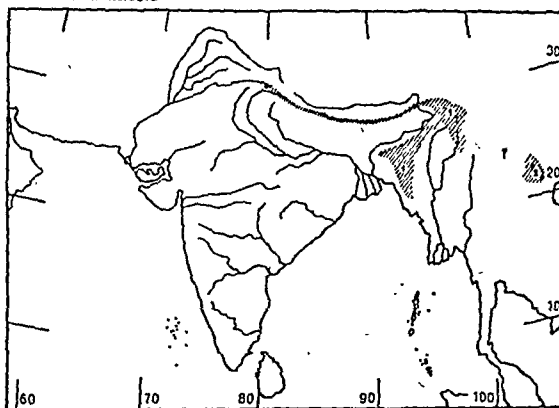


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and flanks olive-brown, the breast with darker brown and some buff spots. Belly, white with dark brown spots. A large white underwing patch conspicuous in flight. Sexes alike.

The remarkably large curved bill and absence of supercilium distinguish this species from female *Z. wardii*. May be easily confused with *Z. marginata* which has a paler breast, scale-like olive markings on belly (not dark brown spots), and whitish streaks on flanks.

STATUS, DISTRIBUTION AND HABITAT. Scarce resident subject to vertical movements. The Himalayas from Kulu eastward through Arunachal Pradesh, thence south through Nagaland, Manipur and Meghalaya south

Zoothera monticola

▨ Distributional ranges 1 *monticola* (1745) 2 *atrata* (RE)

to the Mizo Hills (Koelz) and the Chittagong Hill Tracts (Rashid). Breeds above c. 2000 m (Simla), 3400 m (Garhwal), between 2100 and 3000 m, optimum 2400-2700 m (Sikkim), 900-1800 m (Cachar), 1200-1900 m

104

TURDINAE

1746. Lesser Brown Thrush. *Zoothera marginata* Blyth

Z. (oothera) marginata Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 141 (Arracan)

Zoothera marginata tenebrosa Koelz, 1952, Jour. Zool. Soc. India 4: 41
(Nichuguard, Naga Hills)

Baker, FBI No. 604, Vol. 2: 168

Plate 95, fig. 3

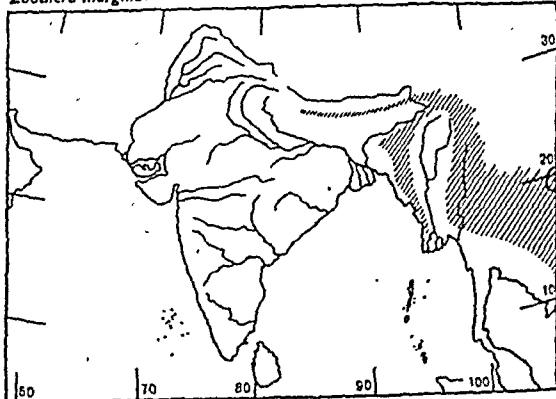
LOCAL NAME. Daokat-buku-lowia (Cachari).

SIZE. Myna +; length c. 25 cm (10 in.).

FIELD CHARACTERS. A stout, large-billed, short-tailed thrush. Above, rufescent olive-brown. Below, sides of head mottled whitish and brown. Throat whitish, a dark brown streak on each side. Breast and belly buffish white scalloped with olive-brown. Flanks olive-brown with whitish streaks. A buff underwing patch visible in flight. Sexes alike.

For distinction from *Z. monticola* see 1745.

STATUS, DISTRIBUTION AND HABITAT. Uncommon resident, subject to short vertical movements. The lower Himalayas from western Nepal (Rand & Fleming, 1957; Biswas, 1961) eastward through northern Bengal (Darjeeling and Jalpaiguri districts), Sikkim, Bhutan and Arunachal Pradesh

Zoothera marginata

▨ Distributional range

(Stevens, JBNHS 23: 262); thence south through Nagaland (Koelz, loc. cit.), Meghalaya, Manipur and Mizoram south to the Chittagong Hill Tracts of Bangladesh (Rashid). Recorded in winter from 1900 m (Sikkim) down to the foothills, the Nepal bhabar and the plains of the Brahmaputra. Presumably breeds in the higher parts of this zone (upper duns of Nepal, Sikkim about 1500 m). More common south of the Brahmaputra where

THRUSHES AND CHATS

105

it breeds between c. 750 and 2100 m. Affects damp forest along small water-courses; in winter also dense reed-jungle along the banks of sluggish streams in evergreen forest (plains of Lakhimpur).

Extralimital. Extends east to Vietnam.

GENERAL HABITS. Similar to those of *Z. monticola* (1745). Very retiring and crepuscular.

FOOD. Chiefly insects and molluscs.

VOICE AND CALLS. Unrecorded.

BREEDING. Season, May to August. Nest cup-shaped, made chiefly of moss mixed with some rootlets, twigs and stems, and lined with rootlets; similar to that of *Z. monticola* but more neatly built. Eggs, 3 or 4, like those of *Z. monticola* (1745, q.v.) but 'more handsome and much more varied'. For details see Baker, *Nidification* 2: 147. Average size of 50 eggs 27 × 20 mm. Incubation by both sexes; other details of breeding biology unrecorded.

MUSEUM DIAGNOSIS. See Field Characters.

Young birds have the upperparts darker, streaked with fulvous on back. Tips of wing-coverts fulvous. Underparts buffish, the feathers tipped with blackish, very heavily on breast.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
3 ♀♀	124-129	33-34	28-30	68-78 mm
			(BB, Rand & Fleming)	
10 ♂♂	122-130 mm (Koelz)			

COLOURS OF BARE PARTS. Iris hazel. Bill blackish brown. Legs and feet 'olivaceous-plumbeous' (Stevens).

Genus *Turdus* Linnaeus

Turdus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 168. Type, by subsequent designation,

Turdus ruscicorus Linnaeus

Arctothornis Kaup, 1829, Skizz. Entw. Nat. Syst.: 93. Type, by original designation,

Turdus pilaris Linnaeus

Bill about half the length of head. Rictal bristles moderate. Wing long and pointed, first primary (as.) small. Tarsus stout and long.

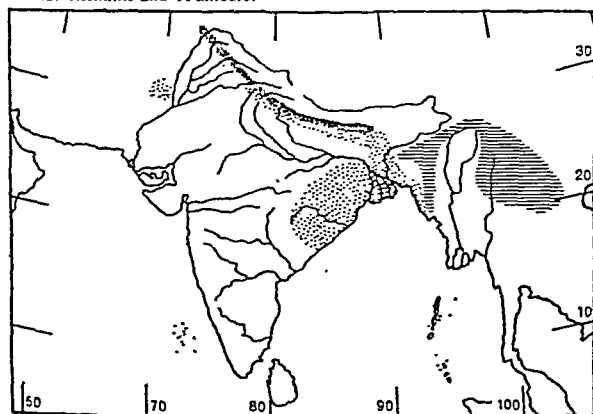
Key to the Species

		Page
I	Tail largely rufous..... <i>T. ruficollis ruficollis</i> ♂♀	129
II	Tail not rufous	
A	Underparts uniformly coloured, no spotting or contrasting pattern	
1	Whole plumage black or slaty	
a	Wings black, legs dark brown..... <i>T. merula</i> ♂	114
b	Wings slaty brown, legs yellow..... <i>T. m. nigripileus</i> ♂	117
c	Wings with a large grey patch..... <i>T. boulboul</i> ♂	112
2	Whole plumage dark brown..... <i>T. merula</i> ♀	114
3	Whole plumage olive-brown..... <i>T. boulboul</i> ♀	112
4	Plumage olive-brown or grey, abdomen whitish	
d	Breast ashy..... <i>T. unicolor</i> ♂	108
e	Breast pale brown or olive-brown..... <i>T. m. nigripileus</i> ♀	117

THRUSHES AND CHATS

107

Brahmaputra, Nagaland and Manipur, from c. 1200 to the highest summits (Meghalaya) and up to at least 2400 m (Nagaland). Extends in winter to neighbouring plains (Dibrugarh, Margherita) and south to Tripura and the Chittagong region. Affects damp evergreen woods with ample under-

Turdus dissimilis and *T. unicolor*

Distributional ranges

- *unicolor* (1748). Breeding ▨ *unicolor*. Winter
▨ *dissimilis* (1747). Resident

growth, mixed oak and rhododendron forest with trees overgrown with moss, orchids and ferns in rocky ravines (Meghalaya), or in light pine forest without undergrowth on rocky slopes (Mt Victoria). In winter also noted in scrub jungle.

Extralimital. Extends to Yunnan and northern Vietnam.

GENERAL HABITS. Very shy and elusive. Keeps almost entirely to the interior of forest. Feeds mostly on the ground, rummaging among fallen leaves.

FOOD. Insects, snails, slugs and berries.

VOICE AND CALLS. Alarm-note a sharp resounding *tock, tock, tock, tock* (Heinrich). 'A sweet but not very powerful song.' Can be heard a great distance off and, in the breeding season, kept up for hours (Whistler).

BREEDING. Season, April to July. Nest, a well-built cup of green moss with an inner layer of grass, roots and a few dead leaves, rarely with some mud, lined with rootlets; placed in a fork of a dense tree or high bush between one and six metres above the ground; occasionally on the ground itself (Hopwood & Mackenzie, JBNHS 25: 86). Eggs, normally 4, sometimes 3, very variable, pale green to buff, more or less marked with deep red or purple-brown blotches. Average size of 50 eggs 26.8 × 19.8 mm

106

TURDINAE

Page

B	Underparts with contrasting patterns but not streaked or spotted	
5	Throat white or greyish white	
f	Belly and back brown or blackish brown..... <i>T. albocinctus</i> ♂♀	110
g	Belly and back chestnut..... <i>T. rubescens</i> ♂♀	121
6	Throat black	
h	Head grey..... <i>T. ruficollis atregularis</i> ♂	127
i	Head black	
a'	Back whitish, rump chestnut..... <i>T. kessleri</i> ♂	124
b'	Back and rump slaty..... <i>T. dissimilis</i> ♂	106
7	Throat grey or white	
j	Breast and flanks rufous..... <i>T. obscurus</i> ♂♀	126
k	Breast and flanks grey..... <i>T. fei</i> ♂♀	125
8	Throat dark brown, breast and flanks rufous..... <i>T. kessleri</i> ♀	124
C	Underparts more or less streaked or spotted	
9	Tips of outer rectrices white, underparts buff with dark brown roundish spots..... <i>T. ruscicorus</i> ♂♀	133
10	No white in tail	
1	A conspicuous supercilium	
c'	Flanks rufous, wings olive-brown..... <i>T. iliacus</i> ♂♀	132
d'	Flanks spotted with blackish, wings rufous..... <i>T. naumanni rufonotus</i> ♂♀	130
m	No supercilium	
e'	Flanks heavily spotted..... <i>T. pilaris</i> ♂♀	131
f'	Flanks not spotted	
O'	Flanks lightly streaked, no rufous <i>T. ruficollis atregularis</i> ♀	127
O'	Some rufous on flanks	
o'	Lower breast rufous..... <i>T. dissimilis</i> ♀	105
o'	No rufous on breast..... <i>T. unicolor</i> ♀	108

1747. Blackbreasted Thrush. *Turdus dissimilis dissimilis* Blyth

T. (Turdus) dissimilis Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 144 (Lower Bengal)

Turdus protomelas Cabanis, 1857, Jour. f. Orn. 15: 286 (Himalaya)

Baker, FBI No. 580, Vol. 2: 140

Plate 93, fig. 10

LOCAL NAME. *Daokat gashim gajao* (Cachari).

SIZE. Myna; length c. 22 cm (9 in.).

FIELD CHARACTERS. A small dark thrush with orange-rufous flanks and axillaries.

Male. *Above*, whole head and nape black. Bill and eye-rim (orbital skin) yellow. Rest of upperparts slaty. *Below*, throat and breast black. Upper belly and flanks and axillaries orange-rufous. Centre of belly and under tail-coverts white.

Female. *Above*, dark olive-brown. *Below*, throat whitish streaked with brown. Breast olivaceous streaked with black. Rest of underparts as in male.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, fairly common. The Garo, Khasi and Cachar hills south of the

108

TURDINAE

(Baker). Building of nest and incubation by both sexes; period undetermined.

MUSEUM DIAGNOSIS. See Field Characters.

Young. Upperparts brown with pale shaft-streaks on head, ochraceous streaks on mantle, scapulars, lesser and median coverts, and ochraceous tips to greater coverts. *Below*, chin and throat white; breast ochraceous, richer on flanks, albescent on belly. Breast- and throat-feathers with heavy blackish terminal bars. Postjuvinal moult of body-feathers, lesser, median and part of greater coverts. First-year bird distinguished by retention of part of juvenal greater coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
2 ♂♂	122, 123	25	32	78, 81 mm
2 ♀♀	117, 123	—	32	80 mm

(MD, Roonwal & Nath, *Stria*)

Weight 1 ♂ (subadult) 75 g — SDR.

COLOURS OF BARE PARTS. Iris brown; orbital skin yellow to orange. Bill yellow to orange. Legs and feet yellow to orange or brownish yellow.

1748. Tickell's Thrush. *Turdus unicolor* Tickell

T. (Turdus) unicolor T. (Tickell), 1833, Jour. Asiat. Soc. Bengal 2: 577

(Bansigar in Borablu = Barababhum, Purulia dist., W. Bengal)

Turdus unicolor subicolor Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 12

(Mawphlang, Khasi Hills)

Baker, FBI No. 579, Vol. 2: 138

Plate 92, fig. 6

LOCAL NAMES. *Kästür*, *Käs künr* (Kashmir); *Diri pūrdi* (Hindi); *Machasah* (Bengali).

SIZE. Myna ±; length c. 21 cm (8½ in.).

FIELD CHARACTERS. **Male.** A small, plain ashy grey Himalayan thrush, paler on breast, white on belly. Under wing-coverts rufous. In the Peninsula in winter may be mistaken for a female Blackbird but the latter is more olive-brown and has a lightly streaked throat.

Female. *Above*, olive-brown; lores, a faint supercilium and eye-ring buff. *Below*, throat white, sides streaked with brown; a broad, pale olive-brown band across breast with a few dark brown streaks; flanks tawny-olive; belly and under tail-coverts white. Distinguished from female Blackbird by tawny flanks and white throat.

STATUS, DISTRIBUTION AND HABITAT. Common summer (breeding) visitor to the Himalayas from N.W.F.P. (Chitral) east through Kashmir to Nepal (uncommon) and Sikkim (breeding?). Breeds between c. 1800 and 2700 m (Chitral), 1500 and 1800 m, occasionally 2200 m (Kashmir), 1200 and 2100 m (Kangra to Simla), 1500 and at least 2100 m (Nepal and Sikkim), overall optimum zone 1500-1800 m. Winters to the east and south-east of its main breeding grounds, from Kangra (occasionally) along the foothills to Arunachal Pradesh (Subansiri Betts, JBNHS 53: 405), and in the Peninsula to eastern M.P. (Bastar, Raipur), Orissa (Mayurbhanj,

THRUSHES AND CHATS

109

Nilgiri — SA), northeastern Andhra (Anantagiri), southern Bengal and Bangladesh in the Chittagong region (Rashid). Regular winter visitor also to northern Baluchistan (Quetta, Fort Sandeman, Loralai — Christison, JBNHS 43: 479). In summer affects open deciduous forest on grassy ground or with little undergrowth, willow groves, orchards and gardens (very common about Srinagar, Kashmir). In winter frequents edges of forest and, in the Peninsula, groves and well-wooded areas.

MIGRATION. Arrives on breeding grounds at the end of March and April, departs in September and October. In autumn migrates eastwards along the Himalayas between c. 2100 m and the foothills. Less in evidence during spring migration. Has straggled to Ladakh, 3000 m in April, Jacobabad [?] (February), Sambhar Lake and Mt Abu (September), Bharatpur (Nov.—Feb. — apparently fairly regular) and Khandala [?] (November).

GENERAL HABITS. Keeps in pairs or in small flocks according to season. Feeds on the ground in the typical thrush manner, spurring a metre or two at a time by a series of short speedy hops or quick mincing steps, then stopping with head cocked to one side as if to gaze intently at the turf or listen for underground movement before thrusting into the ground with the bill to extract a worm. When disturbed flies silently up into a nearby tree. Like the Blackbird, has a habit of 'scolding' while preparing to roost for the night.

FOOD. Insects, earthworms, berries and fruit (apples, plums, etc. especially windfalls). Vegetable food apparently forming major part of diet (GD).

VOICE AND CALLS. Alarm-note *juk-juk*, uttered also when food-hunting. Song typically thrush-like, of short rich notes, *wiw-wiw-wiw... keek-keek*, invariably reiterated twice or 3 or 4 times followed by short typical thrush chatter as interval. Repeated monotonously from stump near tree-top, maybe for ten minutes or more at a stretch (SA). Also rendered as *chellya*, *chellya*, *chirrali* — *cherlyu*, *cherlyu*, *chellya* — *chellya*, *chellya*, *juliu* (Magrath). Song apparently very variable in melody locally; but on the whole rather monotonous and much inferior to that of, e.g. Greywinged Blackbird. Given chiefly early morning from before dawn, and evening until dusk. Song period, end of March to mid August (Proud).

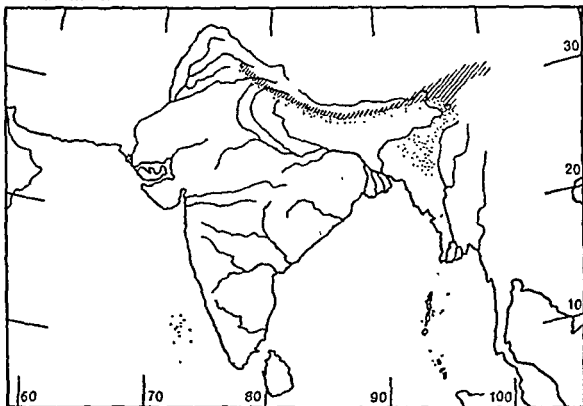
BREEDING. Season, April to August. Nest a deep cup of moss, roots and dry grass lined with rootlets and finer grass; generally placed in the fork of a tree between two and seven metres above the ground, sometimes lower in bushes or in a hollow in a bank. Eggs, usually 3 or 4, sometimes 5, very variable, pale green to pale buff profusely blotched over the whole surface with reddish brown. Average size of 89 eggs 27.1 × 19.3 mm (Osmaston), of 80 eggs 27.8 × 19.5 mm (Baker). Feeding of young by both parents. Share in other duties not recorded.

MUSEUM DIAGNOSIS. See Field Characters.

Young (male and female). Upperparts darker brown than in adult female, all except rump and upper tail-coverts with pale shaft-streaks; lesser, median and greater coverts brown with ochraceous tips. Below, chin, throat and belly white tinged ochraceous; sides of throat, breast and flanks with heavy blackish terminal bars and tinged with ochraceous; under wing-coverts and axillaries ochraceous. Postjuvénal moult of body-feathers, lesser, median and part of greater coverts. Postnuptial moult complete, about August.

THRUSHES AND CHATS

111

Turdus albocinctus

Distributional range

Breeding

Winter

Extralimital range little known

feed a good deal in trees; also on the forest floor, and in winter on lawns in gardens and close to villages.

FOOD. Insects, fruit and berries (crab apples, hawthorn, holly and cotoneaster berries recorded). Vegetable food probably predominant in autumn and winter.

VOICE AND CALLS. Song mellow but less varied than that of the Blackbird; usually given from the top of a tall tree. Song of one individual recorded by Deshayes as uttered in several bursts of notes on a descending scale: *teu-i, teu-u, teu-o*, etc., with variations. Song period mid April at least till July (Proud). Alarm-notes a throaty *tuck-tuck-tuck-tuck* as characteristic of other thrushes; often uttered while going to roost and again at dawn, like the Blackbird in the same circumstances.

BREEDING. Season, early May to July. Nest, a massive cup of moss with some grass, rootlets and leaves incorporated, lined with dry grass or rootlets; built on a stout branch or in a fork, sometimes in large cavities of trees beaten down by snow, between one and three metres above the ground or even on the ground itself at the foot of a mossy stump, often blending perfectly with the surrounding moss. Eggs, 3 or 4, very similar to the Blackbird's but larger and rather more boldly blotched. Average size of 100 eggs 30.5 × 21.7 mm (Baker). Female only has an incubation patch (GD).

MUSEUM DIAGNOSIS. See Field Characters.

Young. Upperparts and sides of head brown with ochraceous shaft-streaks on head and mantle. Wing-coverts brown, all except primary with ochraceous tips. Wings and tail as adult sex for sex. Underparts pale ochraceous with heavy dark brown tips; throat more or less immaculate.

110

TURDINAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	116-130	22-24	29-32	{ 75-95 mm 74-85 mm (HW, BB, SA)
♀♀	113-123			

Weight 1 ♂ (Oct.) 68; 5 ♀♀ (Oct.) 64-75.1 g (GD). 12 ♂♂ (Nov.-March) 57-75 (av. 63.0) g — SA.

COLOURS OF BARE PARTS. Iris brown; eye-rim yellow. Bill yellow to orange-yellow. Legs and feet brownish yellow (Abbott).

1749. Whitecollared Blackbird. *Turdus albocinctus* Royle

Turdus Albicollis Royle, 1835, Ill. Bot. Himalayan Mountains 2 (1839), pl. 8, fig. 3 (Himalayas), *nee Turdus albicollis* Vieillot

T.(urdus) albocinctus Royle, 1840, Ill. Bot. Himalayan Mountains 1 (1839): lxxvii, lxxviii, applied to plate of *T. albicollis* ('Hills' = Himalayas, restricted to Dehra Dun)

Baker, FBI No. 570, Vol. 2: 129

Plate 92, fig. 9

LOCAL NAMES. *Kündoo kástūra* (Hindi); *Charehar* (Paharia, for all blackbirds and rock thrushes).

SIZE. Myna + ; length c. 27 cm (11 in.).

FIELD CHARACTERS. Male. An entirely black or blackish brown thrush with a broad white collar around neck and upper back. Throat white. Under tail-coverts black with white shaft-streaks. Legs and feet yellow.

Female has a collar as in male but dull ashy in colour. Rest of plumage rufous-brown, paler below, the feathers pale-fringed, producing a scaly effect.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The Himalayas from Chamba and Duala Dhar east through Arunachal Pradesh, possibly to Nagaland (specimen collected at end of April). Eggs found by Rattray about Murree *sic* Baker, *Nidification* 2: 116. Breeds between 2700 and 3300 m (Duala Dhar), 2100-3200 m (Simla, Garhwal), 2400-3600 m (Nepal), up to 4000 m (Sikkim), 2700 and 3600, locally up to 4200 m (Bhutan, Arunachal). Winters between c. 2400 and 1500 m (western Himalayas), up to 3000 m (Nepal, Sikkim), down to the base of the hills (Arunachal) and reaching the Cachar and Khasi hills, Nagaland and Manipur but rarely lower than c. 900 m. Affects *kharsu* oak—horsechestnut—rhododendron forest, open coniferous or mixed broad-leaved and conifer forest, especially margins and clearings with plenty of undergrowth; in southeastern Tibet also frequents dwarf rhododendron near tree-line 'in the same surroundings as *Turdus merula maximus*' (Ludlow).

Extralimital. Southeastern Tibet to southwestern Szechuan.

GENERAL HABITS. Keeps singly or in pairs; outside the breeding season sometimes in flocks, either by themselves or with other thrushes. Shy and wary on breeding grounds; more confiding in the cold season. Appears to

112

TURDINAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	137-151	29-30	c. 35	101-109 mm
♀♀	131-143			
		(1 msd)	(1 msd)	
		(Baker, Rand & Fleming, BB, MD, SA)		

Weight 5 ♂♂ (May-June) 90-103; 4 ♀♀ (May-June) 92-107 g (GD). 1 ♀ (April) 105 g — SA.

COLOURS OF BARE PARTS. Iris brown. Bill yellow, dusky at tip. Legs and feet dark ochraceous yellow.

1750. Greywinged Blackbird. *Turdus boulboul* (Latham)

Lanius boulboul Latham, 1790, Index Orn. 1: 80 (India = Darjeeling)

Baker, FBI No. 571, Vol. 2: 130

Plate 92, fig. 8

LOCAL NAMES. *Kástūra* (Hindi); *Pāhāryā māsāichī* (Bengali); *Phoylong pho* (Lepcha); *Chemam* (Bhutaneese).

SIZE. Myna + ; length c. 28 cm (11½ in.).

FIELD CHARACTERS. Male. Overall black, with a large and distinctive



× c. 1

pale grey wing-patch; belly and under tail-coverts with whitish fringes. Eye-rim yellow, bill orange.

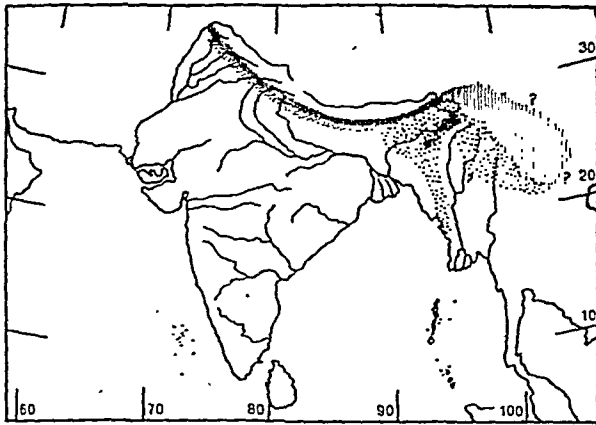
Female brownish ashy tinged with olivaceous; grey wing-patch of male replaced by rufous-brown.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The Himalayas from Murree east through Nepal, Sikkim, Bhutan and Arunachal Pradesh; thence south to the hills of Cachar. Breeds between 1800 and 2300 m (Murree), and up to 2700 m farther east (observed at 3300 m in eastern Nepal — GD); in Cachar breeds about 1200-1400 m. Winters (November to March) between 1200 and 2100 m in the western Himalayas, occasionally reaching the foothills and entering adjacent plains (Salt Range, Lahore, Ludhiana, Chandigarh, Ambala), occasionally straying farther south (Bharatpur, Rajasthan — JBNHS 65: occasionally in winter between 2400 and 2600 m near Naini Tal (Meinertzhagen) and in Nepal above 2100 m, but also regularly descending

THRUSHES AND CHATS

113

to the duns and terai. In Sikkim, Darjeeling dist., and Bhutan winters from c. 1800 m down to the foothills, commonly entering the plains of northern Bengal (Jalpaiguri duars). Farther east reaches Nagaland, Manipur, the Khasi and Cachar hills south to Hailakandi. Affects humid broad-leaved

Turdus boulboul

Distributional range

■ Breeding

■ Winter

forest of oak, rhododendron, etc. Apparently prefers denser forest than *T. albocinctus*. In winter frequents woods, bush jungle and village precincts. *Extralimital*. Extends east to northern Vietnam and Kwangsi. Winters to Burma and Thailand.

GENERAL HABITS. Keeps singly or in pairs in the breeding season, singly or in small flocks in winter; in this season sometimes in company with other thrushes. Feeds mostly on the ground. Rather shy and retiring. Males become pugnacious during nesting season, and intolerant of others of their kind.

FOOD. Insects, earthworms, berries and fruit.

VOICE AND CALLS. Song rich, fluty and far-carrying — of great variety and mellowness, reminiscent of the Blackbird's. It consists of one soft introductory note followed by four high-pitched ones on a descending scale. For details see Lister, JBNHS 52: 39. Song period mid March to mid August (Proud). Alarm-notes, the typical Blackbird chuckles *chūk, chūk, chūk*, and an angry *churr* near nest.

Is one of our finest songsters and a favourite cage bird, especially in Kashmir and Punjab.

BREEDING. Season, March to August. Double-brooded. *Nest*, a bulky cup of moss, leaves, grass and tendrils, often but not always with a layer of mud,

114

TURDINAE

lined with dry grass or rootlets, generally placed in the fork of a horizontal branch of a tree between two and five metres from the ground; sometimes in banks or among the roots of a fallen tree. *Eggs*, 3 or 4, pale green blotched over the whole surface with pale red-brown. Average size of 50 eggs 29 × 20.9 mm (Baker). Building of nest and care of young by both parents. Incubation apparently by female only; period undetermined.

MUSEUM DIAGNOSIS. See Field Characters.

Young male. Upperparts, ear-coverts and sides of neck, lesser wing-coverts and under tail-coverts blackish brown, all except rump and upper tail-coverts with pale shafts. Underparts ochraceous, all feathers except on chin and throat boldly fringed with blackish brown; on flanks, the ochraceous reduced to narrow streaks. Median coverts blackish brown with large ochraceous tips and shafts. Outer webs of greater coverts and inner secondaries fulvous grey with pale shaft-lines at the tip of the former. Flight-feathers and tail as in adult but not so pure black.

Young female like male but rufous-olive replaces blackish brown of plumage and fulvous grey of wings. Postnuptial moult of body-feathers, lesser, median and ? greater coverts. A complete moult apparently takes place in spring.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	140-151	27-30	35-37	{ 107-122 mm
♀♀	131-148	26-30		{ 100-114 mm
				(BB, MD, SA)

Weight 1 ♂ (July) 100.5; 1 ♀ (July) 88.8 g; 3 ♂♂ (Nov.-Dec.) 94.1-105; 3 ♀♀ (Dec.) 97.1-108.2 g (RAP). 6 ♂♂ (Oct.-Apr.) 88-111 (av. 94.5); 6 ♀♀ (Oct.-Apr.) 85-104 (av. 98) g — BB, SA.

COLOURS OF BARE PARTS. Iris brown; eye-rim yellow. Bill deep orange with dark tip of upper mandible. Legs and feet brownish in front, yellow behind (♂), brown (♀); soles yellow.

TURDUS MERULA Linnaeus

Key to the Subspecies

		Page
A	Plumage entirely black or blackish	
1	Smaller and blacker.....	<i>T. m. intermedius</i> 115
2	Larger and browner.....	<i>T. m. maximus</i> 116
B	Plumage dark grey or slaty	
3	Crown black	
i	A broad greyish brown collar; black cap well defined	
a	Below brownish.....	<i>T. m. nigropileus</i> 117
b	Below cold grey.....	<i>T. m. spencei</i> 119
ii	No collar; black cap shading into dark grey of mantle	
c	Paler.....	<i>T. m. similis</i> 119
d	Darker.....	<i>T. m. bourdilloni</i> 120
4	Crown slaty, concolorous with back.....	<i>T. m. kinnisii</i> 121

THRUSHES AND CHATS

115

1751. **Turkestan Blackbird.** *Turdus merula intermedius* (Richmond)

Merula merula intermedia Richmond, 1896, Proc. U.S. Nat. Mus. 18: 585

(Aksu, Eastern Turkestan)

Turdus merula brodkorbi Koelz, 1939, Proc. Biol. Soc. Washington 52: 67

(Farakar, Afghanistan)

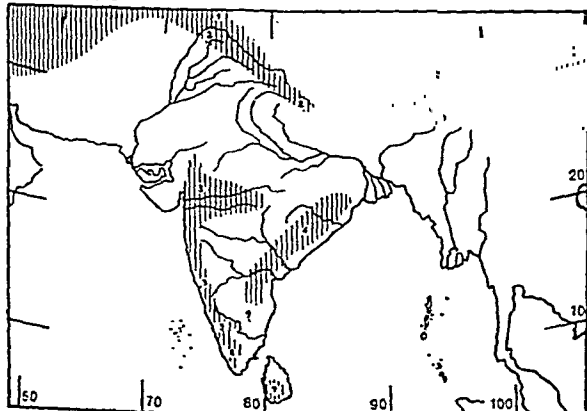
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 26 cm (10½ in.).

FIELD CHARACTERS. As in 1752, q.v.

STATUS, DISTRIBUTION AND HABITAT. Possibly an occasional winter visitor to Pakistan. A sight record in Quetta on 17 February (JBNHS 35: 894) and one specimen obtained near Peshawar (Magrath, JBNHS 21: 680) but not

Turdus merula

■ Distributional ranges 1 *intermedius* (1751) 2 *maximus* (1752)

3 *nigropileus* (1753) 4 *spencei* (1754) 5 *similis* (1755)

6 *bourdilloni* (1756) 7 *kinnisii* (1757)

critically examined; also said to be common between Quetta and Kandahar and in the Bolan Pass in March (Murray *opud* Ticehurst, JBNHS 31: 710). *Extralimital*. Breeds in Turkestan and Afghanistan.

GENERAL HABITS, VOICE AND FOOD. Similar to other subspecies.

MUSEUM DIAGNOSIS. Male differs from *maximus* (1752) in being smaller and blacker. Female is darker and greyer, less olive.

MEASUREMENTS

	Wing	Tail
♂♂	130-140	120-130 mm
♀♀	127-139	
	(NBK, Dementiev, Paludan, Koelz)	

116

TURDINAE

Bill from skull 20 ♂♂ 27-32; 10 ♀♀ 27-31 mm (NBK)

Weight 5 ♂♂ (July) 84-102; 3 ♀♀ (July) 85-92 g (Paludan).

COLOURS OF BARE PARTS. Iris reddish brown. Bill and feet black (female adult — Abbott).

1752. **Tibetan Blackbird.** *Turdus merula maximus* (Seeböhm)

Merula maxima Seeböhm, 1881, Cat. Bds. Brit. Mus. 5: 405

(Cashmere, restricted to Gulmerg)

Turdus merula buddae R. & A. Meinertzhagen, 1926, Bull. Brit. Orn. Cl. 46: 93

(Gyangtse, Southern Tibet)

Baker, FBI No. 565, Vol. 2: 123

Plate 92, fig. 13

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 27 cm (11 in.).

FIELD CHARACTERS. Male entirely black with a yellow bill. Female dark brown with a brown bill.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to short downward movements in winter; common locally but scarce in the more humid central Himalayas. From N.W.F.P. (Whitehead *opud* Baker) and Baltistan (Ludlow MS.) east through Arunachal Pradesh. Breeds between 3000 and 3600 m (Kohat), 3300 and 4000 m (Hazara, Kashmir), [an observation at 2800 m in May in Kangra], 3600 and 4000 m (Garhwal — Whymper, JBNHS 20: 1158), about 4200 m (Nepal — Deshayes, JBNHS 67: 571; *Ibis* 1965: 400), 3600 and 4500 m (Sikkim and adjacent parts of Tibet — *Ibis* 1922: 50 and JBNHS 32: 322), 3400 and 4500 m, more common 4000-4500 m (Bhutan and southeastern Tibet — Ludlow). In winter (November to April) recorded as high as 4600 m in Sikkim and down to 2100 m in southeastern Tibet, but not below 3000 m in the central and western Himalayas, where winter records are very scanty. Prefers drier areas and may winter more commonly on the northern slopes. In summer affects dwarf juniper, dwarf rhododendron and other scrub on steep rocky slopes above timber-line, and boulder-strewn alpine meadows.

Extralimital. Adjacent parts of northern Afghanistan (Yate & Scully, 1887, *Jour. Asiatic Soc. Bengal*) — where presumably intergrading with *intermedius* — and southeastern Tibet. The species ranges west to the British Isles, Morocco and the Azores, and east through southern China. Also the hills of the Indian Peninsula and Sri Lanka (1754-1757).

GENERAL HABITS. Keeps singly in the breeding season, in family groups after breeding, and singly or in small flocks of 5 to 12 birds in winter; in this season sometimes in company with other thrushes. Other habits typical of the blackbirds and related thrushes. As a rule wild and wary, taking off while yet a considerable distance away, flying low over the ground and soon curving out of sight.

FOOD. Insects, caterpillars and berries (juniper, wild rose, etc.); once small lizards (RM).

VOICE AND CALLS. Song, similar to that of the European subspecies but neither so powerful nor so pleasing (Ludlow). A very silent bird; song not often heard. Has a characteristic low *chut-chut* and a rattling alarm-note, less loud, harsh and squeaky than that of *T. m. merula* (Magrath).

THRUSHES AND CHATS

117

BREEDING. Season, May to July. *Nest*, a bulky structure of dry grass and moss with a little mud in the foundation, lined with fine grass; placed in low junipers or rhododendrons, on a ledge of rock, under an overhanging bank, on the ground against a boulder, or among the buttress roots of a gnarled tree. *Eggs*, 3 or 4, pale blue blotched with pale red-brown, similar to those of the European Blackbird but larger and rather more boldly marked. Average size of 2 eggs 33×23.4 mm (Baker).

MUSEUM DIAGNOSIS. Distinguished from *intermedius* by larger size and from peninsular subspecies by black plumage. Male often breed in brown female plumage. Young male. Upperparts, sides of head and neck, chin and throat blackish brown, tips of feathers on mantle blacker, a few ochraceous edges on chin and throat. Rest of underparts evenly barred ochraceous and blackish. Under tail-coverts black with ochraceous edges. Central streaks and edges of median and lesser coverts ochraceous. Wing and tail black. Lower back and rump sometimes barred with ochraceous.

Young female. Like young male but paler brown; greyish brown on rump and upper tail-coverts with paler tips. Mantle feathers with pale shaft-streaks. Wing and tail dark brown (HW).

Young of *maximus* are very variable but show considerably more difference in the sexes than in the nominate subspecies [cf. Witherby, 1938, 2: 140]. Difference between them and juveniles of *merula* very striking, owing to the much narrower shaft-streaks on the upperparts, which are also much paler and end in triangular-shaped marks at tip of feather. No shaft-streaks or markings on head and neck, while below they are less rufous and much darker on breast and throat. Some males have practically no shaft-streaks but the pale V-shaped mark at the tip of the feather is very pronounced (NBK).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	144-161	25-29	c. 38	107-120 mm
♀♀	144-153	25-28		

(NBK, RM)

COLOURS OF BARE PARTS. Iris brown. Bill orange-yellow (♂), dull greenish yellow (♀). Legs and feet black (♂), dark brown (♀).

1753. Blackcapped Blackbird. *Turdus merula nigropileus* (Lafresnaye)

Merula nigropileus Lafresnaye, 1840, Rev. Zool.: 65 (Neilgherries, restricted to Kalhatti, northern Nilgiri Plateau by Ripley, 1950, JBNHS 49: 50)
Turdus simillimus maharattensis Whistler & Kinnear, 1932, Jour. Bombay nat. Hist. Soc. 36: 76 (Mahabaleshwar)
Baker, FBI No. 569, Vol. 2: 128
Plate 92, fig. 11

LOCAL NAMES. Kāstūri (Hindi); *Poda palisa* (Telugu); *Karimkili* (Malayalam).

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. Male dark greyish brown with a black cap; orange-yellow bill, eye-rim and legs.

Female more ashy above and paler generally, with the cap less distinct and brown.

THRUSHES AND CHATS

119

Young male has the upperparts, wings and tail dark sooty blue-grey much as in the adult; lesser and median coverts tipped with triangular fulvous spots. Underparts dark ashy olive, the feathers broadly edged with blackish; throat, central breast and abdomen with the centres of feathers largely white.

Young female has the upperparts dull olive-brown, the feathers faintly streaked with fulvous and edged with sooty. Wings, tail and underparts as in adult. Post-juvenal moult of body-feathers, lesser and median coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	126-135	25-28	30-35	92-101 mm
♀♀	116-129		30-33	84-98 mm

(HW)

Weight 19 ♂♀ (Apr.-May) 60-94 (av. 74.9) g — SA.

COLOURS OF BARE PARTS. Iris brown; eye-rim orange; postorbital skin orange-brown, orange-yellow or rich orange corresponding with gape and bill. Gape and bill horny brown with orange patches at gape, nostrils and sides, or brownish orange with dusky tips, or bright orange with dusky tips; mouth orange-yellow. Legs, feet and claws dusky orange-yellow (SA).

1754. Eastern Ghats Blackbird. *Turdus merula spencei* Whistler & Kinnear

Turdus simillimus spencei Whistler & Kinnear, 1932, Jour. Bombay nat. Hist. Soc. 36: 77 (Jeypore Agency)
Not in Baker, FBI

LOCAL NAME. *Poda palisa* (Telugu).

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. As in 1753, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to seasonal altitudinal and local movements. The Eastern Ghats complex from northern Orissa (c. 22°N.) south at least to the Seshachalam Hills (c. 14°N.). Affects sholas and wooded ravines from c. 750 m to the top of the hills.

GENERAL HABITS, FOOD AND VOICE. As in 1753.

BREEDING. Presumably as in 1753.

MUSEUM DIAGNOSIS. Upper plumage very similar to that of *simillimus* (1755) but paler and not so pure black on crown; lower plumage agrees with that of *nigropileus* (1753) except that 'the faint viscous flush of that bird is replaced by a cold grey tint' (Whistler & Kinnear).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
8 ♂♂	122-132	25-26	30-33	91-102 mm

(HW)

COLOURS OF BARE PARTS. As in 1753.

1755. Nilgiri Blackbird. *Turdus merula simillimus* Jerdon

Turdus simillimus Jerdon, 1839, Madras Jour. Lit. Sci. 10: 253 (Neilgherries, restricted to Avalanche, higher southern Nilgiri Plateau, by Ripley, 1950, Jour. Bombay nat. Hist. Soc. 49: 50)
Baker, FBI No. 566, Vol. 2: 125
Plate 92, fig. 12

LOCAL NAMES. *Karimkili* (Malayalam); *Karun kūruvi* (Tamil).

118

TURDINAE

STATUS, DISTRIBUTION AND HABITAT. Partial migrant, or resident subject to seasonal movements, chiefly altitudinal. Southern Rajasthan (Mt Abu) and eastern Gujarat (Panchmahals dist.) east in the western Vindhya Range and along the Satpuras at least to Seoni (c. 79°30'E.), and south along the Western Ghats at least to Belgaum. All recent records south of this locality are between November and March, the non-breeding season. (Cf. Salim Ali, 1969, *Birds of Kerala* p. 386, JBNHS 43: 330 and 38: 288; Koelz, JBNHS 43: 15. Most older records are undated including, apparently, the type specimen.) Breeds in the hills from c. 900 m up to the highest summits. Birds from the northernmost part of the range, and the greater part of the Madhya Pradesh population, are migratory, ranging in winter to the Gir Forest (Dharmakumarsinhji), Farahabad (c. 79°E., JBNHS 36: 385) and through the Western Ghats and hills of Kerala and western Tamil Nadu to the Cardamom Hills (JBNHS 36: 76), in the low country up to c. 1000 m. Affects moist-deciduous and evergreen forest, sholas, wooded ravines and broken country. In winter frequents well-shaded areas in plantations, gardens and forest.

MIGRATION. Where a summer (breeding) visitor, e.g. in the higher Western Ghats, arrives in April, departs in October-November. In winter spreads out a good deal in the low country and foothills moving locally with the ripening of various fruits and berries on which it feeds.

GENERAL HABITS. Keeps singly and in pairs in the breeding season; often in scattered pairs or small parties in winter. Feeds on the ground as well as in trees. Largely a terrestrial feeder, hopping about rummaging in the mulch and flicking aside dead leaves for insects and windfallen fruit in the typical thrush manner.

FOOD: Insects, snails, slugs, earthworms, fruit and berries (lantana, sandalwood, jamun, wild figs, etc.); also fond of flower-nectar (*Erythrina*, *Salmalia*, etc.).

VOICE AND CALLS. Has a melodious song, not unlike that of the Magpie-Robin (1661) but louder and richer, and freely interlarded with perfectly mimicked calls of many other birds, e.g. grey partridge, pied crested and plaintive cuckoos, pariah kite, wood shrike, tailor bird and others. Heard in the early morning and late afternoon till well after sunset in the breeding season. Silent during winter except for the throaty chuckles and shrill *kres*. Alarm-notes, a harsh *churr* and the characteristic throaty quick-repeated *chuck-chuck-chuck*; call-note, a subdued but high-pitched *kree-ee*, frequently uttered.

BREEDING. Season, June to August (monsoon). *Nest*, a bulky cup of moss, grass and roots with a layer of mud and an inner lining of rootlets and grass; placed in a fork of a small tree or bush between one and seven metres above the ground. *Eggs*, normally 3, sometimes 4 or 5, pale grey-blue to umber brown boldly blotched with reddish, usually more densely around the larger end. Average size of 50 eggs 27.4×20.9 mm (Baker). Both sexes share in nest-building and feeding young. Incubation by female (at least mainly); period undetermined.

MUSEUM DIAGNOSIS. Male has a black cap better defined than in other subspecies. Second primary (as.) longer than seventh. Postnuptial moult complete.

120

TURDINAE

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. As in 1753, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The hills of south-western India from the Brahmagiris and the Biligirirangans south to the Nelliampathis and Palnis where intergrading with *bourdilloni*. Affects evergreen sholas, from c. 1200 m to the top of the hills, lower from October to March when also seen in coffee plantations.

GENERAL HABITS, FOOD AND VOICE. As in 1753.

BREEDING. Season, begins in March but is at its height after the onset of the rains; lasts till August. *Nest*, a substantial cup of moss, grass and lichen with an outer lining of mud and an inner one of grass, placed in evergreen shrubs or small trees, very often on ledges in banks. Normal clutch size 2, occasionally 3, sometimes up to 5. Average size of 50 eggs 29.3×21.3 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies.

Male: forehead, crown and nape black. Whole upper plumage, wings and tail dark slaty. Underparts paler, more ashy.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1756.

1756. Bourdillon's Blackbird. *Turdus merula bourdilloni* (Seeböhm)

Merula bourdilloni Seeböhm, 1881, Cat. Bds. Brit. Mus. 5: 251
(Travancore = Calathoorpolay Patnas, Travancore)
Baker, FBI No. 568, Vol. 2: 127

LOCAL NAMES. *Karimkili* (Malayalam); *Karun kūruvi* (Tamil).

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. As in 1753, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The hills of Kerala and western Tamil Nadu from the Nelliampathis and Palnis south to the Ashambu Hills. Affects evergreen sholas from c. 900 m up to the highest summits.

GENERAL HABITS. As in 1753.

FOOD. As in 1753. Also recorded: berries of *Maesa*, *Trema*, *Lantana*, and wild figs, and flower-nectar (*Salmalia*, *Erythrina*, etc.).

VOICE AND CALLS. As in 1753.

BREEDING. As in 1753. Average size of 20 eggs 27.6×20.5 mm (Baker).
MUSEUM DIAGNOSIS. See Key to the Subspecies. Differs from *simillimus* (1755) in being darker.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	120-124	25-28	31-34	96-100 mm
♀♀	119-122	26-28		93-98 mm

(SA)

COLOURS OF BARE PARTS. Iris dark brown; eye-rim orange-yellow. Bill, legs and feet orange-yellow.

THRUSHES AND CHATS

121

1757. Ceylon Blackbird. *Turdus merula kinnisii* (Kelaart)

Merula kinnisii Kelaart in Blyth, 1851, Jour. Asiat. Soc. Bengal 20: 177
(Newera Elia)

Baker, FBI No. 567, Vol. 2: 126

Plate 92, fig. 10

LOCAL NAMES. *Kalu kurullā* (Sinhala); *Kari-kūrūri* (Tamil).

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. A dark slaty thrush with orange bill, eye-rim and legs. Sexes alike.

On a casual glimpse may be confused with Black Bulbul, *Hyphantornis* *m. humii* (1150), but the latter's slimmer build together with markedly forked tail and coral-red bill and legs distinctive.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to seasonal movements; plentiful but locally distributed. The hills of Sri Lanka above c. 900 m, becoming more common in the higher parts of its range. Affects forest and well-wooded tea estates and gardens.

GENERAL HABITS. As in 1753, q.v.

FOOD. Insects and berries, especially of *nillu* (*Strobilanthes*); also flower-nectar.

VOICE and CALLS. Song, a much reduced blackbird-like series of chuckles and whistles (SDR) usually delivered from the top of a tree. Other notes as in 1753.

BREEDING. Season, two periods, the first beginning second half of March, sometimes February, and lasting till May; the second between August and November. Nest and eggs (c/2, occasionally 3) as in 1753. Average size of 14 eggs 26.6 × 20.6 mm (Baker).

MUSEUM DIAGNOSIS. Plumage, including crown, entirely dark slaty. Female very similar but has the underparts slightly duller and more sullied with brown.

Differentiated from Indian races of *Turdus merula* by smaller size and the greater amount of slaty blue in the plumage.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	104-119	24-26	31-33	85-100 mm
♀♀	105-116		30-33	81-92 mm (HVV)

Weight 2 ♂♂ 66, 67 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill ♂♀ orange-yellow. Legs and feet orange-yellow (♂), dull orange-yellow (♀).

TURDUS RUBROCANUS Hodgson

Key to the Subspecies

Paler; head pale grey..... *T. r. rubrocanus*
Darker; head brownish grey..... *T. r. gouldii*

122

TURDINAE

1758. Western Greyheaded Thrush. *Turdus rubrocanus rubrocanus*
G. R. Gray

Merula castanea Gould, 1835, Proc. Zool. Soc. London: 185 (Himalayas)

nee *Turdus castaneus* Müller, 1776

T. (Turdus) rubrocanus Hodgson in Gray, 1844, Zool. Misc.: 83 (Nepal), nom. nud.
Turdus rubrocanus 'Hodgs.' = G. R. Gray in J. E. Gray, 1846, Cat. Mamm. Bds.
Nepal: 81 (Nepal)

Baker, FBI No. 572, Vol. 2: 132

Plate 92, fig. 16

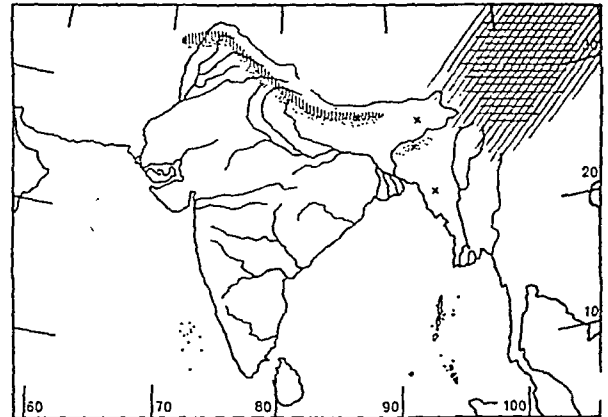
LOCAL NAMES. *Wān kāsūr* (Kashmir); *Lāl kāsūrā* (Hindi).

SIZE. Myna +; length c. 27 cm (11 in.).

FIELD CHARACTERS. Male. Above, head and neck creamy grey paling to whitish on nape; rest of upperparts chestnut. Wings and tail blackish. Below, throat and upper breast whitish; upper belly and flanks chestnut; centre of belly whitish, sometimes with dusky spots; under tail-coverts blackish with broad white shaft-streaks.

Female much duller: head darker and brownish; chestnut paler and margined below with pale greyish.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements, fairly common. The Himalayas from the Safed Koh, Murree and Ladakh east at least to Nepal Valley (Proud, 1955, JBNHS 53: 61; Rand

Turdus rubrocanus

Distributional ranges

▨ *rubrocanus* (1758). Breeding ▨ *rubrocanus*. Winter
▨ *gouldii* (1759). Breeding ▨ *gouldii*. Winter
x *gouldii*. Isolated winter records

THRUSHES AND CHATS

123

& Fleming, 1957, *Feldiana*, Zool., 41(1): 162). Two records from Sikkim, January and May (Biswas, Stevens); none from Bhutan, Arunachal Pradesh or southeastern Tibet. Breeds between 2100 and 3000 m, locally down to 1500 m (Murree) or up to 3200 m (Garhwal). Winters (October to March) between 1200 and 2600 m, occasionally down to the foothills (Kohat); also recorded in winter from the Garo Hills (Godwin-Austen) and Cachar (Baker, sp.?). Affects forest, especially fir and horse-chestnut; more open country and orchards in winter.

GENERAL HABITS. Shy, quiet and unobtrusive. Keeps singly or in pairs in the breeding season, in small flocks thereafter, sometimes congregating in large flocks with *T. r. atrogularis*, *T. bouboul* and *T. albocinctus*.

FOOD. Insects and berries (of holly etc.). Also visits rhododendron blossoms for nectar (GD).

VOICE and CALLS. Song recalls Song Thrush's (*Turdus philomelos*) but is less sustained; rendered as *ye-bre, ye-bre, ye-bre—diddiyit, diddiyt, diddiyt—yip-bru, yip-bru* (Magrath); usually uttered from the top of a tree. 'A really fine songster, perhaps the best in the thrush family in India, not excepting *T. bouboul*' (BBO). Call-note, a blackbird-like chuckle.

BREEDING. Season, April to end of July. Nest, a cup of moss, twigs, roots and dead leaves lined with grass, rootlets or pine needles; a considerable quantity of mud is generally present immediately under the lining; the majority of nests placed between two and three metres above the ground in saplings, or resting against a tree-trunk in a tangle of outgrowing branches; many also built on rock ledges, in banks, or among the roots of a fallen tree, occasionally in holes in rocks or gnarled tree-trunks. Eggs, 2 to 4, more commonly 3, light green covered with reddish brown spots and blotches; similar to eggs of *T. merula* but more boldly blotched. Average size of 50 eggs 30.6 × 21.6 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

First-year males have browner wings, primary-coverts and tail.

Young (juvenile). Head and sides of neck ochraceous brown with faint paler centres. Rest of upperparts, lesser, median and greater coverts chestnut-brown with dark tips, faint paler centres on mantle and ochraceous streaks on coverts. Chin and throat cream edged with brown at the sides. Underparts brown with ochraceous centres and blackish tips (more marked in male than in female). Belly albescent. Postjuvénal moult of body-feathers, lesser, median and (?) greater coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	135-144	(1) 30	33	110 mm
♀♀	132-135	—	—	— mm (BB, MD)

Weight 2 ♂♂ (October) 84.6, 99.7 g (RAP).

COLOURS OF BARE PARTS. Iris brown; eye-rim yellow. Bill yellow. Legs and feet dusky yellow.

124

TURDINAE

1759. Eastern Greyheaded Thrush. *Turdus rubrocanus gouldii* (Verreaux)

Merula Gouldii Verreaux, 1871, Nouv. Arch. Mus. Hist. Nat. Paris 6: 34

(Setchuan occidental = Paohing)

Baker, FBI No. 573, Vol. 2: 133

Plate 92, fig. 17

LOCAL NAME. *Chiama gunka* (Tibetan).

SIZE. Myna +; length c. 27 cm (11 in.).

FIELD CHARACTERS. As in 1758, q.v.

STATUS, DISTRIBUTION and HABITAT. Occasional or possibly regular winter visitor: common in the Burmese Naga hills. Has straggled to North Lakhimpur (once) and Nepal (once). Recorded in the Khasi and Cachar hills (Baker, sp.?).

Extralimital. Breeds in the mountains of western China and eastern Tibet. A winter visitor to southeastern Tibet and northern Burma.

GENERAL HABITS. As in 1758.

FOOD. Stomachs examined contained ants, beetles, grasshoppers, larvae and pupae, pond-snails, berries and seeds (Stanford).

VOICE and CALLS. As in 1758.

MUSEUM DIAGNOSIS. Differs from *rubrocanus* (1758) in being darker. Whole head dark smoke-grey; chestnut of back not so deep, more rusty; centre of belly less whitish.

MEASUREMENTS

	Wing	Tail
♂♀	137-148	104-106 mm (Baker)

COLOURS OF BARE PARTS. As in 1758.

1760. Kessler's Thrush. *Turdus kessleri* Przevalski

Turdus Kessleri Przevalski, 1876, Mongol. i Strana Tangut 2: 62, pl. x (Kansu)

Baker, FBI No. 575, Vol. 2: 134

Plate 92, fig. 15

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 27 cm (11 in.).

FIELD CHARACTERS. Male. A large, striking black-and-tan thrush with yellow bill. Above, head, nape and upper back black; scapulars rufous brown; centre of back whitish buff changing to rufous-brown on rump and upper tail-coverts. Wings and tail black. Below, throat and breast black. Upper belly whitish buff changing to chestnut on lower parts. Under tail-coverts black margined with chestnut.

Female. Above, head, nape, upper back, wings and tail dark brown; scapulars and back grey-brown, rump tinged with tawny. Below, throat, upper breast and sides of head dark brown, the ear-coverts with pale shaft-streaks. Rest of underparts grey-brown tinged with tawny on belly.

STATUS, DISTRIBUTION and HABITAT. A straggler or irregular winter visitor to the eastern Himalayas. One record: a party of four at Changu, 3700 m, Sikkim, 21 December (Meinertzhagen, *Ibis* 1927: 577). A specimen obtained by Mandelli in Tibet close to the Sikkim border, c. 2700 m, in November. Might occur in winter in northern Bhutan or northern Arunachal

THRUSHES AND CHATS

125

Pradesh. In winter affects low scrub, especially juniper, and cultivated fields.

Extralimital. Breeds in eastern Tibet and western China, in low rhododendron and willow scrub above timber-line between 3600 and 4500 m, mostly above 4000 m, in rocky country. In winter down to c. 2100 m.

GENERAL HABITS. Keeps in flocks in winter, often in company with *Turdus ruficollis* and *T. naumanni*. Pairing takes place in May but the birds do not entirely lose their sociable habits even during the breeding season. Flies low over the ground with ten to fifteen wing-strokes alternated with short glides.

FOOD. In winter chiefly juniper berries (Schäfer).

VOICE AND CALLS. Alarm-note, a loud, harsh chuckle similar to that of *T. albocinctus*; call-note, a soft *dug dug*. Song rarely heard, composed of short phrases reminiscent of *T. viscivorus* (Schäfer).

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

Young. Above. Crown and upper back dark brown with pale shaft-streaks; scapulars, back and rump whitish barred with dark brown; wing-coverts tipped with whitish, the lesser and median with pale shaft-streaks. Wings and tail dark brown. Below. Throat and breast whitish buff heavily spotted with dark brown; belly buff barred with dark brown; under tail-coverts dark brown edged with buff.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
1 ♂	155	26	36	125 mm
1 ♀	150	25	35	118 mm
				(MD)
8 ♂♂	153-163	25-27	34-38	c. 130-140 mm
				(Hartert)

COLOURS OF BARE PARTS. Iris brown. Bill (and probably eye-rim) yellow (♂), yellowish brown (♀). Legs and feet brown.

1761. **Fea's Thrush.** *Turdus feai* (Salvadori)

Merula Feai Salvadori, 1887, Ann. Mus. Civ. Genova (2) 5: 514
(Muleyit Mt., Tenasserim)

Turdus subpallidus Hume, 1888, Stray Feathers 11: 132 (Eastern hills, Manipur)
Baker, FBI No. 583, Vol. 2: 143

Plate 92, fig. 14

LOCAL NAME. *Daokat jadi* (Cachari).

SIZE. Myna ±; length c. 23 cm (9 in.).

FIELD CHARACTERS. Male. Above, russet brown. A narrow white supercilium. Lores black, a white spot under the eye. Below, throat, sides of head and upper breast grey more or less suffused with a rusty hue; rest of underparts white, under tail-coverts with broad grey-brown margins.

Female. Above, like male. Below, chin and throat white speckled with brown, and grey of male replaced by fulvous grey.

THRUSHES AND CHATS

127

does not venture into open country, as a rule keeping to forest. Feeds mostly on the ground—also on berry-laden shrubs—in the mornings and evenings, resting in shady trees during the day.

FOOD. Insects and larvae, snails, berries and vegetable matter.

VOICE AND CALLS. Soft pleasant notes, very like Blackthroated Thrush's (1763), uttered while feeding. When approached, the birds fly swiftly up into a nearby tree with a whirr of wings, uttering a thin, pipit-like zip-zip.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

Young (immature). Upperparts, lesser and median coverts much as in adult, but all feathers with ochraceous central streaks, most marked on mantle and scapulars which have darker tips; ear-coverts ochraceous with dark tips. Rest of wings, and tail, much as adult. Underparts white, suffused with fulvous on breast and flanks, all feathers, except on belly and under tail-coverts, with dark brown ends, heaviest on breast. Postjuvénal moult of body, lesser, median and part of greater coverts (Whistler, MSS.).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	120-136	21-23	31-33	84-91 mm
♀♀	116-125			
				(wing Dementiev, rest Hartert)

Weight 9 ♂♂ (winter) 65-80; 8 ♀♀ (winter) 59-75 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible brown, lower yellow at base. Legs and feet yellowish brown to dark fleshy brown.

TURDUS RUFICOLLIS Pallas

Key to the Subspecies

- Throat black..... *T. r. atrogularis* ♂
- Throat whitish streaked with black..... *T. r. atrogularis* ♀
- Throat chestnut..... *T. r. ruficollis* ♂
- Throat whitish with a rusty tinge..... *T. r. ruficollis* ♀

1763. **Blackthroated Thrush.** *Turdus ruficollis atrogularis* Jarocki

Turdus atrogularis Jarocki, 1819, Spis. Ptaków Król. Warszawa: 14 (Poland)
Baker, FBI No. 578, Vol. 2: 137

Plate 93, fig. 13

LOCAL NAMES. *Wanda kōstūr* (Kashmir); *Chachar* (Nepal); *Alach-reycha* (Bengali); *Daokat gashim* (Cachari).

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. Male. Above, grey-brown slightly spotted with dark brown on crown and nape. Lores and a short supercilium black. Ear-coverts grey-brown, sides of neck black. Below, throat and breast black (in winter with whitish fringes). Rest of underparts white.

Female. Above, brown. Below, throat streaked dark brown and whitish. A broad breast-band blackish with whitish fringes. Rest of underparts white, upper belly and sides with a few pale brown streaks.

126

TURDINAE

STATUS, DISTRIBUTION and HABITAT. Winter visitor, 'not rare' in Nagaland and Manipur eastern hills (Hume, Codwin-Austen). Also recorded in Shillong and Cherrapunji (Godwin-Austen) and probably North Cachar (Baker, JBNHS 9: 137). Frequents the hills above c. 1500 m. **Extralimital.** Breeds in China (Hophe, north of Peking); winters in Burma.

MIGRATION. Arrives in winter quarters at the end of October (first date 21 Oct.); remains until early April.

GENERAL HABITS. In winter keeps in flocks, often in company with *T. obscurus*.

FOOD. Insects and berries.

VOICE AND CALLS. Unrecorded.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from gape)	Tarsus	Tail
1 ♂	127	25	33	94 mm
2 ♀♀	119, 121	24, 25	30	89, 91 mm
				(Hume)

COLOURS OF BARE PARTS. Iris brown. Bill blackish brown, yellow-brown at gape and on base of lower mandible. Legs and feet brownish yellow.

1762. **Dark Thrush.** *Turdus obscurus* Gmelin

Turdus obscurus Gmelin, 1789, Syst. Nat. 1: 816 (Siberia = Lake Baikal)
Merula subobscurus Salvadori, 1889, Ann. Mus. Civ. Genova (2) 7: 413 (Karen Hills)
Baker, FBI Nos. 581 and 582, Vol. 2: 141, 142

Plate 93, fig. 11

LOCAL NAME. *Daokat gashim* (Cachari).

SIZE. Myna ±; length c. 23 cm (9 in.).

FIELD CHARACTERS. Male. Above, olive-brown, greyer on nape and sides of head. A broad white supercilium. Lores black. A white spot under the eye. Below, chin white, throat slaty grey. Breast and flanks pale fulvous brown or clay colour. Belly white; under tail-coverts white, edged brown at base.

Female. Like male but throat white streaked with brown. Ear-coverts paler, streaked with white.

STATUS, DISTRIBUTION and HABITAT. Common winter visitor to Meghalaya, Nagaland, Manipur and Mizoram; also most parts of Bangladesh *sic* Rashid. Recorded also in the Arunachal foothills (Stevens) and Sikkim (once, Mandelli). Has straggled to Belgaum (March), Nepal c. 2300 m (18 May), and South Andaman Island (March). Affects open forest.

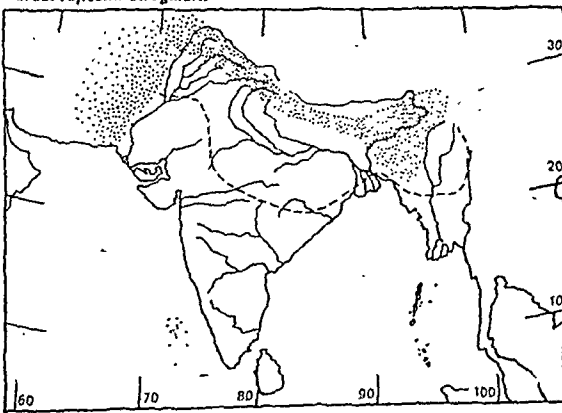
Extralimital. Breeds in Siberia from the Yenisey to Kamchatka and Japan. Winters in Taiwan, southern China and the Indochinese countries.

MIGRATION. Arrives in winter quarters in October (earliest date 15), remains until April (latest date 30).

GENERAL HABITS. In winter keeps in flocks of considerable size, sometimes in company with *T. r. ruficollis* and *T. r. atrogularis*, but unlike them

TURDINAE

Turdus ruficollis atrogularis



■ Main winter range ... Extreme winter extension

STATUS, DISTRIBUTION and HABITAT. Abundant winter visitor.¹ Pakistan from N.W.F.P. through Baluchistan to the Makran Coast, and Sind; the Himalayas and adjacent plains from the Indus Valley and Gilgit eastward through Nepal, Sikkim, Bhutan and Arunachal Pradesh; Nagaland, Manipur, Assam and Bangladesh. In the Himalayas generally found up to c. 3000 m, in Nepal to 3800 m and in Sikkim up to 4200 m. Extension into the plains governed by weather conditions. May occur fairly often south to Jhang, Ludhiana, Bharatpur (Rajasthan — SA) and Gorakhpur. Has been recorded as far south as lat. c. 21°N. (Nasirabad, Sehore, Raipur and Sambalpur); once in Kutch (Jakhau, SA). Affects cultivation, grassy slopes, edges of forest, sparsely scrubbed fallow land, stubble fields and pastures.

Extralimital. Breeds in eastern Russia and eastward through the Siberian taiga to the Yenisey. For details see Vaurie, 1959, 2: 396-7.

MIGRATION. Arrives mostly in October (earliest date 9 September) at high elevations, descending as the weather gets colder to the lower valleys and plains where it is most plentiful between January and March. Apparently arrives in the central Himalayas from either or both the west and east as it reaches Nepal rather late in November or December. Numbers vary greatly from year to year and from month to month, depending on weather conditions and food supply. Northward migration takes place in March-April, a few birds remaining until the end of April or even early May. Southward migration from breeding grounds is apparently very

¹ Alleged breeding in Murree hills and Sikkim has not been substantiated by Whistler's investigations.

THRUSHES AND CHATS

129

leisurely whereas spring migration seems to take place hurriedly (cf. Diesselhorst, 1968).

GENERAL HABITS. A highly gregarious species usually seen in loose flocks of 3 to 30 individuals, or up to 50 before their spring departure. Progresses on the ground in long hops when feeding, flying up into high trees when disturbed. Also picks berries on bushes and trees. Roosts in company in dense-foliaged trees. Consorts freely with other thrushes in large flocks.

FOOD. Insects — grasshoppers, beetles, caterpillars and grubs, white ants, etc.; also earthworms, snails, fruit and berries (*bet* drupes — *Zizyphus*, scarlet berries of a *Magnolia*, and hips and haws recorded), and flower-nectar.

VOICE AND CALLS. Call-note similar to that of the Song Thrush or Redwing (a thin *seet*). Alarm, chuckle like that of a Blackbird but much softer; a throaty *whick-whick-whick* (SA).

BREEDING. Extralimital. However, specimens (♂ ♀) collected in Nepal between 20 March and 17 April had mature gonads (Biswas, JBNHS 58: 677).

MUSEUM DIAGNOSIS. See Field Characters.

First-winter male like adult but black replaced by dark brown with white bases and longer white fringes giving a mottled appearance. There is much variation, some birds having the centre of chin and throat more or less white streaked with brown and being indistinguishable from female. Outer greater coverts with small pale tips to outer web (Whistler, MSS.).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	127-143	22-25	32-35	89-104 mm
♀♀	125-138			

(wing by Dementiev, rest BB, SA)

Weight 8 ♂♂ (Oct.-April) 71.1-94.2; 6 ♀♀ (Oct.-April) 72-96 g (RAP, Paludan). 21 ♂♂ (Nov.-Mar.) 57-94 (av. 77.1) g — SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible dark horny with yellow on gape and sides; lower mandible yellow with dark horny tip. Legs yellowish- or brownish grey with dusky front, or yellowish grey to horny brown; claws dark horny; soles white.

1764. Redthroated Thrush. *Turdus ruficollis ruficollis* Pallas

Turdus ruficollis Pallas, 1776, Reise Russ. Reichs 3: 694 (Dauria)

Baker, FBI No. 577, Vol. 2: 136

Plate 93, fig. 12

LOCAL NAME. *Daokat gejae* (Cachari). See also 1763.

SIZE. Myna ±; length c. 25 cm (10 in.).

FIELD CHARACTERS. Male. As in 1763 but black of throat and supercilium replaced by chestnut, and tail rufous except central rectrices. In winter the chestnut feathers are fringed with whitish.

Female as male but chestnut paler and much mottled with white and more or less heavily spotted with black. Very variable. Some have throat and breast cream with a rusty tinge and no spots on breast; others have

THRUSHES AND CHATS

131

Female. Above, crown, ear-coverts and back grey-brown becoming more rufous-brown on rump. Wing rufous as in male. Throat and sides of neck pale cream speckled with dark brown, especially on the sides. Breast and flanks whitish with scale-like chestnut markings. Centre of belly white.

STATUS, DISTRIBUTION AND HABITAT. Irregular winter visitor, rare in the western Himalayas, more frequent in Assam. Recorded from Kohat (once in April — *Ibis* 1909: 222), Lahore, 12 January (J. R. S. Holmes *vide* T. J. Roberts pers. comm.), central Nepal (large flocks in winter and spring — Proud, JBNHS 48: 703), the Dafia Hills, Dibrugarh, Barail Range and Khasi Hills (SF 11: 130) and North Cachar (JBNHS 9: 136). Recorded between 900 and 3000 m. Affects open fields and grasslands, and thinly wooded country.

Extralimital. Breeds in Siberia from the Yenisey river to Kamchatka. Winters in southeastern Asia from Japan and Hopen south to Taiwan, northern Burma and Yunnan.

MIGRATION. Appears to arrive rather late in autumn (earliest 14 November) or even in mid-winter. Last date 18 April.

GENERAL HABITS. In winter usually keeps in flocks. Feeds mostly on the ground.

FOOD. Insects, snails, berries.

VOICE AND CALLS. Alarm-note a rapid *kereg*. Call-note, a starling-like *spirr*. Also *tack-tack-tack* when going to roost.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Tail
♂♂	124-134	95-98 mm
♀♀	121-133	

(Dementiev)

Bill (from skull) 24-25; tarsus 32-33 mm (MD)

Weight 3 ♂♂ 78-106; 2 ♀♀ 87, 88 g (Dementiev).

COLOURS OF BARE PARTS. Iris brown. Bill blackish brown, yellow at base of lower mandible. Legs and feet brown.

1766. Fieldfare. *Turdus pilaris* Linnaeus

Turdus pilaris Linnaeus, 1758, Syst. Nat., ed. 10, 1: 168 (Europa = Sweden)

Baker, FBI No. 593, Vol. 2: 155

Plate 93, fig. 15

LOCAL NAMES. None recorded.

SIZE. Myna +; length c. 27 cm (11 in.).

FIELD CHARACTERS. Above, head, nape and ear-coverts grey; a few black streaks on crown. Back smoky brown; rump grey. Tail dark brown. Below, throat and breast rusty buff with dark brown streaks. Flanks squamated with dark brown. Centre of belly whitish. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Accidental. One record (undated) from Saharanpur, U.P. (an error in the locality is however not to be excluded). Affects open fields and orchards.

130

TURDINAE

pectoral spots and a rusty tinge throughout; all have a moustachial line of dark brown spots.

The rufous outer rectrices distinguish both sexes from all other members of the genus, including the Blackthroated Thrush.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor to the Himalayas from N.W.F.P. eastward through Nepal (specimens in British Mus.; also Fleming & Traylor, 1964: 547), Sikkim, Bhutan and Arunachal Pradesh; the plains of the Brahmaputra, the Garo and Khasi hills, Bangladesh, Nagaland and Manipur. Common in the east, occasional west of Sikkim. Habitat as in 1763.

Extralimital. Breeds in Siberia in the Lake Baikal region, intergrading with *atroregularis* in the Altai and Sayan Mts. Winters east through south-eastern Tibet, Burma and northern Yunnan.

MIGRATION. As in 1763.

GENERAL HABITS, FOOD AND VOICE. As in Blackthroated Thrush (1763) with which it often consorts, associating freely also with *T. unicolor*, *T. obscurus* and other thrushes in large flocks.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters. Intermediates between this form and *atroregularis* occur, apparently more often in the western Himalayas (cf. Meinertzhagen, *Ibis* 1927: 576).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	128-143	22-23	34-35	94-106 mm
♀♀	127-136			

(wing by Dementiev, rest SA)

Weight 2 ♂♂ (summer) 76.3, 78.5; 1 ♀ (summer) 63 g (Dementiev). 1 ♀ (Mar.) 79 g — SA. 1 ♂? (Dec.) 77 g — BB.

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible black, lower basally dark yellow, distally black. Legs and feet brownish yellow (♂), greyish brown (♀).

1765. Dusky Thrush. *Turdus naumanni eunomus* Temminck

Turdus eunomus Temminck, 1831, Pl. Col. 5, livr. 87, pl. 514 (Japan)

Baker, FBI No. 574, Vol. 2: 133

Plate 93, fig. 9

LOCAL NAME. *Daokat* (Cachari).

SIZE. Myna ±; length c. 23 cm (9½ in.).

FIELD CHARACTERS. A dark thrush with conspicuous white supercilium, rufous wings and squamated breast.

Male. Above, crown, nape and upper back blackish brown with rufous-brown margins; rump more rufous. A long whitish supercilium. A large blackish ear-patch. Wings rufous. Tail blackish. Below, throat and sides of neck cream colour with a few dark malar specks. Breast and flanks blackish brown with broad white margins giving a scaly aspect. Centre of belly white. Under wing-coverts rufous chestnut, rest of underwing pale rufous.

132

TURDINAE

Extralimital. Breeds from Scandinavia and central Europe east to the Lena river. Winters to the Mediterranean countries, Asia Minor, northern Iran and Russian Turkestan.

GENERAL HABITS. A gregarious thrush keeping in large flocks in winter, even nesting in loose colonies. Feeds mostly on the ground, flying into trees when disturbed.

FOOD. Insects, fruit and berries.

VOICE AND CALLS. Usual note, a characteristic, loud *chak-chak-chak*.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Tail
♂♂	137-153	110-115 mm
♀♀	133-148	

(Dementiev)

Bill (from skull) c. 25; tarsus c. 35 mm (MD)

Weight 7 ♂♂ 86-112; 4 ♀♀ 90-109 g (Dementiev).

COLOURS OF BARE PARTS. Iris brown. Bill in winter orange-yellow with tips of both mandibles blackish brown and most of upper mandible clouded with same. Legs and feet brown.

1767. Redwing. *Turdus iliacus* Linnaeus¹

Turdus iliacus Linnaeus, 1766, Syst. Nat., ed. 12: 292 (Sweden)

Baker, FBI No. 594, Vol. 2: 156

Plate 93, fig. 14

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 22 cm (8½ in.).

FIELD CHARACTERS. Above, entirely olive-brown; a conspicuous buff supercilium. Below, creamy white streaked with dark brown on throat, with paler brown on breast and upper belly. Flanks, under wing-coverts and axillaries rich rufous. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Irregular winter visitor? Sight records only in Kohat and near Drosh where a bird has been collected for identification (Jerdon, *Birds of India* 1: 532; Perreau, JBNHS 19: 911; Wall, F., *ibid.* 21: 617). Affects open forest and fields.

Extralimital. Breeds in northern Europe and Siberia from Iceland east to the Kolyma river. Winters in western Europe, the Mediterranean countries and the Middle East.

GENERAL HABITS. Those of the genus. Feeds mostly on the ground, flying into trees when disturbed.

FOOD. Insects and berries.

VOICE AND CALLS. The only note likely to be heard in winter is a thin *tut-tut*.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

¹ *Turdus rufinus* Linnaeus has been placed on the Official Index of Rejected and Invalid Names (ICZN 20: 199-210, 1959).

THRUSHES AND CHATS

133

MEASUREMENTS

	Wing	Tail
♂♂	112-124	
♀♀	108-116	c. 80 mm

(Dementiev)

Bill (from skull) c. 24 mm; tarsus c. 30 mm (MD)

Weight 7 ♂♂ 52-65 (av. 59.4); 5 ♀♀ 58.5-72.9 (av. 63.2) g (Dementiev).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible dark brown, lower mandible dark at tip, fleshy horny at base. Legs and feet fleshy grey-brown.

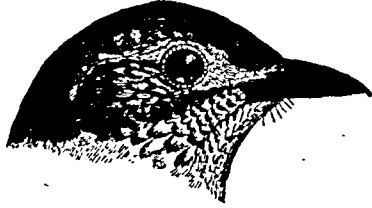
1768. *Missel Thrush*. *Turdus viscivorus bonapartei* Cabanis*T. (urdus) Bonapartei* Cabanis, 1860, Jour. f. Orn. 8: 183 (Himalayas)
Baker, FBI No. 592, Vol. 2: 154

Plate 93, fig. 16

LOCAL NAME. *Techal kástür* (Kashmir).

SIZE. Myna +; length c. 28 cm (12 in.).

FIELD CHARACTERS. -A large grey-brown thrush with holdly spotted underparts. White under wing-coverts conspicuous in flight. Above, grey-brown, flight-feathers more or less edged with white. A pale eye-ring.



x c. 1

Rectrices, especially outer ones, tipped with white. Below, buff boldly marked with roundish dark brown spots. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Pakistan in northern Baluchistan, N.W.F.P., Chitral, Gilgit and eastward along the Himalayas to western Nepal (Fleming & Traylor, 1968). Breeds mostly between 2400 and 3600 m, locally up to 3900 m (Chitral, Lahul) or down to 1800 m (Kashmir, Simla). Winters down to c. 1200 m, occasionally reaching the foothills and adjacent plains (Quetta, Punjab Salt Range, Lahore); also observed at 3300 m at end of November. Affects open forest of fir, deodar, juniper, and pine, sometimes mixed with oak or birch; also dwarf juniper forest above timber-line. In winter also open grassy hillsides, edges of forest and hill cultivation.

EXTRALIMITAL. Extends to Afghanistan and north through Turkestan to the Sayans and the Angara river. The species ranges west to Sweden, the British Isles and Morocco.

WRENS

135

TROGLODYTES TROGLODYTES (Linnaeus)

Key to the Subspecies

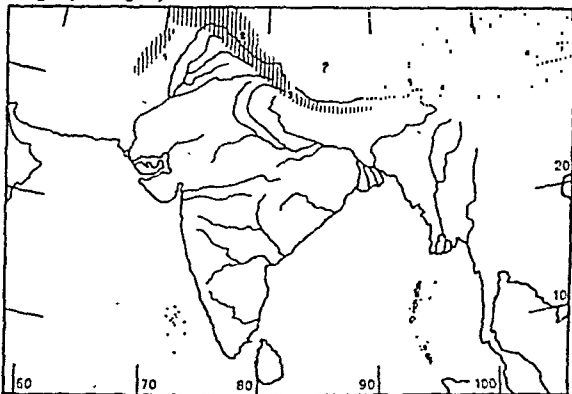
	Page
A Throat ashy grey..... <i>T. t. magrathi</i>	135
B Throat sooty brown	
1 Paler..... <i>T. t. neglectus</i>	136
2 Darker..... <i>T. t. nipalensis</i>	137

1769. *Magrath's Wren*. *Troglodytes troglodytes magrathi* (Whitehead)*Anorthura magrathi* Whitehead, 1907, Bull. Brit. Orn. Cl. 21: 19 (Safed Koh)
Baker, FBI No. 460 (part), Vol. 1: 446

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. As in 1770, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, fairly common but local. The Safed Koh between 2500 and 3700 m (Whitehead, *Ibis* 1909: 117).*Troglodytes troglodytes*

1. Distributional ranges 2. *magrathi* (1769) 3. *neglectus* (1770)
4. *nipalensis* (1771) 5. Extralimital races

Birds from Ziarat, northern Baluchistan (Christison, A. F. P., JBNHS 43: 481) presumably belong to this subspecies. Affects juniper scrub.

GENERAL HABITS, FOOD and VOICE. As in 1770.

BREEDING. Unrecorded; probably as in 1770.

MUSEUM DIAGNOSIS. Differs from *neglectus* (1770) in being almost uniform in colouring above, the barring being scarcely perceptible, and in having the throat

134

TROGLODYTIDAE

GENERAL HABITS. Keeps singly or in pairs during the breeding season, congregating after the middle of August, flocks of twenty or more then being commonly seen. Moves on the ground in long hops in search of food, flying up into trees when disturbed.

FOOD. Insects and larvae, berries. In Europe this species is the principal disseminating agent of the mistletoe berries.

VOICE and CALLS. Has a loud song given in rapid phrases of 5 or 6 notes, generally uttered from the tops of tall trees. Alarm-note, a characteristic rattle, sounding like a splinter of wood drawn over a comb — or harsh *kir-kir-kir* — *kir* reminiscent of Wood Shrike's (*Tephrodornis*). A subdued *krrr* while flying off.

BREEDING. Season, April to July. Nest, a solid cup of coarse twigs well covered with lichen and moss with a certain amount of clay in the foundation, lined with fine grass and rootlets; placed in saplings or junipers usually close to the trunk, sometimes in the lower branches of trees, between two and five metres above the ground. Eggs 3 to 5, normally 4, pale greenish grey marked over the whole surface with small reddish brown blotches, usually more numerous towards the larger end. Average size of 50 eggs 31.3 × 22.4 mm (Baker); 3 eggs 33.5 × 23.3 mm (HW); 3 eggs 34.5 × 21.8 (BBO). Building of nest and incubation by both sexes; incubation period 14 or 15 days.

MUSEUM DIAGNOSIS. See Field Characters.

Young. Above, general colour browner than adult, each feather with a pale ochraceous centre, small on head, narrow on rump and large on rest of upperparts, all with dark brown fringes. Lesser, median and inner greater coverts with large central ochraceous streaks. Below, as adult but spots smaller. Postjuvinal moult of body-feathers, lesser, median and inner greater coverts.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
		(from skull)		
♂♂	162-172	c. 27	36-38	{ (1) 116 mm
♀♀	157-168			{ (1) 112 mm

(HW, CBT, Paludan)

Weight 2 ♂♂ (April, July) 107, 125; 3 ♀♀ (April, June) 100-118 g (Paludan).

COLOURS OF BARE PARTS. Iris dark brown. Bill dark brown or yellowish. Legs and feet olive-brown or light yellowish brown; claws blackish to olive-yellow.

Family TROGLODYTIDAE: Wrens

For description see Baker, E. C. S., 1922, FBI 1: 444; Van Tyne, J. & Berger, A. J., 1959: 521; Armstrong, E. A., 1964, article 'Wren' in Thomson, A. L. (ed.), *A New Dictionary of Birds*, London & New York.

Genus TROGLODYTES Vieillot

Troglodytes Vieillot, 1807, Hist. Nat. Ois. Amér. 2: 52. Type, by subsequent designation, *Troglodytes aedon* Vieillot

Bill slender and weak, about half the length of the head. Wing very short and rounded, first primary (as.) about two-thirds the length of second. Tail shorter than wing, of 12 rectrices, slightly graduated. Tarsus and claws long and slender.

136

TROGLODYTIDAE

ashy grey' (Whitehead). 'A densely banded race, the banding extending upward over the mantle and over the breast, grey-brown above, greyish below with a pale throat, not rufous nor smoky' (Vaurie).

MEASUREMENTS and COLOURS OF BARE PARTS. Unrecorded.

1770. *Kashmir Wren*. *Troglodytes troglodytes neglectus* Brooks*Troglodytes neglectus* Brooks, 1872, Jour. Asiat. Soc. Bengal 41: 328 (Kashmir)
Baker, FBI No. 460, Vol. 1: 446

Plate 75, fig. 1

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. A diminutive, dark rufous-brown bird with short, erect tail. Above, rufous-brown narrowly barred with dark brown on wings, lower back and tail. A pale eye-ring. Below, paler, somewhat whitish on belly and even more closely barred. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. The western Himalayas from N.W.F.P., Balistan and Ladakh east to Garhwal. Breeds between 2700 and 3900 m, locally down to c. 2400 m (Kashmir). Winters (October to March) from c. 1200 (occasionally), up to at least 3000 m. Affects forest of fir, birch or oak, stunted growth on boulder-strewn ground, rocky nullahs and glacier moraines above timber-line. Partial to piled-stone parapet walls around upland cultivation and shepherds' encampments. In drier areas keeps generally to the proximity of streams.

EXTRALIMITAL. The species, in numerous geographical races, ranges west to Iceland and Morocco, and east through China to southeastern Siberia, the Aleutian Islands, Alaska and most of temperate North America.

GENERAL HABITS. Solitary and intensely restless. Hops about lightly in low scrub and amongst boulders, creeping in little jerks and starts in and out of crevices and brushwood in search of food, tail always cocked upwards. When disturbed bobs up and down ('curtseys') nervously like a dipper, with wings partly drooped, turning this way and that before vanishing into concealment.

FOOD. Insects.

VOICE and CALLS. Alarm-notes *tzick-tzick-tzick*, and a harsh scolding *te-tze-tze-tze*. Song, a cheery high-pitched, rapid and vibrant jumble of notes, somewhat reminiscent of that of *Phylloscopus colaptes* (1696) and astonishingly loud for so small a bird; uttered from inside cover or from an exposed situation; given regularly till mid July, resumed about September (probably), and freely uttered all winter often in the bleakest surroundings.

BREEDING. Season, May to July. Nest, a large, globular structure with lateral entrance-hole, of moss, lichen, juniper bark strips, grass or deer leaves, depending on locality, lined with rootlets, fine bast fibers, hair or feathers; placed among the roots of upturned trees, between boulders, in cracks in standing or fallen tree-trunks, in hollows in banks or sometimes in the roof of a derelict stone hut. When placed deep in holes, the dome is usually dispensed with, the nest being merely a loose collection of gran and

WRENS

137

feathers filling the back of the cavity; the height varies from ground level up to nine metres or so, most nests being within two metres of the ground. Eggs, 4 or 5, sometimes 3 or 6, white with pale rusty red specks, occasionally immaculate. Average size of 60 eggs 16.8 × 12.3 mm (Baker); of 35 eggs 17 × 12.5 mm (BBO).

MUSEUM DIAGNOSIS. Heavily and densely banded but much darker than *magrathii* (1769), smoky brown, including the throat; paler than *nipalensis* (1771). Young like adult but darker on throat; barring of underparts coarser.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	47-51	c. 11	19-20	26-30 mm (Baker)

Weight 1 ♂ (March) 8 g (Paludan).

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible dark brown, lower light brown. Legs and feet dark brownish flesh.

1771. Nepal Wren. *Troglodytes troglodytes nipalensis* Blyth

Troglodytes nipalensis 'Hodgson' = Blyth, 1845, Jour. Asiat. Soc. Bengal 14: 589 (Nepal)

Anorthura tibetana Walton, 1905, Bull. Brit. Orn. Cl. 15: 93 (Khamba Jong, Tibet)

Troglodytes troglodytes himalayensis Biswas, 1955, Bull. Brit. Orn. Cl. 75: 87 (Thammu, Bhote Kosi Valley, Khumbu, Nepal)

Baker, FBI No. 458, Vol. 1: 445

Plate 75, fig. 2

LOCAL NAME. *Mardek-pho* (Lepcha).

SIZE. Sparrow —; length c. 9 cm (3½ in.).



x c. 1

FIELD CHARACTERS. As in 1770, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The Himalayas from Tehri Garhwal eastward through Arunachal Pradesh. Breeds between 3300 and 3900 m (Garhwal), 3000 and 5000 m (Nepal) and up to 5500 m in adjacent parts of southern Tibet; between 2700 and at least 4700 m in Sikkim, Bhutan and Arunachal. Common in winter about 3600 m and observed up to 4700 m; occasionally descends as low as 2200 m. Affects rocks and boulders in fir, birch and rhododendron forest near timber-line, juniper and rhododendron scrub above timber-line, and boulder-strewn slopes, screes and moraines above the dwarf scrub zone. Almost entirely absent in the undergrowth in forest such as its European representative commonly patronizes. Here it is replaced by *Procygna albiventer* (1198), a species with very similar habits. The Nepal Wren affects chiefly rocks and boulders which offer a maze of crevices and holes, among which it loves to creep in and out. Where *Procygna* does not occur, however, the Wren may inhabit undergrowth in subalpine conifer forest. In winter also frequents piled-up stone walls in fields and villages, banks and rocky beds of streams, fallen tree-trunks in pine forest, and occasionally deep forest as well as open stony ridges.

DIPPERS

139

1772. Whitebellied Dipper. *Cinclus cinclus leucogaster* Bonaparte

Cinclus leucogaster 'Eversmann' = Bonaparte, 1850, Conspectus Gen. Av. 1: 232 (West Siberia)

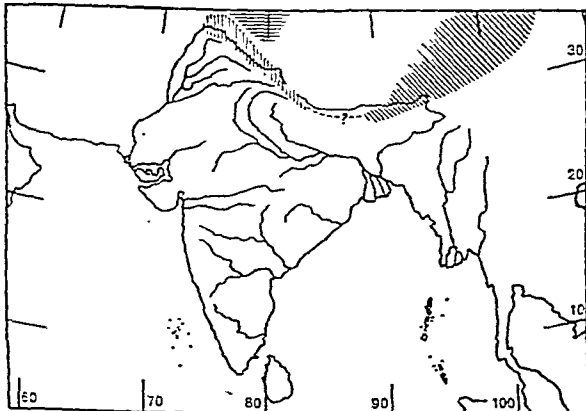
Baker, FBI No. 478, Vol. 2: 3

LOCAL NAMES. None recorded.

SIZE. Myna ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1773 but belly white (c. chocolate-brown).

STATUS, DISTRIBUTION AND HABITAT. Straggler to Darel Valley, Gilgit (one record in July, specimen in British Mus.; cf. SF 10: 262).

Cinclus cinclus

Distributional ranges

- leucogaster* (1772)
 cashmeriensis (1773)
 prezvalskii (1774)

Extralimital. Ranges from northern Afghanistan and the northern slopes of the Karakoram Range (Ludlow, *Ibis* 1933: 454) northeastwards through Turkestan and southeastern Siberia to the Sea of Okhotsk.

GENERAL HABITS, FOOD AND VOICE. As in 1773.

MUSEUM DIAGNOSIS. Easily distinguished by white belly.

MEASUREMENTS

Wing ♂♂ 80-95; ♀♀ 79-94 mm (Dementiev)

Weight 2 ♀♀ (July, Sept.) 41, 50 g (Paludan).

COLOURS OF BARE PARTS. As in 1773.

138

CINCLIDAE

Extralimital. Adjacent parts of southern Tibet. For range of the species see 1770.

GENERAL HABITS AND FOOD. As in 1770.

VOICE AND CALLS. Song as in 1770; said to be similar to, but easily recognizable from that of the European subspecies (Wollaston).

BREEDING. As in 1770. Average size of 17 eggs 17.4 × 12.7 mm (Baker)

MUSEUM DIAGNOSIS. Banding similar to that of *neglectus* (1770) but general coloration darker, sooty brown; the darkest race of the species.

Young much darker than adult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	50-59	13-15	19-20	30-33 mm
♀♀	47-53	13-14	19-20	27-31 mm

(NBK, SA, Fleming & Traylor)

Wing of 29 oo? 45-53 mm (NBK)

Weight 4 ♂♂ (summer) 9.5-10 g; 1 ♀ (August) 8.1 g; 12 juv. 8.5-10 g (GD); 1 ♂ (Sept.) 11 g — SDR; 3 ♀♀ (Nov.) 8, 8, 8 g — SA.

COLOURS OF BARE PARTS. As in 1770.

Family CINCLIDAE: Dippers

For description see Baker, E. C. S., 1924, FBI 2: 1; Van Tyne, J. & Berger, A. J., 1939: 520; Hurrell, H. G., 1964, article 'Dipper' in Thomson, A. L. (ed.), *A New Dictionary of Birds*, London & New York.

Genus CINCLUS Borkhausen

Cinclus Borkhausen, 1797, Deutsche Fauna 1: 300. Type, by monotypy, *C. hydrophilus* Borkhausen = *Sturnus Cinclus* Linnaeus

Bill almost as long as head, narrow and straight, tip slightly curved and notched. Lower mandible slightly upturned. Nostrils covered by a large membrane. No rictal bristles. Wing short and rounded. Tail very short. Tarsus long, smooth and very strong, with short, strong claws.

Cf. Vaurie, C., 1931, *Amer. Mus. Novit.*, No. 1485: 11-15.

Key to the Species

	Page
Breast white..... <i>C. cinclus</i>	138
Breast brown..... <i>C. pallasi</i>	142

CINCLUS CINCLUS (Linnaeus)

Key to the Subspecies

	Page
A Belly white..... <i>C. c. leucogaster</i>	139
B Belly brown	
1 Upper belly paler..... <i>C. c. cashmeriensis</i>	140
2 Whole belly darker without pale shading where joining white of breast..... <i>C. c. przewalskii</i>	141

140

CINCLIDAE

1773. Whitebreasted Dipper. *Cinclus cinclus cashmeriensis* Gould

Cinclus cashmeriensis Gould, 1860, Proc. Zool. Soc. London: 494 (Kashmir)

Baker, FBI No. 477 (part), Vol. 2: 2

Plate 67, fig. 13

LOCAL NAMES. *Dungal*, *Galkar* (Kashmir).

SIZE. Myna ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. A dumpy, stub-tailed, thrush-like bird of swift Himalayan streams. Above, head and upper back chocolate-brown. Rest of upperparts slaty with scaly brown markings on back and rump. Below, throat and breast white. Belly chocolate-brown with faint white tips to the feathers. Sexes alike.

Colour scheme provides perfect camouflage against background of rocks and rushing water, both at rest and in flight.

STATUS, DISTRIBUTION AND HABITAT. Common resident north of the main range, scarce on the southern aspect. The Himalayas from the Kagan Valley, Gilgit, Ladakh and Himachal Pradesh eastward to Sikkim. Recorded only from Langtang Khola, c. 3500 m in Nepal (Polunin, JBNHS 52: 895) where *Cinclus pallasi* (1775) ascends to nearly 5000 m; it is however common in adjacent Tibet (Mt Everest region, *Ibis* 1922: 506). Breeds between 3000 and 4800 m and up to 5100 m in southern Tibet, and possibly at lower elevations in Kashmir exceptionally: a specimen collected at c. 2000 m near Gund, Sind Valley on 6 April (Meinertzhagen) and eggs said by Baker (*Nidification* 1: 437) to have been obtained by A. E. Ward 'close to Srinagar, 1500 m' on 5 April, but doubtfully authentic (*vide* HW). Some birds drift downwards in winter but rarely below 2400 m. Affects swift-flowing streams and torrents, chiefly in the Tibetan facies; also glacial lakes and tarns even though partially frozen. Prefers smaller streams than *C. pallasi*, which it replaces at higher elevations; however the two species may occasionally be seen on the same watercourses where their altitudinal ranges overlap.

Extralimital. Adjacent parts of southern Tibet. The species ranges in the mountains of the Middle East, Morocco, Europe, the Ural Mts., central Asia (*leucogaster*, 1772) and western China.

GENERAL HABITS. Solitary or in widely separated pairs according to the season. Very territorial. Feeds mostly by plunging from a rock amid a stream into the icy water, swimming against the swift current with the help of its wings and walking on the bottom, remaining submerged for a half-minute or more. On emerging floats like a bobbing cork on the surface, sometimes whirled round like a coracle by the rushing current. Jumps on to a stone, shakes off the water from its plumage and resumes its nervous bowing and curviseing — partly flexing and stretching its legs, jerkily turning its head from side to side and cocking its stub tail. Flight direct and swift, with rapid quivering wing-beats low over water, following bends of streams or coasting between the larger boulders, only making a detour overland to avoid an intruder. On alighting usually dips in water close to a boulder and swims up to it. A bird has been observed feeding in a hole in the snow under which a stream flowed.

Display. '... The male nearby stood with its head pointing straight upwards so as to show the white throat and breast to their full extent. He

DIPPERS

141

stood high on his legs with them rather apart, and the tail was partly spread and pointed downwards. Both wings were stretched out and whirled rapidly. Thus he faced his mate, and as she moved about he moved so as to present the white patch continually towards her. Occasionally he varied the display by turning the axis of his body parallel to the ground, still with the wings whirring' (Whistler, MS.).

FOOD. Chiefly aquatic insects and their larvae.

VOICE AND CALLS. A shrill *dzhit*, *dzhit* uttered in flight. Has a wren-like high-pitched, piercing and lively song in the breeding season, often given also on cold but sunny winter days.

BREEDING. Season, April to July. Nest, a large globular structure usually made of moss, lined with fine grass or dead leaves and looking like a natural accumulation of flotsam debris; placed in banks overhanging water, in crevices of rocks or among a pile of rocks forming an islet amidst rushing water. Eggs, 4 or 5, long pointed ovals, pure white. Average size of 50 eggs 25.9 × 18.5 mm (Baker); of 8 eggs 26.1 × 18.8 mm (BBO).

MUSEUM DIAGNOSIS. See Key to the Subspecies. A rare colour phase occurs in which the throat and breast are entirely brown ('sordidus') [two records from Ladakh; more common in southeastern Tibet].

Young. Above, slaty with dark brown tips to feathers. All flight-feathers and rectrices tipped with white. Below, whitish, the feathers finely tipped with grey. Postjuvinal moult of body-feathers, lesser, median and inner greater coverts.

MEASUREMENTS

	Wing	Tarsus	Tail
♂ ♀	90-100	27-29	48-56 mm (Baker)

Bill from skull 3 ♂♂ 3 ♀♀ 22 mm (MD)

COLOURS OF BARE PARTS. Iris pale brown. Bill dark brown to blackish brown. Legs leaden in front, dark brown behind; toes leaden, soles pale greyish (Abbott). Gape of nestling lemon- to sulphur-yellow (SA).

1774. Eastern Whitebreasted Dipper. *Cinclus cinclus przewalskii* Bianchi

Cinclus przewalskii Bianchi, 1905, Bull. Brit. Orn. Cl. 15: 91

(Den-chu, basin of the Yangtse-kiang)

Cinclus cinclus beicki Meise, 1928, Orn. Monatsb. 36: 138

(Desen-laka, South Tating Range)

Baker, FBI No. 477 (part), Vol. 2: 2

LOCAL NAME. Daodui-di (Cachari).

SIZE. Myna ±; length c. 20 cm (8 in.).

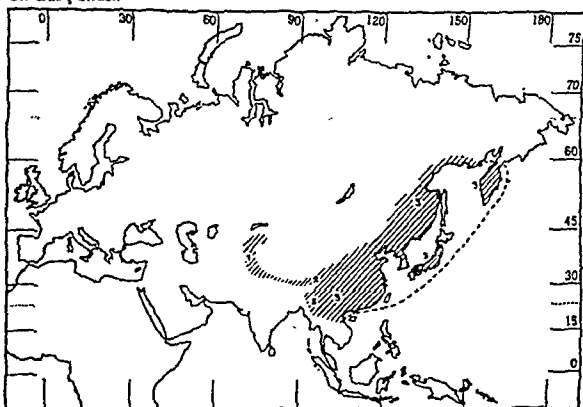
FIELD CHARACTERS. As in 1773, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. N. Bhutan, southeastern Tibet and presumably Arunachal Pradesh (recorded at Lo La and Bimbi La on the border) in Tibetan facies. Breeds above c. 3600 m, up to 4700 m. Winters down to c. 2000 m in Tibet, 2700 m in Bhutan. Habitat as in 1773.

Extralimital. The mountains of western China and eastern Tibet north to Kansu.

DIPPERS

143

Cinclus pallasi

Distributional ranges

▨ *tenuirostris* (1775) • *dorjei* (1776) ■ *pallasi* (RE)

Display. Very similar to that of *C. cinclus* (1773). 'A dipper was standing on a rock, preening its plumage when its mate arrived. The first bird immediately stretched itself high on its legs, with the tail pointing straight downwards, and the head and neck extended to their full length with the beak pointing to the sky; it stood thus for some time with the wings whirring rapidly' (HW, JBNHS 31: 464).

FOOD. Aquatic insects and larvae.

VOICE AND CALLS. A shrill, harsh *dzit-dzit* less shrill than that of *C. cinclus* (Schäfer). 'A full, rich though short song'; somewhat more pleasant than that of the whitebreasted species (Schäfer).

BREEDING. Season, December to early August according to altitude. Nest, a massive globular structure of green moss and dry grass lined with dry leaves and moss roots; placed in clefts of moss- or fern-covered rocks, on a ledge of cliff or among boulders — sometimes in a hole in a fallen log or in a hollow in the masonry of a bridge — usually within a metre from water. Occasionally behind a waterfall or cascade, the birds having to fly through a curtain of water to reach the nest. When built in holes, the structure may or may not be domed. Eggs 4 or 5, white. Average size of 30 eggs 26.7 × 18.9 mm (Baker). Sometimes brood-parasitized by *Cuculus* sp. (JBNHS 64: 561).

MUSEUM DIAGNOSIS. See Key to the Subspecies. One complete annual moult, June to September.

Young. Above, grey-brown with numerous whitish spots. All remiges and wing-coverts margined with white. Thin tip of rectrices white. Below, all feathers whitish tipped with brown giving the bird a very mottled appearance. Postjuvinal moult of body-feathers, lesser, median and greater coverts.

142

CINCLIDAE

GENERAL HABITS, FOOD AND VOICE. As in 1773.

BREEDING. As in 1773.

MUSEUM DIAGNOSIS. See Key to the Subspecies. The dark-breasted colour phase ('sordidus') seems to be common in Tibet (Ludlow, *Ibis* 1937: 262).

MEASUREMENTS

Wing 3 ♂♂ 88-93 mm (NBK)

COLOURS OF BARE PARTS. As in 1773.

CINCLUS PALLASII Temminck

Key to the Subspecies

Paler.....*C. p. tenuirostris*
Darker.....*C. p. dorjei*

1775. West Himalayan Brown Dipper. *Cinclus pallasi tenuirostris* Bonaparte

Cinclus tenuirostris 'Gould' = Bonaparte, 1850, Cons. Gen. Av. 1: 252 (central Asia, restricted to the Himalayas, Simla-Almora area, by Ripley, 1961, Synopsis: 540)

Baker, FBI No. 479, Vol. 2: 4

Plate 67, fig. 14

LOCAL NAMES. Dungal, Galkar (Kashmir); Nambong-karrink (Lepcha).

SIZE. Myna ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. A squat, stub-tailed chocolate-brown thrush-like bird of clear rocky mountain streams, with a conspicuous white eye-ring. Sexes alike. STATUS, DISTRIBUTION AND HABITAT. Common resident. The Himalayas from Saded Koh, Hunza and Ladakh east to Sikkim. Breeds from the foothills (c. 450 m) up to 3000 m (N.W.F.P., Ladakh), 3600 m (Kashmir), 3900 m (Garhwal) and well above



× c. 1

4000 m (up to 4950 m, Diesselhorst) in Nepal where the Whitebreasted Dipper appears to be largely absent. In Sikkim recorded from the foothills to 2700 m; replaced higher up by *C. cinclus*. Withdraws from upper levels in winter (observed up to 2700 m but probably occurs much higher in Nepal). Affects mountain streams, usually larger and less torrential than those frequented by *C. cinclus*; but in Nepal, where the latter is absent, also occurs along small, rushing glacier torrents as well as on tarns. Has been observed chasing the whitebreasted species at 3900 m (Garhwal) and 3700 m (Lahul).

Extralimital. Adjacent parts of northern Afghanistan and north through Tadzhikistan to the Tien Shan.

GENERAL HABITS. Similar to those of *C. cinclus* (1773, q.v.). Keeps solitary on rocks amidst rushing torrents, the stumpy tail held partially cocked, and jerked up from time to time. Frequently dives from a floating position with a slight upward spring, like a dabchick, especially on tranquil pools and tarns, apparently doing so more regularly than the whitebreasted species.

144

PRUNELLIDAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
4 ♂♂	95-100	24-25	30	57-60 mm
5 ♀♀	91-94	24	27-29	50-55 mm

(MD)

Weight 4 ♂♂ (Aug.-Oct.) 69.8-82.6; 2 ♀♀ (July, Dec.) 69, 72 g (GD, RAP).

COLOURS OF BARE PARTS. Iris brown. Bill dark brown or blackish brown. Legs and feet pale leaden in front, black behind; soles whitish to yellowish (Abbott).

1776. East Himalayan Brown Dipper. *Cinclus pallasi dorjei* Kinnear

Cinclus pallasi dorjei Kinnear, 1937, *Ibis*: 263 (Sakden, E. Bhutan)

Cinclus pallasi undina Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 12 (Bara Pani, Khasi Hills)

Baker, FBI No. 480 (part), Vol. 2: 5

LOCAL NAMES. Chutia-nakka (Bhutanese); Di-dao-bui (Cachari).

SIZE. Myna ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1775, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The eastern Himalayas from Chumbi Valley eastward through Bhutan and Arunachal Pradesh; the Cachar and Khasi hills, and Manipur; Chittagong Hill Tracts (Rashid). Breeds between c. 1000 and 4200 m; reaches the foothills in the non-breeding season. Affects rapid rocky mountain streams.

Extralimital. Northern Burma and southeastern Tibet.

GENERAL HABITS, FOOD AND VOICE. As in 1775.

BREEDING. Season, mainly December and January, occasionally till July. Nest and eggs as in 1775. Average size of 30 eggs 26.7 × 18.9 mm (Baker). Frequently brood-parasitized by *Cuculus canorus*.

MUSEUM DIAGNOSIS. Differs from *tenuirostris* in being darker. Young similar to *tenuirostris* but washed with rufous.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	98-111	22-26	30-33	45-54 mm
♀♀	90-101			

(NBK, Koelz, SA, BB)

Weight (March) 1 ♂ 70; 2 ♀♀ 66, 68 g — SA.

COLOURS OF BARE PARTS. As in 1776.

Family PRUNELLIDAE: Accentors or 'Hedge Sparrows'

For description see Baker, E. C. S., 1924, FBI 2: 187; Witherby, H. F., et al., 1938, 2: 205; Van Tyne, J. & Berger, A. J., 1959: 327; Thomson, A. L. (ed.), 1974, *A New Dictionary of Birds*, London & New York (article 'Accentors').

Cl. Marien, D., 1951, *Amer. Mus. Novit.*, No. 1492: 1-28

Ripley, S. D., 1952, *Partilla*, Yale Peabody Mus., No. 13: 15, 35-6

Vaurie, C., 1955, *Amer. Mus. Novit.*, No. 1751: 17-25

ACCENTORS OR 'HEDGE SPARROWS' 145

Genus PRUNELLA Vieillot

Prunella Vieillot, 1816, Analyse nouv. orn.: 43.
Type, by monotypy, *Motacilla modularis* Linnaeus
Laioctopus Gloger, 1841, Handb. in Hilsh.: 267.
Type, by monotypy, *Sturnus collaris* Scopoli

Bill finely pointed and slightly notched, wide at base and compressed towards the middle. Nostrils large, diagonal and covered by a membrane. Rictal bristles few and weak.

Cf. Marien, D., 1951, *Amer. Mus. Novit.*, No. 1482: 1-28

Key to the Species

	Page
A A white spot at tips of rectrices	
1 Breast grey.....	<i>P. collaris</i> 145
2 Breast rufous and white.....	<i>P. himalayana</i> 148
B No white spot at tips of rectrices	
3 No supercilium	
a Breast grey.....	<i>P. immaculata</i> 160
b Breast rufous.....	<i>P. rubeculoides</i> 150
4 A prominent supercilium	
c Throat white with black streaks.....	<i>P. strophhiata</i> 152
d Throat black.....	<i>P. atrogularis</i> 158
e Throat buff	
i Breast spotted with brown.....	<i>P. montanella</i> 160
ii Breast unspotted.....	<i>P. fulvescens</i> 155

PRUNELLA COLLARIS (Scopoli)

Key to the Subspecies

A Paler and greyer.....	<i>P. c. rufilata</i> 145
B Darker and browner.....	<i>P. c. nipalensis</i> 147
C Intermediate between A and B.....	<i>P. c. whymperei</i> 146

1777. Turkestan Alpine Accentor. *Prunella collaris rufilata* (Severtzov)

Accentor rufilatus Severtzov, 1879, Izvestia Obsht. Liub. Est. Anthr. Ethnog. Turkest. Otd. I: 45 (Turkestan)
Baker, FBI No. 621, Vol. 2: 189

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in 1779, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements. N.W.F.P. from Safed Koh to Chitral, Baltistan, Gilgit and Astor, grading into *whymperei* in Ladakh. Breeds between 3600 and 5000 m, descends in winter to c. 1800 m. Affects stony slopes, cliffs and moraines above timber-line.

² As the species is a vertical, not a long-distance migrant throughout its range, it may be safe to assume that the Safed Koh breeding population belongs to this subspecies although there are no specimens.

ACCENTORS OR 'HEDGE SPARROWS' 147

COLOURS OF BARE PARTS. Adult as in 1777. Nestling. Bill bright pink with white edges to gape flanges; mouth bright orange-yellow with two black tongue-spots. Juvenile (fledged young). Iris brown. Bill horny, darker above; gape dark pinkish red; mouth orange, two black elongated spots at base of tongue. Legs and feet brown, joints and claws darker.

1779. Eastern Alpine Accentor. *Prunella collaris nipalensis* (Blyth)

A.(centor) Nipalensis Hodgson = Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 958 (Kāchar region of Nepal)
Baker, FBI No. 620 (part), Vol. 2: 188
Plate 94, fig. 1

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Above, head greyish brown speckled with white around eye. Back streaked with dark brown. Rump and upper tail-coverts rufescent. Wing-coverts blackish brown with white tips forming two wing-bars. Tertiaries tipped with buff or whitish. Tail dark brown, each rectrix with a white or buff, roundish terminal spot. Below, chin and centre of throat white finely barred with brown. Sides of throat, breast and centre of belly grey. Flanks rusty with white tips on lower parts. Under tail-coverts dark brown edged with whitish. Sexes alike.



The plain grey breast easily distinguishes this species from *P. himalayana* (1780).

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Nepal, Darjeeling dist., Sikkim, Bhutan and Arunachal Pradesh. Breeds from c. 3700 m up to over 5500 m; in Nepal mostly above c. 4200 m. Observed at 7900 m on Mt Everest (Charles Evans, pers. comm.). Winters from c. 2400 m, seldom 2000 m, up to at least 4800 m. Affects rock-strewn meadows, cliffs, screes and moraines, particularly sunny slopes and open, snow-free patches on ridges; in winter also frequents upland villages.

Extralimital. Extends to northern Yunnan and central Szechuan.

GENERAL HABITS. Keeps in pairs in the breeding season; small loose parties of 4 or 5 birds (adults as well as young) from about the end of July. Flocking much in evidence in the beginning of September when flights of more than 20 birds may be seen. A very confiding bird, hopping about quietly on the ground or on large boulders in search of food.

Display. 'In a small foraging flock, an individual suddenly approached another with tail erect, then turned its back and quivered its wings. In another case only the tail was quivered. The subject of this attention did not react in any apparent way.' The scenes took place in the end of July and early August (Diesselhorst).

FOOD. Insects and small seeds; grit often found in stomachs.

146 PRUNELLIDAE

Extralimital. Adjacent parts of Afghanistan, Chinese and Russian Turkestan north to Ala Tau.

GENERAL HABITS, FOOD and VOICE. As in 1779.

BREEDING. As in 1779.

MUSEUM DIAGNOSIS. Similar to *whymperei* (1779) but grey-brown of plumage paler and greyer. Chestnut on flanks paler.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	95-105	c. 17	c. 24	68-71 mm
♀♀	89-102			
(Dementiev, Paludan, Marien)				
Weight 2 ♂♂ (June) 29, 32; 2 ♀♀ (June) 28, 29 g (Paludan). 1 ♂ (Nov.) 31 g (RAP).				

COLOURS OF BARE PARTS. Iris brown to reddish brown. Bill black, base of lower mandible yellow. Legs and feet reddish brown; soles yellow or yellowish.

1778. Garhwal Alpine Accentor. *Prunella collaris whymperei* (Baker)

Laioctopus collaris whymperei Baker, 1915, Bull. Brit. Orn. Cl. 35: 61 (Garhwal)
Baker, FBI No. 620 (part), Vol. 2: 188

LOCAL NAME. *Zanda tier* (Kashmir).

SIZE. Sparrow; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in 1779, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. The western Himalayas from Kashmir to Kumaon. Breeds between 3600 and 4500 m, descends to c. 1800 m in winter (November to March). Affects stony slopes, rocks and cliffs above timber-line.

GENERAL HABITS, FOOD and VOICE. As in 1779.

BREEDING. Season, June to August. Nest, a substantial compact cup of moss, grass and rootlets lined with moss and hair; placed under boulders or on rock ledges, or deep down between the stones of a glacier moraine. Eggs, 3, blue, unspotted; size c. 23 × 16 mm.

MUSEUM DIAGNOSIS. Darker than *rufilata* (1777) and less rufous than *nipalensis* (1779).

Young. Upperparts much as in adult but browner and duller, the feathers of the mantle edged browner, not so grey; no rufous on the scapulars; rump and upper tail-coverts greyish brown with paler fringes; chin and throat pale grey tinged with buffish, the tips of the feathers dull dark brown giving a speckled appearance; breast, abdomen, flanks, and lower tail-coverts ochraceous buff, brightest on the flanks, streaked with dark brown; wings and tail as in adult, but primary-coverts and greater and median wing-coverts browner, with the tips buffish, not white.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	93-102	15-16	62-70 mm
♀♀	91-94	15-16	56-63 mm
(Marien)			

148 PRUNELLIDAE

VOICE and CALLS. Call-note, usually uttered when flushed, a rippling, somewhat lark-like *chiriririp*, a low *chit-chittur* when in flocks. Song, similar to that of the central European (nominate) subspecies — a pleasant, varied warble of lark-like quality, uttered from a rock or in flight. Song period is over by the end of July.

BREEDING. Chiefly June and July; occasional fledglings may be seen in August. Single-brooded. Nest and eggs as in 1778. Three eggs measure 23 × 16, 22 × 16 and 21 × 16 mm (Ludlow).

MUSEUM DIAGNOSIS. Like *whymperei* (1778) but darker, more rufous. Complete moult in August-September.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	96-105	15-16	c. 25	{ 63-69 mm
♀♀	93-101			{ 65-67 mm
(Marien, Strea., SA)				

Weight 11 ♂♂ (June-Aug.) 31-38.5; 4 ♀♀ (June-Aug.) 29.3-36; 5 juv. 25.5-30.3 g (GD).

COLOURS OF BARE PARTS. As in 1777.

1780. Altai Accentor. *Prunella himalayana* (Blyth)

Accentor Himalayanus? Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 187 (Himalaya range)
Baker, FBI No. 624, Vol. 2: 191
Plate 94, fig. 5

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Above. Forehead, crown and nape greyish brown with dark streaks; a narrow greyish supercilium extending to nape. Back rufous-brown with dark brown streaks; rump greyish brown. Wings rufous-brown with two narrow white bars; inner remiges tipped with whitish. Tail dark brown with whitish terminal spots. Below, chin and centre of throat white, spotted with brown at sides. Breast, upper belly and flanks striped rufous and whitish; centre of belly whitish. Sexes alike.

The white gorget on chin and throat, rufous and whitish striped breast without any grey, and pale supercilium distinguish this species from the Alpine Accentor (*P. collaris*).

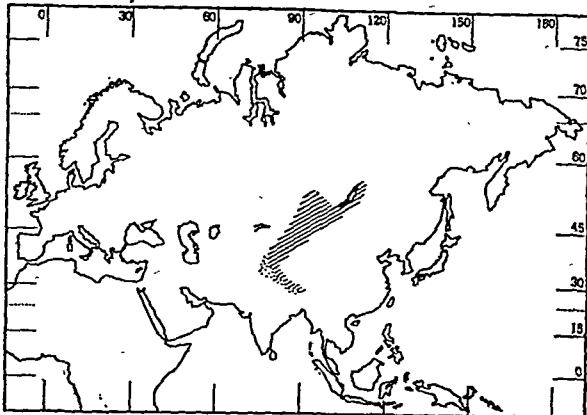
STATUS, DISTRIBUTION and HABITAT. Chiefly known as a winter visitor, fairly common, especially in the western Himalayas. Recorded from the Safed Koh and Gilgit east to Bhutan; also Arunachal Pradesh in the Miri Hills (*vide* Baker). Observed between 2000 and 4000 m, in the western parts of its range occasionally down to 1500 m, rarely 1000 m (Chamba); between 2800 and 4200 m (Nepal) and above 2400 m, rarely down to 2000 m (Sikkim). May be met with at these elevations from end September till end April, mostly between November and March. Breeding range little known. There is but one summer (July) record within our territory — a specimen in the Hume collection labelled 'Kashmir'. From adjacent areas, Baker

ACCENTORS OR 'HEDGE SPARROWS'

149

received nests from Yatung, Chumbi Valley 4200 m (Nidification 2: 165) and Koelz collected 3 specimens in July at Munjan Pass, Hindu Kush (Marien, 1951). Affects bare rocky hillsides, showing a decided preference

Prunella himalayana



■ Breeding

▨ Winter

for the shady side of the hills (Jones, JBNHS 16: 609). In summer appears to prefer stony ground in rather flat areas rather than scree and large boulders (Dementiev).

Extralimital. Ranges north through Turkestan to the Lake Baikal region. Also southeastern Tibet (Chumbi Valley).

GENERAL HABITS. More gregarious than *P. collaris*, being often seen in close-packed flocks of 30 to 100 or more birds, sometimes in company with Alpine accentors (*Prunella collaris*) and Mountain finches (*Leucosticte nemoralis*). Feeds on stony ground and is very inconspicuous while thus engaged. The birds hop about quietly among the stones, dodging in and out of crevices under boulders, often keeping up a low twitter. Flight rapid and finch-like. When disturbed, flocks fly back and forth round the contours of hillsides, rising and falling in disorderly undulations before settling again. When perching in a bare tree-top (in winter quarters) the birds bunch together like starlings at a roost.

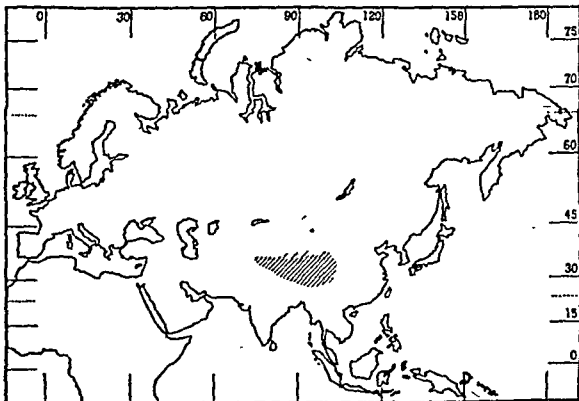
FOOD. Insects and small seeds.

VOICE AND CALLS. 'Towards the end of their sojourn in the winter quarters an incessant warbling is uttered while searching the ground for food or when perched on a leafless tree' (Jones). Voice similar to that of *Serinus pusillus* (Dementiev). Call-note silvery and very finch-like (HW), also uttered on the wing.

ACCENTORS OR 'HEDGE SPARROWS'

151

Prunella rubeculoides



■ Distributional range

Extralimital. Southern Tibet to Szechuan, Kansu and Tsinghai.

GENERAL HABITS. Gregarious in winter. Usually fearless and confiding. Met with in small flocks commonly in villages, hopping stiffly on the ground like a sparrow, picking seeds out of animal dung. In summer keeps in pairs more in cover than the Alpine Accentor, and unlike it does not leave its breeding territory for foraging.

Display. Collective displays described by Schäfer (1938): Four males were observed chasing each other through light scrub with bat-like fluttering flight then alighting on a low shrub, sitting silently close to one another and fluttering their low-hanging wings. The same display also noted accompanied by singing. Another display involving ten males took place on the ground, the birds either dancing around or sitting still with hanging, whirring wings 'in highest ecstasy', this performance entirely silent.

FOOD. Insects and small seeds; grit often found in stomachs.

VOICE AND CALLS. Usual call, a trilled note similar to that of *P. strophilata* but sharper and more metallic; alarm-note, a bunting-like *zieh-zieh* (Schäfer). Another note or song is described as a pleasant but feeble *tilliti* (SA). Song described as 'sweet and short' — a simple, chirping *si-ti-si-ti*, *tsi-tsiti* (Schäfer). Song period, beginning of April to July.

BREEDING. Season, May to August, even early September. Apparently double-brooded. Nest, a bulky and compact cup of dry grass and moss thickly lined with hair, fur or feathers; placed on the ground among clumps of sedges or low down in thorny furze bordering streams, occasionally in a hollow in the bank of a stream. Eggs, 3 or 4, pale turquoise. Average size of 41 eggs 21.1 × 15.3 mm (BBO), of 60 eggs 19.5 × 14.5 mm (Baker).

150

PRUNELLIDAE

BREEDING. Little known; two nests received by Baker from the Chum Valley and one nest found in the Pamirs. Season, May to August. Nest, cup of grass more or less mixed with leaves, roots and fibre, lined with wool placed in a hollow under tussocks. Eggs, 4 or 5, blue, unspotted. Average size of 10 eggs 22.2 × 15.7 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

Young. Above, similar to adult but paler. Tail without terminal white spot. Below, throat slightly mottled greyish brown and buff. Breast ochraceous-buff with dark brown streaks. Rest of underparts cream-buff.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	89-99	14-15	22-26	{ 54-62 mm 51-56 mm
♀♀	88-94			

(Marien, MD, SA)

Weight 4 ♂♂ (Nov.) 25.5-29.8; 2 ♀♀ (Nov.) 24.3, 27.1 g (RAP, SA).

COLOURS OF BARE PARTS. Iris reddish brown or pale claret. Bill blackish brown, gape and base of lower mandible yellowish. Legs and feet yellowish brown to brownish flesh; claws horny brown.

1781. Robin Accentor. *Prunella rubeculoides* (Moore)

Accentor rubeculoides 'Hodgson' = Moore, 1854, Cat. Bds. Mus. E.I. Co. 1: 361 (Nepal)

Prunella rubeculoides muraria R. & A. Meinertzhagen, 1926, Bull. Brit. Orn. Cl. 46: 99 (Astor)

Baker, FBI No. 626, Vol. 2: 193
Plate 94, fig. 3

LOCAL NAME. Phoo-ching-pho (Lepcha).

SIZE. Sparrow; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Above, head brownish grey. Rest of upperparts pale brown with darker streaks on back and two whitish wing-bars. Below, throat brownish grey; breast rufous; belly pale cream, lower flanks streaked with rufous-brown. Sexes alike.

Distinguished from *P. strophilata* (1782-3) by entirely grey head and throat, without supercilium.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. Occurs in Tibetan Plateau facies from Balistan (Richmond, 1895), Astor and Ladakh east to northern Bhutan and probably Arunachal Pradesh. Breeds between 3600 and 5300 m, locally down to 3000 m (Suru); in eastern Nepal between 4500 and 5000 m. Descends in winter to c. 2700 m (Ladakh), 2500 m (Sikkim), exceptionally lower (Rampur, c. 1000 m, Himachal Pradesh) and Singhiik 1200 m (Sikkim). Affects dwarf willows, and furze (*Caragana*) patches in the neighbourhood of streams, tundra-like vegetation and sedge tussocks around lakes, and low scrub in valley bottoms, not ascending far up the flanking slopes. Has a decided liking for wet and swampy areas but in winter also frequents stony and rocky ground in the barest places. In this season also seen in and around upland villages.

152

PRUNELLIDAE

MUSEUM DIAGNOSIS. See Field Characters.

Young. Above, very dark brown streaked with ochraceous buff; a pale supercilium. Wing as in adult but darker. Below, throat mottled whitish and dark brown. Breast and flanks streaked ochraceous and dark brown. Belly cream colour.

Very similar to young of *P. strophilata* but distinguished by unstreaked belly.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	75-86	13-15	23-24	{ 59-69 mm 60-65 mm
♀♀	72-79			

(Marien, HW, Strea.)

Weight 4 ♂♂ (July-Sept.) 23.2-25.7; 3 ♀♀ (July-Sept.) 21.2-24.1; 3 juv. 20.5-22.5 g (GD).

COLOURS OF BARE PARTS. Iris pale brown to reddish brown. Bill black. Legs and feet pale reddish brown; claws black.

PRUNELLA STROPHILATA (Blyth)

Key to the Subspecies

Darker, more heavily streaked..... *P. s. strophilata*
Paler, less heavily streaked..... *P. s. jerdoni*

1782. Western Rufousbreasted Accentor. *Prunella strophilata jerdoni* (Brooks)

Accentor Jerdoni Brooks, 1872, Jour. Asiat. Soc. Bengal 41: 327 (Kashmir)

Prunella strophilatus siroietensis Koelz, 1939, Proc. Biol. Soc. Washington 52: 67 (Sirotai, Afghanistan)

Baker, FBI No. 629, Vol. 2: 197

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. General aspect rufous-brown very dark-streaked above, with rufous breast and mottled whitish throat. Above, brown streaked with blackish on crown and back. Two pale wing-bars. A conspicuous supercilium, whitish in front, rufous and broader behind eye; cheeks dark brown changing to rufous on ear-coverts. Below, throat ashy white streaked with blackish brown; breast rufous; belly whitish with dark brown streaks. Sexes alike.

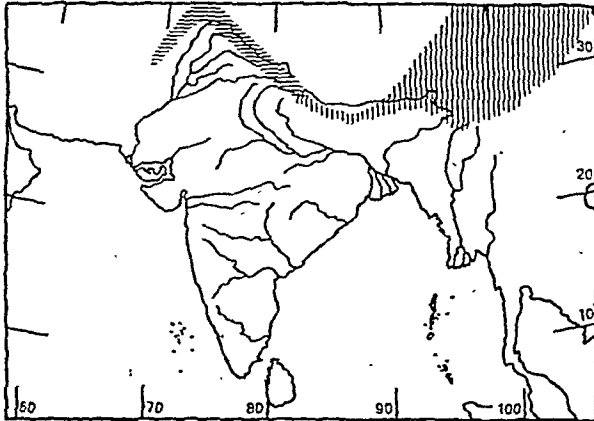
Distinguished from *P. rubeculoides* (1781) by streaked throat and belly and prominent supercilium; from *P. himalayana* (1780) by rufous supercilium, streaked whitish throat, unstreaked rufous breast, and dark brown streaks on belly.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. From Barwatin Valley and Sirotai (Afghanistan) north through N.W.F.P. to Shandur Pass (Gilgit), thence east along the Himalayas including Kashmir and Ladakh to Kumaon, intergrading with *strophilata* in western Nepal. Breeds from c. 2700 m up to the limit of dwarf scrub (c. 3600 m on Safed Koh, and in Ladakh and Lahul; 4000 m in Gushwal). Descends in winter to 1200 m, seldom lower (Kangra 600 m, Nurpur

ACCENTORS OR 'HEDGE SPARROWS'

153

Shapan and Sakesar, Salt Range). Affects fir and birch forest, pine, *kharshu* oak with rhododendron scrub, and juniper, willow and bracken scrub above timber-line. In winter frequents scrub jungle, wooded nullahs and

Prunella strophliata

Distributional ranges

jerdoni (1782)

strophliata (1783)

occasionally gardens, and weed undergrowth on deserted village or graziers' encampment sites. Partial to a moister habitat than the Blackthroated accentor's.

Extralimital. Adjacent parts of eastern Afghanistan.

GENERAL HABITS. Behaviour typically hedge-sparrowlike; keeps to the ground and avoids flying in the open. Lives in pairs in the breeding season, otherwise singly or in small parties of two to eight individuals or larger flocks, hopping about quietly and feeding at the base of bushes. Is a great skulker; when disturbed works its way with great speed through the root-stocks and tangles of branches. When flushed dives abruptly to the base of some bush after a hurried hedge-hopping flight. Has the characteristic nervous flicking of wings of the familiar *P. modularis* of Europe.

FOOD. Insects and small seeds.

VOICE AND CALLS. Song very wren-like (*Troglodytes*) but less loud and interspersed with occasional harsher notes. Alarm-note, a high-pitched chattering *tir-r-r*.

BREEDING. Season, May to August. Nest, a deep cup of weed stems, moss and lichen, lined with fine grass, hair and feathers; placed in dwarf rhododendrons, junipers or other scrubby bushes, or in a lower branch of a conifer, sometimes as high as three metres above the ground. Eggs, generally 4, sometimes 3, rarely 5, turquoise-blue, unspotted. Average size of 40 eggs

ACCENTORS OR 'HEDGE SPARROWS'

155

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	62-73	13-15	21-23	53-67 mm
♀♀	60-67			46-67 mm

(Marien, SA, NBK)

Weight 11 ♂♂ (summer) 16.7-20.2; 7 ♀♀ (summer) 16.2-19.2; 6 juv. 15.6-19.6 g—GD. 11 ♂♂ (winter) 16.5-20 g—SA.

COLOURS OF BARE PARTS. Iris dark orange-brown. Bill brownish black, or horny brown, paler on commissure at base of upper mandible and at chin. Legs and feet dusky orange-brown; claws horny brown.

PRUNELLA FULVESCENS (Severtzov)

Key to the Subspecies

	Page
A Flank-feathers without brown centres	
1 Upperparts more heavily streaked, breast more ochraceous.....	<i>P. f. sushkini</i> 156
2 Upperparts less heavily streaked, breast less ochraceous <i>P. f. fulvescens</i>	155
B Flank-feathers with brown centres.....	<i>P. f. ocularis</i> 157

1784. **Turkistan Brown Accentor.** *Prunella fulvescens fulvescens* (Severtzov)

Accentor fulvescens Severtzov, 1872, Vertik. Turkest. Zhivo'n.: 66, 132 (Turkistan) Baker, FBI No. 630 (part), Vol. 2: 198

Plate 94, fig. 9

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Above, pale brown with darker streaks on back. A conspicuous long white supercilium and dark brown 'cheeks'. Two faint whitish wing-bars. Below, buffish, more ochraceous on breast. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Uncommon resident, subject to vertical movements. Hunza, Astor, Baltistan and Ladakh to Rupshu. In winter to Chitral, Gilgit and Lahul. Breeds between 3300 and 5100 m. Winters down to c. 1500 m (October to March). Affects Tibetan fir (*Ceragena*) on mountain slopes, in the same habitat as *P. rubeculoides* but appears to prefer a drier biotope.

Extralimital. Ranges west to central Afghanistan and north to the Tien Shan. The species extends to the Sayans, Kansu and Szechuan.

GENERAL HABITS. Little recorded. Met with in small flocks up to ten individuals in winter. Feeds on the ground, hopping quietly among bushes and stones.

FOOD. Unrecorded.

VOICE AND CALLS. Little recorded. Song, a short, low warble (Dementiev); period April through June.

BREEDING. Season, May to August. Nest, a cup of grass and fibres lined with wool, hair and vegetable down; placed in low shrubs up to c. 60 cm

154

PRUNELLIDAE

19 × 13.8 mm (Baker), of 19 eggs 18.6 × 13.8 mm (BBO). Incubation and care of young by both sexes.

MUSEUM DIAGNOSIS. See Field Characters. For distinction from *strophliata* see 1783.

Young. Above, like adult but more rufescent. Supercilium whitish. Below, entirely streaked with blackish, the breast ochraceous buff, the throat and belly whitish. Very similar to the young of *P. rubeculoides* but distinguished by streaked belly.

MEASUREMENTS. As in 1783.

Weight 1 ♂ (June) 16 g (Paludan); 1 ♀ (Oct.) 18.7 g (RAP).

COLOURS OF BARE PARTS. As in 1783.

1783. **Eastern Rufousbreasted Accentor.** *Prunella strophliata strophliata* (Blyth)

A. (accentor) strophliatus 'Hodgson' = Blyth, 1843, Jour. Aviat. Soc. Bengal 12: 959 (Nepal)

Baker, FBI No. 628, Vol. 2: 196

Plate 94, fig. 2

LOCAL NAME. Phoo-ching-pho (Lepcha).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1782, q.v. When hopping about, the broad orange-rufous eyebrow is strikingly prominent.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The Himalayas from western Nepal eastward through Sikkim, Bhutan and Arunachal Pradesh. Breeds between 3600 and 4200 m (western Nepal), 3800 and 5000 m (eastern Nepal), 3400-4300 m (Bhutan). Winters between 1300 and at least 3600 m. Affects dense rhododendron jungle near timber-line and especially dwarf juniper and rhododendron above this limit; locally also scrubless, boulder-strewn alpine meadows in same habitat as *P. collaris* (Gosainkund, Nepal — Deshayes). In winter (November to March) frequents open scrubby meadowland, bushes in fallow fields near villages or around abandoned cattle sheds, preferring xerophilous scrub to any other vegetation (Schäfer).

Extralimital. Southeastern Tibet, northern Burma, Yunnan and the mountains of western China north to Tsinghai, Kansu and Shensi.

GENERAL HABITS. As in 1782.

FOOD. Insects and larvae, worms, small seeds and some vegetable matter; grit often recorded.

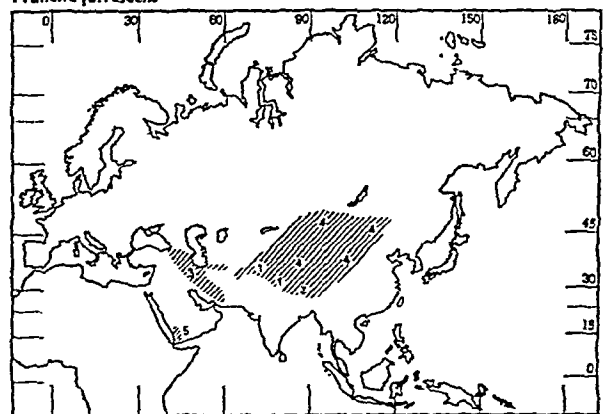
VOICE AND CALLS. As in 1782. Alarm-note rendered as *zwitt-twitt*, *twitt*, *twitt* (Schäfer).

BREEDING. As in 1782. Clutch size 3 or 4. Average size of 80 eggs 19.4 × 14.4 mm (Baker).

MUSEUM DIAGNOSIS. Darker than *jerdoni*, more heavily streaked with darker streaks above and on flanks; more rufous supercilium, and darker orange pectoral band.

156

PRUNELLIDAE

Prunella fulvescens

Distributional ranges

1 fulvescens (1784) 2 sushkini (1785) 3 ocularis (1785a)

4, 5 Extralimital subspecies

above the ground. Eggs, 3 or 4, blue, indistinguishable from those of *P. rubeculoides*. Average size of 7 eggs 19.2 × 13.9 mm (Osmaston).

MUSEUM DIAGNOSIS. See Field Characters. For distinction from *P. f. sushkini* see 1785. Postnuptial moult complete, September and October.

Young. Above, as adult but a little more rufescent. Supercilium mixed with brown. Ear-coverts not so dark. Below, throat whitish with dusky spots; rest of underparts ochraceous buff, breast streaked with dark brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	71-81	13-15	c. 20	61-68 mm
♀♀	72-79			59-66 mm

(Marien, Dementiev, MD)

Weight 1 ♂ (Sept.) 20 g (Paludan).

COLOURS OF BARE PARTS. Iris pale brown. Bill black. Legs and feet pale reddish brown.

1785. **Tibet Brown Accentor.** *Prunella fulvescens sushkini* Collin & Hartert

Prunella fulvescens sushkini Collin & Hartert, 1927, Novit. Zool. 34: 52. New name for *Prunella fulvescens tibetensis* Sushkin, see *Accentor collaris tibetensis* Bianchi

Prunella fulvescens tibetensis Sushkin, 1925, Proc. Boston Soc. Nat. Hist. 38: 53 (Khamba-jong, Tibet)

Baker, FBI No. 630 (part), Vol. 2: 198

LOCAL NAMES. None recorded.

ACCENTORS OR 'HEDGE SPARROWS'

157

SIZE. Sparrow; length c. 15 cm (6 in.).
FIELD CHARACTERS. As in 1784, q.v.
STATUS, DISTRIBUTION and HABITAT. Two winter records: Jomosum, 2800 m, Nepal (Rand & Fleming, 1957: 183) and Sikkim (Mandelli). Probably breeds at very high altitudes in Tibetan facies north of the main range as it does in the Mt Everest region (JBNHS 32: 323). May be expected in winter in Bhutan and Arunachal Pradesh since the species is common in adjacent Tibet (Ibis 1944: 192). Breeds between 3600 and 5000 m; descends in winter to c. 2100 m. Affects Tibetan furze, willows and other low scrub on dry, rocky, boulder-strewn hillsides. In winter also frequents villages.
Extralimital. Southern and southeastern Tibet.
GENERAL HABITS. As a rule very confiding; less secretive than *P. strophliata*, often feeding in the open or perching on rocks or walls. In winter commonly searching food amongst village refuse in the streets, on manure heaps, and on roofs of houses.
FOOD. Insects and seeds.
VOICE and CALLS. Call-note, a bunting-like *ziel, ziel, ziel*; alarm-note, a tinny rattle similar to that of *P. rubeculoides*. Song (heard in January) long-drawn and rattling, 'like a bad, slow Robin Redbreast song' (Schäfer).
BREEDING. As in 1784. One nest was found in a deep gap between ration boxes of a Mt Everest expedition camp. Average size of 60 eggs 19.5 × 14.3 mm (Baker).
MUSEUM DIAGNOSIS. Differs from the nominate race (1784) in having the upperparts more heavily streaked and the breast richer ochraceous.
MEASUREMENTS and COLOURS of BARE PARTS. Unrecorded; probably as in 1784.

1785a. Radde's Accentor. *Prunella fulvescens ocularis* (Radde)

Accentor ocularis Radde, 1884, Ornith. Caucasica: 244, pl. 14 (Kiz Yurdi Mt., Talych) Baker, FBI Vol. 8: 626
Plate 94, fig. 7

LOCAL NAMES. None recorded.
SIZE. Sparrow; length c. 15 cm (6 in.).
FIELD CHARACTERS. As in 1784, but with prominent white malar stripes in addition to supercilium.
STATUS, DISTRIBUTION and HABITAT. Accidental. A record from Chaman, northern Baluchistan (JBNHS 31: 711); specimen in BNHS collection. Habitat as in 1784.
Extralimital. Breeds from extreme eastern Turkey, Georgia and Armenia southeast to southern Iran, and east along the Elburz Mts to the Kopet Dag.
GENERAL HABITS, FOOD and VOICE. Unrecorded.
BREEDING. Extralimital.
MUSEUM DIAGNOSIS. Distinguished from *fulvescens* (1784) by darker crown, concolorous with ear-coverts, heavier streaking on back and a fine malar line of brown spots in some individuals. Flank-feathers with dark brown centres.
MEASUREMENTS
Wing 5 ♂♂ 73-77; 1 ♀ 71 mm (Dementiev)
COLOURS of BARE PARTS. Unrecorded.

ACCENTORS OR 'HEDGE SPARROWS'

159

42: 716) and east along the Himalayan foothills to Dehra Dun; in the hills up to c. 2500 m but mostly below 1800 m. Affects scrub jungle on hillsides, tea gardens, orchards and bushes near cultivation; in the Punjab plains affects sandy semi-desert near cultivation and tussocks of *sarpat* grass.
Extralimital. Breeds in Turkestan north to the Altai. Moves vertically with the seasons and also reaches Iran and Afghanistan.
MIGRATION. Arrives about the middle of October (earliest 29 September), remains until the third week of March (latest 15 April).
GENERAL HABITS. Usually seen singly or in pairs, sometimes in small parties. More a bird of bushes than the very similar *P. fulvescens*, and usually found at lower elevations. Habits similar to those of the well-known *P. modularis* of Europe, but more gregarious. At times associates with *P. strophliata*. Feeds on the ground, shuffling around the base of bushes, nervously flicking its wings. On being disturbed perches freely on bushes and in the lower branches of trees.
FOOD. Insects, ants, small seeds.
VOICE and CALLS. Only note recorded in winter quarters, a soft *trrl*.
BREEDING. Extralimital.
MUSEUM DIAGNOSIS. See Field Characters. For distinction from nominate *atrogularis* see 1787.
MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	70-79	13-15	60-71 mm
♀♀	71-77	12-15	59-68 mm

(Marien, NBK)
arsus c. 21 mm
Weight 5 ♂♂ (Nov.-Dec.) 17.8-20; 2 ♀♀ (Dec.) 17.1, 19.4 g — RAP.
COLOURS of BARE PARTS. Iris brown. Bill black. Legs and feet brownish flesh.

1787. Ural Blackthroated Accentor. *Prunella atrogularis atrogularis* (Brandt)

Accentor atrogularis [sic] Brandt, 1844, Bull. Phys. Acad. Imp. Sci. St. Pétersb. 2, col. 140 (Semipalatinsk) Baker, FBI No. 627 (part), Vol. 2: 194
Plate 94, fig. 6

LOCAL NAMES. None recorded.
SIZE. Sparrow; length c. 15 cm (6 in.).
FIELD CHARACTERS. As in 1786, q.v.
STATUS, DISTRIBUTION and HABITAT. Scarce winter visitor to Pakistan. Recorded from Gilgit and Punjab (Jhang, Jhelum and Bahawalpur dists.). Habitat as in 1786.
Extralimital. Breeds in the northern Urals. Winters within the winter range of *huttoni* but more commonly in the western parts (Afghanistan).
GENERAL HABITS, FOOD and VOICE. As in 1786.
BREEDING. Extralimital.

158

PRUNELLIDAE

PRUNELLA ATROGULARIS (Brandt)

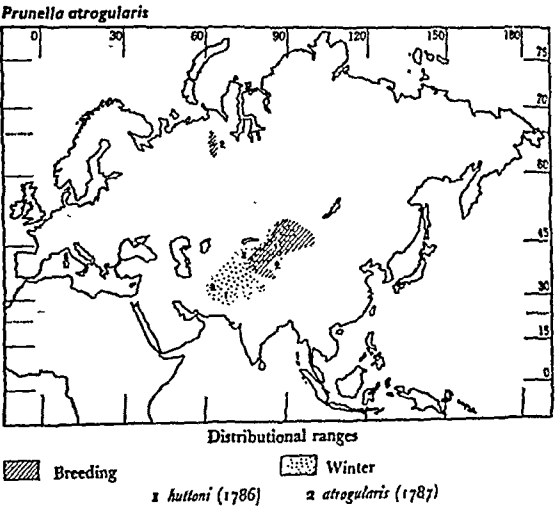
Key to the Subspecies

A faint whitish band between bib and breast....*P. a. atrogularis*
No whitish band between bib and breast.....*P. a. huttoni*

1786. Turkestan Blackthroated Accentor. *Prunella atrogularis huttoni* (Moore)

Accentor huttoni Moore, 1854, in Horsfield & Moore, Cat. Bds. Mus. E.I. Co. 1: 360, new name for *A. atrogularis* Hutton, 1849, Jour. Asiat. Soc. Bengal 18: 811 (Simla), nec *A. atrogularis* Brandt, 1844 Baker, FBI No. 627 (part), Vol. 2: 194

LOCAL NAMES. None recorded.
SIZE. Sparrow; length c. 15 cm (6 in.).
FIELD CHARACTERS. Above, brown streaked with darker brown on back. Ear-coverts dark brown. A buff supercilium bordered above with dark brown. Two pale wing-bars. Below, chin and centre of throat ('bib') blackish brown. Sides of throat, breast and flanks rich buff, the latter with dark brown streaks. Centre of belly cream-buff. Sexes alike.
Very similar to *P. fulvescens* but distinguished by blackish bib.
STATUS, DISTRIBUTION and HABITAT. Winter visitor, fairly common locally. Pakistan from Hunza and Balistan south to northern Baluchistan (Quetta, Fort Sandeman, Ziarat), the Salt Range, Bahawalpur (JBNHS



160

PRUNELLIDAE

MUSEUM DIAGNOSIS. Differs from *huttoni* in being paler and less heavily streaked above, and having a faint whitish band between the black of throat and the buff of breast. Bill and tail average shorter.
MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	71-77	11-14	60-66 mm
♀♀	70-74	11-13	56-62 mm

(Marien)

COLOURS of BARE PARTS. As in 1786.
1787a. Siberian Accentor. *Prunella montanella montanella* (Pallas)
Motacilla montanella Pallas, 1776, Reise versch. Prov. Russ. Reichs 3: 695 (Dauria) Not in Baker, FBI Plate 94, fig. 8

LOCAL NAMES. None recorded.
SIZE. Sparrow; length c. 15 cm (6 in.).
FIELD CHARACTERS. Very similar to Blackthroated Accentor but throat buff and breast spotted with black. Back more chestnut-brown.
STATUS, DISTRIBUTION and HABITAT. Straggler. One record: Dras c. 3000 m, Ladakh, 15 April (Meinertzhagen, Ibis 1927: 595). Affects bushes and forest edges, especially along streams.
Extralimital. The species breeds in Siberia from the Ural and Sayan Mts east to Anadyr. Winters from Kansu to Korea and Japan.
GENERAL HABITS and FOOD. As in 1786.
VOICE and CALLS. Said to be very similar to those of *P. atrogularis*.
BREEDING. Extralimital.
MUSEUM DIAGNOSIS. See Field Characters.
MEASUREMENTS
Wing ♂♂ 70-74; ♀♀ 65-73 mm
Weight 3 ♂♂ 17-17.7; 1 ♀ 17.5 g (Dementiev).
COLOURS of BARE PARTS. Iris light brown. Bill blackish, base of lower mandible yellowish. Legs and feet yellowish brown.

1788. Maroonbacked Accentor. *Prunella immaculata* (Hodgson)

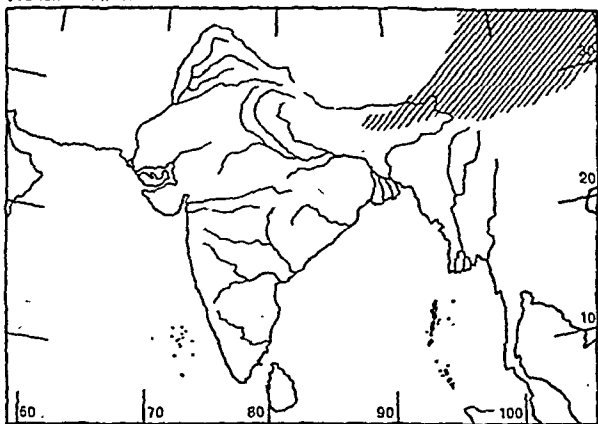
Acc.(entor) immaculatus Hodgson, 1845, Proc. Zool. Soc. London: 34 (central and northern regions of the Hills, Nepal) Baker, FBI No. 625, Vol. 2: 193
Plate 94, fig. 4

LOCAL NAMES. None recorded.
SIZE. Sparrow; length c. 15 cm (6 in.).
FIELD CHARACTERS. A dark, slaty grey accentor with pale yellow eye. Chestnut wings and rufous vent. Above, crown and nape slaty, forehead scalloped with white; back and rump rufescent olive-brown and maroon. A large shoulder-patch and edge of wing slaty grey; tertials chestnut. Tail slaty brown. Below, throat to belly dark grey; lower flanks, vent and under tail-coverts chestnut; thighs slaty. Sexes alike.

ACCENTORS OR 'HEDGE SPARROWS'

161

STATUS, DISTRIBUTION and HABITAT. Scarce resident, subject to vertical movements. Eastern Nepal,¹ Darjeeling, Sikkim, Bhutan and Arunachal Pradesh ('common locally both north and south of the main range in southeastern Tibet' — Ludlow). Breeds between 2900 and 4200 m (south-eastern Tibet). Winters between 2100 and 3700 m (Nepal, Sikkim, Bhutan),

Prunella immaculata

Distributional range

down to 1500 m (Tibet). Affects humid, mossy conifer and rhododendron forest; in winter secondary jungle, edges of clearings with brushwood and fallen tree-trunks, forest margins near harvested terraced fields and boggy nullahs etc.

Extralimital. Extends to northern Yunnan and northern Szechuan.

GENERAL HABITS. Keeps singly or in pairs in summer, in small parties outside the breeding season. The most secretive of all our accentors. Feeds quietly on the ground, close under bushes, seldom venturing into the open. When disturbed dashes out furtively in hurried twisting hedge-hopping flight and disappears in a flash round the next bush. This tactic repeated again and again on being followed. In summer also frequents the tops of conifers 'where it utters an off-repeated monotonous two-syllabled call' (Ludlow).

FOOD. Insects, pupae, seeds.

VOICE and CALLS. Call-note, a metallic *zieh-dzit* (Schäfer). Song unrecorded.

¹ A nest allegedly taken in Ladakh (Baker) was almost certainly misidentified. A supposed sight record from Dunchuk nala, 3900 m, two marches from Astor (Littledale, 1889, JBNHS 4: 115) is certainly erroneous. There are no forests at that altitude in Astor, which eliminates the possibility *ipso facto*.

11

TRUE TITS

163



x c. 1

Female similar but back blackish olive, throat yellowish olive.

In overhead flight, silhouetted against sky, looks very like a bulbul (*Pycnonotus*). Tail comparatively long and partly spread.

STATUS, DISTRIBUTION and HABITAT. Resident, common east of Darjeeling. The Himalayan foothills from central Nepal (JBNHS 60: 177) east through Darjeeling, Sikkim, Bhutan, Arunachal Pradesh and adjacent plains, thence south through Meghalaya, Nagaland, Manipur, Mizoram and the hills of Bangladesh to the Chittagong region. More common below c. 700 m, but locally up to c. 1900 m. Affects foothills forest, deciduous and evergreen, with a preference for the latter, especially along jungle paths, roads, etc. where growth not too dense; also large trees near cultivation.

Extralimital. Ranges east to northern Thailand and south to Tenasserim. The species extends to Sumatra, Vietnam, Hainan and Fukien.

GENERAL HABITS. Essentially tit-like. Keeps in pairs or small parties of up to ten or so — often in the mixed associations. Hunts for insects in bushes and the foliage canopy of lofty trees, clinging to sprigs and trunks in all manner of acrobatic positions, peering under leaves or into crevices of the bark. Actions slower than other tits. Flits lightly from branch to branch, the peculiar hovering flight reminiscent of an iora's parachuting display or of wood shrikes (*Tephrodornis*) in a foraging party. The recumbent crest is erected when the bird is excited.

FOOD. Chiefly insects — grasshoppers, mantises, etc., but also fruit and seeds.

VOICE and CALLS. Song, a musical jingling *tee-r-r* usually repeated three times, or *tirree, tiri*, punctuated by harsh *chur-chur* or *chuchuk* (like a quaker babbler's but louder). Call-note, a rather nasal, short *chick* (like a small woodpecker's) given while foraging in parties, or a shrill *chip-tree-trr*. Alarm-note, a harsh rolling *krikree* like the alarm-note of some laughing thrush, and a shrill chattering note like a Grey Tit's. A plaintive, high-pitched *puay-puay-puay* is sometimes heard.

BREEDING. Season, April to July. Nest (only a couple described) a thick pad of moss heavily lined with vegetable down; placed in a hollow or crack in a tree-trunk. Eggs 6 to 7, broad ovals, chalky white, scattered all over with brownish red spots and underlying ones of pinkish grey. Average size of 5 eggs from a clutch of seven 19 × 15.3 mm; another clutch of 6 eggs averaged 21.7 × 16.5 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

162

PARINAE

BREEDING. Not satisfactorily recorded. Baker describes nests built 'in furze... above the tree-limit in the bleakest and barest of hillsides', a rather unlikely habitat for this pre-eminent forest-haunting species. Season, given as about May to July. Eggs (if correctly identified) 3 or 4, blue; average size of 50 eggs 19.5 × 14.6 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

Young. Above, head olive-grey, no whitish on forehead. Back rufescent olive, each feather tipped with black; rest of upperparts like adult. Below, throat whitish spotted with blackish; breast buff streaked with dark brown; belly and under tail-coverts ochraceous.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	76-87	13-15	22-25	{ 55-59 mm
♀♀	74-81			{ 50-59 mm

(Marien, SDR, Stevens, SA)

Weight 1 ♀ (winter) 19; 2 oo? (winter) 20.5, 22.5 g (SA).

COLOURS OF BARE PARTS. Iris pale yellow in winter but from mid February onwards, the iris in most birds of both sexes assumes an outer ring of bright orange-brown which in some cases fades immediately after death (Stanford). Bill black. Legs and feet pale brownish flesh or flesh-pink to almost white.

Family PARIDAE: Tits or Titmice

Subfamily PARINAE: True Tits

For description see Witherby, H. F., *et al.*, 1938, 1: 244-5; Van Tyne, J. & Berger, A. J., 1959: 512; Snow, D. W., 1964, article 'Tit' in Thomson, A. L. (ed.), *A New Dictionary of Birds*, London & New York.

Genus MELANOCHLORA Lesson

Melanochlora Lesson, 1839, Rev. Zool. 2: 42. Type, by subsequent designation,

Melanochlora sumatrana Lesson

Wing long and pointed. Nostrils slightly exposed. Bill and feet as in *Parus*.

1789. Sultan Tit. *Melanochlora sultanea sultanea* (Hodgson)

Parus sultaneus Hodgson, 1837, Ind. Rev. 2(1): 31 (central and northern regions of the Hills, Nepal)

Baker, FBI No. 87, Vol. 1: 101

Plate 95, fig. 20

LOCAL NAMES. Bon-lyia-pho (Lepcha); Dao-rajah-gatang-liti (Cachari).

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. A showy, yellow-crested, black-and-yellow arboreal bird.

Male. Above, forehead, crown and long crest bright yellow; rest of upperparts black, back with a metallic greenish cast. Below, throat black; rest of underparts bright yellow.

164

PARINAE

Young as adult but glistening black replaced by dull brownish black; yellow of underparts paler. Narrow yellow tips to greater wing-coverts; crest shorter.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	103-113	16-18	22-26	{ 93-98 mm
♀♀	95-108			{ 85-93 mm

(SA, NBK, BB)

Weight 2 ♂♂ 38, 41; 2 ♀♀ 35, 36.3 g (SDR, RAP, SA).

COLOURS OF BARE PARTS. Iris brown. Bill brownish black. Legs and feet bluish plumbeous; claws horny brown.

Genus PARUS Linnaeus

Parus Linnaeus, 1758, Syst. Nat., ed. 10, 1: 189.

Type, by subsequent designation, *Parus major* Linnaeus

Lophophanes Kaup, 1829, Skizz. Nat. Syst.: 92.

Type, by original designation, *Parus cristatus* Linnaeus

Maclotophus Cabanis, 1851, Mus. Hein. 1: 91.

Type, by subsequent designation, *Parus spilonotus* Bonaparte

Cf. Vaurie, C., 1950, *Amer. Mus. Novit.*, No. 1459: 1-66.

Bill short, conical; nostrils concealed by bristles. Rictal bristles short. Tarsus well developed, scutellated. Wing weak and rounded. Tail shorter than wing.

Key to the Species

	Page
I Crown not black	
A Tail brown.....	<i>P. dichrous</i> 184
B Tail blue.....	<i>P. cyanus</i> 176
II Crown black	
C Sides of body yellow	
3 Cheeks white.....	<i>P. monticolus</i> 174
4 Cheeks yellow	
a Back plain olive.....	<i>P. xanthogenys</i> 186
b Back spotted with black.....	<i>P. spilonotus</i> 190
D Sides of body not yellow	
5 No white nuchal patch.....	<i>P. hypermelas</i> 177
6 A white nuchal patch	
c Outer rectrices entirely white	
i Outer web of remiges white at base.....	<i>P. nuchalis</i> 172
ii Outer web of remiges not white at base.....	<i>P. major</i> 165
d Outer rectrices not white	
iii A rufous patch on flanks	
o Tip of wing-coverts white.....	<i>P. melanolephus</i> 178
oo Tip of wing-coverts not white.....	<i>P. rubidiventris</i> 180
iv No rufous patch on flanks.....	<i>P. ater</i> 179

PARUS MAJOR Linnaeus

Key to the Subspecies

	Page
I Upper back greenish.....	<i>P. m. tibetanus</i> 171

TRUE TITS

165

Page

- II No greenish in plumage
- A White wedge on inner web of 2nd outer rectrix reduced, about 9 mm long; plumage darker and smokier than 4. *P. m. ziarati* 171
- B White wedge on inner web of 2nd outer rectrix usually over 10 mm
- a White wedge on inner web of 2nd outer rectrix usually over 30 mm
- 1 Palest, white edging to tertials broader. *P. m. ziaratiensis* 165
- 2 Darker above, smokier below. *P. m. decolorans* 166
- 3 Greater coverts mostly blue; outer web of 2nd outer rectrix almost entirely white. *P. m. caschmirensis* 167
- 4 White wedge on inner web of 2nd outer rectrix between 25 and 35 mm. A black line on outer web of 2nd outer rectrix. *P. m. nipalensis* 168
- 5 White wedge on inner web of 2nd outer rectrix between 20 and 28 mm; outer web black; outermost rectrix nearly all white. *P. m. stuppea* 169
- 6 Darker than 5. Central rectrices and greater coverts mostly black. *P. m. mahabattarum* 170

1790. Baluchistan Grey Tit. *Parus major ziaratiensis* Whistler

Parus major ziaratiensis Whistler, 1929, Bull. Brit. Orn. Cl. 50: 7 (Ziarat, Baluchistan)
Baker, FBI No. 52 (part), Vol. 1: 76

LOCAL NAMES. None recorded.

SIZE. Sparrow \pm ; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1792, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The higher wooded mountains of northern Baluchistan. Affects juniper forest. Descends to the lower valleys in winter when it may be seen in the gardens of Quetta, and perhaps to Sind (JBNHS 66: 25).

Extralimital. Adjacent parts of Afghanistan to Herat and Kandahar.

GENERAL HABITS, FOOD AND VOICE. As in 1792.

BREEDING. As in 1792.

MUSEUM DIAGNOSIS. The palest of Indian Grey Tits. Differs from *caschmirensis* in the paler and bluer grey of upperparts, more conspicuous white edging to tertials, and smaller bill.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	70-78	11-12	60-72 mm
♀♀	66-71	11	

(Koelz, HW, CBT)

Weight 1 ♂ (July) 16; 3 ♀♀ (July) 14-16 g (Paludan).

COLOURS OF BARE PARTS. As in 1792.

TRUE TITS

167

1792. Kashmir Grey Tit. *Parus major caschmirensis* Hartert

Parus major caschmirensis Hartert, 1905, Vög. pal. Fauna 1: 345 (Gilgit)
Baker, FBI No. 53, Vol. 1: 76

LOCAL NAMES. *Ranga tior*, *Dentian* (Kashmir).

SIZE. Sparrow \pm ; length c. 13 cm (5 in.).

FIELD CHARACTERS. Above, crown black; cheeks white; back grey; a whitish patch on nape. Wings dark brown, tertials broadly edged with pale ash; a white wing-bar. Tail blackish with white outer rectrices. Below, throat black continued in a broad black band running down the middle of underparts; flanks ash. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The western Himalayas from Hazara, Chitral and Hunza east through Ladakh, Kashmir, and Himachal Pradesh (Kulu, Kangra, Lahul) to Kumaon. Breeds between c. 1000 and 1800 m, locally 2400 m; in Chitral and Ladakh up to 3600 m wherever there are a few trees in the valleys. Descends to lower elevations in winter (October to March) and spreads into the plains of northern Punjab. Affects lighter forested areas, edges of cultivation, open hillsides with scattered bushes, gardens, groves, orchards and hedgerows.

Extralimital. NE. Afghanistan (Nuristan - Paludan).

GENERAL HABITS. Usually seen in pairs or in small scattered parties, often in company with various tits, nuthatches, tree creepers, leaf warblers, and other small insectivorous birds. A familiar and sprightly bird, exploring energetically the leaves and branches of trees and bushes, clinging in all manner of acrobatic positions, often hanging to sprigs upside down, and intermittently uttering its cheerful call-notes. When greatly excited, as when chivvying an owl or snake, repeatedly bobs forepart of body vehemently and nervously twitches wings like a *Phylloscopus* while hopping around and swearing at the unwelcome presence. Often descends to the ground and hops about in search of food or nesting material, sometimes even entering bungalow verandas in the quest.

FOOD. Insects, caterpillars, seeds, flower buds and berries. If too large to swallow whole, insects held underfoot and devoured piecemeal. Similarly kernels of hard-shelled seeds hacked out by repeated hammer-blows with the strong conical bill.

VOICE AND CALLS. Ordinary call-note *tee tee tee* given while foraging. Song, a variety of loud and clear whistling notes such as *zwick zwick*, a sawing *weeter-weeter-weeter* . . . and a three-syllabled *whet-chet-chet* repeated several times (HW). Alarm, a harsh churring note.

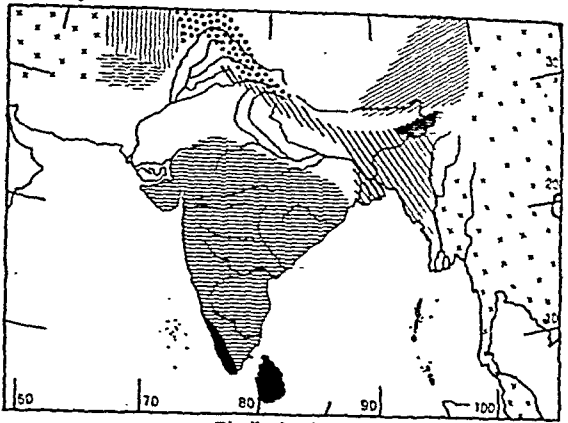
BREEDING. Season, early April to July. Nest, a pad of moss lined with wool and hair; placed in a hole in the wall or roof of a building, tree or stump, a roadside bank (a common site), a rat-hole in a sloping hillside or a deserted kingfisher burrow. Eggs, 4 to 6, occasionally up to 5, white, speckled with reddish brown. Average size of 31 eggs 17.5 \times 13.4 mm (Osmaston), of 100 eggs 17.2 \times 13.4 mm (Baker).

MUSEUM DIAGNOSIS. Paler than *decolorans* but darker than *ziaratiensis* (Vaurie). Grey predominates on central rectrices. Blue fringes of greater coverts broad so that coverts appear blue. White wedge on inner web of second outer rectrix very long.

166

PARINAE

Parus major



Distributional range

- ziaratiensis* (1790) *decolorans* (1791) *caschmirensis* (1792)
nipalensis (1793) *scutellatus* (1795) *tibetanus* (1797)
stuppea (1794) *mahabattarum* (1795) [•••] Extralimital subspecies

1791. Afghanistan Grey Tit. *Parus major decolorans* Koelz

Parus major decolorans Koelz, 1939, Proc. Biol. Soc. Washington 52: 62 (Jalalabad, eastern Afghanistan)
Baker, FBI No. 52 (part), Vol. 1: 76

LOCAL NAMES. None recorded.

SIZE. Sparrow \pm ; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1792, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. N.W.F. Province in the Safed Koh region and adjacent parts of eastern Afghanistan (however see Paynter, JBNHS 59: 952). Affects forest of oak, juniper, and scrub around cultivation, breeding above c. 1500 m.

GENERAL HABITS, FOOD AND VOICE. As in 1792.

BREEDING. As in 1792.

MUSEUM DIAGNOSIS. Differs from *ziaratiensis* in having the back darker and underparts more smoky. Differs from *caschmirensis* by the smoky (i.e. white) underparts and in having more black on the second outer rectrix.

MEASUREMENTS

Wing 6 ♂♂ 71-78; 4 ♀♀ 70-72 mm (Koelz)

COLOURS OF BARE PARTS. As in 1792.

168

PARINAE

20 to 45 mm, almost always over 30 mm. Outer web of second outer rectrix almost entirely white.

Young. Above, crown dark, dull brown; cheeks dull yellowish white; back washed with olive-green. Below, pale yellow; a narrow dark brown band from chin to lower belly. Wings and tail as in adult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	72-78	12-13	17-20	60-71 mm
♀♀	68-73	11-13	18-20	56-62 mm

(HW)

Weight 17 ♂♂ 14.1-17.1 (av. 15.6); 16 ♀♀ 13.2-16.2 (av. 14.3) g — RAP.
COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet plumbeous.

1793. Nepal Grey Tit. *Parus major nipalensis* Hodgson

Parus Nipalensis Hodgson, 1837, Ind. Rev. 2(1): 31 (Nepal)
Parus major nipalensis Hartert, 1905, Novit. Zool. 12: 499 (South Punjab)
Baker, FBI Nos. 51, 54 and 55 (part), Vol. 1: 74, 77

LOCAL NAMES. *Rān-gengd* (Bengali); *Shadler coolie* (Assam).

SIZE. Sparrow \pm ; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1792, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical or local movements. The plains of northern Punjab, Kumaon, Nepal and adjacent plains of Uttar Pradesh and Bihar, Sikkim foothills and the whole of Bengal, Bangladesh and Assam [except for the range of *scutellatus* (1796)] in the plains and lower hills; also Nagaland and Manipur. In the foothills up to c. 1800 m, in Nepal locally to 2700 m. Affects light forest, especially deciduous, forest edges, groves, cultivation and gardens.

Extralimital. Extends east to central Burma. The species ranges from Scandinavia and Morocco east to southeastern Siberia, Japan, China, the Indochinese countries, Borneo and the Sunda Islands.

GENERAL HABITS. As in 1792.

FOOD. As in 1792. Among stomach contents in an intensively cultivated area in Bihar the following insects identified: predominantly weevils (*Mylioxenus discolor*, *Tenymenus* sp. and others); also ants (*Camponotus confusus*, *Oecophylla smaragdina*, *Polyrhachis simplex*), tenebrionid and other caterpillars, pentatomid eggs and hemipteron bugs. Young birds fed chiefly on small caterpillars, young crickets (such as *Brachytrupes achaticus*), mole crickets (*Gryllotalpa africana*), and spiders (Mason & Lefroy, 1912).

VOICE AND CALLS. Song of this subspecies recorded as a loud and clear whistled *chee-chicki, chee-chicki, chee-chicki*, etc. or *weetychi, weetychi, weetychi, weetychi*, repeated 3 or 4 times, followed by a few seconds' pause before resumption. Individual and regional variations in song clearly noticeable (SA). Vocalizations, however, not identical with those of the European (nominate) subspecies, recalling in part those of the latter, in part those of the Coal Tit [*P. ater*] (Dieselhorst).

BREEDING. Season, March to June. Nest and eggs, as in 1792. Average size of 100 eggs 17 \times 13.3 mm (Baker).

TRUE TITS

169

MUSEUM DIAGNOSIS. A wide band of black along shafts of central rectrices; rest of tail grey. Blue fringes of greater coverts broad so that coverts appear blue. White wedge on inner web of second outer rectrix 12-38 mm, usually over 25 mm. Always a black line on outer web of second outer rectrix.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	63-71	11-12	16-17	55-61 mm
♀♀	59-66			53-54 mm (HW, BB)

Weight 8 ♂♂ 12.1-14.5; 4 ♀♀ 12.2-13.7 g (RAP, GD).

COLOURS OF BARE PARTS. As in 1792.

1794. Indian Grey Tit. *Parus major stupae* Koelz

Parus major stupae Koelz, 1939, Proc. Biol. Soc. Washington 52: 61 (Sanchi, Bhopal)
Baker, FBI No. 55 (part), Vol. 1: 77

Plate 95, fig. 18

LOCAL NAMES. *Rāmāchākli* (Gujarati); *Puttani kūrūci* (Tamil).

SIZE. Sparrow ±; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1792, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to local movements. Peninsular India from central Rajasthan (Jodhpur, Sambhar Lake) and Gujarat (including the Kathiawar peninsula) east through Madhya Pradesh to Orissa and south through Maharashtra, Karnataka, Andhra Pradesh and Tamil Nadu. Breeds mostly in the hills, spreading to the plains in winter. Affects light deciduous forest, village groves, orchards, etc.

GENERAL HABITS AND FOOD. As in 1792.

VOICE AND CALLS. Song, a musical whistling *witwit-seesee*, *witwit-seesee*, *witwit* or *titiweesi*, *titiweesi*, *titiweesi*, *weesi*, etc. repeated three or four times followed by a break of a few seconds. Kept up more or less throughout the day in the breeding season (SA).

BREEDING. Season, overall February to August, apparently more prolonged in the south where nests have been found in September and even November. Double-brooded. Nest and eggs, as in 1792. Average size of 54 eggs (including *mahrattarum*) 17.5 × 13.6 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *mahrattarum* (1795) in having shorter wing and tail with the outermost rectrices nearly all white. Upperparts brighter and paler, the white edging of tertials much broader. Underparts whiter; black on throat and belly less extensive.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	60-73	10-12	17-19	47-61 mm
♀♀	61-69	11-12	17-20	48-58 mm (SA, Koelz)

Weight 1 ♂ 11.9 g (BB).

TRUE TITS

171

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
<i>Sri Lanka</i>				
6 ♂♂	68-73	11-12	18-19	59-65 mm
5 ♀♀	66-69		17-19	56-58 mm (HW)
<i>Kerala</i>				
5 ♂♂, 1 ♀	61-67	11	—	52-57 mm (SA)

COLOURS OF BARE PARTS. As in 1794.

1796. Lakhimpur Grey Tit. *Parus major tauriei* Ripley

Parus major tauriei Ripley, 1950, Postilla, Yale Peabody Mus., No. 1: 2
(Chabua, Northeastern Assam)
Baker, FBI No. 51 (part), Vol. 1: 74

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1792, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Eastern Assam in Lakhimpur district and the adjacent foothills of the Mishmi and Patkai hills, from the plains to c. 900 m. Affects wet deciduous and sal forest.

GENERAL HABITS, FOOD AND VOICE. As in 1792.

BREEDING. As in 1793.

MUSEUM DIAGNOSIS. Differs from *nipalensis* (1793) in having reduced white patches on second outer rectrices and a darker, smokier wash on flanks. Differs from *decoloratus* by smaller size.

MEASUREMENTS

1 ♂ (type) Wing 59; bill, from skull, 10.5; tail 53.5 mm
White area on second rectrix (on inner web) 9 mm (SDR)
COLOURS OF BARE PARTS. Unrecorded. Probably as in 1792.

1797. Tibet Grey Tit. *Parus major tibetanus* Hartert

Parus major tibetanus Hartert, 1905, Vög. pal. Fauna 1: 346
(Chaksam in Tsangpo Valley, Tibet)
Baker, FBI No. 56, Vol. 1: 78

LOCAL NAME. *Chi-kiaga* (magpie bird—Tibet).

SIZE. Sparrow ±; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1792 but upper back greenish.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Southeastern Tibet south to the Chumbi Valley from c. 2900 to 3400 m. Affects poplars, willows and thickets of rose and barberry along the banks of rivers; seldom in conifers or dense forest.

Extralimital. Extends to western Szechuan and northern Yunnan.

GENERAL HABITS, FOOD AND VOICE. As in 1792.

BREEDING. As in 1792. Four eggs measure c. 18.8 × 13.5 mm (Baker).

170

PARINAE

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs, feet and claws slaty; soles dirty pale grey.

1795. Ceylon Grey Tit. *Parus major mahrattarum* Hartert

Parus major mahrattarum Hartert, 1905, Novit. Zool. 12: 499 (Ceylon)
Baker, FBI No. 55 (part), Vol. 1: 77

LOCAL NAMES. *Marappottan* (Malayalam); *Sittu-kūrūci* (Tamil).

SIZE. Sparrow ±; length c. 13 cm (5 in.).



× c. 1

FIELD CHARACTERS. As in 1792, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Kerala from the plains to the highest summits; most abundant around c. 1000 m. Sri Lanka in all zones, generally abundant above c. 600 m, less common and more local in the lowlands. Affects scrub and light deciduous forest.

GENERAL HABITS. Keeps in pairs or family parties, either by themselves or in association with other small insectivorous birds. Moves about restlessly among the foliage of trees, hunting for insects. In this quest the birds cling to sprigs and flowering stems in all manner of acrobatic positions, peering under leaves, probing into blossoms and investigating cracks and crannies in the bark. The members keep in touch with one another by lively cheeping and twittering notes.

FOOD. Beetles, moths, caterpillars and other insects, their eggs and larvae; also flower buds, and kernels of various seeds.

VOICE AND CALLS. A chattering and scolding alarm-note. A clear whistling song rendered as *weechichi* and *tisswee* (with other variations). As in 1794 this is repeated 3 or 4 times, then there is a break of 4 or 5 seconds. It continues thus for long periods at a stretch throughout the day, especially in the breeding season (Henry, SA). Call-note, a loud *cheerit*. Alarm-note, a chattering scold. Young solicit food from their parents in a reedy *dee-dee-dee* (Henry).

BREEDING. Season, in Kerala chiefly February to May; nests have also been found in November. In Sri Lanka chiefly in the first half of the year but many birds breed again in September–November. Nest, a pad of moss, fibres, hair, feathers and soft vegetable down; usually placed in holes in trees at moderate heights, sometimes under bungalow eaves. Holes with a small entrance, through which the birds have to squeeze themselves in, are preferred. Eggs, 4 to 6, white or pinkish white, spotted and speckled with reddish brown. Average size of 54 eggs 17.5 × 13.6 mm (Baker). Both sexes partake in the domestic duties. Brooding bird sits very tight, hissing menacingly when fingers inserted into nest-hole.

MUSEUM DIAGNOSIS. Central rectrices black, a line of grey down the outer web. Blue fringes of greater coverts narrow, so that coverts appear black with blue edges. White wedge on inner web of second outer rectrix 16.5 to 34 mm, usually over 25 mm. Sometimes a black line on white outer web of second outer rectrix. Differs from *stupae* (1794) also in being darker; white edging to tertials narrower; bill heavier. Complete postnuptial moult August to November.

172

PARINAE

MUSEUM DIAGNOSIS. Differs from all other subspecies on the Indian list in having the upper back greenish (cf. 1792 Young).

MEASUREMENTS

	Wing	Bill (from skull)
8 ♂♂	75-77	11-12 mm (NBK)
3 ♀♀	71-73	

COLOURS OF BARE PARTS. Not recorded.

1798. Whitewinged Black Tit. *Parus nuchalis* Jerdon

Parus nuchalis Jerdon, 1844, Madras Jour. Lit. Sci. 13: 131
(Eastern Ghats)
Baker, FBI No. 58, Vol. 1: 79
Plate 95, fig. 19

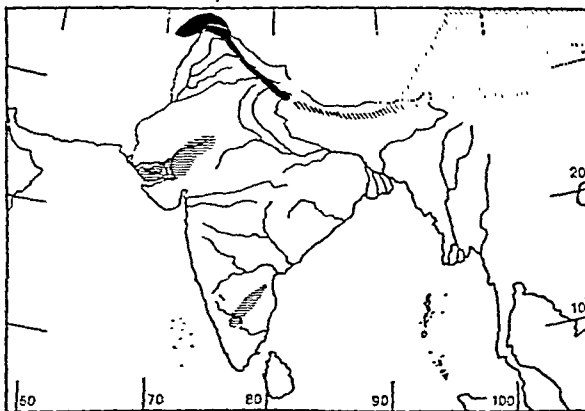
LOCAL NAMES. *Kābāri rāmāchākli* (Gujarati); *Nalla patsa jitta* (Telugu).

SIZE. Sparrow ±; length c. 13 cm (5 in.).

FIELD CHARACTERS. A distinctive piebald black-and-white tit. Above, glossy blue-black with a white patch on nape, white wing-pattern and white outer rectrices. Below, a broad black band from chin to vent. Cheeks, sides of neck and flanks white, often suffused with yellowish. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to local movements. Range very restricted and disjunct, comprising: (1) An area in

Parus nuchalis, *P. melanolephus* and *P. ater*



Distributional ranges

■ *nuchalis* (1798)

■ *melanolephus* (1802)

■ *aterodius* (1803)

TRUE TITS

173

northwestern India covering Kutch (fairly common but patchily distributed), northern Gujarat (Deesa, Palanpur, Mehsana), central and south central Rajasthan (Pali, Jodhpur, Nasirabad, Ajmer, Kishanganj, Jhalawar and Sambhar). (2) An area in southern India where very rare and recorded only once from each of the following localities: Eastern Ghats west of Nellore, Bangalore, and Satyamangala (Biligirirangan Hills). Affects broken, stony, hummocky semi-desert country where well covered with jungle of be'ool, kandi (*Prosopis*) and pilu (*Salvadora*), and bushes of gugar (*Balsamodendron*), gangi (*Grewia*) and similar species. The occurrence of this species and *P. major* is mutually exclusive.

GENERAL HABITS. Much as in Grey Tit. Met with in pairs or family parties of four or five individuals maintaining contact with one another by clear musical notes. The following observation by Sâlim Ali (JBNHS 52: 785) about roosting birds deserves mention: 'Before I first visited Bhuj [Kutch] in August 1943 my cousin Humayun Abdulali gave me the "address" of one of these tits he had been shown about 6 years previously roosting at night in a particular hole in the cross-bar of a particular gate on the circular road round Bhujia Hill. He asked me half jokingly to try and call on his friend should I have the opportunity. On doing so at sunset on August 8 I was astonished to find the tit (same individual or successor?) at home! When peeped at through a chink, the bird swayed its head and neck deliberately from side to side. In the dim light of the hole the white cheeks and streak down the neck heightened the snake-like effect. Three evenings later I visited the roost again at the same time, caught the bird in its hole and marked it with an aluminium ring. This ringed bird was still in occupation of its roost on April 4, 1944 (i.e. 8 months later). I have no knowledge whether that gate still exists, but it would be interesting to know how much longer this bird continued to sleep there and whether the hole has since been inherited by a successor—for the original occupant can no longer be alive.'

FOOD. Insects, caterpillars, pupae.

VOICE AND CALLS. Contact-notes between members of a party, a rapid clear musical whistling *tee whi whi whi* (or *see pit pit pit*) of the volume and quality of the Tailor Bird's calls. Besides these the usual joyous harsh 'wheeching' notes of the Great Tit are uttered (SA). Another call (or song) is described as a fine bold *whew, whew, whew, whew, whew* uttered rapidly with the last note high (R. M. Adam).

BREEDING. Season, May to August; in Kutch breeding was in full swing in July and August (SA). Nest, a rough pad of soft fibres, wool, cotton and hair (in one case containing a tangle of sewing thread with a needle-attached!); placed in holes in trees about one or two metres above the ground. Eggs, undescribed; clutch size and incubation period unknown. On one occasion three young were seen with their parents. Care of young by both parents.

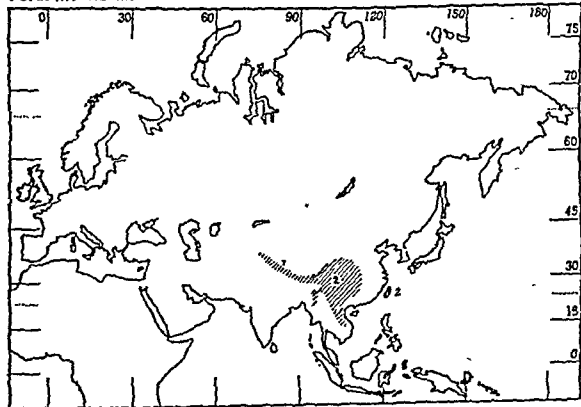
MUSEUM DIAGNOSIS. See Field Characters. Breeding birds have the underparts suffused with yellow. This colour fades to pure white in museum skins. Complete postnuptial moult in September. Young as adult but black duller (brownish), not glossy.

¹ The gate was dismantled c. 1950.

TRUE TITS

175

Parus monticolus



■ Distributional ranges 1 *monticolus* (1799) 2 Extralimital subspecies

mixed company with small babblers, flycatchers, warblers and suchlike insectivorous birds; once noted in company with *P. major* (JBNHS 54: 629). One of the mainstays of the Himalayan hunting parties. Hunts energetically amongst the foliage of trees, clinging to sprigs sideways or upside down. Occasionally also feeds on the ground though less so than the Grey Tit. Aggressive and agonistic behaviour consists of rapidly bobbing or dipping vehemently, turning excitedly from side to side, flicking wings and tail, as two rivals, a few centimetres apart, approach one another in sidelong hops, facing this way and that, with occasional angry chirrups. Actual physical contact seldom results (SA).

FOOD. Insects, flower buds, fruit and berries.

VOICE AND CALLS. A loud and pleasant whistling song *whitew* (or *whetee*), *whitew, whitew*... repeated four to six times with variations such as *whitew-whitew* etc. (SA). Also a rather musical *pling pling pling* followed by a double note *tee-cup* (SDR). Song period, early February to end May (Proud). Call-note, *teacher* or *sit here* and many other notes rendered as *te-te-where*, *ti-ti-tee-ti*, *whit whit whit*, etc. Calls similar to those of the Grey Tit but louder, clearer and shriller (Schäfer).

BREEDING. Season, March to July. Nest, differs in no way from that of *P. major*, nesting sites and materials being similar. Nests have been found in holes at heights up to 7 m, but are usually under 3 m, in tree-trunks, stumps, posts, roadside parapets, rocky banks as well as in walls and under roofs of houses. Eggs, 4 to 8, generally 5 to 7, differing from those of the Grey Tit in being rounder, more obtuse, and more heavily marked. Average size of 40 eggs 16.7 × 13.1 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

174

PARINAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
9 ♂♂	65-71	11-13	17-19	48-55 mm
4 ♀♀	67-68	11-12		49-53 mm (SA)

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet slaty plumbeous.

1799. Greenbacked Tit. *Parus monticolus monticolus* Vigors¹

Parus monticolus Vigors, 1831, Proc. Zool. Soc. London: 22

(Himalayan Mountains = Simla)

Parus monticolus lepeharum R. & A. Meinertzhagen, 1926, Bull. Brit. Orn. Cl. 46: 97

(Gangtok, Sikkim)

Baker, FBI No. 59, Vol. 1: 80

Plate 95, fig. 17

LOCAL NAMES. *Chichin kethi* (Paharia); *Sarak-chak-pho* (Lepcha); *Dassi-weti* (Cachari).

SIZE. Sparrow ±; length c. 13 cm (5 in.).

FIELD CHARACTERS. Above, crown and sides of neck black; nuchal patch and cheeks white. Back yellowish olive; rump grey. Wing bluish with two white wing-bars and white tips to tertials. Tail bluish, tip of outer rectrices and outer web of outermost rectrix white. Below, throat and a broad band down the middle of belly black. Rest yellow. Sexes alike.

Very similar in pattern to the Grey Tit but distinguished by olive back, yellow underparts and double wing-bar.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, locally common. The Himalayas south of the main range from Swat, N.W.F.P. (Paynter, JBNHS 59: 954) eastward through Nepal, Sikkim and Bhutan to Arunachal Pradesh, thence south through Nagaland, Manipur and the Khasi Hills (breeding?). Breeds between 1800 and 2400 m (Murree), 1600-2800 m (Kashmir), 1500-3600 m (from Nepal eastwards), in Sikkim down to 1200 m. Reaches the foothills in winter (October to March) when recorded from Peshawar, the Jhelum portion of the Salt Range (JBNHS 59: 962), the plains of northern Punjab, Dehra Dun, the Jalpaiguri duars and Bhutan foothills; in Nepal not observed below 1200 m but recorded as high as 3900 m in the cold season (BB). Affects many types of forest: light deciduous, oak or deodar, secondary jungle, scrub pastureland, orchards and cultivation. Also dense forest as well as the neighbourhood of populous hill-stations (Murree). On the whole appears to prefer a wetter zone than *P. major*. The two species replace each other altitudinally, *P. monticolus* inhabiting a higher zone, but in the eastern Himalayas occupying an intermediate zone between *P. m. tibetanus* and the lowland subspecies of the Grey Tit (*nipalensis*, 1793).

Extralimital. The species extends to Kansu, Shensi, Hupeh and Vietnam; also Taiwan.

GENERAL HABITS. Keeps in pairs in the breeding season, otherwise in small parties up to 15 or 20 individuals sometimes by themselves, usually in

¹ See also Paynter, R. A., JBNHS 59: 954 for western limit of *yunnanensis*.

176

PARINAE

Young similar to adult but glossy black replaced by sooty black; white of wing and ear-coverts tinged with yellow; mantle duller.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	65-71	11-12	18-19	54-57 mm
♀♀	63-70			53-56 mm (BB, Rand & Fleming, RM)

29 ♂♂ Wing 61-72 mm (Stress, SA)

Weight 24 ♂♂ 12-16.8; 14 ♀♀ 12.3-15.3 g (RAP, GD).

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet plumbeous.

PARUS CYANUS Pallas

Key to the Subspecies

- Breast white.....*P. c. tienschenicus*
Breast yellow.....*P. c. flaviceps*

1800. Yellowbreasted Blue Tit. *Parus cyanus flaviceps* Severtzov

Parus flaviceps Severtzov, 1872, Verh. Turkestan. Zhiivotn.: 133

(Turkestan, probably Ferghana, vide Vaurie, 1957, Amer. Mus. Novit., No. 1833: 15)

Not in Baker, FBI

Plate 95, fig. 15

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 13 cm (5 in.).

FIELD CHARACTERS. Above, pale bluish ashy, darker on back with a dark line through eye and around nape. Wings blue with a white bar and white tips to tertials. Tail blue with white tips and white outer rectrices. Below, throat pale ashy; breast pale yellow; belly white with a blackish median band from breast to vent. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Straggler or possible breeder.¹ Five juveniles obtained on 26 July 1902 at Shost, c. 3000 m, Chitral (Fulton, H. T., JBNHS 16: 47). There were 'numbers' in dense scrub of stunted willow, juniper and birch in the river bed.

Extralimital. Extends from northeastern Afghanistan north to the Kirghiz Range.

GENERAL HABITS. Typical of tits. Hunts in low bushes especially near water.

FOOD. Insects.

VOICE AND CALLS. Unrecorded.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

Young. Above, centre of crown dark grey surrounded by whitish. Line through eye and around nape dark grey-brown. Back olive-grey. Wing and tail as in adult. Below, entirely pale yellow.

MEASUREMENTS

Wing 8 ♂♂ 63-68; 4 ♀♀ 61-64 mm (Dementiev)

COLOURS OF BARE PARTS. Probably as in 1800a.

¹ The species is subject to sporadic extensions of its breeding range and may have bred in the area where collected.

TRUE TITS

177

1800a. **Tien Shan Blue Tit.** *Parus cyanus tianschanicus* (Menzbier)*Cyanistes cyanus* var. *tianschanicus* Menzbier, 1844, Bull. Soc. Zool. France 9: 276 (Tien Shan)

Baker, FBI No. 60, Vol. 1: 81

Plate 95, fig. 16

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 13 cm (5 in.).

FIELD CHARACTERS. Similar to *flavipectus* (1800) but underparts white, no yellow on breast.STATUS, DISTRIBUTION and HABITAT. Vagrant. One record: Misgar (Hunza), 20 October 1930 (Ludlow, *Ibis* 1933: 450). Affects bushes, especially near water.

EXTRALIMITAL. Ranges north to the Altai and east to Manchuria and Amurland.

GENERAL HABITS and FOOD. As in 1800.

VOICE and CALLS. Unrecorded.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

Wing 5 ♂♂ 65-68; 3 ♀♀ 64-66 mm.

Weight 2 ♂♂ 12, 12.2; 1 ♀ 13.7 (Dementiev).

COLOURS OF BARE PARTS. Iris brown. Bill slaty horn. Legs and feet plumbeous.

1801. **Blackbibbed Tit.** *Parus hypermelas* (Berezovski & Bianchi)*Poecile hypermelasma* Berezovski & Bianchi, 1891, Aves Exped. Potanini: 112, pl. 2, fig. 2 (Shensi and the border of Kansu)Baker, FBI No. 62, Vol. 1: 82 [= *P. palustris poecilopsis* (Sharpe)]

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 11 cm (4 in.).

FIELD CHARACTERS. Above, crown and nape black; lores, ear-coverts and sides of neck white. Rest of upperparts olive-grey. Below, throat black, rest whitish tinged with fulvous on flanks. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident on Mt Victoria, Burma, between 2500 and 3000 m (Stresemann & Heinrich, 1940). Also in south-eastern Tibet in the Ygrong Range 3900 m (Kongbo, Ludlow, *Ibis* 1951: 554). May occur in the Mizo or Manipur hills adjacent to the Chin Hills, and in Arunachal Pradesh. Affects pine forest (Mt Victoria) or mixed forest (Tibet).

EXTRALIMITAL. Breeds in the mountains of western China north to Kansu and Shensi.

GENERAL HABITS, FOOD and VOICE. Unrecorded.

BREEDING. Extralimital? Season, about March and April. Nest, placed in holes in trees.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂♂	59-67	(1 ♂) 11	15	52 mm
3 ♀♀	56-61			

(Wing by Stres., rest MD)

COLOURS OF BARE PARTS. Unrecorded.

TRUE TITS

179

size of 100 eggs 17.7 × 11.7 mm (Baker). Both sexes take part in all the domestic chores. Brooding bird very reluctant to leave nest; may utter snake-like hisses from the bottom of its cavity.

MUSEUM DIAGNOSIS. See Field Characters. (For a note on taxonomy see Paynter, R. A., 1962, JBNHS 59: 951-2.)

Young similar to adult but black of head and breast duller and the white faintly washed with yellow. Upperparts dull greyish olive. Slaty of underparts replaced by fulvous white.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	60-68	c. 11	c. 17	{ 41-46 mm
♀♀	58-66			{ 40-46 mm

(RAP, Paludan, MD)

Weight 23 ♂♂ 8.9-8; 12 ♀♀ 7.9-5.5 g (RAP, Paludan).

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet plumbeous.

1803. **Himalayan Coal Tit.** *Parus ater aemodius* Hodgson*P. (arus) aemodius* Hodgson, 1844, in Blyth, Jour. Asiat. Soc. Bengal 13: 943 (Nepal)

Baker, FBI No. 64, Vol. 1: 84

Plate 95, fig. 10

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. A small, black-crested tit with white cheeks. Above, crown, crest and sides of neck black; cheeks and a nuchal patch white. Back dark grey. Two whitish wing-bars (rows of spots). Below, throat black, rest of underparts fulvous buff. Sexes alike.

Distinguished from *P. rubidiventris* (1804) by double wing-bar, lack of rufous patch on flanks, and fulvous (not slaty) belly. The very similar *P. melanophus* (1802) of extreme western Nepal and westward, also with double wing-bar, is distinguished by rufous flanks and slaty belly.STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. The Himalayas from west-central Nepal (Rand & Fleming, 1957) east at least to western Bhutan, and southeastern Tibet (Arunachal Pradesh?). Breeds from c. 2500 m, mostly above 2800 m and up to 3600 m; in eastern Nepal between 3500 and 4200 m (BB, GD). Recorded in winter between 1800 and 3600 m. Affects conifer forest; in Nepal also noted in the *Abies-Betula* facies.

EXTRALIMITAL. Extends to northern Yunnan and Szechuan. The species ranges from Morocco and the British Isles to Kamchatka, Japan and Taiwan.

GENERAL HABITS. Much as in *P. melanophus* (1802). Usually hunts in mixed flocks among the tops of conifers moving from tree to tree in loose follow-my-leader fashion. Observed in company with *P. dichrous*, *P. r. rufonuchalis*, *Certhia familiaris*, *Regulus* and various leaf warblers (*Phylloscopus*). May be seen in parties throughout the summer. A hardy species, often being the only one to enliven the snow-draped coniferous forests in the depth of winter.

178

PARINAE

1802. **Crested Black Tit.** *Parus melanophus* Vigors*Parus melanophus* Vigors, 1831, Proc. Zool. Soc. London: 23

(Himalayan Mountains = Simla-Almora area)

Baker, FBI No. 63, Vol. 1: 83

Plate 95, fig. 12

LOCAL NAMES. *Pintalön*, *Tajdär tar* (Kashmir).

SIZE. Sparrow —; length c. 11 cm (4 in.).

FIELD CHARACTERS. A small, slaty, black-crested tit. Above, crown, crest and sides of neck black; cheeks and nuchal patch white. Rest of upperparts slaty. Two rusty white wing-bars (or rows of spots). Below, throat and breast black; belly slaty, a rufous patch on flanks. Under tail-coverts rufous. Sexes alike.

The erect black crest, and pure white cheek- and nape-patches give it a distinctive appearance.

The double wing-bar distinguishes it from the very similar *P. rubidiventris* (1804) which, moreover, has the black on underparts more extensive. The Coal Tit (1803), which does not occur within the range of the present species, has a fulvous belly and no rufous on flanks.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. N.W.F.P. from Safed Koh to Chitral, Gilgit, Astor, Baltistan, Murree and Kashmir eastward through Himachal Pradesh, Garhwal and Kumaon to extreme western Nepal (Fleming & Traylor, 1961; also an old specimen in British Mus.). Breeds from c. 2000 m to timber-line (3300 m in Kashmir, 3600 m in the eastern parts). In winter (October to March) occurs down to the foothills (c. 600 m) but probably does not entirely forsake the higher elevations. Affects oak, coniferous or mixed forest, but shows a preference for conifers — fir, pine and decid.

EXTRALIMITAL. Adjacent parts of northeastern Afghanistan.

GENERAL HABITS. A sociable little tit found in most mixed foraging parties of other tits, goldcrests, leaf warblers, tree creepers, etc.; in winter may gather in flocks of up to 50 individuals. A sprightly bird, hunting restlessly in the high canopy of trees in typical tit fashion, flitting from bough to bough, examining every twig, peering into crevices or pecking at the scales of a fir cone. Occasionally descends to the ground to pick seeds among pine needles and debris.

FOOD. Chiefly insects; also seeds and berries. Frequently comes into hill-station gardens to pick the seeds from ripe sunflower heads.

VOICE and CALLS. Members of a party continually utter their call-notes to keep in touch; most common are *te-leuy* and a thin *zee-zee*; also a plaintive *tyu-tyu* slowly repeated. Song, some short clear whistles rapidly repeated three or four times after short intervals, variously rendered as *uunt you—*, *need you—*, *deed you—*, *kin-ka-jou—*, etc. (Magrath and others).

BREEDING. Season, chiefly May and June, a few birds starting in early April. Nest, mostly made of moss, the cup warmly lined with fur and hair; usually placed in holes in trees within a couple of metres above the ground, occasionally up to ten metres, sometimes in holes in walls of occupied houses or even in the ground. Eggs, 4 to 10, generally 5 or 6, white, with rusty red blotches and specks often forming a zone around the larger end. Average

180

PARINAE

FOOD. Insects.

VOICE and CALLS. The birds keep up a thin cheeping *tsi, tsi* as they search the foliage (SA). Also a call of two notes, the second lower in pitch. Ordinary call-note said to be very different from that of the nominate European subspecies (GD).

BREEDING. Little known. Season, apparently May and June, possibly later (see Diesselhorst, 1968). Nest (one described, FBI 1: 84), a pad of fur in a hole in a tree. Eggs, described as 'indistinguishable from those of the European Coal Tit [white, speckled with reddish brown]; measuring about 17.9 × 12.9 mm' (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

Young. Above, black of adult replaced by dull, dark brown; no crest. Back more olive. Below, throat greyish with an olive tinge. Rest of underparts paler and more yellowish than in adult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	58-62	9-10	16-18	40-42 mm
♀♀	55-61			

(SA, Rand & Fleming, Stevens)

Weight 6 ♂♂ 7.7-8.9; 7 ♀♀ 7.2-8.4 g (RAP, GD). 1 ♂ (Sept.) 11 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet plumbeous blue; claws horny brown.

PARUS RUBIDIVENTRIS Blyth

Key to the Subspecies

	Page
A Nuchal patch partly tinged with rufous	
1 Abdomen grey..... <i>P. r. rufonuchalis</i> ¹	180
2 Abdomen rufous..... <i>P. r. rubidiventris</i>	182
B Nuchal patch not tinged with rufous	
3 Back slaty; abdomen grey washed with rufous..... <i>P. r. beazani</i>	183
4 Back buffy-olive; abdomen deep olive-grey..... <i>P. r. saramatii</i>	184

1804. **Simla Black Tit.** *Parus rubidiventris rufonuchalis* Blyth*Parus rufonuchalis* Blyth, 1849, Jour. Asiat. Soc. Bengal 18: 810 (range beyond Simla)*Parus rufonuchalis blanchardi* Meinertzhagen, 1938, Bull. Brit. Orn. Cl. 58: 95

(N.W. side of Gardez Forest, Afghanistan)

Baker, FBI No. 66, Vol. 1: 85

Plate 95, fig. 11

LOCAL NAMES. *Pintalön*, *Tajdär tar* (Kashmir).

SIZE. Sparrow ±; length c. 13 cm (5 in.).

FIELD CHARACTERS. Above, crown, crest and sides of neck black; cheeks white; nuchal patch white tinged rufous near back. Rest of upperparts grey. No wing-bars. Below, throat, breast and upper belly black; lower belly grey. Under tail-coverts and a patch on flanks rufous. Sexes alike.

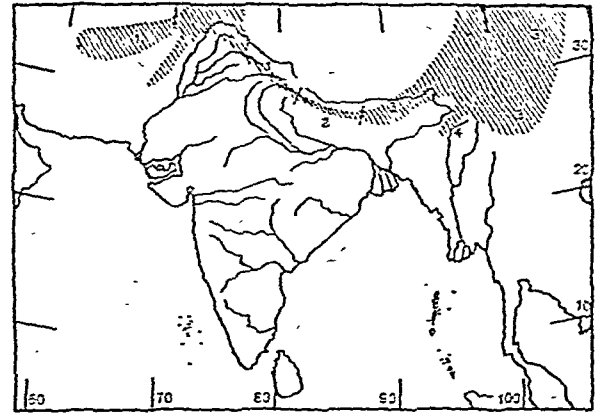
¹ Jochen Martens, 1971 (JFO 112: 451-8) gives reasons for considering *P. rufonuchalis* and *P. rubidiventris* as distinct species rather than subspecies of the latter.

TRUE TITS

181

Distinguished from the very similar *P. melanoleptus* (1802) by absence of wing-bars and more extensive black of underparts.
STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Pakistan from northern Baluchistan (Ziarat, Loralai) north through N.W.F.P. to Chitral, Gilgit, Astor and Baltistan, thence east through Kashmir to Garhwal and Kumaon (JBNHS 60: 176). Has strayed to west-central Nepal in winter (Rand & Fleming, 1957). Breeds between

Parus rubidiventris



■ Distributional ranges 1 *ruficollis* (1804) 2 *rubidiventris* (1805)
3 *leucotis* (1806) 4 *saronotii* (1806a)

2700 and 3600 m, occasionally descending to c. 1500 m in winter, exceptionally to the foothills (Rawalpindi—A. E. Jones in Bates & Lowther, 1952). Affects fir, pine, mixed oak and spruce forest and, in drier country (such as Baluchistan, N.W.F.P. and north of the main range) also juniper forest or scrub. Also visits thickets of dwarf willows and birch along nullahs.
Extremal. Ranges west to western Afghanistan and north through Turkistan to the Tien Shan.
GENERAL HABITS. Much as in *P. melanoleptus* (1802). One of the commonest tits of high elevations, occurring in most mixed hunting parties. Has regular hammering places on branches to which it takes seeds of drupes and berries to hack out the kernels. See also 1805.
FOOD. Insects and seeds.
VOICE and CALLS. Call-notes, a loud, cheery *gyris-tee, gyris-tee*, a mellow *pit-pip-pit* and some little twittering and reeling notes (HW). Song, a musical double whistle *whi-uh* usually repeated four times, the first syllable short, the second long (SA). Alarm-note, *trrr* similar to that of *P. major*.

TRUE TITS

183

vibrating note, something like the twanging of a low-pitched guitar string (Smythies). Song period mid March to mid June (Proud).
BREEDING. As in 1804.
MUSEUM DIAGNOSIS. Similar to *ruficollis* (1804) above, but grey mantle more weakly tinged with olive; rufous on nuchal patch paler, black of underparts less extensive and belly rufous; it is also smaller.
MEASUREMENTS
Wing ♂♂ 67-71 (av. c. 69) mm — Vaurie
Weight 7 ♂♂ (May-Sept.) 11-13.1; 4 ♀♀ (May-Sept.) 11-12 g — GD.
COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet plumbeous.

1806. Sikkim Black Tit. *Parus rubidiventris beccarii* (Jerdon)

Lophophanes Beccarii 'Blyth' = Jerdon, 1863, Bds. India 2: 275 (Mount Tonglo, Sikkim)
Baker, FBI No. 67, Vol. 1: 86

LOCAL NAME. *Lho tsao* (Lepcha).
SIZE. Sparrow —; length c. 10 cm (4 in.).
FIELD CHARACTERS. As in 1804, q.v.
Distinguished from *P. ater* (1803) by absence of wing-bars.
STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Eastern Nepal from the Khumbu region (Biswas, JBNHS 60: 176) east through Darjeeling dist., Sikkim, Bhutan and probably Arunachal Pradesh, between 2700 and 4200 m, descending in winter to c. 2200 m. Affects fir, pine and juniper forest as well as rhododendron scrub above timber-line; in winter also in oak forest.
Extremal. Southeastern Tibet, northern Yunnan and north to Tsinghai and Shensi.
GENERAL HABITS, FOOD and VOICE. See 1804 and 1805.
BREEDING. As in 1804.
MUSEUM DIAGNOSIS. Differs from subspecies *ruficollis* (1804) and *rubidiventris* (1805) in lacking the olive tinge on mantle, and having a white nuchal spot; cheeks pale buff rather than white; grey of abdomen washed with rufous.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	67-75	c. 10	20-21	45-52 mm
♀♀	57-69	—	—	46-47 mm

(SA, Stevens, Mayr)

Wing ♂♂ 63-70 (av. 67) mm — Vaurie
Weight 16 ♂♂ 11-6-13.1; 9 ♀♀ 10.5-12.5 g (RAP, GD). 1 ♂, 1 ♀ 11, 10 g (Sept.) — SDR.
COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet brownish plumbeous; claws horny brown.

182

PARINAE

BREEDING. Season, chiefly May and June. Nest, a pad of moss lined with wool and hair; placed deep down in holes, seldom less than c. 30 cm from the entrance, often considerably more. The holes are usually in the ground, in a steep bank, under a large stone or the spreading roots of a tree, sometimes in a cleft or hollow in a trunk or stump within a metre from the ground (*P. melanoleptus* more often chooses a hole in a tree-trunk). Eggs 4 to 6, white, speckled with reddish brown — similar to those of the Grey Tit but rather feebly marked. Average size of 11 eggs 17.6 x 12.9 mm (Baker); of 5 eggs 18 x 13 mm (HW). Both parents feed the young.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies.
Young, similar to adult in pattern but black replaced by dull sooty. Rufous tinge almost absent from nuchal patch; back and abdomen suffused with olive; axillaries and under tail-coverts pale buff.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	71-78	12-13	19-20	51-56 mm
♀♀	74-75	—	—	—

(HW)

Wing ♂♂ 74-81, average about 76 mm (Vaurie)
Weight 13 ♂♂ 12.3-14.7; 8 ♀♀ 11.4-12.4 g (RAP).
COLOURS OF BARE PARTS. Iris brown. Bill black; mouth fleshy, slaty anterior. Legs and feet plumbeous.

1805. Rufousbellied Crested Tit. *Parus rubidiventris rubidiventris* Blyth
P. (crus) rubidiventris Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 445 (Nepal and Sikkim, restricted to Kathmandu Valley by Ripley, 1961, Synopsis 53)
Baker, FBI No. 65, Vol. 1: 84
Plate 95, fig. 13

LOCAL NAMES. None recorded.
SIZE. Sparrow —; length c. 10 cm (4 in.).
FIELD CHARACTERS. As in 1804 but belly rufous.
STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Tehri Garhwal and Kumaon to east-central Nepal. Has strayed once to Simla. Breeds between 3000 and 4100 m; descends to c. 2400 m in the cold season. Affects pure coniferous forest or mixed conifer and birch; it is also a characteristic bird of the rhododendron zone. For nesting purposes however avoids the treeless scrub zone which it visits in the non-breeding season.
GENERAL HABITS. May be seen in parties of adult individuals throughout the summer, often in company with *P. dictus*, *Agelaeus trichotis*, *delichopsis ignicauda* and leaf warblers; parties are met with oftener than pairs or singles, this posing the question whether the species is territorial or not (GD). Forages mostly among the tree-tops but also descends to bushes.
FOOD. Insects and seeds.
VOICE and CALLS. Among the common utterances of the species (see 1804), also a clear *tü tti*, a rattling *dyä dyä dyä dyä* or *gylllylllyll*... and some fine goldenest-like contact calls (GD); also a most characteristic

184

PARINAE

1806a. Nagaland Black Tit. *Parus rubidiventris saronotii* Ripley
Parus rubidiventris saronotii Ripley, 1961, Jour. Bombay nat. Hist. Soc. 58: 282 (Mount Saramati, Naga Hills)
Not in Baker, FBI

LOCAL NAMES. None recorded.
SIZE. Sparrow —; length c. 10 cm (4 in.).
FIELD CHARACTERS. As in 1804, q.v.
STATUS, DISTRIBUTION and HABITAT. Resident. Nagaland at c. 3200 m in heavy rhododendron forest.
Extremal. Adjacent parts of Burma.
GENERAL HABITS, FOOD and VOICE. As in 1805.
BREEDING. Unrecorded.
MUSEUM DIAGNOSIS. Differs from *leucotis* (1806) in having the underparts deep olive-grey washed with drab, more particularly on centre of belly and under tail-coverts. Upperparts buffy olive rather than blue-grey. Differs from *rubidiventris* (1805) in having the upperparts greyish buffy olive, rather than olive-brown, the grey with a faint isabelline cast, more pronounced on rump. Abdomen deep olive-grey instead of rufous.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
1 ♂	66	10	43 mm
1 ♀	65	—	46 mm

(SDR)

COLOURS OF BARE PARTS. 'Legs and feet black.' Probably not different from 1806.

PARUS DICHROUS Hodgson

Key to the Subspecies

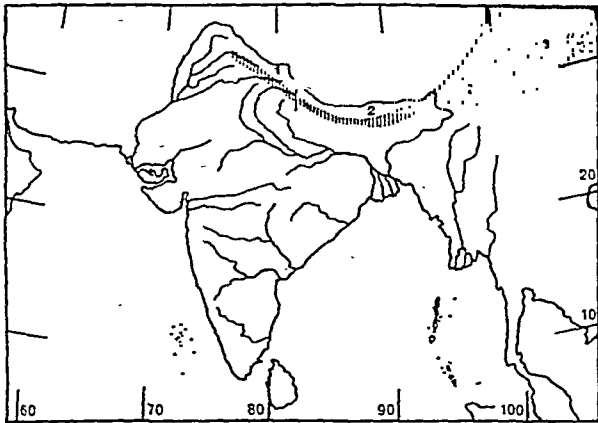
Paler.....*P. d. longus*
Darker.....*P. d. dictus*

1807. Western Brown Crested Tit. *Parus dictus longus* (Whistler)
Lophophanes dictus longus Whistler, 1932, Bull. Brit. Orn. Cl. 53: 20 (Koti State, near Simla)
Baker, FBI No. 68 (part), Vol. 1: 87

LOCAL NAMES. None recorded.
SIZE. Sparrow —; length c. 12 cm (4½ in.).
FIELD CHARACTERS. As in 1803, q.v.
STATUS, DISTRIBUTION and HABITAT. Uncommon resident. The western Himalayas from extreme eastern Kashmir east to Naini Tal and Kumaon. Breeds between 2400 and 3300 m. Affects principally oak forest, mixed oak and fir, and also pine forest.
GENERAL HABITS, FOOD and VOICE. As in 1803.
BREEDING. Season, April to June. Nest, composed of moss, lined with fur, hair and a few feathers; placed in holes in tree-trunks and stumps about

TRUE TITS

185

Parus dichrous

■ Distributional ranges
 1 *kangrae* (1807) 2 *dichrous* (1808)
 3 Extralimital races

three to six metres above the ground. Eggs, 5, broad obtuse ovals, pure white, densely spotted with reddish. Average size of 9 eggs 17.1 × 12.8 mm (Baker). Both sexes take part in all domestic chores. Incubation period undetermined.

MUSEUM DIAGNOSIS. Similar to nominate *dichrous* (1808) but paler throughout. MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1808.

1808. Eastern Brown Crested Tit. *Parus dichrous dichrous* Hodgson

P. (erus) dichrous Hodgson, 1844, in Blyth, Jour. Asiat. Soc. Bengal 13: 943 (Nepal, restricted to central Nepal by Biswas, 1955, Bull. Brit. Orn. Cl. 75: 88)

Parus dichrous izzardi Biswas, 1955, Bull. Brit. Orn. Cl. 75: 88

(Thammu, Bhote Kosi Valley, Khumbu, Nepal)

Baker, FBI No. 68 (part), Vol. 1: 87

Plate 95, fig. 9

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. A plain grey and buff crested tit. Above, crown, pointed erect crest, and back brownish grey. A conspicuous whitish collar, interrupted on back. Below, throat greyish fulvous, rest of underparts brownish buff. Sexes alike.

Rather similar in general effect to Yellownaped Yuhina (1368).

STATUS, DISTRIBUTION AND HABITAT. Fairly common resident. The Himalayas from western Nepal east through Arunachal Pradesh, from

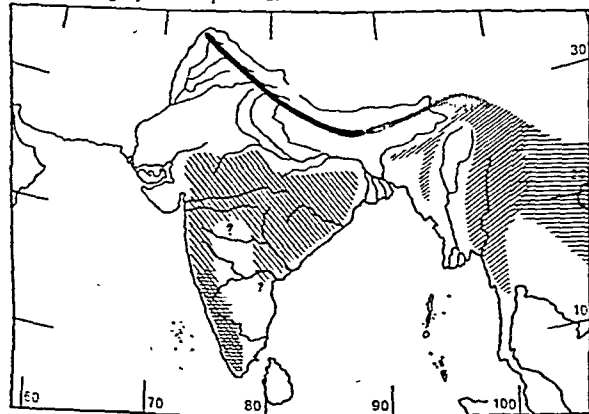
TRUE TITS

187

FIELD CHARACTERS. A sprightly black and yellow crested tit. Above, crown, pointed upstanding crest, and a band behind eye black; a few crest-feathers tipped with yellow. A long yellow supercilium joining prominent yellow nape-patch. Back olive-green. Wings black spotted with yellow and black on shoulder, and with a white longitudinal patch. Tertiaries broadly tipped and edged white. Tail blackish slate with white outer edge and white tips. Below, bright yellow with a broad black median band from chin to vent. Sexes practically alike.

The erect black crest, yellow supercilium and spotted wing easily identify this species. For distinction from *spilonotus* see 1812.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The outer Himalayas from Murree east to eastern Nepal (Manebhanjan — Rand & Fleming, 1957). A specimen in British Mus. labelled Darjeeling (Seeborn coll.). Breeds between 1500 and 2100 m, in Nepal up to 2400 m, occasionally descending to 1200 m in winter. Has

Parus xanthogenys and *P. spilonotus*

Distributional ranges

■ *xanthogenys* (1809) ■ *aplonotus* (1810) ■ *trancorensis* (1811)
 ■ *spilonotus* (1812) ■ *subtridus* (1812a) ■ Extralimital spp. of *P. spilonotus*

straggled to the Salt Range in the cold season. Range disjunct from that of the peninsular races. Affects *ban* oak jungle (*Quercus incana*), *Ilex* and pine forest or subtropical evergreen bush jungle usually with at least a few trees. Also visits gardens, but is more a forest bird than *P. major* and not often seen near houses. Rather capricious in its choice of habitat and may be absent in large tracts of apparently suitable forest.

Extralimital. Species endemic to Pakistan and India. Replaced eastwards by the closely related *P. spilonotus* (1812).

186

PARINAE

2700 m up to timber-line, in eastern Nepal up to 4100 m, descending to 2200 m in winter. Affects chiefly deciduous forest, especially oak, rhododendron and birch, and also mixed fir and rhododendron.

Extralimital. Extends to central Yunnan and western Szechuan. The species ranges north to Tsinghai and Shensi.

GENERAL HABITS. Sociable as other tits; small parties may still be seen in May. Often seen in company with other tits (*P. ater*, *P. rubidiventris*, *Aegithalos*, etc.) and leaf warblers, usually no more than a pair or so in every hunting party. Keeps to low or moderate heights in bushes and trees; also feeds on the ground.

FOOD. Chiefly insects.

VOICE AND CALLS. A characteristic, thin and high-pitched call-note rendered as *zai*; also some goldcrest-like contact-calls (GD). Voice quite unlike that of the European *P. cristatus* (GD, MD).

BREEDING. As in 1807.

MUSEUM DIAGNOSIS. Darker than *kangrae*. Postnuptial moult complete in July and August.

Young differs from adult in the shorter crest, the tips of which are darker than the rest of the feathers. Upperparts darker; underparts paler and less uniform cinnamon-buff.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	65-74	c. 10	c. 20	48-51 mm
♀♀	65-70	—	—	47-50 mm

(SA, Stevens, Mayr)

Weight 10 ♂♂ 12-14; 8 ♀♀ 11-2-13.5 g (GD, RAP). 1 ♂, 1 ♀ 12, 12 g (SDR).

COLOURS OF BARE PARTS. Iris orange-brown to crimson. Bill black. Legs and feet bright blue-grey; claws horny brown.

PARUS XANTHOGENYS Vigors

Key to the Subspecies

	Page
A Upperparts olive-green. Male and female crest black, ventral median stripe black. <i>P. x. xanthogenys</i>	186
B Upperparts duller. Male as in A; female crest black, ventral stripe greyish olive. <i>P. x. eplonotus</i>	188
C Upperparts duller than B, more green. Male as in A and B; female polymorphic: either as A or B, or with both crest and ventral stripe greyish olive. <i>P. x. trancorensis</i>	189

1809. Northern Yellowcheeked Tit. *Parus xanthogenys xanthogenys* Vigors

Parus xanthogenys Vigors, 1831, Proc. Zool. Soc. London: 23

(Himalayan Mountains, restricted to Murree by Baker, 1923, Handlist: 9)

Baker, FBI No. 75, Vol. 1: 91

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 14 cm (5½ in.).

188

PARINAE

GENERAL HABITS. Similar to other tits, foraging in mixed parties in the non-breeding season, but also reported to be less gregarious than other tits, being oftener seen solitary or in pairs.

FOOD. Insects and some vegetable matter; mulberries, raspberries, etc.; spiders.

VOICE AND CALLS. Calls very distinct from those of other tits. When in parties, a contact note like *tyuji*, *tyuja* is uttered; when approaching nest, a loud *towit*, *towit*; also a chattering alarm-note. Song rendered as *teeteeen towt-teeteeen* (Magrath); also a clear whistling *wicheewee-wicheewee-wichi*, repeated two or three times (SA). Song period January to September, chiefly March-April (Proud).

BREEDING. Season, March to June. Nest, a pad of moss with a central cup lined with fur; almost always in holes in trees, from ground level up to about six metres; occasionally between roof and ceiling of hill-station bungalows. Eggs, 4 or 5, similar to those of *P. major* but the markings fewer and finer. Average size of 40 eggs 17.9 × 13.2 mm (Baker). Building, incubation and care of young by both sexes. Incubation period undetermined.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies. *P. spilonotus* (1812) is distinguished by black streaks on back, and yellow forehead.

Female has a shorter crest and slightly narrower ventral band. Postnuptial moult complete. Moulting period apparently very extended, individuals being still in moult towards the end of October.

Young similar to adult but crest shorter, white on tertiaries washed with yellow, black of lower parts duller and narrower.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	67-76	12-13	18-19	50-60 mm
♀♀	65-72	—	—	50-54 mm

(HW, BB, Rand & Fleming)

Weight 11 ♂♂ 13.7-16.9; 9 ♀♀ 12.9-15.9 g (RAP, GD).

COLOURS OF BARE PARTS. Iris dark brown. Bill black, sometimes horny on tip. Legs, feet and claws bluish slaty.

1810. Central India Yellowcheeked Tit. *Parus xanthogenys eplonotus* Blyth

P. (erus) eplonotus Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 444 (Mountains of central India, restricted to Chaibasa, Singhbhum, Bihar, by Whistler & Kinnear, 1932, Jour. Bombay nat. Hist. Soc. 35: 519-21)

Baker, FBI No. 76 (part), Vol. 1: 92

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Male practically as in 1809; spots on wing white. Female has the ventral median band greyish olive instead of black.

STATUS, DISTRIBUTION AND HABITAT. Widespread and fairly common resident in the Peninsula, chiefly on the elevated plateau and hills, uncommon or absent in the coastal plains. Eastern Gujarat, southern Rajasthan

TRUE TITS

189

(Mt Abu, Jhalawar), the whole of Madhya Pradesh (including Gwalior), southern Bihar, Orissa, south in the Eastern Ghats to the Krishna river and in the Western Ghats to Mahabaleshwar. Affects well-wooded country, generally more so than *P. major*.

GENERAL HABITS. Like other tits forages in small parties or pairs most often in company with other small insectivorous species such as white-eyes, nuthatches and leaf warblers. Prefers the leafy canopy of trees but will descend lower on occasion. Searches energetically for insects among the crevices of the bark, hopping about and peering under the leaves, clinging to sprigs sideways or upside down and in all manner of acrobatic positions.

FOOD. Insects, grubs, ants, spiders, fruit and berries.

VOICE AND CALLS. Members of a party keep up a joyous *chee chee* while hunting for food. Song, a clear whistling *cheewit-pretty-cheewit* (and variations) uttered with crest erect and wings drooping at the sides, while moving through the branches; notes more musical than of most other tits (SA).

BREEDING. Season, April to August, in the south apparently beginning later and lasting till October. Nest and eggs as in 1809. Average size of 60 eggs (including those of *travancorensis*) 17.9 × 13.5 mm (Baker).

MUSEUM DIAGNOSIS. Like *xanthogenys* (1809) but upperparts duller olive-green. Yellow of ear-coverts and sides of neck paler. Greater and median wing-coverts tipped with white instead of yellow. In the female, median band on underparts olive instead of black.

Young resemble their respective adults. Black markings less glossy. White tips of greater and median coverts washed with yellow. Rectrices narrower, with the white tips smaller and less pure white. A complete postjuvinal moult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	70-78	11-13	18-20	52-60 mm
♀♀	66-71			49-53 mm
				(HW, SA)

Weight 2 ♂♂ 14.1, 15.2 g (Roonwal).

COLOURS OF BARE PARTS. Iris brown. Bill black; mouth pinkish (gape and mouth bright yellow in juvenile). Legs and feet slaty blue; claws darker.

1811. **Southern Yellowcheeked Tit.** *Parus xanthogenys travancorensis* (Whistler & Kinnear)

Machlolophus xanthogenys travancorensis Whistler & Kinnear, 1932, Jour. Bombay nat. Hist. Soc. 35: 520 (Mynall, Travancore)

Machlolophus xanthogenys xanthonotus Koelz, 1939, Proc. Biol. Soc. Washington 52: 63 (London, Bombay Presidency)

Baker, FBI No. 76 (part), Vol. 1: 92

Plate 95, fig. 22

LOCAL NAME. *Pacha-marapottam* (Malayalam).

SIZE. Sparrow ±; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As in 1810. Female sometimes with crown and crest olive instead of black, in addition to the ventral band.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The Sahyadris or Western Ghats from southwestern Maharashtra (South Konkan) south

TRUE TITS

191

SIZE. Sparrow ±; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As in 1809, q.v., but forehead and lores yellow. Back streaked with black.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, scarce and locally distributed. Extreme eastern Nepal in the Mai Valley (Stevens, JBNHS 29: 725; Fleming & Traylor, 1964, *Feldiana* 35: 548), Darjeeling dist., Sikkim, Bhutan and Arunachal Pradesh to the Mishmi Hills (Ali & Ripley, 1948). Noted in summer between 1600 and 2400 m, in winter down to 1400 m and, exceptionally, at 3700 m (Meinertzhagen). Affects light, mixed forest and neighbourhood of cultivation.

Extralimital. Northern Burma.

GENERAL HABITS, FOOD AND VOICE. As in 1812a.

BREEDING. As in 1812a.

MUSEUM DIAGNOSIS. For distinction from Yellowcheeked Tit (1809) see Field Characters. Reasons for keeping it specifically distinct from *P. xanthogenys* are discussed by Paynter, loc. cit. *supra*. The two species do not appear to intergrade. For distinction from subspecies *subiridis* see 1812a, under Museum Diagnosis.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	71-84	c. 11	c. 18	58-63 mm
				(Mayr, MD)

Weight 2 ♂♂ 18.3, 19.4 g (RAP).

COLOURS OF BARE PARTS. Iris brown. Bill dark plumbeous horny. Legs and feet bluish plumbeous.

1812a. **Burmese Blackspotted Yellow Tit.** *Parus spilonotus subiridis* Blyth

Parus subiridis Blyth (ex Tickell MS.), 1855, Jour. Asiat. Soc. Bengal 24: 267 (Tenasserim)

Baker, FBI No. 74, Vol. 1: 91

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As in 1812, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. Nagaland, Manipur and in the Cachar, Khasi and Mizo hills. Breeds above 1500 m. Affects light forest of oak, pine, rhododendron and other evergreens.

Extralimital. The Chin Hills south to Mt Victoria, northern Burma to northern Yunnan and northern Thailand. The species extends to Vietnam and through southern China to Fukien.

GENERAL HABITS. Keeps in pairs or small parties, usually in mixed company. Frequents the higher trees but also descends to bushes. Not so restless as *P. major* but still active, energetic and assuming the same acrobatic attitudes while hunting for food amongst the foliage.

FOOD. Chiefly insects; also berries and some vegetable matter.

VOICE AND CALLS. Song, a loud and spirited whistling syllabified as *did-he-do-it did-he-do-it no-he-didn't* (Baker), usually uttered from the tops of trees.

190

PARINAE

through western Karnataka (Malnaad), Kerala and western Tamil Nadu, between 900 and 1500 m; in the Nilgiris occupies a lower zone than *P. major* which is found mostly above 1800 m (Jerdon). Affects evergreen biotope — open forest, mixed bamboo jungle, cardamom sholas, coffee plantations, etc.

GENERAL HABITS. As in 1809. The itinerant foraging parties of which the Yellowcheeked Tit is a regular member are commonly composed, among others, of *Sitta frontalis*, *Callicapra ceylonensis*, *Alcippe poioicephala*, *Argitta liphia*, *Pyronotus ictericus*, *Hemipus picatus*, *Tephrodornis gularis*, *Pericrocotus flammeus*, *Phylloscopus occipitalis* and *P. nitidus*.

FOOD. Insects: cockroaches, grubs, caterpillars; insects' eggs, spiders, berries (*Rubus*), etc. Flying ants occasionally taken in air. Frequently visits the flowers of *Salmalia* trees for nectar. See also 1810.

VOICE AND CALLS. As in 1810.

BREEDING. Season, June to October. Nest and eggs as in 1809.

MUSEUM DIAGNOSIS. Like *aplonotus* (1810) but upperparts duller, more saturated green. Yellow of underparts duller and more washed with olive-green. White tips to rectrices smaller. Size slightly larger.

Female apparently polymorphic. Phase (a) similar to male with crown, eye-streak and ventral band black. (b) Similar to male with crown and eye-streak black but ventral band dull olive-green. (c) Similar to male but crown and crest dull greenish olive with darker centres and shafts; eye-streak and ventral band dull greenish olive, hardly darker than the rest of underparts (HW).

Young. Male has crown and ventral band black, whereas female has the crown black and the ventral band dull olive-green. Young female not polymorphic but black crown can be followed by greenish olive crown of adult form (c).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	71-82	12-14	19-20	54-62 mm
♀♀	68-76			51-57 mm
				(HW, SA, Koelz)

COLOURS OF BARE PARTS. Iris brown. Bill ♂ horny black, ♀ horny brown; mouth pink. Legs and feet bluish grey. Juvenile, gape yellow; commissure and tip of lower mandible whitish; mouth yellowish pink; rest as in adult.

PARUS SPILONOTUS Bonaparte

Key to the Subspecies

Male greyer, less yellow on flanks; female with dull olive-yellow ventral band *P. s. subiridis*

Male brighter yellow on flanks; female with black ventral band *P. s. spilonotus*

1812. **Himalayan Blackspotted Yellow Tit.** *Parus spilonotus spilonotus* Bonaparte

Plate 95, fig. 14

P. (arus) spilonotus 'Blyth' = Bonaparte, 1850, Consp. Gen. Av. 1: 228, new name for *P. xanthogenys* Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 444, *not P. xanthogenys* Vigors, *supra* (Himalaya, restricted to N. Cachar by Baker, 1922, FBI 1: 89)

Cf. Paynter, R. A., 1962, JBNHS 59: 952-3

Baker, FBI No. 73, Vol. 1: 89

LOCAL NAME. *Muchetink pho* (Lepcha).

192

PARINAE

BREEDING. Season, end of March to end of June. Nest, a pad of moss, chips of bracken leaves, fur, hair or wool, usually placed in holes in trees; in stone walls only when tree-holes are wanting. Eggs, 4 to 6, rarely 7, similar to those of *P. major* (1792) — white speckled with reddish brown — but larger and more boldly blotched. Average size of 60 eggs 17.6 × 14.1 mm (Baker).

MUSEUM DIAGNOSIS. Male similar to *spilonotus* (1812) but greyer, less yellow on flanks. Black edge of feathers of upperparts more extensive.

Female has black of underparts (median stripe) replaced by dull olive-yellow, just darker than the rest of the underparts. Mantle less marked with black than in female *spilonotus*.

Young. Above, crown dull black; back duller and black parts not sharply defined. Edges of tertials greenish white instead of bluish white. Black on coverts replaced by brown and the spots creamy white. Below, black portions duller and browner; rest of underparts dirty cream yellow.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	72-78	10-11	c. 22	c. 58 mm
				(Baker)

Weight 1 ♂ 18 g (SDR).

COLOURS OF BARE PARTS. As in 1812.

Genus SYLVIPARUS Burton

Sylviparus Burton, 1836 (1835), Proc. Zool. Soc. London: 153.

Type, by monotypy, *Sylceiparus modestus* Burton

Very close to *Parus*. Differs from it in having proportionately shorter, smaller bill and very slightly forked, almost square, tail.

SYLVIPARUS MODESTUS Burton

Key to the Subspecies

Darker and duller *S. m. modestus*

Paler and brighter *S. m. simlaensis*

1813. **Simla Yellowbrowed Tit.** *Sylviparus modestus simlaensis* Baker

Sylviparus modestus simlaensis Baker, 1917, Bull. Brit. Orn. Cl. 38: 8 (Simla)

Baker, FBI No. 71, Vol. 1: 88

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (3½ in.).

TRUE TITS

193

194

PARINAE

FIELD CHARACTERS. As in 1814, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements, locally common. The western Himalayas from Ladakh (Leh) and western Kashmir (Srinagar and Pir Panjal) east to Kumaon (Vaurie, 1965). Altitudinal distribution imperfectly known. Recorded in summer at c. 2100 m (northern slopes of Pir Panjal) and from 3000 to 3600 m (Ladakh). Very uncommon in winter (October to March) between c. 1200 and at least 2400 m from Kashmir to Simla. In summer noted to frequent willows (Ladakh) and apricot orchards (Sutlej Valley). In the cold season observed in oak forest, deciduous jungle and gardens.

GENERAL HABITS, FOOD and VOICE. As in 1814.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Like *modestus* (1814) but paler and brighter, more yellowish, above and below.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
1 ♂	57	18	16	35 mm (HW)

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet plumbeous.

1814. Eastern Yellowbrowed Tit. *Sylviparus modestus modestus* Burton

Sylviparus modestus Burton, 1836 (1835), Proc. Zool. Soc. London: 154 (*apud* Montes Himalayensis = Nepal *vide* Baker, 1920, Handlist: 8)

Sylviparus saturator Rippon, 1906, Bull. Brit. Orn. Cl. 16: 87 (Mt Victoria) Baker, FBI No. 70, Vol. 1: 88

Plate 95, fig. 21

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. A small olive-green bird easily mistaken for a leaf warbler. Above, olive-green with a pale eye-ring. A short tuft-like crest often raised. A short, bright yellow supercilium but not always visible in the field; more clearly seen when the diminutive crest is erected in agitation or courtship. Below, paler, olive-buff. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Fairly common resident, subject to vertical movements. The Himalayas from Nepal east through Arunachal Pradesh (Ludlow, *Ibis* 1944: 68), thence south through Nagaland, Manipur and Cachar (eastern Barail Range). Recorded in summer between 2100 m (Lhalung — Ludlow) and 3200 m (Bigu — GD), in autumn up to 4200 m (central Nepal — Smythies). In winter, noted between 1500 and 2900 m. In summer affects fairly open oak and rhododendron forest, mixed deciduous and conifer forest, mossy broad-leaved forest, and scrub near timberline. In winter, noted in heavy rhododendron and evergreen jungle, and bushes on hillsides.

Extralimital. The Chin Hills of Burma, southeastern Tibet (south of the main range) and east through Szechuan and Yunnan to northern Vietnam; also the mountains of Fukien. Another subspecies (*klossi*) in Vietnam.

13

PENDULINE TITMICE

195

entrance slit. Eggs, 4–6, white without noticeable marking; unmeasured as broken in removal. A male shot on 5 April (Bhutan) had fully mature gonads (8 × 5 mm) and was evidently breeding (SA). Not yet fully fledged young recorded on 11 May.

MUSEUM DIAGNOSIS. Differs from *simlaensis* in being darker and duller, less yellowish.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	57–64	8–9	15–17	35–41 mm
♀♀	54–62			33–39 mm

(BB, Stres., SA, Stevens, NBK)

Weight 8 ♂♂ 6.1–8.5; 6 ♀♀ 6.2–7.8 g (RAP, GD). 3 ♂♂ (Feb.–Mar.) 6–7; 4 ♀♀ (Feb.–Mar.) 6–7 g (SA, BB).

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible dark horny, bluish slaty on base and greyish white on the sides of its anterior half; lower mandible bluish slaty with a dark tip. Legs, feet and claws bluish slaty.

Subfamily REMIZINAE: Penduline Titmice

For description see *A New Dictionary of Birds*, 1964, pp. 823–4

Genus CEPHALOPYRUS Bonaparte

Cephalopyrus Bonaparte, 1854, Compt. Rend. Acad. Sci. Paris 38: 62.

Type, by monotypy, *Aegithalus flammeiceps* Burton

Bill short and straight, very pointed. Tail and wings short; first primary (as.) very short. Tarsus in front covered with transverse scales. A hole-nester.

CEPHALOPYRUS FLAMMEICEPS (Burton)

Key to the Subspecies

Paler, more yellowish; orange colour more extensive.....*C. f. flammeiceps*
Darker, more olive; orange colour less extensive.....*C. f. olivaceus*

1815. Western Firecapped Tit. *Cephalopyrus flammeiceps flammeiceps* (Burton)

Aegithalus [*sic*] *flammeiceps* Burton, 1836 (1835), Proc. Zool. Soc. London: 153 (*apud* Montes Himalayensis, restricted to Mussoorie by Whistler, 1924, Bull. Brit. Orn. Cl. 45: 15)

Baker, FBI No. 949 (part), Vol. 2: 545

Plate 95, fig. 6

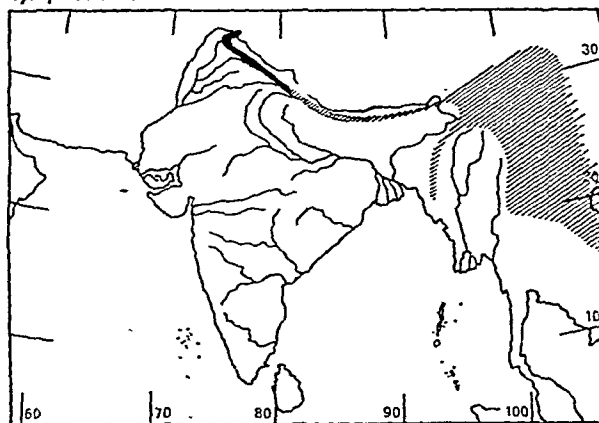
LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. A dumpy short-tailed bird, reminiscent of a flower-pecker.

Male (summer). Above, forecrown bright orange-scarlet. Rest of upperparts yellowish olive. Wings brown with two yellow wing-bars, the lower broader and more prominent. Below, chin and throat bright orange-scarlet paling to saffron yellow on breast and pale yellow on belly.

Winter plumage duller: no orange on crown, which is yellowish olive; underparts yellowish white with a yellower tinge on throat and breast.

Sylviparus modestus

Distributional ranges

■ *simlaensis* (1813)

▨ *modestus* (1814)

GENERAL HABITS. Quiet and unobtrusive. Usually found in the mixed hunting parties of Redheaded and Greenbacked tits, sivas, yuhinas, creepers, goldcrests and leaf warblers, from the last of which it is difficult to distinguish. In summer oftener met with singly or in small parties of its own. Frequents the tops and foliage canopy of trees as well as bushes, moving about busily, clinging to leaves and sprigs in acrobatic positions like a tit, or flitting restlessly among the foliage, nervously flicking its wings like a leaf warbler (SA). 'In appearance and habits very like a *Phylloscopus*' (Proud). '... indeed I procured my first specimen under the impression that I was shooting a willow warbler, though once known it may be identified with fair certainty' (HW).

FOOD. Insects, ants, grubs, caterpillars and occasionally some vegetable matter. On one occasion 'seemed to feed almost entirely on the pupae of the *Tortrix* moth or something similar which are found in the curled-up leaves' (Proud).

VOICE and CALLS. Call-notes, a weak, very high-pitched *pit* or buzzy *tzee*, *tzee* (Fleming) and a curious grating *churr* (Smythies). 'The note very much resembles that of the British Blue Tit' (A. E. Jones). Song, a thin shrill *zee-zee-zee-zee* uttered endlessly in April (Proud); a high squeaking *tee* repeated 5–8 times in a 5-second period (Fleming). Song period early March to end of May.

BREEDING. Unknown until recently described from Central Nepal, c. 2400 m (R. L. Fleming, Jr., 1973, JBNHS 70 (2)). Season, April–May. Nest, a thick pad of squirrel fur and brown moss in a tree-hole (rhododendron, maple) between half and 6 metres from ground, with narrow vertical

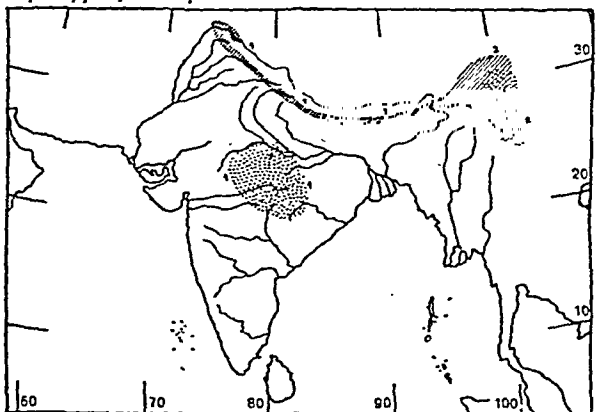
196

REMIZINAE

Female. Above, olive, yellow on forehead and yellowish on rump. A broad yellow wing-bar. Below, pale yellowish olive, centre of belly cream-buff. Winter plumage duller; no yellow on forehead.

Male in breeding plumage unmistakable. Otherwise very similar to *Sylviparus* but distinguished by yellow on wing.

STATUS, DISTRIBUTION and HABITAT. Summer visitor to the western Himalayas, locally common. Gilgit, Baltistan, Ladakh and the Rawalpindi dist. (Murree) east to Garhwal (Dehra Dun). Breeds between 2000 and 3300 m; in Kashmir observed as high as 3500 m in dwarf willows. Affects

Cephalopyrus flammeiceps

Distributional ranges

▨ Breeding

■ Winter

1 *flammeiceps* (1815) 2 *olivaceus* (1816)

poplars, willows, oak forest, orchards, mixed forest of hazel, elm and walnut just below the silver fir zone, wooded hillsides or dense jungle. Winters in central India from Etawah and Kanpur to Raipur, Nagpur and Schore. Observed once in Ambala in December; 2 specimens collected in Bharatpur, E. Rajasthan, in January (SA).

Extralimital. Has strayed once to Afghanistan.

MIGRATION. Arrives on breeding grounds in April. Passage in the foothills mostly in the second half of March and early April, unnoticed in autumn. Recorded in winter quarters from the middle of October to March, once as late as 15 May.

GENERAL HABITS. In the non-breeding season keeps in small hunting parties, usually of its own, sometimes in company with various leaf warblers. On migration larger parties of up to 20 or 30 birds may be met with. Flits

PENDULINE TITMICE

197

restlessly about the tops of trees, working the blossoms, catkins or old seed-cases after the manner of redpolls or tits, clinging upside down and sideways to the extremity of small twigs to examine the foliage. Flicks wings nervously like a leaf warbler. Movements and habits very similar to those of leaf warblers and also of *Sylviparus*, *Dicaeum* and *Zosterops*.

FOOD. Chiefly insects, also leaf- and flower-buds. Has been observed eating the exudation from petioles of banyan leaves.

VOICE AND CALLS. Song described as a faint twittering reminiscent of that of *Zosterops* but more sustained; also like a feeble version of song of Goldfronted Serin (*Serinus pusillus*) — HW.

BREEDING. Season, early April to June. Nest, a mere pad of fine strips of dry grass, sometimes mixed with a few soft feathers; placed in a hole in a tree-trunk or branch, from near the ground up to 15 metres or so, generally between 6 and 12 metres. Eggs, normally 4, pale blue-green, unmarked. Average size of 40 eggs 14.6 × 11 mm (Baker). Building of nest by female, invariably escorted by singing male. Period, and share in incubation, unrecorded. Feeding of young by both parents, sanitation apparently by female alone. Female sits very close, and if disturbed 'puffs' or hisses at the intruder after the manner of tits (Jones).

MUSEUM DIAGNOSIS. For distinction from *olivaceus* see 1816.

YOUNG. Upperparts dull olive tinged with brown. Bar on median coverts dull yellowish, less distinct than in adult. Underparts sullied white irregularly tinged with yellow. Postjuvénal moult of body-feathers and at least some coverts.

Adult undergoes a moult of body-feathers in February. Postnuptial moult complete. Adult in fresh winter plumage at end of August.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	58-64	9-10	13-15	30-33 mm (SA, MD)

COLOURS OF RARE PARTS. Iris brown. Bill brownish plumbeous. Legs and feet plumbeous.

1816. Eastern Firecapped Tit. *Cephalopyrus flammiceps olivaceus* Rothschild

Cephalopyrus flammiceps olivaceus Rothschild, 1923, Novit. Zool. 30: 263
(Vicinity of Tengyueh)

Cephalopyrus flammiceps saturatus Whistler, 1924, Bull. Brit. Orn. Cl. 45: 15
(Sikkim)

Baker, FBI No. 949 (part), Vol. 1: 545

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 9 cm (3½ in.).

FIELD CHARACTERS. As in 1815, q.v.

STATUS, DISTRIBUTION AND HABITAT. Very little recorded. Apparently rare and very locally distributed. Known only from specimens taken in winter in Sikkim and Bhutan between 300 and 2300 m, and in the Jalpaiguri and Buxa duars. One specimen from E. Nepal in British Museum.

LONGTAILED TITMICE

199

c. 4900 m), where obtained on 1 June with testes much swollen. 'It is more than likely that they were breeding in the abundant thick scrub in the dry river-bed' (Meinertzhagen, *Ibis* 1927: 415). Affects tamarisk-acacia scrub jungle along rivers; and sheesham trees (*Dalbergia*) along canal banks and in forest plantations. During migration may occur in gardens, orchards or bushes on hillsides.

EXTRALIMITAL. Extends north through Turkestan to the Sayans and the upper Yenisey. The species ranges west to Spain and east through southern Siberia to Amurland and northern China.

MIGRATION. A short-range migrant. Within our limits migrates through N.W.F.P. (Peshawar, Kohat) in the second half of March and first week of April. Autumn passage unnoted. Recorded in winter quarters from September (earliest 19 Sept.) to March (latest 20 March).

GENERAL HABITS. In winter usually seen in parties of from 2 to 40 individuals, sometimes in company with white-eyes. Hunts in the foliage of trees and bushes, clinging upside down and sideways to the leaf clusters and sprigs in the typical manner of tits.

FOOD. Small insects and their larvae.

VOICE AND CALLS. A mousy cheeping note constantly uttered as it moves about — *see-see* etc. (SA), resembling that of *Dumetia* or *Zosterops*.

BREEDING. Season, end of May and June. Nest, a pouch-shaped pendant structure of very soft vegetable down intricately woven, or felted, with a protruding, spout-like entrance near the top; generally hung from the end of a branch, often over water, at heights of one to five metres or so. For details see Dementiev. Eggs 5 to 9, white, unmarked.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	50-54	10-11	13	40-44 mm
♀ ♀	52-54			39-43 mm (HW, MD)

COLOURS OF RARE PARTS. Iris brown. Bill dark brown with pale-coloured edges. Legs and feet dark slate.

Subfamily AEGITHALINAE: Longtailed Titmice

For description see *A New Dictionary of Birds*, 1964, p. 823

Genus AEGITHALOS Hermann

Aegithalos Hermann, 1804, Obs. Zool.: 214. Type, by monotypy,

Pipra? europaea Hermann = *Parus caudatus* Linnaeus

Aegithaliscus Cabanis, 1851, Mus. Hein. 1: 90. Type, by original designation,

Parus erythrocephalus Vigors = *Psittacus concinnus* Gould

Bill very short and stout; culmen strongly curved; nostrils hidden by small feathers. First primary (as.) well developed but shorter than half the length of second. Tail longer than wing, much graduated. Plumage very soft.

198

REMIZINAE

EXTRALIMITAL. Recorded from northern Yunnan, northern Szechuan and southeastern Tibet (Ludlow, *Ibis* 1944: 205).

GENERAL HABITS, FOOD AND VOICE. As in 1815.

BREEDING. Unrecorded. Two males collected in Bhutan (at c. 2300 m) 7 and 9 March had mature gonads, evidently ready to breed (SA).

MUSEUM DIAGNOSIS. Upperparts darker, more olive-green than in nominate *flammiceps* (1815). Orange patch on forehead of male smaller; orange of underparts more reduced and breast more greenish, less yellowish. Female also more greenish on breast.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
2 ♂ ♂	59, 60	10, 10	15, 16	32, 35 mm (SA)

Weight 2 ♂ ♂ 7, 7 g (SA).

COLOURS OF RARE PARTS. Iris dark brown; eye-rim plumbeous. Bill, legs and feet plumbeous-slate; mouth yellow, plumbeous anteriorly.

Genus REMIZ Jarocki

Remiz Jarocki, 1819, Spis. Ptaków Król. Warszawa: 21. Type, by subsequent designation, *Parus pendulinus* Cuvier = *Motacilla Pendulinus* Linnaeus

Cf. Dementiev, G. P., 1935, *L'Oiseau*: 82-5.

Vaurie, C., 1957, *Amer. Mus. Novit.*, No. 1833: 4-6.

Genus characters similar to those of *Cephalopyrus*; differs mainly in building a hanging nest.

1817. Penduline Tit. *Remiz pendulinus coronatus* (Severtzov)

Aegithalus coronatus Severtzov, 1872, Vertik. Turkest. Zhivotn.: 136, pl. 9, fig. 3
(Khodzhen, Turkestan)

Baker, FBI No. 86, Vol. 1: 100

Plate 95, fig. 7

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. A small buffish tit with a conspicuous blackish band through eye and round the crown. Above, crown whitish. Forehead, a broad band through eye, ear-coverts and around nape brownish black; this nuchal band very variable in extent, sometimes covering most of the crown. Upper back whitish followed by a transverse chestnut band. Rest of back clay-colour. A dark chestnut patch on wing with a buff lower edge. Flight-feathers and rectrices broadly edged with white. Below, throat white continued as a collar on sides of neck and upper back. Rest of underparts cream-buff suffused with dark rufous on breast and flanks. Female similar but nuchal band narrower.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor in small numbers to the plains of the Indus east to Lahore, Bahawalnagar, Bahawalpur (Punjab), and south to Sukkur in Sind. A possible breeder in Ladakh (Changchenmo,

200

AEGITHALINAE

Key to the Species

		Page
A	Throat white	<i>A. nicochalis</i> 204
B	Centre of throat not white	
1	Centre of throat silvery with slaty base to feathers	<i>A. ionchistos</i> 206
2	Centre of throat black	
a	Crown rufous contrasting with slaty back	<i>A. concinnus</i> 200
b	Crown brownish clay grading into greyish olive of back <i>A. leucogenys</i>	201

AEGITHALOS CONCINNUS Gould

Key to the Subspecies

A	Supercilium mixed black and white	<i>A. c. manipurensis</i> 202
B	Supercilium white	
1	Smaller and darker; back slaty	<i>A. c. rubricapillus</i> 202
2	Larger and paler; back grey	<i>A. c. iredalei</i> 203

1818. Western Redheaded Tit. *Aegithalus concinnus iredalei* (Baker)

Aegithaliscus concinna iredalei Baker, 1920, Bull. Brit. Orn. Cl. 41: 8, new name for *Parus erythrocephalus* Vigors, 1831, nec *P. erythrocephalus* Linnaeus

(Himalayas, restricted to Simla)

Baker, FBI No. 77 (part), Vol. 1: 91

Plate 95, fig. 4

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

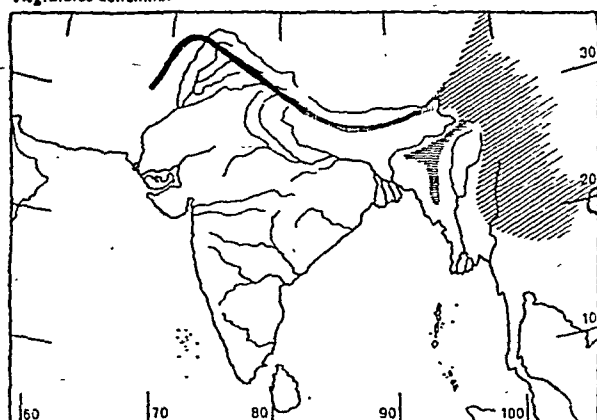
FIELD CHARACTERS. Above, crown rufous-chestnut; supercilium white; lores to ear-coverts black; eye yellowish white. Back grey; wings brown with a darker shoulder-patch. Tail brown with white outer edge and tips. Below, chin and sides of throat white; centre of throat black. Rest of underparts ochraceous buff. Sexes alike. Young birds have white throat.

STATUS, DISTRIBUTION AND HABITAT. Common resident, little seasonal movements. Pakistan in N. Baluchistan (Ziarat) and N.W.F.P. (Peshawar, and presumably the intervening ranges), thence east along the outer Himalayas through the Murree hills, the Jhelum Valley (but not in the Valley of Kashmir), Kishtwar, Jammu (?), and Himachal Pradesh (Chamba and Kulu) to western Nepal (Fleming & Traylor, 1961; Rand & Fleming, 1957) grading into *rubricapillus* in Nepal. Breeds between 1400 and 2400 m wandering in winter down to 900 m or up to 2900 m. Affects bushes and trees in open forest, especially oak woods. Also visits gardens. Near Ziarat frequents juniper forest.

GENERAL HABITS. Very sociable, restless and fussy; invariably found in flocks, often associated with *Zosterops*, leaf warblers, tree creepers, and other tits. Frequents bushes as well as the canopy of trees, actively investigating leaves and twigs, hanging upside down or clinging sideways, seldom remaining still for a second and 'flying on' rapidly in straggly follow-my-leader fashion from tree to tree. Very confiding, often ignoring the presence of an observer. Breeding birds pair off in March but parties may be seen throughout the nesting season. Unlike tits of the genus *Parus* which often roost in

LONGTAILED TITMICE

201

Aegithalos concinnus

Distributional ranges

■ *iredalei* (1818) ■ *rubricapillus* (1819)
 ■ *manipurensis* (1820) ■ Extralimital spp.

holes, this species favours a sheltered branch in a bush, along which birds huddle together in the manner of parrotbills or munias.

FOOD. Chiefly insects; also tiny seeds and fruits. Particularly fond of wild raspberries (*Rubus*).

VOICE AND CALLS. Call-notes, a soft *trr-trr-trr* or *tz-tz-tz* continually uttered while foraging; also some little, almost bell-like notes. Alarm-note a rustling *prrr-prrr* usually taken up by every member of the party.

BREEDING. Season, end of March to May, occasionally June. Single-brooded. Nest, a small upright oval structure very like that of the Long-tailed Tit (*A. caudatus*), about 10 to 15 cm in its long axis, with the entrance on the side near the top; made of green moss mixed with lichen, rootlets, scraps of bark and vegetable down, all bound together with cobweb, especially cocoons, perfectly camouflaged in its surroundings. It is densely lined with feathers and suspended between several twigs or wedged into a fork, usually in a low bush or stunted oak within easy hand reach; occasionally higher: once built in a clump of fir cones some 12 metres up in the tree. Eggs, 3 to 8, generally 4 to 6, white to pale lilac-white, with tiny pinkish red freckles disposed in a dense ring around the larger end, sparse elsewhere. Unmarked eggs have been found. Average size of 100 eggs 13.9 × 10.6 mm (Baker). Share of the sexes in the nesting duties, and incubation period, unrecorded.

MUSEUM DIAGNOSIS. See Field Characters. Differs from *rubricapillus* (1819) in being larger (cf. weight), and in having the back greyer and the crown paler.

LONGTAILED TITMICE

203.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. Nagaland, Manipur, and in the Cachar, Khasi and Mizo hills. Breeds above c. 1500 m. Affects bushes in mixed or pine forest, and secondary growth.

Extralimital. The Chin Hills of Burma.

GENERAL HABITS, FOOD and VOICE. As in 1818.

BREEDING. As in 1818. Average size of 19 eggs 13.1 × 10.4 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *rubricapillus* in having the supercilium mixed black and white (i.e. pure white) and the abdomen darker, separated from black of throat by a white band.

MEASUREMENTS. As in 1819, perhaps a little smaller. Wing 2 ♂♂ 48, 49 mm (Stres.).

Weight 2 ♂♂ 5.5, 7; 1 ♀ 5.5 g (SDR).

COLOURS OF BARE PARTS. As in 1818.

1821. Whitecheeked Tit. *Aegithalos leucogenys* (Moore)

Orius leucogenys Moore, 1854, in Horsfield & Moore, Cat. Bds. Mus. E.I. Co. 1:

374 ('woods above Balu Chughur' = Bharawal above Bala Chaugra Serai, northeast Afghanistan, ride Whistler, 1944, JBNHS 44: 516)

Baker, FBI No. 83, Vol. 1: 97

Plate 95, fig. 1

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Above, crown fulvous brown. A broad black band from lores and around eye to nape. Eye pale straw colour. Back olive-grey. Wings brown, darker at shoulder. Tail brown with white outer edge. Below, sides of throat and cheeks white; chin and centre of throat ('bib') black. Rest of underparts pale cinnamon-buff. Sexes alike.

Distinguished from *A. concinnus* by absence of white supercilium.

STATUS, DISTRIBUTION and HABITAT. Imperfectly known. Resident, subject to vertical movements; locally abundant. Pakistan from Chitral south to Ziarat (N. Baluchistan) and east through Gilgit and Baltistan to the Sind Valley (Kashmir); in N.W.F.P. east to Attock. Breeds between 1600 and 2600 m, in Chitral up to 3600 m (Fulton, JBNHS 16: 46). In winter descends locally to 450 m (Attock). Affects bushes in forest, ilex scrub, tamarisk bushes along rivers (N.W.F.P.) and juniper forest (Ziarat).

Extralimital. Adjacent parts of eastern Afghanistan.

GENERAL HABITS. Those of the genus (cf. 1818). Keeps in parties of 6 to 12 individuals, usually in company with other tits and creepers etc. moving from tree to tree.

FOOD. Chiefly insects and their eggs and larvae.

VOICE AND CALLS. Call-note *prir-t-t* continually uttered while foraging (Whitehead). Also *ut*, *it* and a weak churring alarm-note (Paludan).

BREEDING. Season, end of March to May. Nest, an upright oval ball measuring about 11 by 8 cm, with a lateral entrance-hole towards the top; made of moss and grass leaves bound with cobweb and densely lined with feathers; usually placed near the top of an oak bush between one and three metres or so above the ground. Eggs, 5 to 8, white, sometimes with a faint zone of pinkish red spots round the large end; they measure about 14.7 × 9.9 mm (Whitehead).

202

AEGITHALINAE

Young similar to adult but crown paler; chin and throat white, rest of underparts paler with a pectoral line of indistinct black spots. Postjuvinal moult complete. Postnuptial moult complete, about August–September.

MEASUREMENTS

Wing ♂♂ 53–57; ♀♀ 49–52 mm (Rand & Fleming)

Weight 2 ♂♂ 8.5, 9; 3 ♀♀ 6.7–7 g (RAP).

COLOURS OF BARE PARTS. As in 1819.

1819. Eastern Redheaded Tit. *Aegithalos concinnus rubricapillus* (Ticehurst)

Aegithalus concinna rubricapillus Ticehurst, 1925, Bull. Brit. Orn. Cl. 46: 22 (Sikkim) Baker, FBI No. 77 (part), Vol. 1: 93

LOCAL NAME. *Pyiong-sanyi* (Lepcha).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1818, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to seasonal movements. Nepal (where grading into *iredalei*) eastward through Sikkim, Darjeeling dist., Bhutan and Arunachal Pradesh. Breeds between 1400 and 2700 m, possibly up to 3200 m, wandering in winter up to 3600 m (Sikkim) or down to 600 m (Bhutan foothills). Affects light deciduous forest and secondary growth of brambles etc.; sometimes deodar or pine forest.

Extralimital. Adjacent areas of southeastern Tibet. The species ranges north to Kansu, east to Chekiang, Formosa, Kwantung and northern Vietnam.

GENERAL HABITS, FOOD and VOICE. As in 1818.

BREEDING. As in 1818.

MUSEUM DIAGNOSIS. Differs from *iredalei* (1818) in having the crown darker, the back more slaty, and in being smaller (cf. weight).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	47–55	7–8	16–17	48–53 mm
♀♀	45–52			43–50 mm

(BB, Stevens, SA, Rand & Fleming)

Weight 5 ♂♂ 6.6–9 (av. 6.5); 5 ♀♀ 5.6–7.1 (av. 6.4) g (RAP). 5 ♂♂ (summer) 5.5–6.9; 2 ♀♀ (summer) 5.8, 7 g (GD). 15 ♂♂ (winter) 5.7–5 (av. 5.8) g — SA.

COLOURS OF BARE PARTS. Iris yellowish white. Bill black. Legs and feet dull orange-brown or brownish yellow; claws pale horny or brownish horny.

1820. Manipur Redheaded Tit. *Aegithalos concinnus manipurensis* (Hume)

AE. (githalus) manipurensis Hume, 1888, Stray Feathers 11: 254

(Eastern hills, Manipur)

Baker, FBI No. 78, Vol. 1: 94

Plate 95, fig. 5

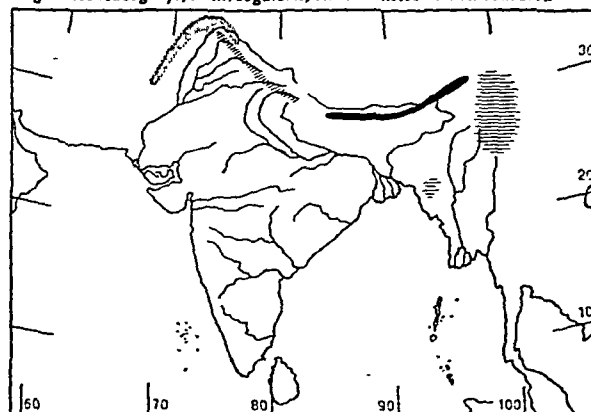
LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1818, q.v.

204

AEGITHALINAE

Aegithalos leucogenys, *A. niveogularis*, *A. iouschistos* and *A. bonvaloti*

Distributional ranges

■ *niveogularis* (1822) ■ *iouschistos* (1823)
 ■ *bonvaloti* (SE. Range imperfectly known) ■ *leucogenys* (1821)

MUSEUM DIAGNOSIS. See Field Characters. Bill stouter and more strongly curved on culmen than in *A. niveogularis* (1822).

Young similar to adult but crown paler, cheek-band cream instead of white, black of throat replaced by dull pinkish brown with dusky bases to the feathers; an indistinct pectoral band of blackish streaks.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	57–59	c. 8	c. 17	53–57 mm
♀♀	52–55			49–52 mm

(Paludan, MD, CBT)

Weight 4 ♂♂ 6.5–7.4; 3 ♀♀ 6.1–7 g (RAP). 5 ♂♂ (breeding) 6.8; 4 ♀♀ (breeding) 6–7 g — Paludan.

COLOURS OF BARE PARTS. Iris pale straw. Bill black. Legs and feet pinkish brown; claws brown.

1822. Whitethroated Tit. *Aegithalos niveogularis* (Gould)

Atanhiparus niveogularis Gould, 1855, Bds. Asia 2(7), pl. 67

(North India, restricted to northern Punjab by Vaurie, 1957,

Amer. Mus. Novit., No. 1853: 20)

Baker, FBI No. 84, Vol. 1: 98

Plate 95, fig. 2

LOCAL NAMES. None recorded.

LONGTAILED TITMICE

205

SIZE. Sparrow — ; length c. 10 cm (4 in.).
FIELD CHARACTERS. Above, forehead and forecrown white, diffusing into buffy brown on hindcrown and nape. A broad black eye-stripe, the two bands partially meeting on nape. A narrow buffish brown band across upper back; rest of back grey. Wings greyish brown with dark brown shoulders. Tail greyish brown with narrow white outer edge. Below, throat and sides of neck white forming a collar interrupted on back. A brown band across breast. Belly vinaceous buff. Sexes alike.

The white throat and forehead, and black eye-stripe, help to identify the species.

STATUS, DISTRIBUTION and HABITAT. Uncommon resident, subject to vertical movements. The western Himalayas from Kagan Valley eastward through Kashmir, Himachal Pradesh (Duala Dhar, Kulu, Simla) and Garhwal. Breeds between 2400 and 3300 m, in Garhwal up to 3600 m, descending in winter to c. 1800 m. Affects deciduous forest of birch, cherry or oak, mixed forest of birch and silver fir or spruce and deodar; also dwarf willows and rhododendrons at timber-line.

GENERAL HABITS. Those of the genus (cf. 1818). Hunts in small parties, often in company with leaf warblers, *Parus dichrous* and *Alcippe rufipectus*, working energetically through bushes and foliage of trees.

FOOD. Chiefly insects.

VOICE and CALLS. While foraging, a frequently uttered high-pitched *wee* reminiscent of the Goldfinch.

BREEDING. Season, May to early July. Nest, an oval or pear-shaped purse, similar to that of the Redheaded Tit, with a lateral entrance-hole near the top; made of moss and cobweb, covered with lichen and copiously lined with feathers; placed in a fork in bushes between one and three metres up, or suspended to branches of trees (fir etc.) up to nine metres or so above the ground. Eggs, white, rather feebly spotted pink at the larger end, varying in size between 14.3 × 11.2 and 14 × 10.8 mm (Baker). Clutch size and other details of breeding biology unknown.

MUSEUM DIAGNOSIS. See Field Characters. Bill longer, straighter and more slender than in *A. leucogenys* (1821).

This species differs from *A. iouschistos* (1823) not only by colour pattern but also by its larger size and length of bill, and colour of the iris.

Young similar to adult but throat pinkish white, pectoral band darker and more conspicuous, and rest of underparts more buff, less pink.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	60-65	9-11	18	52-58 mm (Vaurie, MD)

COLOURS OF BARE PARTS. Iris dark brown (Abbott) or reddish brown (HW). Bill black. Legs and feet orange-brown or yellowish brown.

206

AEGITHALINAE

1823. **Rufousfronted Tit.** *Aegithalos iouschistos iouschistos* (Hodgson)
P. (erus) iouschistos Hodgson, 1844, in Blyth, Jour. Asiat. Soc. Bengal 13: 941 (Nepal)
Baker, FBI No. 85, Vol. 1: 99
Plate 95, fig. 3

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. Above, forehead and a broad medial coronal band buff, more ochraceous on forehead and nape. A broad black eye-stripe. Eye yellow. Sides of neck ochraceous buff; rest of upperparts grey. Wing with a darker shoulder-patch. Tail with narrow white outer edge. Below, centre of throat silvery white, the base of feathers and chin blackish. Malar stripe, sides of throat and rest of underparts rufous-cinnamon. Sexes alike. Roundish silvery throat-patch, broad greyish 'centre parting' on crown, and ferruginous underparts identify the species.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to erratic seasonal movements. The Himalayas from central Nepal (Proud, JBNHS 50: 362; Fleming & Traylor, Fieldiana 53: 185) east through Arunachal Pradesh (Ludlow, Ibis 1944: 68).¹ Occurs between 2700 and 3600 m at all seasons, descending to c. 2400 m during cold spells. Affects low, scrubby deciduous trees and bushes, shrubby undergrowth of rose, barberry, holly oak and bamboo in conifer and mixed forest; also visits dense evergreens after the breeding season. Appears to be more plentiful in the drier zone. Extralimital. Southeastern Tibet and southwestern Szechuan.

GENERAL HABITS. Keeps in pairs when breeding, otherwise in parties up to 30 individuals by themselves or in company with *Parus rubidiventris*, *P. dichrous* and other insectivorous species, however not in the same localities with *Aegithalos concinnus* (GD). Forages in the crowns of high trees as well as in bushes.

FOOD. Insects and their eggs and larvae. Also some vegetable matter.

VOICE and CALLS. Constantly utters a short sharp note as it flits from twig to twig.

BREEDING. Season, from circumstantial evidence, May to July. Nest and eggs unknown.

MUSEUM DIAGNOSIS. See Field Characters.

Young similar to adult but underparts including throat paler cinnamon.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	53-60	9-10	17-19	45-53 mm (Vaurie, Stres., SA, MD)

Weight 3 ♂♂ (May) 6.5-7.5 g (GD). 3 ♂♂ (winter) 7, 7, 7 g—SA.
COLOURS OF BARE PARTS. Iris lemon-yellow. Bill black. Legs and feet yellow or orange-brown to dark brown.

¹ An allied species, *P. boncaloti sharpei*, occurs on Mt Victoria from 2500 m to the summit, down to 2100 m in winter, and may be expected in the high ranges of Manipur and Nagaland.

NUTHATCHES

207

Family SITTIDAE: Nuthatches and Creepers

Subfamily SITTINAE: Nuthatches

For description see Baker, E. C. S., 1922, FBI 1: 120-1; Witherby, H. F., et al., 1938, 1: 240-1; Van Tyne, J. & Berger, A. J., 1959: 513; Hans Lohrl, 1964, article 'Nuthatch' in Thomson, A. L. (ed.), *A New Dictionary of Birds*, London & New York.



Whitetailed Nuthatch (1834)

Genus *SITTA* Linnaeus

Sitta Linnaeus, 1758, Syst. Nat., ed. 10, 1: 115.

Type, by monotypy, *Sitta europaea* Linnaeus

Bill a little longer than the head, straight, horizontally compressed towards the tip, which is neither notched nor toothed. Nostrils partly hidden by bristles and feathers; no rictal bristles. Wings long, about twice the length of tail; first primary (as.) short. Tail short and square. Tarsus short covered anteriorly with transverse scales; hallux with claw longer than middle toe, and longer than tarsus.

Key to the Species

	Page
I Upperparts with bright blue or purplish blue	
A Tips of wing-coverts white.....	<i>S. formosa</i> 223
B No white on upperparts.....	<i>S. frontalis</i> 224

208

SITTINAE

	Page
II Upperparts ashy; size large, tarsus over 21 mm.....	<i>S. tephronota</i> 222
III Upperparts slaty or bluish slaty; size medium; tarsus under 20 mm	
C Crown black.....	<i>S. leucopsis</i> 217
D Crown more or less slaty	
1 Middle pair of rectrices partly white.....	<i>S. himalayensis</i> 219
2 No white on middle pair of rectrices	
a Under tail-coverts rufous.....	<i>S. europaea cashmirensis</i> 216
b Under tail-coverts partly white	
i Breast ashy.....	<i>S. europaea nagaensis</i> 211
ii Breast rich chestnut (♂) or fawn colour (♀).....	<i>S. castanea</i> 211

SITTA EUROPAEA Linnaeus

Gf. Deignan, H. G., 1945, Bull. U.S. Nat. Mus., No. 186: 315-17; Vaurie, C., 1950, Amer. Mus. Novis., No. 1472: 2-9; Voous, K. H. & Van Marle, J. G., 1953, Ardea 41, Extra No.: 1-68.

Key to the Subspecies

A Under tail-coverts rufous.....	<i>S. e. cashmirensis</i> 216
B Under tail-coverts white tipped with chestnut	
1 Breast ashy.....	<i>S. e. nagaensis</i> 211
2 Breast ashy washed with buff.....	<i>S. e. montium</i> 210

1824. **Kashmir Nuthatch.** *Sitta europaea cashmirensis* Brooks

Sitta Cashmirensis Brooks, 1871, Proc. Asiat. Soc. Bengal: 209 (Kashmir)
Baker, FBI No. 114, Vol. 1: 128

Plate 96, fig. 4

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 12 cm (4½ in.).

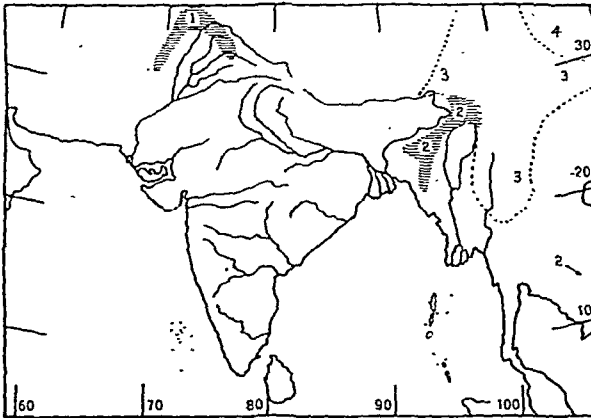
FIELD CHARACTERS. Above, bluish slaty. A black band from lores through eye to nape. Tail, when expanded, blackish with white subterminal spots. Below, sides of head and chin whitish grading to cinnamon on breast, darker (chestnut) on flanks and vent. Female similar to male but paler below.

For distinction from *S. castanea* and *S. himalayensis*, see 1827 and 1834.
STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Pakistan in N.W.F.P. from Shingar and the Takht-i-Sulaiman (N. Baluchistan, Christison, JBNHS 43: 479) north to Chitral, thence east through Kagan Valley, Murree (?), the Pir Panjal and Kashmir to the

NUTHATCHES

209

Liddar Valley.¹ Breeds between 2100 and 3000 m locally down to c. 1800 m (Kashmir), and up to 3300 m in Chitral. Descends more regularly to c. 1800 m in winter. Affects forest of pine, deodar and fir, mixed forest and deciduous groves of poplar, walnut, etc.

Sitta europaea

1 *cashmirensis* (1824) 2 *nagaensis* (1826)
3 *montium* (1825) 4 Extralimital subspecies

Extralimital. Adjacent parts of Afghanistan. For range of the species see 1825.

GENERAL HABITS. Outside the breeding season generally found in twos or threes among the roving parties of tits, warblers and tree creepers. Hunts energetically on tree-trunks and larger branches, climbing without the aid of its tail (unlike woodpecker), progressing in little spurts in all directions up or down or around horizontal branches, sometimes creeping jerkily along their undersides. Keeps to a lower stratum than *S. leucopsis* and may occasionally be observed foraging on the ground.

FOOD. Insects, seeds and nuts; grit often found in stomachs. Extracts kernels from hard-shelled seeds or nuts by wedging them into a hollow or crevice ('socket') on a branch and hacking them open by persistent hammer-blows of the strong pointed bill (SA).

VOICE AND CALLS. Ordinary call-note, a pleasant, rippling trill; a harsh alarm-note 'recalling in miniature the scream of a jay' (HW).

BREEDING. Season, end of April to end of June. Nest, placed in hollows in trees, often a woodpecker hole, the entrance of which is reduced with

¹ Breeding record by Whympers at Naini Tal 4500 feet (Baker, *Nidification* 1: 95) pertains to *S. castanea*.

14

NUTHATCHES

211

VOICE AND CALLS. Alarm-note, a loud 'chitter' resembling the note of the British Greenfinch, in no way resembling the corresponding call of the European subspecies (Stanford).

BREEDING. Probably as in 1824.

MUSEUM DIAGNOSIS. Differs from *cashmirensis* (1824) in having the underparts grey strongly washed with buff, the lower flanks chestnut and the under tail-coverts white tipped with chestnut. Differs from *nagaensis* by the buff wash on breast.

MEASUREMENTS

	Wing	Bill (from skull)
♂♂	76-89	19-20 mm
♀♀	74-88	19-21 mm

(Kleinschmidt & Weigold, Mayr, NBK)

COLOURS OF BARE PARTS. Iris brown. Bill greyish black, grey-blue at base of lower mandible. Legs and feet plumbeous grey.

1826. **Naga Nuthatch.** *Sitta europaea nagaensis* Godwin-Austen

Sitta nagaensis Godwin-Austen, 1874, Proc. Zool. Soc. London: 44 (Naga Hills)
Baker, FBI No. 113, Vol. 1: 127

Plate 96, fig. 1

LOCAL NAME. *Daomejo-gopu* (Cachari).

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. As in 1825 but underparts ashy. Flanks chestnut.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The Patkai Bumai Range, Nagaland, Manipur, and the Cachar and Khasi hills. Breeds between 1400 and 2600 m; occasionally up to 2800 m. Affects mixed deciduous and evergreen forest, coniferous, and light deciduous forest.

Extralimital. Adjacent parts of Burma (Kachin and Chin hills south to Mt Victoria). An apparently isolated population in the high hills of southern Vietnam has been linked to this subspecies.

GENERAL HABITS AND FOOD. As in 1824.

VOICE AND CALLS. Song, a loud, clear, rapid piping or trilling, similar to that of the European subspecies but softer and less full or sometimes near identical. Call-note, a peculiar drawn-out nasal *tjab* (Heinrich).

BREEDING. Season, March to June. Nest, a pad of fur and scraps of bark placed in a tree-hole as in 1824. Eggs, as in 1824; average size of 8 eggs 18.6 × 13.8 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *montium* by the pure ashy colour of underparts.

MEASUREMENTS

Wing 10 ♂♂ 75-81; 2 ♀♀ 72, 75 mm (Stresemann)

Weight 2 ♀♀ 13.5, 16.5 g (SDR).

COLOURS OF BARE PARTS. Iris dark brown. Bill blackish grey at base of lower mandible. Legs and feet greenish brown.

SITTA CASTANEA LESSON

Cf. Whistler, H. & Kinnear, N. B., 1936, JBNHS 35: 521-2

Ripley, S. D., 1959, *Parilla*, Yale Peabody Mus., No. 42: 1-11

210

SITTINAE

plastered wet mud to a diameter just large enough for the bird to scrape through; lining material not described but birds have been observed to take fine flakes of bark from the trunks of trees. 'The Nuthatch works with meticulous care and little jerky movements, pecking at the mud ["trowelling"] incessantly, most of the time with its head downwards' (HW). As a rule the masonry work is not prominent, but at times may take the form of a protruding short cone; the plastering occasionally extends for some distance around the hole, filling up any little depressions and smoothing them off. Chipped pieces of masonry showed small seeds within (Bates & Lowther). The masonry is often of terracotta hardness and not easily broken with the fingers whilst at other times it is quite friable and comes away easily. The nest-hole may be at any height from two to nine metres or more above the ground. Eggs, 5 to 7, white, marked with reddish spots and small blotches. Average size of 50 eggs 19.7 × 14.4 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	82-86	21-23	17-18	42-44 mm
♀♀	81-86	20-23		

(Paludan, Vaurie, Voous, MD)

Weight 7 ♂♂ (March-July) 17.2-18.3 (av. 17.6); 4 ♀♀ (March-July) 18.9-21 (av. 19.7) g — Paludan. 8 ♂♂ (Oct.-Dec.) 17.8-18.6; 6 ♀♀ (Oct.-Dec.) 17.8-18.8 g (RAP).

COLOURS OF BARE PARTS. Iris dark brown. Bill blackish plumbeous, basal half of lower mandible horny grey; mouth fleshy livid. Legs and feet dark brown or horny plumbeous.

1825. **Chinese Nuthatch.** *Sitta europaea montium* La Touche

S. (itta) montium La Touche, 1899, Ibis: 404 (Kuatun)

Sitta (europaea) tibetensis Kleinschmidt & Weigold, 1922, Abh. zool. Mus. Dresden

15: 10 (Samando, Sëurong, Atentsze [= Atuntze, NW. Yunnan])

Sitta europaea konyboensis Kinnear, 1940, Bull. Brit. Orn. Cl. 60: 57

(Molo, southeastern Tibet), corrected to *kangboensis*, 1940, ibid. p. 74

Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. As in *cashmirensis* but underparts greyish buff, lower flanks chestnut.

STATUS, DISTRIBUTION AND HABITAT. Common resident in extreme south-eastern Tibet on the northern slopes of the main range between 2800 and 3300 m. May occur in Arunachal Pradesh in the Tsangpo Bend area. Affects holly oak, deciduous and pine forest.

Extralimital. Northern Burma, Yunnan and Szechuan east to Fukien. The species ranges north to Yakutia and west across Siberia and the Middle East to Morocco and the British Isles.

GENERAL HABITS AND FOOD. As in 1824.

212

SITTINAE

Key to the Subspecies

	Page
A Bill heavier; under tail-coverts with a broad white subterminal band	
1 Paler; underparts of male cinnamon-brown.....	<i>S. c. almora</i> 212
2 Darker; underparts of male chestnut-brown.....	<i>S. c. cinnameiventris</i> 213
3 Male as in 2; female darker.....	<i>S. c. loelzi</i> 215
B Bill finer; under tail-coverts ashy with narrow pale subterminal band; females pinker	
4 Male darker; bill shorter.....	<i>S. c. castanea</i> 215
5 Male paler; bill longer.....	<i>S. c. prateri</i> 216

1827. **Western Chestnutbellied Nuthatch.** *Sitta castanea almora* Kinnear & Whistler

S. (itta) castaneiventris almora Kinnear & Whistler, 1930, Bull. Brit. Orn. Cl. 51: 27
(Valley of Ramganga between Almora and Pethora)
Baker, FBI No. 111 (part), Vol. 1: 125

LOCAL NAME. *Siri* (Hindi).

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. Male. Above, bluish slaty. A black band from lores to upper back; a prominent white malar patch. Expanded tail shows black rectrices with white subterminal spots. Below, chin white, rest of underparts chestnut. Under tail-coverts white and chestnut.

Female similar but underparts cinnamon.

Male easily distinguished from both Kashmir and Whittailed Nuthatches (1824, 1834) by the rich chestnut underparts and well-defined white malar patch. Female distinguished from the Kashmir Nuthatch by better defined cheek-patch and white on under tail-coverts; *S. himalayensis* has the throat and breast ochraceous buff, not dull cinnamon, the black eye-stripe shorter, and white base of tail.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The western Himalayas from Chakrata (western U.P.)¹ east to east-central Nepal, between c. 300 and 1500 m at all seasons. Affects deciduous woods and pine forest.

GENERAL HABITS AND FOOD. As in 1828.

VOICE AND CALLS. Very different from that of the European Nuthatch (GD); see 1828 for description. Song period in Nepal January to April with a resumption from August to October (Proud).

BREEDING. As in 1828. Average size of 30 eggs 19.4 × 14.8 mm (Baker).

MUSEUM DIAGNOSIS. Bill heavy. Underparts in male cinnamon-brown. Under tail-coverts ashy grey with broad white subterminal patches and cinnamon fringes. Both sexes differ from *cinnameiventris* in being paler.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	81-87	21-24	{ 18-20 18-19	40-44 mm
♀♀	78-85			40-48 mm

(HW, BB)

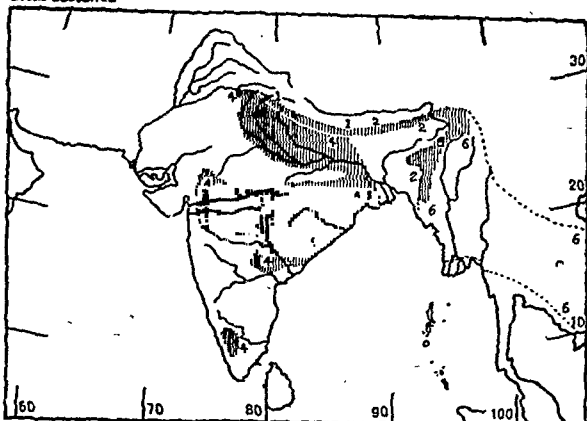
¹ For comments on specimens labelled 'Murree' see Whistler, *Ibis* 1950: 77.

NUTHATCHES

213

214

SITTINAE

Sitta castanea

Distributional ranges 1 *almorae* (1827) 2 *cinnamomensis* (1828) 3 *koelzi* (1829) 4 *castanea* (1830) 5 *pratieri* (1831) 6 Extralimital rates

Weight 8 ♂♂ 17.4-20.9; 5 ♀♀ (Oct.-Nov.) 19.9-20.5; 2 oo? (Oct.-Nov.) 20, 20.9 g (RAP, GD).

COLOURS OF BARE PARTS. Iris dark brown to reddish brown. Bill: upper mandible black with bluish slaty on base; lower mandible bluish slaty with black anterior quarter. Legs and feet slaty horny; claws horny; soles grey-white to white.

1828. Eastern Chestnutbellied Nuthatch. *Sitta castanea cinnamomensis* Blyth

Sitta cinnamomensis Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 459 (Darjeeling) Baker, FBI No. 111 (part), Vol. 1: 125

LOCAL NAMES. *Sidhi-ship* (Lepcha); *Chor-parki* (Bengali).

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. As in 1827, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The eastern Himalayas from eastern Nepal east through Arunachal Pradesh, in the Garo, Khasi and Mizo hills, Manipur and the hills of Bangladesh to the Chittagong Hill Tracts (see map, above). Occurs at all seasons, in Nepal from the terai to c. 1800 m, optimum zone 600-1500 m; in Sikkim between 600 and 1700 m; in Bhutan up to 1600 m but mostly below 1000 m. Also occurs in the northern half of the plains of the Jalpaiguri district. South of the Brahmaputra occurs from the base of the hills to 1800 m. Affects chiefly deciduous forest.

Extralimital. The species ranges east to Vietnam.

NUTHATCHES

215

1829. Naga Chestnutbellied Nuthatch. *Sitta castanea koelzi* Vaurie

Sitta europaea koelzi Vaurie, 1950, Amer. Mus. Novit., No. 1472: 5 (Patkai Hills, Assam-Burma border) Baker, FBI No. 111 (part), Vol. 1: 125

LOCAL NAME. *Dao-mojo-gajao* (Cachari).

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. As in 1827, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident. The Patkai range, Nagaland and North Cachar, from the edge of the plains to c. 1500 m. Affects deciduous and semi-evergreen forest.

GENERAL HABITS, FOOD AND VOICE. As in 1828.

MUSEUM DIAGNOSIS. Adult male not separable from *cinnamomensis*. Female differs by richer cinnamon of underparts, and by being darker above.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in *cinnamomensis* (1828).

1830. Peninsular Chestnutbellied Nuthatch. *Sitta castanea castanea* Lesson

Sitta castanea Lesson, 1830, Traité d'Orn.: 316 (Bengale) Baker, FBI No. 110 (part), Vol. 1: 123

Plate 96, fig. 3

LOCAL NAMES. *Kathipet zad-chad* (Gujarati); *Sin* (Hindi); *Chor-parki* (Bengali).

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. As in 1827, q.v.

STATUS, DISTRIBUTION AND HABITAT.

Resident, common but locally distributed.

Practically all India roughly east of a line

from Ferozepore in Punjab (c. 30°N.,

75°E.) to Nasik in Maharashtra (c. 20°N.,

74°E.). Eastward along the terai and

through the Gangetic Plain to Bihar

(Darbhanga, Rajmahal Hills) and southern Bengal (Nadia, c. 23°N., 88°E.).

Southward (presumably) more or less throughout the Peninsula including eastern Rajasthan, Madhya Pradesh, Maharashtra, Orissa and Andhra (excepting range of *pratieri*, 1831, q.v.) in the appropriate biotope. South of c. 16°N. has been recorded in southern Karnataka (Antarsante, Bandipur, Biligirirangan Hills, Coorg), Tamil Nadu (Nülgiri Hills), and Kerala (Wynaad and Palghat Hills). Not yet recorded from large intervening areas. Affects light forest, mango topos and groves near villages, roadside trees, etc. in deciduous plateau and foothills country; avoids coastal areas.

T. R. Bell's 1905 sight record for Sind (see *Ibis*, 1922) is incredible. It was doubted by the observer himself, and should be discarded (see Abdulali, JBNHS 49: 303-4).

GENERAL HABITS. As in 1828. Usually met with in mixed hunting parties, often with *Picoides nanus*. Keeps largely to the tops of lofty trees.

FOOD. Insects, grubs, seeds and nuts. Among stomach contents in an intensively cultivated tract in Bihar, the following insects have been identified: Ants (*Crematogaster subnuda* — Formicidae), weevils (*Mylocherus discolor*,

216

SITTINAE

Tanymericus sp. — Curculionidae), beetles (*Mesomorphus villiger* — Tenebrionidae), and remains of various other small coleoptera, jassids, tabanids, noctuids and hemipterons — in addition to spiders (Mason & Lefroy, 1912).

VOICE AND CALLS. A mousy, quick-repeated double note *chilp-chilp* (SA). Also a tremulous whistle and a shrill squeak resembling that of the musk shrew (*Suncus*). Song, a loud clear whistling *whew* quickly repeated four or five times thus *whewwhewwhewwhew*.

The sound of hammering on bark often betrays its whereabouts.

BREEDING. Season, February to May in the north, April to September in Andhra Pradesh. *Nest*, placed in a hollow in a tree from near the ground up to at least nine metres. The cavity is almost invariably lined with bits of fine bark and dry leaves. As in other subspecies, the hollow is walled up with a plaster of wet mud, brought in blob by blob, leaving a tiny round aperture just large enough for the bird to scrape through. The cement is reinforced with resin assiduously collected from a nearby babool (*Acacia arabica*) or suchlike tree, and kneaded and pummelled into position by repeated jabs of the bill (Gill, SA). The masonry often attains a thickness of nearly 5 cm and dries to terracotta hardness. Some plastering around the aperture is in evidence even when originally of appropriate size. *Eggs*, normally 4 or 5, white to pale pink marked with reddish spots, specks and minute blotches, more so towards the large end. Average size of 60 eggs 17 × 16.5 mm (Baker). Incubation by both sexes (Baker). However, according to Gill (JBNHS 29: 110) the female 'never leaves the eggs till they are hatched; she is fed assiduously by the male'. Period of incubation 11 or 12 days.

MUSEUM DIAGNOSIS. Bill fine and short. Underparts in male deep chestnut, darker than in *cinnamomensis*. Under tail-coverts ash-grey with chestnut fringes. See Key to the Subspecies.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	72-82	18-21	17-19	36-42 mm
♀♀	71-78	18-20		35-41 mm

(HW, SA)

Weight 1 ♂ 12 g (Roonwal).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible black, lower grey at base; mouth pale pink. Legs and feet dark brown; soles pale yellow.

1831. Eastern Ghats Chestnutbellied Nuthatch. *Sitta castanea pratieri* Whistler & Kinnear

Sitta castanea pratieri Whistler & Kinnear, 1936, Jour. Bombay nat. Hist. Soc. 35: 522 (Anantagiri, Vishakhapatnam Dist.) Baker, FBI No. 110 (part), Vol. 1: 123

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. As in 1827, q.v.

NUTHATCHES

217

STATUS, DISTRIBUTION and HABITAT. Common resident. The Eastern Ghats in Orissa and Andhra Pradesh from Jeypore (c. 19°N.) southward to the Godavari river, at c. 900 to 1000 m. Affects deciduous forest.

GENERAL HABITS, FOOD and VOICE. As in 1830.

BREEDING. As in 1830.

MUSEUM DIAGNOSIS. Differs from *castanea* (1830) in having a longer bill, and the under tail-coverts ash-grey with narrow pale subterminal band and chestnut fringes. Underparts of male similar to *cinnamomeiventris* (1828) and paler than in *castanea*. Underparts of female more pink than in *cinnamomeiventris*.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	77-83	21-22 }	17-19	40-43 mm
♀♀	75-78	20-22 }		38-41 mm (HW)

COLOURS OF BARE PARTS. As in 1830.

SITTA LEUCOPSIS Gould
Key to the Subspecies

Breast buffish white.....*S. l. leucopsis*
Breast rufous.....*S. l. przewalskii*

1832. Western Whitecheeked Nuthatch. *Sitta leucopsis leucopsis* Gould
Sitta leucopsis Gould, 1850, Bds. Asia 2(1), pl. 46 (Himalayas)
Baker, FBI No. 117, Vol. 1: 130
Plate 96, fig. 6

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 12 cm (4½ in.).

FIELD CHARACTERS. Above. Crown and sides of nape black; sides of head, including broad supercilium, white. Rest of upperparts dark bluish slaty. Expanded tail shows black outer rectrices with a white subterminal spot on the three outer pairs and a narrow white streak along the outer edge of the outermost. Below, buffish white. Lower flanks and under tail-coverts rich chestnut.

The white of face extending above the eye, bordered above by the black of crown, identifies the species.

STATUS, DISTRIBUTION and HABITAT. Fairly common resident, subject to vertical movements. N.W.F.P. from the Safed Koh to Chitral, Gilgit, Balistan, and the Murree hills, and eastward along the Himalayas to Garhwal (JBNHS 28: 143 and 53: 320), from c. 2100 m to timber-line (c. 3300 m), optimum zone 2400-3000 m. Descends in winter locally to 1800 m. Affects forests of pine, fir and deodar, occasionally mixed forest.

Extralimital. Adjacent parts of eastern Afghanistan. Range disjunct from that of the western China population.

GENERAL HABITS. As in other members of the genus but keeps to the tops of the taller conifers (mostly) and smaller branches and is therefore difficult to see. Its presence is usually detected by its peculiar call-note (q.v.). Sometimes perches on the highest twig of a dead tree, flicking its wings and jerking from side to side.

NUTHATCHES

219

1833. Eastern Whitefaced Nuthatch. *Sitta leucopsis przewalskii* Berezovski & Bianchi
Sitta przewalskii Berezovski & Bianchi, 1891, Pütsi Kansus. Putschest. G.N. Potanina: 119 (Mindshu dist., upper Hwangho R., eastern Tsinghai. China)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 12 cm (4½ in.).

FIELD CHARACTERS. As in 1832 but breast rufous (v. buffish white).

STATUS, DISTRIBUTION and HABITAT. May occur in northern Arunachal Pradesh in the Tsangpo Bend area (see Extralimital, below). Affects chiefly conifer forest.

Extralimital. Southeastern Tibet west to Tse (c. 94°30'E. long.) at c. 2800-3000 m (Ludlow, *Ibis* 1951: 555) and the mountains of western China north to Tsinghai and Kansu.

GENERAL HABITS, FOOD and VOICE. Probably as in 1832.

BREEDING. Unrecorded; probably as in 1832.

MUSEUM DIAGNOSIS. Differs from *leucopsis* (1832) in being rufous on breast and abdomen rather than buffish white. Bill much weaker, thinner and shorter, averaging 17 mm in four adults as against 21 in a long series of nominate *leucopsis*. Wing length averages about 4 mm shorter (Vaurie).

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	76-81	21-22	39-45 mm
♀♀			40-44 mm (Vaurie)

COLOURS OF BARE PARTS. Unrecorded.

SITTA HIMALAYENSIS Jardine & Selby
Key to the Subspecies

Eye-stripe extending on to shoulder.....*S. h. himalayensis*
Eye-stripe not extending on to shoulder.....*S. h. australis*

1834. Himalayan Whitetailed Nuthatch. *Sitta himalayensis himalayensis* Jardine & Selby
Sitta himalayensis Jardine & Selby, 1835, Ill. Orn. 3, pl. 144
(Himalaya Mts. = Simla *sic* Meinertzhagen)
Baker, FBI No. 108 (part), Vol. 1: 122
Plate 96, fig. 2

LOCAL NAME. Siddyi-ship (Lepcha).

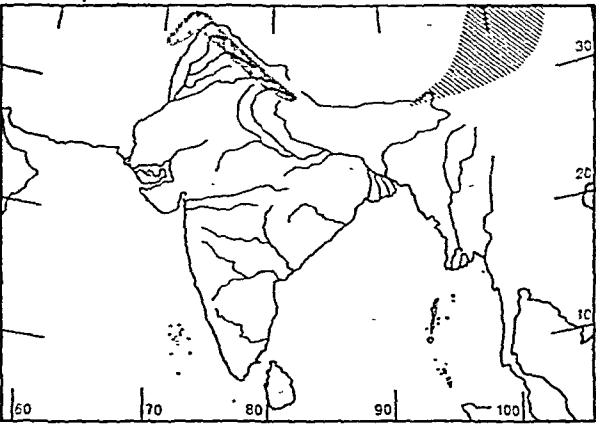
SIZE. Sparrow — ; length c. 12 cm (4½ in.).

FIELD CHARACTERS. Above, bluish slaty. A black eye-stripe from lores to nape. A white patch at base of tail. Expanded tail shows black rectrices with white spots. Below, throat buff shading to ochraceous on breast and deep rufous on lower parts. A white patch under wing visible in flight.

218

SITTINAE

Sitta leucopsis



Distributional ranges

□ *leucopsis* (1832) ▨ *prezawskii* (1833)

FOOD. Insects and seeds (of *Pinus excelsa*, *P. gerardiana*, etc.).

VOICE and CALLS. Ordinary call-note, incessantly uttered while foraging, a curious plaintive squeak, or 'wailing bleat of a small kid', rendered as *quair-quair* (HW) or *pain*, pronounced like the French word for bread (Whitehead). It is a characteristic sound of the conifer forest and often the only sign of the bird's presence. Also a common double-note like *bavain bavain* of the same quality as above (Magrath).

BREEDING. Season, end of April to early July. Nest, a pad of moss, grass and a few leaves, lined with fur; placed in holes or crevices in trees shattered by lightning, generally at great heights — from 6 to 30 metres above the ground — exceptionally in a hole in the ground below a root (Whitehead). No masonry is used to reduce entrance-hole. Eggs, 4 to 8, pinky white with numerous reddish spots; similar to those of *Sitta europaea* but more delicately marked. Average size of 75 eggs 18 × 13.8 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters and 1833. Postnuptial moult complete, July to October.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	74-79	(one) 22 }	18-19	39-40 mm (Paludan, MD)
♀♀	73-75	(one) 21 }		

Weight 10 ♂♂ 13.5-15.9; 3 ♀♀ 14.7-15.1 g (Paludan, RAP).

COLOURS OF BARE PARTS. Iris brown. Bill blackish, base of lower mandible whitish or pale grey. Legs and feet greenish brown.

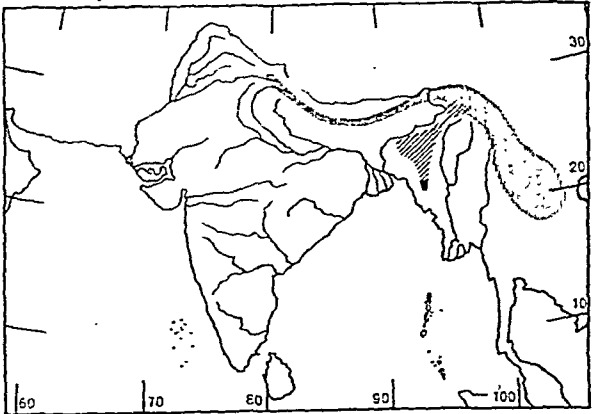
220

SITTINAE

Distinguished from other nuthatches by the white patch at base of tail; from the Assam subspecies (1835) by longer eye-stripe, extending on to shoulder.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to seasonal movements. The Himalayas from Chamba c. 76°E. (replaced by *S. europaea* west of this locality) eastward through Arunachal Pradesh. Breeds between 1500 and 3000 m, in eastern Nepal and Sikkim up to 3300 or 3400 m,

Sitta himalayensis



Distributional ranges

□ *himalayensis* (1834) ▨ *australis* (1835)
■ *vicariae* (RE)

overall optimum zone 1800-2700 m. In Sikkim noted as low as 950 m in winter. Affects deciduous or evergreen broad-leaved forest, chiefly oak and rhododendron; shows a preference for mossy forest.

Extralimital. Ranges east to Yunnan and the northern Indochinese countries.

GENERAL HABITS. Keeps in pairs or scattered parties, often among the mixed hunting bands of tits and small babblers. Appears to forage mostly on the mossy branches, much less on trunks (Diesselhorst). Creeps jerkily along the upper or under side of moss-covered boughs or up and around tree-trunks with astonishing agility, prying into crevices in the bark or under the moss in search of insects, presently flying off to another tree nearby to resume the hunt. Occasionally found in low shrubs.

FOOD. Mainly insects; also kernels of nuts and seeds. The nut is fixed in a suitable hollow or 'socket' in a branch and hacked open by determined hammer-blows of the pointed bill.

NUTHATCHES

221

VOICE and CALLS. The birds maintain contact with one another by a feeble mousy *chip-chip*. In the breeding season, a clear, spirited, tit-like whistling song *wheel-wit-wit-wit* quickly repeated six to eight times, uttered by male with neck partially upstretched, from a perch in a tree (SA). Song period February to May (Proud).

BREEDING. Season, mid March to early May. Nest, a hole in a tree, usually an oak, between 1 and 15 metres above the ground, lined with moss or rhododendron leaves. Where the hole is too large, the entrance is reduced to suit the size of the bird by masonry work with wet clay. Eggs, 4 to 7, white densely covered with dark red spots and small blotches, generally more numerous at the larger end where they may form an ill-defined ring. Average size of 25 eggs 18.6 × 13.4 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters; also for distinction from the Assam subspecies *australis*.

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	69-77	15-19	17-21	35-42 mm
♀♀	68-76			33-40 mm
			(Vaurie, BB, NBK, SA)	

Weight 13 ♂♂ 14-17; 10 ♀♀ 14.3-16 g (RAP, GD). 4 ♂♂ (winter) 12-16; 4 ♀♀ (winter) 12-15 g—SA.

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible blackish brown, lower pale plumbeous with horny brown tip. Legs, feet, claws, pale horny brown; soles greyish white.

1835. Assam Whitetailed Nuthatch. *Sitta himalayensis australis* Koelz

Sitta himalayensis australis Koelz, 1951, Jour. Zool. Soc. India 3: 29 (Tekhubama, Naga Hills, Assam)

Sitta himalayensis lushaiensis Koelz, 1952, Jour. Zool. Soc. India 4: 37 (Hmuntha, Lushai Hills)

Baker, FBI No. 108 (part), Vol. 1: 122

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. As in 1834, q.v.

STATUS, DISTRIBUTION and HABITAT. Fairly common resident in Nagaland, Manipur and in the Cachar and Mizo (Lushai) hills, above c. 1700 m. Affects moist, broad-leaved evergreen forest.

Extralimital. Adjacent hills of Burma.

GENERAL HABITS, FOOD and VOICE. As in 1834.

BREEDING. Unrecorded; probably as in 1834.

MUSEUM DIAGNOSIS. Differs from *himalayensis* (1834) in having a shorter post-ocular stripe (not extending on to the shoulder). Rufous of underparts fading to white on centre of throat and chin.

MEASUREMENTS

Wing 5 ♂♂ 72-76; 5 ♀♀ 71-76 mm (Koelz)

Weight 1 ♂ 15; 1 ♀ 14 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill black, base of lower mandible grey. Legs and feet dark greenish brown or dark yellowish brown.

NUTHATCHES

223

in being larger, glossier, more sparsely and boldly spotted. Average size of 50 eggs 21.1 × 16.6 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. Postnuptial moult complete, from the middle of July to the middle of October, occasionally later.

First-winter plumage not distinguishable with certainty from that of adult. Post-juvenal moult of body-feathers, lesser and median wing-coverts, takes place at the same time as the postnuptial moult of adults.

MEASUREMENTS

	Wing	Bill (from skull)
♂♂	85-90	26-27 mm
♀♀	85-88	26-29 mm

(Vaurie, southern Afghanistan)

1 ♀ Tarsus 25; tail 50 mm (MD)

Weight 3 ♂♂ (August) 33-35; 3 ♀♀ (August) 31-32 g (Paludan, northern Afghanistan).

COLOURS OF BARE PARTS. Iris dark brown. Bill black, livid at base of lower mandible. Legs and feet grey.

1837. Beautiful Nuthatch. *Sitta formosa* Blyth

Sitta formosa Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 938 (Darjeeling)

Baker, FBI No. 118, Vol. 1: 131

Plate 96, fig. 8

LOCAL NAMES. *Tishe kuyi gumbo* (Lepcha); *Dao-mojo-gadeba* (Cachari).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. A large, showy, black and blue nuthatch. Above, crown and upper back black with brilliant blue and lilac streaks. Wing black with blue outer edge and shoulder, white bars and white edge to tertials. Scapulars and rump pale blue. Tail blue with black shaft-lines; expanded tail shows black rectrices with white subterminal spots. Below, sides of head buffish white with dark ear-coverts. Chin and upper throat creamy white grading to rufous-clay on lower parts. Sexes alike.

In flight a white patch on the black underwing conspicuous from below.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements, rare and locally distributed. Sikkim, Bhutan (?), the Dafia, Abor and Mishmi hills, Nagaland, Manipur, the Cachar and Khasi hills, and the Chittagong Hill Tracts. Recorded in summer between 1500 and 2100 m (2400 *vide* Inglis), and in winter between 330 and 2000 m. Affects deep forest.

Extralimital. Extends east to northern Vietnam.

GENERAL HABITS. Little known. Keeps in pairs or small family parties of 4 or 5 usually high up in lofty trees. Actions and behaviour characteristic of the genus, but slower, resembling those of a woodpecker as when clambering about the branches or hammering away on the bark. Flight fast.

VOICE and CALLS. A typical nuthatch call though less harsh than that of *S. europaea* and lower pitched than almost any other nuthatch's.

BREEDING. Season, April to June. Nest, a hollow in a tree between c. 2 and 8 metres above the ground, lined with some leaves, chips of bark and

222

SITTINAE

1836. Eastern Rock Nuthatch. *Sitta tephronota tephronota* Sharpe

Sitta tephronota Sharpe, 1872, Ann. Mag. Nat. Hist. 10: 450

(Kokand, Ferghana, Central Asia)

Baker, FBI No. 116, Vol. 1: 129

Plate 96, fig. 5

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. A comparatively large rock-inhabiting nuthatch. Above, ashy grey. A black eye-stripe from lores to nape. Outer edge of tail and tips of outer rectrices pale buff. Below, throat, sides of head and neck, and breast creamy white grading to pinkish buff on lower belly and flanks. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Fairly common resident, subject to vertical movements. Baluchistan from the Sulaiman Range southwest to Nushki and Kalat, and possibly through the ranges of central Makran as the species occurs in Iranian Baluchistan. Affects rocky valleys with broken cliffs and jumbles of boulders especially where there are streams, from c. 300 m in winter to c. 2500 m in summer.

Extralimital. Extends north to the Tien Shan and southern Transcaspia. The species ranges west to Armenia.

GENERAL HABITS. Usually solitary or widely separated pairs; often breeding in family parties of 5 or 6, or maybe two such parties together. An extraordinarily active bird, jerkily clambering about on almost every type of rock face, however perpendicular and precipitous, in search of insects lurking within the unevennesses.

FOOD. Insects and seeds.

VOICE and CALLS. Call-note, *pit-pit-pit*. Song(?), a chattering though pleasing call (Williams).

BREEDING. Season, February to June. Nest, a remarkable structure of clay like a little oven protruding from the substrate 'much like a woman's breast'. In some cases comparatively small (c. 30 cm in diameter); in others the clay portion may cover as much as three square feet (a third of a square metre). Foundation of one nest examined measured c. 75 × 45 cm. The point of the mud entrance is sometimes prolonged in the shape of a cone sticking out of the cliff-face for about 15 cm, at the end of which is the actual entrance-hole, 35 mm or so in diameter. The nest is lined with fur of small mammals and feathers. Feathers and other bright objects are sometimes stuck into the clay outside (Williams, JBNHS 33: 599). The structure is usually shaded from the sun by overhanging rock. As a rule it is not built high up on the rock-face, often near the entrance of a deep cleft, and quite often within easy hand reach. The clay plaster is usually laid on over crevices or in shallow angles of rocks and frequently also 'against holes in trees, which were invariably furnished with the same masonry inside and outside while often feathers were used to decorate the bark of the trunk all round the nest' (Barnes *apud* Baker, *Nidification* 1: 99; also Murray *apud* Ticehurst, JBNHS 31: 695). Eggs, normally 4, white, spotted and blotched with light chestnut to chestnut-brown with secondary markings of pale pinkish lavender, sometimes absent. Differ from those of other nuthatches

SITTINAE

224

fur of small mammals. Entrance-hole reduced with clay masonry when too large. Eggs, clutch size apparently 4 to 6, like large eggs of *S. castanea* (1828). Average size of 6 eggs 21.1 × 15.6 mm; of 20 eggs, including 4 small added ones, 20.8 × 15.3 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	114-118	c. 17	c. 21	58-60 mm
		(from skull)		(Baker)
1 ♀	98	23	20	52 mm
				(MD)

COLOURS OF BARE PARTS. Iris brown. Bill black, white at base of lower mandible. Legs and feet olive-brown.

1838. Velvetfronted Nuthatch. *Sitta frontalis frontalis* Swainson

Sitta frontalis Swainson, 1820, Zool. Ill. (1), pl. 2 (Ceylon)

Sitta cerallina Hodgson, 1836, Jour. Asiat. Soc. Bengal 5: 779 (Nepal)

Sitta frontalis simplex Koelz, 1939, Proc. Biol. Soc. Washington 52: 63

(London, Bombay Presidency)

Baker, FBI No. 119, Vol. 1: 132

Plate 96, fig. 7

LOCAL NAMES. *Mākhmāli zad-chad* (Gujarat); *Dao-mojo-bulu-gajas* (Cachari); *Pasai edukira kūrūni* (Tamil); *Tandan kili* (Malayalam); *Panu-kurulla* (Sinhalese).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. A small purplish blue nuthatch with velvety black forehead, red bill, orange-yellow orbital skin and yellow eye.

Male. Above, forehead and a long supercilium black. Rest of upperparts purplish blue. Expanded tail shows black rectrices with greyish terminal band. Below, ear-coverts lavender. Chin and centre of throat white grading to drab brown more or less suffused with lavender on lower part.

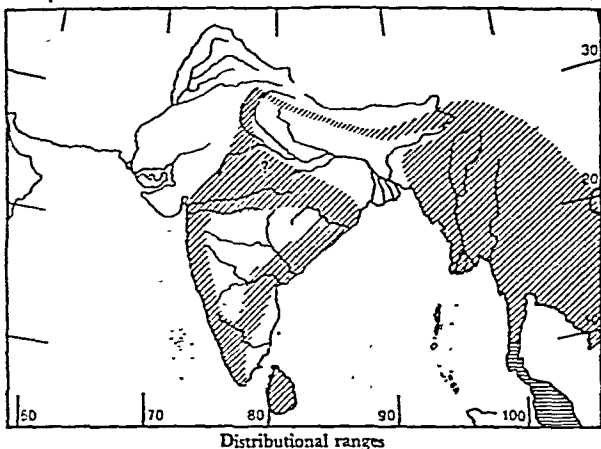
Female similar but without the black supercilium.

STATUS, DISTRIBUTION and HABITAT. Resident, locally abundant. Widely distributed in the better wooded:

roughly east and south of a line . . . to Navsari in Gujarat (c. 21°N., 73°E.). Eastward along the lower Himalayas, (including Nepal, Sikkim and Bhutan) through Arunachal Pradesh; thence south through Assam, Meghalaya, Nagaland, Manipur, Mizoram and Bangladesh to the Chittagong Hill Tracts. Bengal and southward through the Peninsula to Kerala and Tamil Nadu; and Sri Lanka. From plains level to c. 1500 m, locally to c. 2200 m in the Himalayas, and the peninsular and Sri Lanka hills. Common in the Eastern and Western Ghats complexes (including Nilgiri and Palni hills), and fairly common locally elsewhere in the appropriate evergreen and moist-deciduous biotope. Avoids arid areas. Affects rather open broad-leaved forest and mixed bamboo jungle, evergreen sholas, shade-trees in tea, coffee and cardamom plantations, etc. Also mangrove forest (*Sonneratia apetala* etc.) in the Khulna Sunderbans.

NUTHATCHES

225

Sitta frontalis

Distributional ranges

▨ *frontalis* (1838)

▨ Extralimital subspecies

Extralimital. Ranges east through Burma, the Indochinese countries, Hainan, southern Sumatra and Java. Other subspecies in Malaysia, Borneo and the Philippines.

GENERAL HABITS. Similar to those of other nuthatches. Keeps in pairs or small parties sometimes up to a dozen individuals, usually in mixed hunting associations often including *Sitta castanea*. Hunts on the moss-covered branches of large trees, creeping jerkily up and down or around them with the agility of a mouse, inspecting little nooks and crannies and hammering away at the bark like a woodpecker. Also forages in brushwood and on fallen logs but does not seem to visit the ground. Sometimes will cling back downwards on the underside of a branch and scuttle along thus with astonishing celerity. A bird has been observed in this inverted position on a horizontal twig at top of a bare tree, head stiffly turned down at a right angle, bill pointing to the ground, remaining 'frozen' thus for no apparent reason for over three minutes!

FOOD. Insects and their larvae.

VOICE AND CALLS. A rapid series of loud high-pitched cheeping whistles; often the latest diurnal bird-call to be heard after dusk, even after the last Grey Junglefowl has ceased to crow.

BREEDING. *Season*, April to June in the north, January to May in the south and in Sri Lanka. *Nest*, a hole in a branch or trunk of a tree between one and twelve metres above the ground, lined with moss, fur and feathers. Size of entrance reduced with masonry work if too large, but hole chosen

226

TICHODROMADINAE

usually so small as to even require enlarging. *Eggs*, 4 or 5 in the north, 3 or 4 in the south, like small, rather richly marked eggs of *S. castanea*, some of them with large red blotches and more like tit's eggs. Average size of 50 eggs 17.2 × 13.2 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. Contrary to the normal condition in nature (Bergmann's Rule, see Vol. 1: xlii) Himalayan birds in this case are smaller than south Indian and Ceylonese examples.

Young, like adult but black frontal band not so broad nor so pure black. Ear-coverts less lilac, more brownish. Chin and throat duller. Under tail-coverts edged with rusty brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	70-82	15-16	15-17	37-45 mm
♀♀	69-80			35-44 mm

(HW, Koelz, SA, BB, Mukherjee)

Weight 13 ♂♂ 11-14.5; 4 ♀♀ 10-13.4; 1 ♂♂ 8.5 g (RAP, GD, SDR).

COLOURS OF BARE PARTS. Iris yellow; eye-rim orange-yellow to orange-red. Bill coral-red, tip of upper mandible brown; palate coral-red. Legs and feet pinkish brown; soles orange-yellow. **Young.** Iris brown. Bill black, pink at gape and nostrils; mouth coral-red.

Subfamily TICHODROMADINAE: Wall Creepers

For description see Baker, E. C. S., 1922, FBI 1: 441 (Genus *Tichodroma*); Hans Löhr, 1964, article 'Nuthatch' in Thomson, A. L. (ed.), *A New Dictionary of Birds*, London & New York.

Genus TICHODROMA Illiger

Tichodroma Illiger, 1811, Prodrum: 210. Type, by monotypy, *Certhia muraria* Linnaeus

Cf. Vaurie, C., 1957, *Arct. Mus. Novit.*, No. 1858: 1-8

Bill very long, slender, slightly curved, longer than head, with long, narrow nostrils. Wing very large, rounded; first primary (as.) about half the length of second; second and third primaries falling short of tip of wing. Tail of twelve soft rectrices. Tarsus smooth; hind claw longer than its toe.

1839. Wall Creeper. *Tichodroma muraria nepalensis* Bonaparte

T. (tichodroma) nepalensis Bonaparte, 1850, *Consp. Gen. Av.* 1: 225 (Central Asia)
Baker, FBI No. 457, Vol. 1: 441

Plate 96, fig. 9

LOCAL NAMES. *Dracl gajrak* (Pashu); *Lamba dider* (Kashmir); *Supperetra* (Chamb); *Sag-gersa-lamdong-pha* (Lepcha).

SIZE. Sparrow; length c. 17 cm (6½ in.).

WALL CREEPERS

227

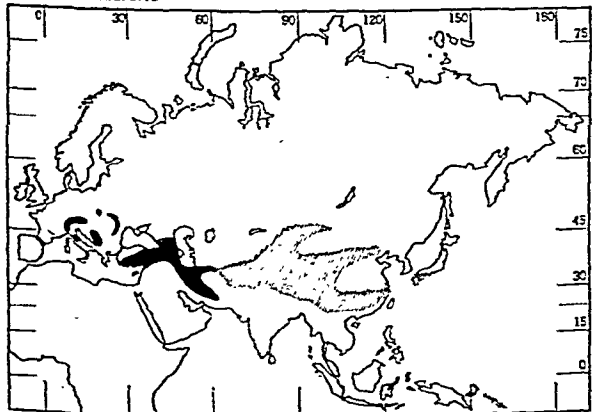
FIELD CHARACTERS. Winter. Above, crown pale brown; a white eye-rim. Back ashy. Wings blackish brown with bright crimson shoulder and outer edge, the primaries with round white spots very conspicuous in flight. Tail comparatively short, blackish brown with grey tip, the outer rectrices mostly white. Below, throat and upper breast white; rest of underparts dark slaty.

× c. 1

Summer. Crown ashy like back. Throat and upper breast black. Sexes practically alike.

At a distance, general appearance and actions confusingly like Rock Nuthatch, both when creeping up a rock face and on the wing. At close range easily identified by unique crimson wings continually flicked while climbing.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements and winter wandering. Fairly common but sporadic. Pakistan from the Safed Koh to Hunza, thence east through Ladakh, Kashmir and along the Himalayas through Arunachal Pradesh. Breeds mostly above 3300 m,

Tichodroma muraria

Distributional ranges

▨ *nepalensis* (1839)

▨ *muraria* (RE)

possibly down to c. 2700 m locally, and up to permanent snow-line (young bird obtained in July at 6400 m in Ladakh — Meinertzhagen). In winter (October to March or early April) commonly reaches the foothills in suitable country, and sometimes wanders considerable distances into the plains

228

TICHODROMADINAE

(Salt Range, Lyallpur, Lahore, Fatehpur Sikri, Dehra Dun, Etawah, Ghazipur, Delhi, etc.). Affects gorges and vertical cliffs, especially near streams or small cascades; in winter also visits earth cliffs, concrete walls, buildings and archaeological ruins, and boulders in river-beds.

Extralimital. Extends to Transcaucasia, Altai, Hopeh and Fukien. Nominatē race from Iran to the Alps and the Pyrenees.

GENERAL HABITS. Solitary or in pairs. Seldom seen away from cliffs although it has been noted paying regular visits to the wooden walls of a Kashmir houseboat, and once observed climbing the trunk of a tree. On vertical cliffs, climbs in jerky zigzag spurts continually flicking its crimson wings and poking its long bill into small crannies for insects and spiders. Now and again will let go its hold and tumble through space to explore the scarp lower down, or loop off and fly to another cliff, where active hunting is forthwith resumed. Unlike nuthatches, will often fly high over a valley or forest when moving to a distant hunting-ground. Flight undecided and very hoopoe-like, also reminiscent of a large butterfly, with alternated flappings and pauses. 'Occasionally attempts to take an insect on wing' (HW).

FOOD. Chiefly spiders, also diptera, beetles and other insects and larvae.

VOICE AND CALLS. Recorded within our limits only as 'a plaintive cheeping noise' (A. B. Aitken). A very silent bird. In the Alps its call-note has been noted as a melodious rather fast *ti-oo-ū ti-oo-ū*, first and third note highest, second note lower. Song, uttered in the breeding season and on sunny days in autumn and early spring, a thin, slow ascending phrase of four sliding notes *tiu tush-tee-ū*, a very short pause after the first note, third note highest and very thin. Both call-note and song rather weak and not audible beyond c. 80 metres under favourable circumstances (MD).

BREEDING. *Season*, May to July. *Nest*, a pad of wool, hair and grass placed in crevices of rocks, usually inaccessible. *Eggs*, white with a few black or deep red-brown specks at the larger end. Clutch-size and egg measurements unrecorded within our territory. Extralimital: c/4 to 6, averaging 21.3 × 14.9 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. Summer plumage acquired by pre-nuptial body moult about February–March. Postnuptial moult complete.

Young. *Atter*, as in female in winter plumage, but head dark grey with plum-coloured gloss, deep plum round the eyes. Upper back very pale, pearl grey, shading into darker grey on lower back. Primaries tipped with pearly white. *Below*, as in winter male. Many of these colours fading rapidly in dried skins (Meinertzhagen).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	100-115	26-30	22-26	53-58 mm
♀♀	92-104			57-60 mm

(SA, MD, Rand & Fleming)

Weight 6 ♂♂ 13-19 g (Paludan, RAP, SA). 2 ♀♀ 16.5, 18 g (SA). 3 juv. 18.2-19.2 g (GD).

COLOURS OF BARE PARTS. Iris dark brown. Bill black, lower mandible white at base. Legs and feet blackish brown.

SPOTTED CREEPERS

229

Subfamily SALPORNITINAE: Spotted Creepers

For description see below, under Genus *Salpornis*

Genus *SALPORNIS* Gray

Salpornis Gray, 1847, Proc. Zool. Soc. London: 7. Type, by original designation, *Certhia spilnotus* Franklin



x c. 1

SALPORNIS SPILONOTUS (Franklin)

Key to the Subspecies

Upperparts greyer.....*S. s. rajputanae*
Upperparts darker, underparts more heavily marked *S. s. spilonotus*

1840. **Rajasthan Spotted Grey Creeper.** *Salpornis spilonotus rajputanae* R. & A. Meinertzhagen

Salpornis spilonotus rajputanae R. & A. Meinertzhagen, 1926, Bull. Brit. Orn. Cl. 46: 83 (Sambhur)

Baker, FBI No. 456 (part), Vol. 1: 439

LOCAL NAME. *Rākhodi thad-chad* (Gujarat).

SIZE. Sparrow — ; length c. 13 cm (5½ in.).

FIELD CHARACTERS. As in 1841, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident. Central and southeastern Rajasthan (including the Aravalli Hills) from Sambhar to Mt Abu. Habitat as in 1841.

GENERAL HABITS, FOOD AND VOICE. As in 1841.

BREEDING. As in 1841.

MUSEUM DIAGNOSIS. Like *spilonotus* (1841) but upperparts greyer, ground colour hair-brown, markings not so intense black. Underparts paler, sandier and less heavily marked.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1841.

1841. **Indian Spotted Grey Creeper.** *Salpornis spilonotus spilonotus* (Franklin)

Certhia spilonota Franklin, 1831, Proc. Zool. Soc. London: 125 (Vindhyan Hills)

Baker, FBI No. 456 (part), Vol. 1: 439

Plate 96; fig. 14

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 13 cm (5½ in.).

TREE CREEPERS

231

forwards instead of ascending the tree in the jerky spiral so characteristic of *Certhia* (Newnham, JBNHS 13: 194). First alights near the base of a tree-trunk rapidly creeping up to and along the upper branches, clinging to them upside down merely stopping now and again to investigate a crevice, and soon flying off to an adjacent tree. When alighting on a tree-trunk 'tumbles' on to it with wings open, rather like a quail pitching into grass, in contrast to a woodpecker which sweeps gracefully upwards with wings closed before clinging to the bole (SA).

FOOD. Insects and spiders.

VOICE AND CALLS. A feeble whistling song of the volume and timbre of a sunbird's, of about five seconds' duration, *chichichiu-chi-chiu-chiu-chiu* (SA).

BREEDING. Season, March to May. Nest, a deep cup fixed in a crotch of a thin leafless acacia or suchlike tree, or on a slender branch at its junction with a vertical shoot, some 3 to 5 metres above the ground. Composed of leaf-stalks, bits of leaves, lichen and chips of bark, lined with soft spider egg-bags, and cemented exteriorly with cobwebs, cocoons, caterpillar frass and vegetable down, perfectly camouflaged against the bark of supporting branches and practically invisible from below. Inside diameter of cup c. 45 mm, thickness of wall c. 12 mm, depth of cup c. 45 mm. Nest very strong though soft and pliant in the hand, 'almost as flabby as if it was jelly'. Eggs, 2 or 3, pale greenish grey with dark brown specks and paler secondary blotches, specially at the large end. Two eggs measure 19.5 × 13 and 19 × 13 mm (SA); average size of 6 eggs '16.9 × 13 mm' (Baker). Incubation by both sexes; period unrecorded.

MUSEUM DIAGNOSIS. Differs from *rajputanae* (1840) in being darker.

MEASUREMENTS		Wing	Bill (from skull)	Tarsus	Tail
2	♂♂	90	25, 26	17	52, 53 mm
3	♀♀	87-89	24-28	17	49-51 mm (SA)

Weight 1 ♂ 14 g (SA).

COLOURS OF BARE PARTS. Iris dark brown. Bill horny brown, lower mandible flesh colour. Legs and feet bluish black.

Family CETHIIDAE: Tree Creepers

For description see Baker, E. G. S., 1922, FBI 1: 428; Van Tync, J. & Berger, A. J., 1959: 516; Ferguson-Lees, I. J., 1964, article 'Treecreeper' in Thomson, A. L. (ed.), *A New Dictionary of Birds*, London & New York.

Genus *CERTHIA* Linnaeus

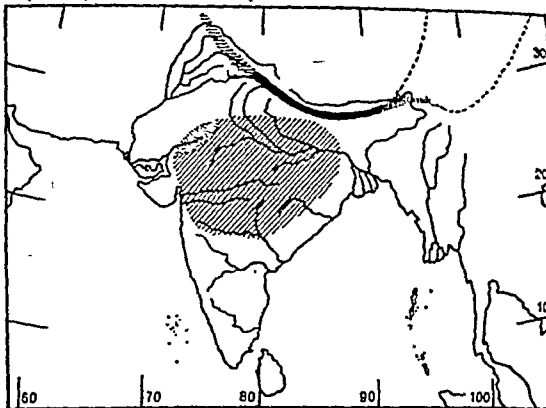
Certhia Linnaeus, 1758, Syst. Nat., ed. 10, 1: 118. Type, by subsequent designation, *Certhia familiaris* Linnaeus

Bill as long or nearly as long as the head, slender and curved downwards. Nostrils long and narrow. Tarsus scutellated. Toes and claws very long.

230

SALPORNITINAE

Salpornis spilonotus and *Certhia familiaris*



Distributional ranges

- spilonotus* (1841)
- rajputanae* (1840)
- hodgsoni* (1842)
- mandellii* (1843)
- khamensis* (1844)

FIELD CHARACTERS. A mottled brown bird with slender, longish curved



x c. 1

bill, reminiscent of both tree creeper and nuthatch. Above, entirely dark brown spotted with white. A white supercilium and dark ear-coverts. Tail barred brown and white. Below, throat white, rest of underparts fulvous spotted and barred with dark brown. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident; on the whole scarce and patchily distributed, but not uncommon locally. The central Indian Peninsula from Gurgaon (near Delhi), Gonda (U.P.) and the 'Bihar terai' (Hume) east to Manbhum, south through eastern Madhya Pradesh (Bastar dist.) roughly to the Godavari river (Sironcha, Ahmednagar) and west to Khandesh, Rajpipla and Deesa. Affects fairly open deciduous forest of *Acacia*, teak, etc. and mango groves, in the plains and hills.

Extralimital. Other subspecies in Africa south of the Sahara.

GENERAL HABITS. Usually met with singly or in pairs, sometimes in mixed company. Has a preference for trees with deep-fissured bark such as *tendu* (*Diospyros* sp.), babool (*Acacia nilotica*) and khair (*A. catechu*) for its foraging. Flutters and clambers rapidly up the trunks and branches 'with a vivacity and ease reminding one of a Wall Creeper' (Babault). 'Resembles a nuthatch more than a creeper as it works the branches backwards and

CERTHIIDAE

Key to the Species

		Page
A	Tail distinctly barred.....	<i>C. himalayana</i> 234
B	Tail not barred	
1	Throat white	
a	Breast white, lower flanks earthy brown.....	<i>C. familiaris</i> 232
b	Breast buff, lower flanks ferruginous.....	<i>C. nipalensis</i> 240
2	Throat earthy brown or rufous brown.....	<i>C. discolor</i> 238

CERTHIA FAMILIARIS Linnaeus

Key to the Subspecies

A	Lower flanks distinctly tinged with rufous.....	<i>C. f. mandellii</i> 233
B	Lower flanks not (or faintly) tinged with rufous	
1	Upperparts pale brown.....	<i>C. f. hodgsoni</i> 232
2	Upperparts very dark rusty brown.....	<i>C. f. khamensis</i> 234

1842. **Kashmir Tree Creeper.** *Certhia familiaris hodgsoni* Brooks

Certhia Hodgsoni Brooks, 1872, Jour. Asiat. Soc. Bengal 41: 74 (Cashmir)

Baker, FBI No. 450, Vol. 1: 434

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length c. 12 cm (5 in.).

FIELD CHARACTERS. Above, fulvous brown spotted with whitish on crown and back; a white supercilium. A short wing-bar and an oblique buff band across wing. Tail longish, pointed, brown, unbarred. Below, white. Sexes alike.



x c. 1

Distinguished from *C. himalayana* by unbarred tail.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The western Himalayas from Gilgit, Astor and Murree east through Kashmir to Lahul, from c. 2100 m up to timber-line. Apparently less common in Kashmir than *himalayana* but the two doubtless often confused in the field. Affects forests of pine, deodar, fir and mixed birch and fir.

Extralimital. The species extends from western Europe to Japan. Also cold and temperate conifer forests of North America.

GENERAL HABITS. Solitary, sometimes in twos or threes, usually in mixed hunting parties of tits and other small birds. Creeps up tree-trunks in short jerky spurts, searching the crevices and bark for insects — sometimes drops or slithers lower, in 'reverse gear' and works up again. After working up to near the top, flies off to another tree, alighting on the trunk near its base and scuttling upward in the same way. Occasionally also on moss-covered rocks.

FOOD. Insects and spiders.

VOICE AND CALLS. Undescribed. Extralimital: call-note a thin *tut*; song, a very thin, short phrase on a descending scale.

BREEDING. Little recorded. Season, May and June. Nest (undescribed) placed in cracks in tree-trunks or behind loose outflanking bark, from 3 to 12 metres above the ground. Eggs, 5 or 6, white stippled with reddish

TREE CREEPERS

233

specks, more numerous at the larger end. Average size of 25 eggs 15.8 × 11.9 mm (Baker). Care of young by both parents.

MUSEUM DIAGNOSIS. Differs from *mandellii* (1843) in being much paler, less rufous above and in lacking rufous tinge on vent and lower flanks.

MEASUREMENTS

	Wing	Tarsus	Tail
♂ ♀	63-66	c. 17	60-61 mm (Baker)

Bill from skull 16-20 mm

Weight 3 ♂♂ (Nov.-Dec.) 7.6-9.9 g (RAP).

COLOURS OF BARE PARTS. As in 1843.

1843. **Mandelli's Tree Creeper.** *Certhia familiaris mandellii* Brooks

Certhia Mandellii Brooks, 1874, Jour. Asiat. Soc. Bengal 42: 256 (Sikkim)

Baker, FBI No. 448 (part), Vol. 1: 433

Plate 96, fig. 10

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. As in 1842 but darker; spots rufous, rump ferruginous.

Distinguished from *C. himalayana* by absence of barring on tail; from *C. discolor* by white throat and breast; from *C. nipalensis* by white breast and earth-brown lower flanks (v. buff breast and ferruginous flanks).

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. The Himalayas from Kulu to extreme western Arunachal Pradesh (Tawang), replaced at higher altitudes in Bhutan by the next subspecies. Occurrence south of the Brahmaputra doubtful (cf. Baker, *Nidification* 1: 413); also said to have been obtained from Shillong (Hume) and Nagaland (Godwin-Austen) [SF 11: 85. No extant specimens.]. Breeds from c. 2700 m up to timber-line (4200 m in eastern Nepal) mostly above 3300 m. Recorded in winter between 1700 m (Sikkim) and 3600 m (Nepal). Presumably not above 3000 m in Bhutan. Affects forests of fir, deodar, birch and rhododendron. Occurs in pure coniferous as well as in pure birch forest.

GENERAL HABITS, FOOD and VOICE. As in 1842.

BREEDING. Unrecorded (see 1842).

MUSEUM DIAGNOSIS. Differs from *hodgsoni* in being darker, more rufous brown above and in having the vent and lower flanks tinged with rufous.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	63-70	15	17	55-57 mm
♀♀	63-66	13	17	55 mm

(SA, NBK)

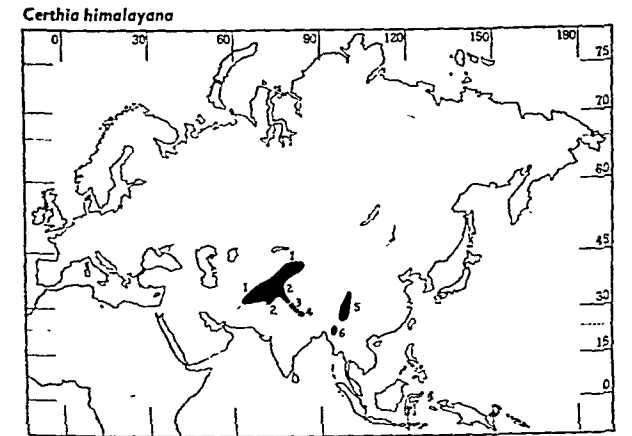
Weight 3 oo? adult (summer) 9-10; 4 juv. 9.2-10.2 g (GD). 2 ♂♂ (July) 9.3, 9.3 g (RAP).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible horny brown, lower pinkish flesh. Legs, feet and claws horny brown.

TREE CREEPERS

235

STATUS, DISTRIBUTION and HABITAT. Altitudinal and short-range migrant. Pakistan from Ziarat north through N.W.F.P. to Chitral and Hunza, thence east through Gilgit, Astor and Baltistan to Skardu, and from Murree to eastern Kashmir. Breeds from c. 2100 m, locally 1800 m, up to timber-line, optimum zone 2400-3000 m. Affects forests of pine, fir, deodar and juniper. In winter (end October to end March or early April) found mostly below



1800 m (occasionally up to c. 2400 m) down to the foothills and into the plains of the Indus south to Bahawalpur (Chachran, Harunabad, Bhong). In this season frequents orchards, village groves, roadside avenues, and sheesham trees in forest plantations and Canal Bungalow compounds, even where these are isolated far amidst treeless semi-desert tracts.

Extralimital. Eastern Afghanistan.

GENERAL HABITS. Those of the genus, cf. 1842. May be seen in small family parties after breeding, but later usually singly — one to a tree or among roving bands of tits, leaf warblers, etc. Works up the tree-trunks and along the larger boughs like a nuthatch, starting from the base and climbing in short spurts, investigating the crevices in the bark. Having attained a fair height, immediately flies off to another tree, again starting at the bottom and jerking its way upward directly or in irregular spirals. Normally avoids thin branches with no roughnesses in the bark for tiny insects to lurk. Occasionally seen foraging on stone retaining walls in winter.

VOICE and CALLS. Call-note, a low long-drawn squeak. Song, a loud, vigorous and very rapid *tis, yip yip yip yip yip* (Alexander). May be heard throughout the year, more lustily in the breeding season.

234

CERTHIIDAE

1844. **Tibetan Tree Creeper.** *Certhia familiaris khamensis* Bianchi

Certhia khamensis Bianchi, 1903, in Sharpe, Handl. Gen. Sp. Bds. 4: 355, 360 (Kansu . . . upper Mekong = Kham, upper Mekong)

Baker, FBI No. 449, Vol. 1: 434

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. As in 1842, q.v.

STATUS, DISTRIBUTION and HABITAT. Bhutan, presumably above 3500 m (specimens from Wangdo Chu and Lamthang, NW. Bhutan, 3500, 4150 m Sept. [SDR coll.]; Arunachal in the Pachakshiri region between 2900 and 4000 m (Ludlow, *Ibis* 1944: 176). Status and habitat as in 1843.

Extralimital. Extends to northern Yunnan and northern Szechuan. For range of species see 1842.

GENERAL HABITS, FOOD and VOICE. As in 1842.

BREEDING. Unrecorded.

MUSEUM DIAGNOSIS. Like *mandellii* but upperparts darker and less rufous. Belly, flanks and under tail-coverts pale smoke colour instead of rufous. Young greyer than adult, less rusty, especially on rump.

MEASUREMENTS

Wing 9 ♂♂ 68-72 mm; bill from skull 17-18 mm (NBK)

Weight 2 oo? (Sept.) 8.5, 10 g (SDR).

COLOURS OF BARE PARTS. Iris brown, dark brown. Bill: upper mandible black, lower whitish flesh. Legs and feet brown to dark brown.

CERTHIA HIMALAYANA Vigors

Key to the Subspecies

		Page
A	Palest, more greyish above.....	<i>C. h. taeniura</i> 236
B	Darker and browner above.....	<i>C. h. limes</i> 234
C	Darker than B, more buffy below.....	<i>C. h. himalayana</i> 237
D	Darkest, more blackish above with sharply defined streaks; barring on tail blacker and more distinct.....	<i>C. h. infima</i> 237

1845. **West Himalayan Tree Creeper.** *Certhia himalayana limes* Meinertzhagen

Certhia himalayana limes Meinertzhagen, 1922, Bull. Brit. Orn. Cl. 42: 141 (Gilgit)

Baker, FBI No. 444 (part) and 445 (part), Vol. 1: 430, 431

LOCAL NAME. *Koel dider* (Kashmir).

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. Above, brown mottled with pale grey. Supercilium whitish. A short whitish bar and an oblique buff band on wing, conspicuous in flight. Tail longish, pointed, pale brown distinctly barred with dark brown. Below, chin and throat white grading to buffish on belly and smoky on flanks. Sexes alike.

At close range distinguished from *C. familiaris* by barred tail. Long curved bill a helpful character in identification.

236

CERTHIIDAE

BREEDING. Season, early April to June. Nest, loosely made of twigs, dry grass or assorted materials and lined with feathers; usually placed behind the loose bark of a large tree, sometimes in cracks or crevices of trees split by lightning, from near the ground up to 15 metres or so, usually rather low down. Eggs, 4 or 5, white profusely marked all over with reddish brown freckles, forming an indistinct zone around the large end. Average size of 34 eggs 15.8 × 12.2 mm (Baker). Both sexes build the nest, which takes a couple of weeks to complete. Incubation apparently by female alone; male feeds female on nest. Incubation period 13 or 14 days; care of young by both parents; young leave the nest in about three weeks (Dodsworth, *JBNHS* 20: 463-71).

MUSEUM DIAGNOSIS. Intermediate between *taeniura* and *himalayana*; upperparts not so rufous as in *himalayana* but not so grey as in *taeniura*; crown almost as dark as in *himalayana*, but underparts paler.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	73-74	23-25	15-16	68-69 mm
♀♀	66-72	18-21		60-66 mm

(MD, HW)

Weight 2 ♂♂ (May) 8, 9; 3 ♂♂ (Oct.-Dec.) 9.1-10.3; 4 ♀♀ (Nov.-Dec.) 7.8-8.5; 2 oo? 8.5, 9 g (RAP, Paludan). 7 oo? (Mar.-Apr.) 8-10 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible dark brown, lower pale flesh, brown at tip. Legs and feet brown to fleshy brown.

1846. **Turkestan Tree Creeper.** *Certhia himalayana taeniura* Severtzov

Certhia taeniura Severtzov, 1872 (1873), Vertik. Turkest. Zhivnot.: 138 (Chimkent, Turkestan)

Baker, FBI No. 445 (part), Vol. 1: 431

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. As in 1845, q.v.

STATUS, DISTRIBUTION and HABITAT. Straggler. One record in Ladakh (Dras, 3000 m — Meinertzhagen), in stunted willows.

Extralimital. Extends to western Afghanistan and through Turkestan to the Tien Shan.

GENERAL HABITS, FOOD and VOICE. As in 1845.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Differs from *limes* in being paler and greyer.

MEASUREMENTS

	Wing	Bill (from skull)
♂♂	69-72	22-25 mm
♀♀	64-68	

(Dementiev)

COLOURS OF BARE PARTS. As in 1845.

TREE CREEPERS

237

1847. *Himalayan Tree Creeper*. *Certhia himalayana himalayana* Vigors

Certhia himalayana Vigors, 1832 (1831), Proc. Zool. Soc. London: 174
(Himalayan Mountains, restricted to Kumaon or Garhwal by Meinertzhagen,
1922, Bull. Brit. Orn. Cl. 42: 140)
Baker, FBI No. 444 (part), Vol. 1: 430
Plate 96, fig. 11

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. As in 1845, q.v.

STATUS, DISTRIBUTION AND HABITAT. Fairly common resident, subject to vertical movements; from eastern Kashmir east to Kumaon, breeding between 1500 and 3600 m (timber-line), optimum zone 2000–3000 m. Winters from c. 2100 m, mostly below 1400 m, down to the foothills and adjacent plains (Ambala district). Affects forests of spruce, pine, deodar and rhododendron. Generally avoids pure oak forest, where it is replaced by *C. discolor*.

GENERAL HABITS, FOOD AND VOICE. Occasionally flutters off the bark to take an escaping moth in the air. Song, 'a loud but squeaky rapid *chi-chi* . . . *chiu-chiu-chiu* (or *tri-tri* . . . *triu-triu-triu*) of the volume and quality of the *tree-tee* flight-song of Redwinged Bush Lark (*Mirafra erythroptera*)' — SA.

BREEDING. As in 1845.

MUSEUM DIAGNOSIS. Upperparts more rufous than in *lines*, underparts darker.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1845.

1848. *West Nepal Tree Creeper*. *Certhia himalayana infima* Ripley

Certhia himalayana infima Ripley, 1950, Proc. Biol. Soc. Washington 63: 106
(Tikapur, Kailali District, Western Nepal)
Baker, FBI No. 444 (part), Vol. 1: 430

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. As in 1845, q.v. See Museum Diagnosis.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements. Eastern Kumaon (where intergrading with *himalayana*) and western Nepal east to c. 81°31' long.¹ Two Hodgson specimens from Nepal in Brit. Mus. Occurs from c. 2500 m (October) down to the terai in winter. Summer distribution and habitat probably as in 1847.

GENERAL HABITS, FOOD AND VOICE. As in 1845.

BREEDING. Unrecorded.

MUSEUM DIAGNOSIS. Differs from *himalayana* by being conspicuously darker, more blackish on the upper surface. This race has sharply defined narrow streaks of buffy white on the head, nape and upper back. The rufous colour on the tips of the feathers of the lower back is stronger and darker than in *himalayana*. On the tail also the barring is more blackish as well as stronger and more distinct. There is no size difference.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 1845.

¹ The range of the species appears to be discontinuous in the Himalayas (see map, p. 235). The nearest populations occur in northern Burma (*yunnanensis*) and on Mt Victoria between 2300 and 3000 m (*ripponi*). Both may be expected in adjacent areas of India.

TREE CREEPERS

239

in the breeding season from 1800 to 2700 m, and in winter from 300 to 2700 m in Nepal and from 700 to 3600 m in Sikkim. Affects mossy oak and rhododendron forest. Prefers broad-leaved forest but also frequents conifers.

GENERAL HABITS. Those of the genus.

FOOD. Insects and spiders.

VOICE AND CALLS. Little recorded. Call, a sharp, quick-repeated *chip-chip-chip-chip* (SA). Song said to be 'typically tree creeper's'; see also 1850. Song period, early February to May (Proud).

BREEDING. Season, March to May (from circumstantial evidence). Nest and eggs undescribed.

MUSEUM DIAGNOSIS. See Field Characters. For distinction from *manipurensis* see 1850.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	67–76	17–20	17–20	73–82 mm
♀♀	64–72	16–18	17–18	73–77 mm

(SA, Rand & Fleming, MD)

Weight 7 ♂ ♀ (Mar.) 10–11; 3 ♂♂ (Oct.) 10–11 g — SA. 2 ♂♂ 10.4, 10.5; 2 ♀♀ 9.6, 10.6 g (GD).

COLOURS OF BARE PARTS. Iris brown. Bill; upper mandible dark brown, lower whitish, yellowish white or pinkish white; gape inside fleshy. Legs and feet pale brown.

1850. *Manipur Tree Creeper*. *Certhia discolor manipurensis* Hume

Certhia manipurensis Hume, 1881, Stray Feathers 10: 151 (Eastern Hills, Manipur)
Certhia victoriar Rippon, 1906, Bull. Brit. Orn. Cl. 16: 87 (Mount Victoria)
Baker, FBI No. 452, Vol. 1: 437

LOCAL NAMES. *Dao-mojo* (Cachar); *Inru-m-jet* (Naga); *Voh-ti-ti-ling* (Manipur).

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. As in 1849, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident, locally common. Nagaland (Godwin-Austen), Manipur, and probably the Khasi and Cachar hills (Baker, JBNHS 17: 791 and 13: 563; cf. also *Nidification* 1: 413).¹ Occurs between c. 900 and 2300 m (on Mt Victoria from 1400 to 3000 m but more frequent in the lower part of its zone). Affects mostly deciduous forest, occasionally pine woods.

Extralimital. The Chin Hills and south to the Arakan Yomas. The species extends east through Burma to Yunnan, Laos and Vietnam.

GENERAL HABITS AND FOOD. Those of the genus.

VOICE AND CALLS. Song described as a loud sharp double-note repeated several times *tija tija* . . . *tija* — (Heinrich); also rendered as a shrill *duuce-tee*, *duuce-tee* (Smythies).

BREEDING. Season, chiefly April and May. Nest, a pad of fibres, moss, rootlets and a few feathers placed in cracks or shallow holes in trees c. 2 to 4

¹ Records from Khasi and Cachar hills not supported by specimens; however no other tree creeper seems to occur south of the Brahmaputra.

238

CERTHIIDAE

CERTHIA DISCOLOR Blyth

Key to the Subspecies

Paler, more fulvous above *C. d. discolor*
Darker, less fulvous above *C. d. manipurensis*

1849. *Sikkim Tree Creeper*. *Certhia discolor discolor* Blyth

C. (certhia) discolor Blyth, 1845, Jour. Asiat. Soc. Bengal 14: 580 (Darjeeling)
Baker, FBI No. 451, Vol. 1: 435
Plate 96, fig. 13

LOCAL NAMES. *Silsuli* (Paharia); *Saddyer-pha* (Lepcha); *Chud sydi* (Assam).

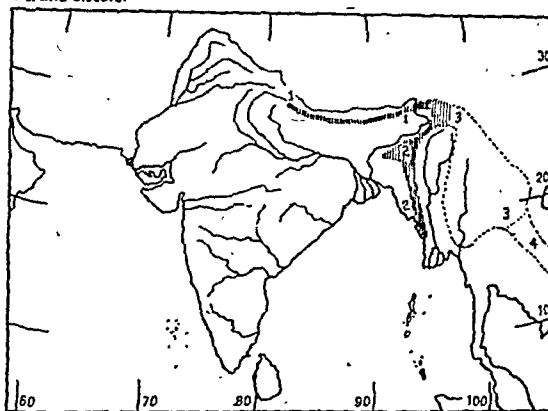
SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. Above, dark brown streaked with fulvous. Supercilium fulvous. A short bar and an oblique buff band across wing. Rump ferruginous. Tail rufous-brown. Below, throat and breast earth-brown to tawny brown. Belly paler, greyish to buffish. Under tail-coverts ochraceous. Axillaries white. Sexes alike.

Easily identified by its dark throat. All other creepers have a white throat.

STATUS, DISTRIBUTION AND HABITAT. Fairly common resident, subject to vertical movements and winter wandering. The Himalayas from western Nepal (Rand & Fleming, 1957) east through Arunachal Pradesh. Obtained

Certhia discolor



■ Distributional ranges

1 *discolor* (1849) 2 *manipurensis* (1850)

3, 4 Extralimital subspecies

240

CERTHIIDAE

metres above the ground. Eggs, apparently 3 or 4, differing from those of *himalayana* and *familiaris* in being more densely marked with deeper red-brown, tiny blotches and freckles. Average size of 11 eggs 15.9 × 12.3 mm (Baker).

MUSEUM DIAGNOSIS. Like *discolor* (1849) but dark feathers of upperparts blacker with less fulvous. Chin, throat and upper breast reddish fulvous; belly and flanks more tinged with fulvous.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	66–71	15–16	17–18	65–68 mm
Wing ♂♂ 67–73; ♀♀ 64–69 mm (Sires. — Mt Victoria)				
Weight 1 ♂ 11; 1 ♀ 10 g (SDR).				

COLOURS OF BARE PARTS. As in 1849.

1851. *Nepal Tree Creeper*. *Certhia nipalensis* Blyth

C. (certhia) nipalensis 'Hodgson' = Blyth, 1845, Jour. Asiat. Soc. Bengal 14: 581 (Nepal)

Certhia Stoliczkae Brooks, 1874, Jour. Asiat. Soc. Bengal 42: 256 (Sikkim)
Baker, FBI No. 455, Vol. 1: 438

Plate 96, fig. 12

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. Above, crown and upper back very dark brown streaked with fulvous. A very broad, buff supercilium. Mantle rusty brown with dark scale-like markings. Rump rusty. Wing marked with a buff wing-bar and buff oblique band. Tail brown, unbarred. Below, throat whitish. Breast and centre of belly cream-buff. Flanks tawny-olive, rusty on lower part. Sexes alike.

Short, straight bill a helpful character in identification. Distinguished from *discolor* by whitish throat; from *himalayana* by unbarred tail; from *familiaris* by buff breast and tawny flanks (i.e. white and greyish).

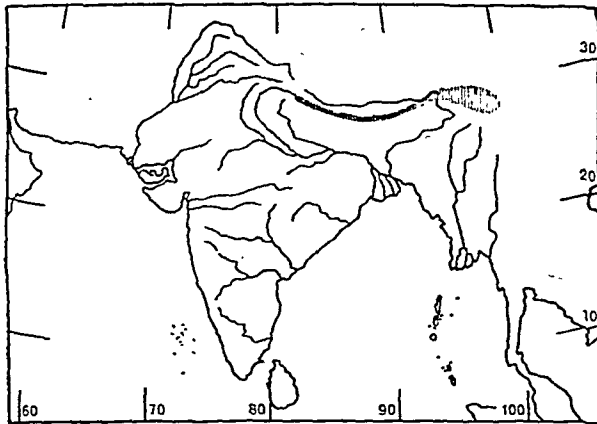
STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, apparently uncommon. Western Nepal from c. 81° long. (Fleming & Traylor, 1961) east along the Himalayas through Sikkim, Bhutan and Arunachal Pradesh (Ludlow, *Ibis* 1944: 177). Possibly also the hills of North Cachar (Baker, loc. cit.) but no specimens extant. Recorded in summer between 2700 and 3500 m and in winter between 1500 and 3500 m. Affects oak forest and mixed deciduous and conifer forest.

Extralimital. Ranges east to northern Burma and southeastern Tibet (Pome).

GENERAL HABITS. Keeps singly or in pairs, often among the roving parties of tits, nuthatches and other creepers (Fleming, Stanford). According to Meinertzhagen seldom in hunting parties. Seems to keep to more

PIPITS AND WAGTAILS

241

Certhia nipalensis

Distributional range

rotten and mossy trees than other tree creepers, seldom ascending high up into the branches. Movements slow and more deliberate.

FOOD. Insects.

VOICE and CALLS. Unrecorded. A very silent bird, thus difficult to locate.

BREEDING. Unknown. Season, about May.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	66-76	14-17	18-20	75-81 mm
♀♀	66-71			69-76 mm

Weight 2 ♂♂ (May-June) 11.5, 11; 2 ♀♀ (May-June) 11, 11 g (GD). 1 ♂ (Feb.) 12; 1 ♀ (Nov.) 10 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible black, lower pinkish white. Legs and feet brown.

Family MOTACILLIDAE: Pipits and Wagtails

For description see Baker, E. C. S., 1926, FBI 3: 254; Van Tyne, J. & Berger, A. J., 1959: 528; Voous, K. H., 1964, article 'Wagtail' in Thomson, A. L. (ed.), *A New Dictionary of Birds*, London & New York.

Key to the Genera

Upper plumage streaked; tail comparatively shorter.....	<i>Anthus</i>	Page 242
Upper plumage unstreaked; tail comparatively longer.....	<i>Motacilla</i>	272

PIPITS AND WAGTAILS

243

1852. Indian Tree Pipit. *Anthus hodgsoni hodgsoni* Richmond

Anthus trivialis hodgsoni Richmond, 1907, in Blackwelder, Res. in China, (2): 493, new name for *Anthus maculatus* Jerdon, 1864, Bds. India 3: 873. [Type locality from 1863, *ibid.* 2: 228 (Calcutta)], *rec Anthus maculatus* Vieillot

Anthus maculatus berezowskii Zarudny, 1909, Orn. Monatsb. 17: 41 (SW. Kansu)

Baker, FBI Nos. 1186 and 1187, Vol. 3: 281, 282

Plate 97, fig. 8

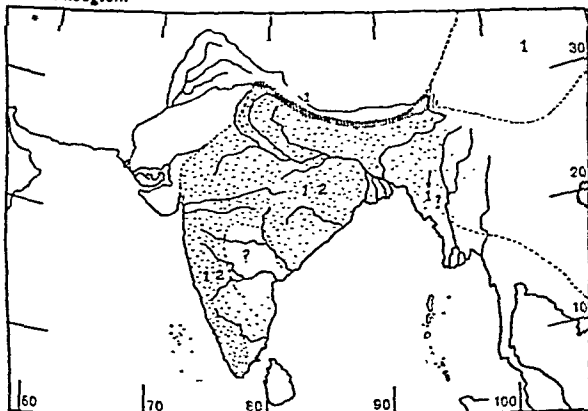
LOCAL NAMES. *Musarichi* (Hindi); *Dhan chidi* (Gujarati); *Muchassi* (Bengali); *Ambel-serui* (Munda); *Liku jitta* (Telugu); *Pūlkirūvi* (Tamil).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. Above, greenish brown streaked with darker brown. Supercilium, double wing-bar, and outer rectrices whitish. Below, whitish to buff boldly streaked with dark brown on breast and flanks. Sexes alike.

Very similar to *A. trivialis* and not easily distinguishable from it in the field though in *trivialis* the upperparts are browner (v. greenish) and the streaks on the underparts bolder; call-notes apparently identical. *A. pratensis* has finer streaks on breast and different call-notes.

STATUS, DISTRIBUTION and HABITAT. Common summer (breeding) visitor to the Himalayas and winter visitor to the foothills and practically the entire Indian Peninsula. In summer from Dharmasala, Kangra and Kulu (Whistler, JBNHS 31: 474 and *Ibis* 1926: 735) east along the Himalayas to Burma, breeding c. 2700 to timber-line and in the scrub zone above it: in Kulu up to 3300 m, in central and eastern Nepal up to 4500 m (Smythies), in Sikkim

Anthus hodgsoni

Distributional ranges

1 Winter, 1 and 2

2 Breeding, 1

1 *hodgsoni* (1852) 2 *junnanensis* (1853)

242

MOTACILLIDAE

Genus *ANTHUS* Bechstein

Anthus Bechstein, 1805, Gen. Naturg. Deutsch. 2: 247, 302, 465.

Type, by subsequent designation, Selby, 1825, *Alauda pratensis* Linnaeus

Oreocorys Sharpe, 1885, Cat. Bds. Brit. Mus. 10: 622.

Type, by monotypy, *Heterura sylvana* Hodgson

Cf. Hall, B. P., 1961, 'The Taxonomy and Identification of Pipits', *Bull. Brit. Mus. Nat. Hist.*, Zoology Vol. 7, No. 5: 245-89.

Key to the Species

	Page
I Rectrices pointed; dark shaft-line on breast-feathers dividing to form a triangle at tip.....	<i>A. sylvanus</i> 271
II Rectrices not pointed; no shaft-lines on breast-feathers	
A Hind claw not exceeding hind toe in length	
a Pale tip of inner web of penultimate rectrix very small	
1 Pale tips of rectrices white	
i Upper plumage brown, boldly streaked.....	<i>A. trivialis</i> 246
ii Upper plumage greenish, finely streaked.....	<i>A. hodgsoni</i> 242
2 Pale tips of rectrices pale rufous.....	<i>A. similis</i> 263
b Pale tip of inner web of penultimate rectrix large, about one-third length of feather.....	<i>A. nilghiriensis</i> 267
B Hind claw exceeding hind toe in length	
c Sides of body plain or with obsolete streaks only	
3 General colour of underparts sandy or buff	
iii Breast spotted or streaked	
o White pattern on second outer rectrix a triangle <i>A. godlewskii</i>	259
o' White pattern on second outer rectrix a narrow white streak.....	<i>A. novaezeelandiae</i> 251
iv Breast unstreaked.....	<i>A. campestris</i> 256
4 Underparts vinous.....	<i>A. spinoletta</i> 268
d Sides of body with coarse dark streaks	
5 Axillaries yellow.....	<i>A. roseatus</i> 261
6 Axillaries whitish more or less tinged with brownish or yellowish	
v Throat and breast cinnamon.....	<i>A. cervinus</i> 260
vi Throat buffish.....	<i>A. pratensis</i> 250

ANTHUS HODGSONI Richmond

Cf. Ripley, S. D., 1948, JBNHS 47: 622-7

Biswas, B., 1961, JBNHS 58: 452-3

Key to the Subspecies

Back distinctly streaked.....	<i>A. h. hodgsoni</i>
Back obsoletely streaked.....	<i>A. h. junnanensis</i>

244

MOTACILLIDAE

and Arunachal Pradesh up to c. 4000 m. Affects grass and bracken-covered slopes, rocky ground and glades in open forest of oak, fir, pine, etc., abandoned cultivation and scrub with isolated trees; also dwarf juniper or other scrub just above timber-line. Winters from c. 2000 m, occasionally 2500 m (Nepal), down to the foothills and in most of the Indian Peninsula, west to Kangra and Mt Abu, east throughout Assam and Bangladesh, and south to the Ashambu Hills (southern tip of the Peninsula). In the south winters mostly in the hills up to the summits — common in coffee and cardamom plantations — and, unlike *A. trivialis*, does not seem to occur outside the evergreen woodland or in the lowlands. In the north commonly found in the plains in mango groves and suitable wooded biotope.

Extralimital. Ranges north and east to Kansu, Korea and Japan. Winters south to the Philippines and the Indochinese countries. Probably breeds on Mt Victoria (Stresemann & Heinrich, 1940).

MIGRATION. Occurs in winter quarters from September to early May (Himalayas) or mid October to mid April (southern India). Noted on migration up to 5000 m (Mt Everest).

GENERAL HABITS. Keeps singly or in pairs in summer when very territorial; in loose flocks in the non-breeding season. Runs about on the ground in search of food, flying up into trees when disturbed. Flight jerky and undulating, characteristic of all pipits and wagtails.

FOOD. Insects and their larvae, grass- and weed seeds and other vegetable matter; grit. Insects identified among stomach contents in an intensively cultivated tract in Bihar included a large proportion of weevils (especially *Tanymecus* and *Myliocerus* spp.) and other coleopterous and hemipterous remains (Mason & Lefroy, 1912).

VOICE and CALLS. Song lark-like in character sometimes similar to that of *A. trivialis*, sometimes remarkably different, with a harsher and more wheezy tone (GD); almost invariably uttered on the wing, the bird rising a short distance in the air on quivering wings from a tree-top and volplaning back to its perch with wings and tail outspread. Song period mid March till third week of June (Proud, GD). Call-note, a single *tsiep* from time to time, especially in flight, and continually repeated when alarmed (near nest).

BREEDING. Season, May to end of July. Two broods are reared though not all birds appear to be double-brooded. Nest, a cup of moss and dry grass lined with fine grass and a few hairs, placed on the ground usually under a tuft of grass occasionally under a boulder. Eggs, normally 4, less often 3 or 5, dark brown densely spotted with darker colour, occasionally pale grey blotched with dark grey-brown. Average size of 120 eggs 21.4 × 15.8 mm (Baker).

MUSEUM DIAGNOSIS. Above, olive-green with green edges to wing and tail and blackish streaking on head and mantle varying from very light to heavy. Below, white with dark, broad, well-defined streaking variable in extent. Hind claw short and curved. First three primaries longest and subequal, the fourth 1-4 mm shorter. Second, third and fourth primaries emarginated. Tail-pattern slightly off-white, with the pattern on the second outer rectrix in the form of a small spot or triangle near the tip, sometimes extending about 25 mm up the shaft.

Green edges to wings and green on upperparts distinguish *hodgsoni* from all other pipits except *A. roseatus* in autumn plumage. The two species can best be distinguished

PIPITS AND WAGTAILS

249

tail up and down, less vehemently than wagtail. When disturbed flies up into the branches of trees. Flight undulating, very like a wagtail's.

FOOD. Insects and grass- and weed seeds. A flock observed eating nectar from flowers of *Erythrina suberosa* just prior to emigration (end March), the specimens collected being excessively fat (SA).

VOICE AND CALLS. Call-note, a single *teeep* chiefly given in flight; this also repeated persistently and monotonously when bird alarmed at intruder's proximity to its nest. Song: in breeding season male sings from perch on tree-top or prominent rock — a rapid, rather lark-like *chikchikchik* . . . *chia-chia-chia-wich-wich-wich*. This frequently followed by an upward spring in a narrow arc, the bird volplaning steeply, wings stiffly outstretched and motionless, legs dangling and tail cocked far forward — accompanied by a prolonged *tee-tee-tee* . . . , back to the same or a different perch, the *tees* slowing down towards the end.

BREEDING. Season, May to end of July. Nest, a cup of grass stems lined with finer grass and a few hairs placed in a little depression under a tuft of grass, under a stone on a hillside or protected by a bush or weed. Eggs, 3 or 4, pale pinkish red, blotched or freckled with darker red and purple brown with pale lavender secondary blotches. For further details see *Nidification* 3: 139. Average size of 30 eggs 21.2 × 16 mm (Baker); of 3 eggs 19.3 × 15.2 (BBO).

MUSEUM DIAGNOSIS. Differs from nominate race (1854) in the more earthy, less olive-fulvous brown of the upperparts, paler fulvous of breast and flanks, slightly heavier streaking of the breast and broader, deeper bill. Colour of upperparts and amount of buff on underparts very variable. Some Himalayan birds are very greyish above in fresh plumage but when a little worn, as in May, they are indistinguishable from European birds in similar state. Most Indian birds in fresh plumage are quite unlike *trivialis*; in worn plumage the only difference is that of bill shape (HW). See 1854 for specific distinction.

Spring moult of body-feathers, central rectrices, tertials and most coverts except primary. Postnuptial moult complete. Fresh autumn and spring plumage alike, but worn spring dress greyer above and paler fulvous below.

Young, much as adult but edges of feathers of upperparts paler buffish brown, making the streaking more conspicuous on underparts, streaks almost confined to throat and pectoral region; flanks and under tail-coverts suffused with buff. Post-juvenal moult of body-feathers, lesser, median and inner greater coverts, tertials and central rectrices.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	83-94	14-16	20-22	54-66 mm
♀♀	83-91	14-16		54-63 mm

Width of bill at nostrils 5-5.5 mm

Hind claw 7-9 mm

(B. P. Hall, NBK, HW)

Weight 1 ♂ (October) 21; 3 ♀♀ (October) 23-25; 1 ♀ (June) 24 g (Paludan).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible and tip of lower horny brown; rest of lower mandible flesh colour; mouth pale pink. Legs and feet brownish flesh.

PIPITS AND WAGTAILS

251

ANTHUS NOVAESEELANDIAE Gmelin

Key to the Subspecies

Page

- A Darker, more heavily streaked and larger; wing usually over 88 mm, tarsus usually over 28 mm. *A. n. richardi* 251
- B Paler, less heavily streaked and smaller; wing usually under 88 mm, tarsus usually under 28 mm
- 1 Palest and less heavily streaked. *A. n. waiti* 252
- 2 Intermediate. *A. n. rufulus* 253
- 3 Darkest and more heavily streaked. *A. n. malaysiensis* 255

1857. Richard's Pipit. *Anthus novaeseelandiae richardi* Vieillot

Anthus richardi Vieillot, 1818, Nouv. Dict. d'Hist. Nat. 26: 491 (France)

Baker, FBI No. 1193, Vol. 3: 288

Plate 97, fig. 1

LOCAL NAMES. *Rūgail*, *Chārchāri* (Hindi); *Siriām*, *Serai*, *Chanchir* (Chota Nagpur); *Gerepe-rodi-fitta* (Telugu); *Pulla parake*, *Nettai-kali* (Tamil); *Chatuppen*, *Veramben* (Malayalam); *Gomeritta* (Sinhala).

SIZE. Sparrow; length c. 17 cm (6½ in.).

FIELD CHARACTERS. A strikingly long-legged pipit similar to the Indian Paddyfield Pipit (1859, q.v.) but larger.

STATUS, DISTRIBUTION AND HABITAT. Widespread but local and erratic winter visitor; common from Bengal eastwards, uncommon in the Indian Peninsula. Recorded from the Nepal terai (Rand & Fleming 1957) and the Kathmandu Valley (Scully); south in the Peninsula to Kerala, Tamil Nadu and Sri Lanka (plentiful in the lowlands). In India normally east of a line Fatchgarh to Goa but also recorded in Kohat (Whitehead, *Ibis* 1909: 243); eastwards through Bengal, Bhutan, Assam, Manipur and Bangladesh. Also the Andaman Islands (Hume). Affects cultivation, stubble fields, bare hillsides and sandy areas; shows a marked preference for damp grassy ground — jheel margins etc.

Extralimital. Breeds from western Siberia east to Korea and the Sea of Okhotsk.

The species *novaeseelandiae* ranges through China, the Indochinese countries, Malaysia, Indonesia, the Philippines, New Guinea, Australia, New Zealand and Africa south of the Sahara. Only the Palaearctic subspecies are regular migrants and winter in southern China, the Philippines and Indochinese countries.

MIGRATION. Occurs in winter quarters from October (earliest 10 Oct.) to April or early May (latest 22 May).

GENERAL HABITS. As in 1859.

FOOD. Beetles and other insects and larvae.

VOICE AND CALLS. Usual note a loud, rapid and harsh *reep* ('r-r-rūp' — Witherby), apparently unlike that of resident subspecies (1859, q.v.). A soft double chirp strongly reminiscent of the note of a bunting (Brooks).

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Differs from the resident Indian subspecies in being larger with a longer tarsus. (See Measurements.)

250

MOTACILLIDAE

1856. Meadow Pipit. *Anthus pratensis* (Linnaeus)

(*Alenda*) *pratensis* Linnaeus, 1758, Syst. Nat. ed. 10, 1: 166 (Sweden)

Anthus pratensis emigmaticus Zarudny, 1909, Orn. Monatsb. 17: 56

(Taschkent, Turkistan)

Baker, FBI No. 1185a, Vol. 8: 661

Plate 97, fig. 5

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. Above, olive-brown streaked with dark brown. Two pale wing-bars. Outer edge of tail white. Below, buff with dark brown streaks on sides of throat, breast and flanks. Sexes alike.

Very similar to tree pipits but generally more buffish. In the field only distinguishable by call-notes (q.v.).

STATUS, DISTRIBUTION AND HABITAT. Scarce winter visitor to N.W.F.P. (Bannu and Kohat — *Ibis* 1909: 242; JBNHS 18: 684), the Vale of Kashmir (one record: *Ibis* 1927: 403) and Ferozepore (*Ibis* 1869: 355). Affects grassy farming areas.

Extralimital. Breeds in Europe from the Ob river to France and the British Isles. Winters in the Mediterranean and Middle East countries, Pakistan being the easternmost limit of its winter range.

MIGRATION. Recorded within our limits from 12 January to 19 March.

GENERAL HABITS. In winter usually seen in small loose flocks, often in company with *A. spinoletta*, feeding on lawns, and in meadows and lucerne fields.

FOOD. Insects and their larvae, spiders, occasionally weed seeds.

VOICE AND CALLS. When flushed usually utters some thin notes very similar to the Water Pipit's *ist* but given in series of 3 or 4 (MD).

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Above, olive-brown with clear streaking on head and mantle. Below, white or light buff with spotting on breast dark and well defined, changing on lower breast and flanks to sparse streaks. Hind claw fairly long and weak. First three primaries longest and equal, fourth usually less than 1 mm shorter, occasionally 2 mm. Second, third and fourth emarginated. Tail-pattern white with a small triangle, spot or streak near tip of second outer rectrix. Primaries and rectrices sometimes rather pointed (B. P. Hall).

For distinction from *A. trivialis* see 1854.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	74-86	14-16	20-23	51-60 mm
♀♀	73-84			49-56 mm

Hind claw 9-15 mm

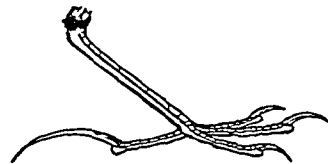
(B. P. Hall, Dementiev)

Weight 8 ♂♂ 16-19.5; 4 ♀♀ 15.7-18 g (Dementiev).

COLOURS OF BARE PARTS. Iris dark brown. Bill dark brown, brownish flesh at base. Legs and feet pale brown.

252

MOTACILLIDAE



× c. 1

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	89-102	16-21	28-33	63-78 mm
♀♀	86-97	15-19		62-72 mm

Hind claw ♂♂ 14-27, ♀♀ 14-19 mm

(HW, SA, B. P. Hall, SDR)

Weight 1 ♂, 1 ♀ Bhutan (Sept.) 27, 27 g — SDR.

COLOURS OF BARE PARTS. Iris brown. Bill horny brown, paler on lower mandible except tip; mouth yellow to pale flesh. Legs, feet and claws brownish flesh; soles chrome-yellow. Legs and feet not so fleshy in colour as those of *A. n. rufulus* and *A. godkessii*, but are more yellowish, particularly the soles (Brooks).

1858. Northwestern Paddyfield Pipit. *Anthus novaeseelandiae waiti* Whistler

Anthus rufulus waiti Whistler, 1936, J. Bombay nat. Hist. Soc. 38: 766

(Jhelum, Punjab)

Baker, FBI No. 1195 (part), Vol. 3: 290

LOCAL NAMES. *Rūgail*, *Chārchāri* (Hindi); *Dhār chidi* (Gujarati).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1859, q.v.

STATUS, DISTRIBUTION AND HABITAT. Fairly common resident, subject to local movements; mostly a summer visitor to the Himalayan foothills. Pakistan from Kohat and Punjab to Quetta and Sind, and northwestern India east to U.P. from the Himalayan foothills (up to c. 1000 m, locally 1800 m, exceptionally 3000 m — Whistler, *Ibis* 1925: 189), south through Haryana, Uttar Pradesh, Rajasthan, Gujarat and Madhya Pradesh to the Narbada river. Affects grassland, stubble fields, abandoned land and marshy ground.

Extralimital. Has been obtained at Kandahar in summer.

GENERAL HABITS, FOOD AND VOICE. As in 1859.

BREEDING. Season, March to end of July. Nest and eggs, as in 1859.

MUSEUM DIAGNOSIS. Differs from *rufulus* (1859) in being paler, greyer and less heavily streaked both above and below. Differs from *richardi* by smaller size and shorter tarsus.

May be confused with first-winter birds and some adults of *A. campestris* which have retained some spotting on breast and have the same tail-pattern and wing-formula; *campestris* is identified by relatively short tarsus, long wing, shorter and

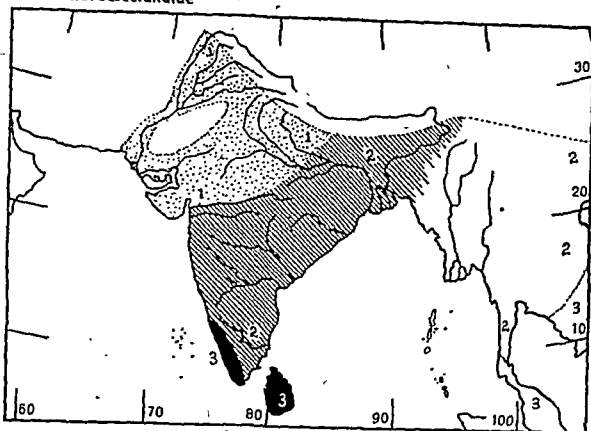
PIPITS AND WAGTAILS

253

254

MOTACILLIDAE

Anthus novaeseelandiae



1 *waitiei* (1858)

2 *rufulus* (1859)

3 *malayensis* (1860)

more curved hind claw and finer bill. The fact that measurements overlap and are ambiguous makes it difficult to identify all juveniles of *A. campestris*, *A. novaeseelandiae* and *A. godlewskii* with certainty (B. P. Hall).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	76-86	16-17	25-28	51-58 mm
♀♀	75-82	15-17	24-27	49-56 mm
Hind claw	♂♂ 11-17; ♀♀ 12-15 mm			

COLOURS OF BARE PARTS. As in 1859.

1859. Indian Paddyfield Pipit. *Anthus novaeseelandiae rufulus* Vieillot

Anthus rufulus Vieillot, 1818, Nouv. Dict. d'Hist. Nat. 26: 494 (Bengal)

Baker, FBI No. 1195 (part), Vol. 3: 290

Plate 97, fig. 2

LOCAL NAMES. *Rūgail*, *Chārchāri* (Hindi); *Suriām*, *Serwi*, *Chanchir* (Chota Nagpur); *Gurapa-modi-pitta* (Telugu); *Pulla purake*, *Nettai-kali* (Tamil).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. An exact miniature of Richard's Pipit and usually shorter on the legs. Above, dark brown marked with fulvous. Tail dark brown with white outer rectrices conspicuous in flight and when alighting. Below, buff streaked with brown on breast. Sexes alike.

PIPITS AND WAGTAILS

255

Differs from *richardi* (1857) in being paler and smaller; from *waitiei* (1858) in being darker and browner; from *malayensis* (1860) in being less rufous and less heavily streaked. Some individuals of *A. campestris* have a streaked breast but can usually be identified by shorter hind claw.

A partial moult takes place haphazardly throughout the non-breeding season (B. P. Hall). A complete postnuptial moult in August and September (GD, HW). Young has scalloped plumage, with rather darker and heavier spotting on breast than adult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	78-88	15-17	24-28	54-65 mm
♀♀	74-85	15-17	25-26	51-66 mm
Hind claw	♂♂ 10-18; ♀♀ 11-16 mm			

(HW, BB, B. P. Hall)

Weight 9 ♂♂ (March-Sept.) 20.1-22.7; 6 ♀♀ (March-Sept.) 17.4-22 g (GD, SDR).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible dark horny, paler on edges and tip; lower mandible fleshy with yellowish tinge on base and smoky on tip. Legs and feet yellowish fleshy; claws horny; soles pale yellow.

1860. Malay Paddyfield Pipit. *Anthus novaeseelandiae malayensis* Eyton

Anthus Malayensis Eyton, 1839, Proc. Zool. Soc. London: 104 (Malaya)

Baker, FBI Nos. 1195 (part) and 1196, Vol. 3: 290, 292

LOCAL NAMES. *Chatuppan*, *Varamban* (Malayalam); *Nettai-kali* (Tamil); *Gomaritta*, *Panu-kūrulla* (Sinhala).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1859, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Kerala and Sri Lanka, in the plains and hills up to c. 1800 m (Kerala) and 2100 m (Sri Lanka). Affects ploughed and stubble fields, sparse grass-covered fallow land, neighbourhood of backwaters and irrigation tanks, grazing grounds and grassy slopes and summits of hills, particularly where sheet rock and boulders occur. More or less replaced by *A. nilghiriensis* in the hills though both species may be seen side by side.

Extralimital. Malaysia, Sumatra, Java, Borneo and the southern Indochinese Peninsula. For range of the species see 1857.

GENERAL HABITS AND FOOD. As in 1859.

VOICE AND CALLS. Utters a sharp *twit*, *twit-tit* in flight (Henry). For description of song see 1859.

BREEDING. Season, November to May in Kerala, January to July in Sri Lanka, with a peak in April-May. Apparently single-brooded. Nest and eggs, as in 1859. For details see also Phillips, 1950, *Ceylon Jour. of Sci.* 24: 76-8. Female only appears to build the nest while male keeps watch, but the latter may assist in incubation (Phillips).

MUSEUM DIAGNOSIS. Differs from *rufulus* (1859) in being darker and more heavily streaked. Postnuptial moult complete, August to October.

A. campestris usually has unstreaked underparts though some individuals are lightly streaked on breast. Call-notes very different.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to local movements. India east and south of the range of *waitiei* (excepting Kerala), the Nepal Valley, terai and duns, Jalpaiguri duars, Bhutan foothills to c. 1800 m, Bangladesh and Assam. In Nepal breeds locally up to c. 2100 m. Withdraws from higher levels in winter when occurring from c. 1000 m down. Passes through in Sikkim and Nepal in autumn below c. 2000 m (see Diesselhorst, 1968: 361). Affects open grass and stony country, fallow fields, low dry crops, edges of cultivation, roadsides and, locally, village grazing grounds.

Extralimital. Ranges east through Burma, Thailand, northern Vietnam and southern China. For range of species see 1857.

GENERAL HABITS. Keeps in pairs or small loose flocks according to season. Feeds on the ground, running about briskly and moving its tail up and down in the manner of wagtails; flight also similarly undulating. Perches freely on bushes and tufts of grass.

FOOD. Insects and their larvae. Identified among stomach contents are weevils (*Myliocerus* sp.), ants (*Phidole malinsi*, *Crematogaster subnuda*), termites (*Termes* sp.), Hemipterous bugs, spiders, weed seeds, grass blades and other vegetable matter (Mason & Lefroy, 1912).

VOICE AND CALLS. Song consists of a wheezy trill or feeble *tseep* notes uttered as the bird rises in the air in an ascending succession of dipping curves; when arrived at the highest point dives to earth in an abrupt curve with stiff, partly extended wings (HW). Also described as a series of five to twenty *clink* notes often given in flight (Nichols). Ordinary call-note a thin high-pitched *pipit* or *tseep-tseep* (SA). Concern for nest and young expressed by a feeble *tsip-tsip-tsip* etc. as parent flies flutteringly a few metres above intruder, sailing down to the ground on stiff half-closed wings and uptilted tail looking like a child's paper aeroplane. This manoeuvre repeated again and again.

BREEDING. Season, the dry months from November till the break of rains in June in the south, March to July in the north, occasionally till September (Bengal). Nest, a cup of grass and grass roots neatly lined with fine grass and hair, sometimes partly domed; usually placed among roots of grass tufts, tangles of weeds, etc. in a fallow field or grazing land, often in a small depression such as a sunbaked hoof-print of cattle. Eggs, 3 or 4, usually 3 in the south, pale grey or buff marked with blackish brown speckles and secondary ones of grey: Average size of 125 eggs 20.2 × 15.4 mm. Brood-parasitized by *Cuculus canorus*. Building of nest and care of young by both sexes. Parents usually approach the nest through a tunnel in the grass, 30 to 60 cm long. Injury-feigning by female flushed from nest has been observed.

MUSEUM DIAGNOSIS. Hind-claw medium or long, comparatively weak and often rather straight. First three primaries (as) longest and subequal, with the fourth slightly shorter. Fifth primary about 7-10 mm shorter than fourth. Second, third and fourth emarginated. White pattern on inner web of second outer rectrix usually in the form of a narrow streak up more than half the shaft, only slightly wider at the tip

256

MOTACILLIDAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	77-87	16-18	24-28	51-62 mm
♀♀	74-84	16-18	24-28	50-60 mm
Hind claw	♂♂ 12-18; ♀♀ 12-18.			

(HW, B. P. Hall, SA)

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible and tip of lower horny brown, rest of lower mandible pale flesh colour; gape yellow; mouth orange-yellow, bright yellow or yellow and pink, varying with age. Legs and feet brownish yellow, claws dusky.

ANTHUS CAMPESTRIS (Linnaeus)

Key to the Subspecies

Darker and larger; wing mostly over 90 mm. *A. c. campestris*
Paler and smaller; wing mostly 90 mm or under *A. c. kastschenkoi*

1861. Tawny Pipit. *Anthus campestris campestris* (Linnaeus)

Alauda campestris Linnaeus, 1758, Syst. Nat., ed. 10, 1: 166 (Europa = Sweden)

Anthus campestris griseus Nicoll, 1920, Bull. Brit. Orn. Cl. 41: 25

(Tischan, Turkestan)

Baker, FBI Nos. 1197 (part) and 1198, Vol. 3: 292, 293

Plate 97, fig. 3

LOCAL NAMES. *Chillu* (Hindi); *Dhan chidi* (Gujarati).

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. Above, pale brown, lightly streaked. Outer rectrices white. Below, plain whitish buff, sometimes with dark streaks on breast. Sexes alike.

Absence of streaking on underparts distinguishes this species from *A. novaeseelandiae*. Some individuals however may have a streaked breast; best identified by call-notes (q.v.). *A. similis* is a larger bird with a relatively longer tail and different call-notes.

In flight silhouette easily confused with Grey-necked Bunting (2050) with which it is often associated.

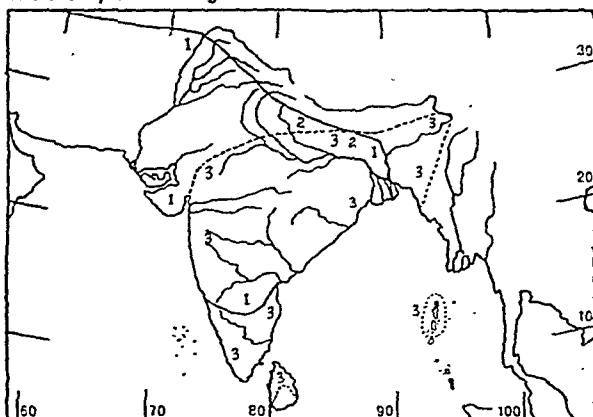
STATUS, DISTRIBUTION AND HABITAT. Winter visitor, widespread and locally very common. Pakistan from Kohat and Punjab south through Sind (JBNHS 66: 26) and Baluchistan, and the greater part of the Indian Peninsula east to the Brahmaputra river in Bangladesh (Rashid, 1967) and south to Londa near Belgaum (Koel, JBNHS 43: 22) and the Kolar district, extreme southeastern Karnataka (Sālim Ali, JBNHS 43: 587); in the north to base of the hills in Kangra, Simla and Dehra Dun. Not recorded from Nepal. Affects open, sparsely scrubbed stony country, semi-desert, fallow land, pastures and ploughed fields.

Extralimital. Breeds from Mongolia, Turkestan and northeastern Afghanistan west to France and Morocco. Winters in the Middle East countries, northeastern and northern Africa.

PIPITS AND WAGTAILS

257

Anthus campestris and A. godlewskii



Winter ranges

Solid line : 1 *A. c. campestris* (1861) 2 *A. c. kastschenko* (1862)
 Broken line : 3 *A. godlewskii*

MIGRATION. No ringing data. Arrives in winter quarters mostly in September; two records in July and one on 19 June (Sambhar) are exceptional. Remains till mid April (latest 14 May). Common on passage in the plains of northwestern India and Pakistan. There is but one record from the ranges to the north, Gilgit 8 March.

GENERAL HABITS. Keeps singly, in scattered twos and threes, or loose flocks. Feeds on the ground; frequently jumps up a few centimetres to take an insect from a herb.

FOOD. Insects (weevils, *Tanymecus indicus* identified) and weed-seeds.

VOICE AND CALLS. Not recorded within our limits. Extralimital, a distinctive sparrow-like *tsirip* or *tsirih* usually uttered in flight.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Above, light or tawny brown, indistinctly streaked on head and mantle in adult. Below, pale buff with little or no spotting on breast in adult. Hind claw short to medium, curved and moderately strong. First three primaries (as.) longest and subequal, the fourth slightly shorter; fifth about 10 mm shorter than fourth. Second, third and fourth emarginated. White pattern on second outer rectrix usually in the form of a long narrow streak up the shaft, only slightly wider at the tip; sometimes reduced to a short streak near tip.

Young has scalloped plumage, distinctly streaked above and on breast.

Plainer back and plain breast of most specimens identify this species. However, first-winter birds and some adults which have retained some spotting on breast are not easily distinguishable from some *A. novaeseelandiae* which have a similar

PIPITS AND WAGTAILS

259

1863. Blyth's Pipit. *Anthus godlewskii* (Taczanowski)

C. (ichlopt) *thermophilus* Hodgson, in Gray, 1844, Zool. Misc.: 83, *nomen nudum*
Anthus striolatus Blyth, in Gray, 1846, Cat. Mamm. Bds. Nepal: 77, *nomen nudum*, as a synonym of *Anthus rufescens* Temminck

A. (Anthus) striolatus Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 435 (Darjeeling)
Corydalla (*A.*) *thermophilus* 'Hodgson' = Jerdon, 1863, Bds. India 2: 233 (name only)

Agrodroma Godlewskii Taczanowski, 1876, Bull. Soc. Zool. France: 158 (Argun River, south Dauria)

Cf. Kinnear, N. B., in Ludlow & Kinnear, 1944, *Ibis* 86: 364

Baker, FBI No. 1194, Vol. 3: 289

LOCAL NAMES. *Chillu* (Hindi); *Palla puraki* (Tamil); see also 1859.

SIZE. Sparrow \pm ; length c. 15 cm (6 in.).

FIELD CHARACTERS. Not distinguishable from *A. novaeseelandiae* (1857 and 1859, qq.v.) unless in the hand, but see Voice and Calls. Distinguished from *A. campestris* by streaked breast.

STATUS, DISTRIBUTION AND HABITAT. Widespread and locally common winter visitor. Assam, Bangladesh and most of the Indian Peninsula west to Fatehgarh (near Agra) and Udaipur (southeastern Rajasthan), and south to Nellore, Karnataka (up to 750 m in the hills) and Kerala (uncommon in southern India). Also Sri Lanka (Phillips, *Spolia Zeylanica* 28: 188; JBNHS 51: 937) and Andaman Islands (one record). Reported nesting in 'Assam' (JBNHS 10: 3, 16: 72 and 17: 962, SF 11: 236, FBI 3: 290 and *Nidification* 3: 145), on high ridges between 1600 and 2000 m. Baker states that he 'never found *A. n. rufulus* breeding on these high ridges though the bird was exceedingly common on the lower hills and up to 5000 feet' (1500 m). Data require confirmation. Specimens have been obtained at Sadiya on 5 June (Hume coll.), and Deju on 20 July (Stevens). These records fall within the migration period of the species, but may be an indication of not too distant breeding grounds. In winter affects dry paddyfields, grass and fallow land and edges of cultivation. On migration prefers swampy land.

Extralimital. Breeds in eastern Asia from central Mongolia to eastern Manchuria south to Ala Shan and Tibet. Breeding range apparently complementary to that of *A. campestris*.

MIGRATION. Autumn passage recorded from August to the end of October in southeastern Tibet, Bhutan, Sikkim and Nepal (see Diesselhorst, 1968); on Mt Everest up to 6000 m. Occurs in winter quarters from early September to 20 July in 'upper Assam' (Stevens, JBNHS 23: 267) to end of April or early May. A specimen has been collected in the Sutlej Valley in June (Hume coll.).

GENERAL HABITS AND FOOD. As in 1861. Display described in *Nidification* 3: 146; very similar in general pattern to that of Paddyfield Pipit (1859), q.v.

VOICE AND CALLS. Indistinguishable in voice and behaviour from *A. n. richardi* (Schäfer); different from voice of *A. n. rufulus* and peculiarly harsh (Diesselhorst). 'Rises with a loud and discordant note; and by the note alone it is easy to distinguish this species, so utterly unlike is it to that of any other pipit' (Brooks, SF 1: 359).

MOTACILLIDAE

258

wing formula and tail-pattern. Best guides to identification are the relatively short tarsus and long wing of *A. campestris*, and its shorter and more curved hind claw and finer bill.

Moult very variable. A spring moult of body-feathers, tertials, median coverts, sometimes all greater and lesser coverts, central rectrices or whole tail. A haphazard winter moult of some body-feathers, wing-coverts, innermost secondaries and central rectrices. Some birds, both adult and young, arrive in winter quarters before the moult is completed. Postjuvinal moult includes body-feathers, most wing-coverts except primary, usually tertials and central rectrices.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	88-101	18-20	25-28	61-76 mm
♀♀	82-91	17-20	24-26	59-69 mm

Hind claw ♂♂ 10-13; ♀♀ 9-14 mm, rarely over 11 mm

(B. P. Hall, HW)

Weight 12 ♂♂ (Mar.-Apr.) 17-22 (av. 19) g — SA. 2 ♂♂ (Sept.) 22, 25; 2 ♀♀ (Sept.-Oct.) 19, 23.5 g — Paludan, Afghanistan.

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible dark brown, lower pinkish flesh. Legs and feet yellowish flesh; claws dusky.

1862. Siberian Tawny Pipit. *Anthus campestris kastschenko* Johansen

Anthus campestris kastschenko Johansen, 1952 (1944), Jour. f. Orn. 92: 147

(Novosibirsk, West Siberia)

Baker, FBI No. 1197 (part), Vol. 3: 292

LOCAL NAMES. None recorded.

SIZE. Sparrow \pm ; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1861, q.v.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor in Uttar Pradesh and Bihar. Habitat as in 1861.

Extralimital. Breeds in western Siberia.

GENERAL HABITS, FOOD AND VOICE. As in 1861.

MUSEUM DIAGNOSIS. Differs from nominate race (1861) in being paler and smaller.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	85-92	17-18	25-26	55-65 mm
♀♀	80-87	16-17	23-26	54-61 mm

Hind claw ♂♂ 8-13; ♀♀ 8-10 mm

(B. P. Hall)

COLOURS OF BARE PARTS. As in 1861.

MOTACILLIDAE

260

BREEDING. See Baker, *Nidification* 3: 145 for data possibly pertaining to this species.

MUSEUM DIAGNOSIS. Above, tawny brown clearly streaked on head and mantle. Below, pale buff, the upper breast streaked with dark brown. Hind claw of medium length and comparatively weak. First three primaries (as.) longest, and subequal, fourth slightly shorter; fifth about 10 mm shorter than fourth; second, third and fourth emarginated. White pattern on second outer rectrix a triangle, broad at the tip and usually about 15 mm, occasionally reduced further but always retaining a triangular shape rather than appearing as a streak along the shaft.

A haphazard winter moult and a partial spring moult similar to those of Richard's Pipit.

Young has scalloped plumage. Spotting on breast slightly denser and darker than in adult but less well-defined.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	90-97	16-18	25-28	62-70 mm
♀♀	84-93	16-18	24-27	59-69 mm

Hind claw ♂♂ 11-17; ♀♀ 11-17 mm, rarely over 14 mm

(B. P. Hall, NBK)

Weight 1 ♂ (Sept.) 24.7; 4 ♀♀ (Sept.) 25.1-30.5; 2 ♀♀ imm. (Sept.) 22.7, 24.9 g (GD).

COLOURS OF BARE PARTS. Iris dark brown. Bill flesh colour, dusky on upper mandible and tip of lower; gape and mouth bright yellow or pinkish flesh. Legs and feet yellowish.

1864. Redthroated Pipit. *Anthus cervinus* (Pallas)

Motacilla cervina Pallas, 1811, Zoogr. Rosso-Asiat. 2: 511 (Siberia)

Baker, FBI No. 1199, Vol. 3: 294

Plate 97, fig. 6

LOCAL NAME. *Lāl gālā chillu* (Hindi).

SIZE. Sparrow \pm ; length c. 15 cm (6 in.).

FIELD CHARACTERS. Above, pale brown, heavily streaked with dark brown. A buffish supercilium and double whitish wing-bar. Outer rectrices white. Below, creamy buff streaked with dark brown on breast, sides of neck and flanks, the throat either whitish or with some pinkish clay colour. In spring, males have the supercilium, throat and upper breast pinkish clay with little or no streaking on breast. Sexes alike.

A. roseatus in summer plumage has a more conspicuous whitish supercilium, vinaceous buff throat, this colour extending to upper belly. *A. trichialis*, *A. hodgsoni* and especially *A. pratensis* are confusingly similar to *A. cervinus* in autumn plumage and are not distinguishable in the field except maybe by their call-notes.

STATUS, DISTRIBUTION AND HABITAT. Very scarce passage migrant, mostly in Pakistan: Lower Sind from 27 October to 20 November and 4 March to 4 May (fairly common — Ticehurst, *Ibis* 1923: 10); Baroda (Gujarat) 18 November (Sálim Ali, JBNHS 52: 777); Gilgit 1500 m, 21 and 22 October and Kiswand 20 June (Biddulph, specimens in Brit. Mus.); also Gilgit in

PIPITS AND WAGTAILS

261

May and December (Biddulph, *Ibis* 1882: 270); Sutlej Valley in June (Hume, SF 2: 241, specimen in Brit. Mus.); Manipur in April (Hume, SF 11: 237); central Nepal 5100 m in December (belated migrant?) (Rand & Fleming 1957); Maldives Islands in December and probably earlier as an autumn passage migrant (Phillips, JBNHS 60: 582). A winter visitor to the Andaman and Nicobar islands (Hume & Davison, Osmaston). Other records should be regarded as mislabeled (e.g. Sikkim in July) or misidentified. Affects low grass on wet ground, and stubble fields.

Extralimital. Breeds in the tundra from northern Scandinavia to the Chukotski Peninsula. Winters in the northern half of Africa and in lower Burma, the Indochinese countries, Hainan, Borneo, Celebes, and the Philippines.

GENERAL HABITS. Usually seen in small, loose flocks on damp or marshy ground. Does not perch on bushes or trees.

FOOD. Insects.

VOICE AND CALLS. A hoarse *teez*, a clear *pee-ee* and a soft *teu* (Witherby).

MUSEUM DIAGNOSIS. See Field Characters. Birds lacking rufous tinge on throat are easily distinguished from other small-size pipits by dark centres on upper tail-coverts. For details of plumage see B. P. Hall, 1961.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	83-90	14-15	21-22	49-56 mm
♀♀	79-87			47-55 mm

(B. P. Hall, CBT)

Tail of one ♂ 65 mm (SA)

COLOURS OF BARE PARTS. Iris brown. Bill horny brown, yellowish at base, darker at tip. Legs and feet fleshy brown; soles pale yellow.

1865. **Vinaceousbreasted Pipit.** *Anthus roseatus* Blyth

Anthus roseatus Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 437 (Nepal)

Anthus pelopus G. R. Gray, 1846, Cat. Mamm. Bds. Nepal: 154 (Nepal)

[nomen nudum]

Baker, FBI No. 1200, Vol. 3: 295

Plate 97, fig. 7

LOCAL NAMES. None recorded.

SIZE. Sparrow ±; length c. 15 cm (6 in.).

FIELD CHARACTERS. Summer plumage. *Above*, grey with dark brown streaks. A distinct buff supercilium. Wings brown with greenish edges and two pale wing-bars. Tail brown with whitish outer edges. *Below*, throat and breast a delicate pink or vinaceous buff with a few faint streaks on breast. Rest of underparts buffish, the flanks streaked with dark brown. Sexes alike.

Autumn plumage. *Above*, olive-brown instead of grey. Supercilium often tinted yellow. *Below*, vinaceous on throat and breast fainter, the breast heavily streaked.

Immature birds lack any vinaceous colour and are indistinguishable from *A. hodgsoni*.

STATUS, DISTRIBUTION AND HABITAT. Common summer (breeding) visitor to the Himalayas from the Safed Koh, Baltistan and Ladakh (Dcosai plain)

PIPITS AND WAGTAILS

263

than that of *A. spinoletta* and reminiscent of the Woodlark's (Desfayes); also said to be reminiscent of that of the Redwinged Bush Lark. Song also uttered on the ground, in which case only the first twittering part is given (Schäfer). Song period, beginning of May to end of July (Proud, GD).

BREEDING. Season, end of May to August, sometimes September. *Nest*, a cup of grass lined with finer grass and some hair placed in a little depression apparently scraped by the bird, under a rock or a tuft of grass. *Eggs*, 4, sometimes 3, grey or brownish buff, very densely and finely speckled with shades of colour ranging from sepia to chocolate-brown. Average size of 100 eggs 22 × 15.6 mm (Baker). Sometimes brood-parasitized by cuckoos, e.g. *Cuculus saturatus*.

MUSEUM DIAGNOSIS. Axillaries lemon-yellow. First four primaries (as) longest and subequal. Second, third and fourth emarginated. Tail-pattern slightly off-white, pattern on second outer rectrix confined to a medium or small triangle near tip. Complete postnuptial moult in August-September. A moult of body-feathers, tertials, innermost greater coverts and central rectrices between December and March.

Young, similar to adult in autumn but browner above and less heavily streaked below, with no streaking on the abdomen. Postjuvénal moult of body-feathers, lesser, median and ? greater coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	84-96	15-17	22-24	57-69 mm
♀♀	79-87	15-16		52-64 mm

(B. P. Hall, BB, Stres.)

Weight 9 ♀♀ (Mar.-Apr.) 17-20 g — SA. 13 ♂♂ (July-Sept.) 19-25; 6 ♀♀ (July-Sept.) 19-23 g (GD, SDR).

COLOURS OF BARE PARTS. Iris dark brown. Bill blackish. Legs and feet brownish flesh.

ANTHUS SIMILIS Jerdon

Key to the Subspecies

		Page
A	Palest and greyest, markings on breast fainter.....	<i>A. s. decaptes</i> 263
B	Darker, markings on breast more distinct.....	<i>A. s. jerdoni</i> 265
C	Darker and more rufous than both A and B.....	<i>A. s. similis</i> 266
D	Darkest above, underparts cinnamon rather than buff.....	<i>A. s. travancoriensis</i> 267

1866. **Persian Rock Pipit.** *Anthus similis decaptes* Meinertzhagen

Anthus sordidus decaptes Meinertzhagen, 1920, Bull. Brit. Orn. Cl. 41: 23

(Rud-i-Taman, East Persia)

Baker, FBI No. 1192, Vol. 3: 287

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 20 cm (8 in.).

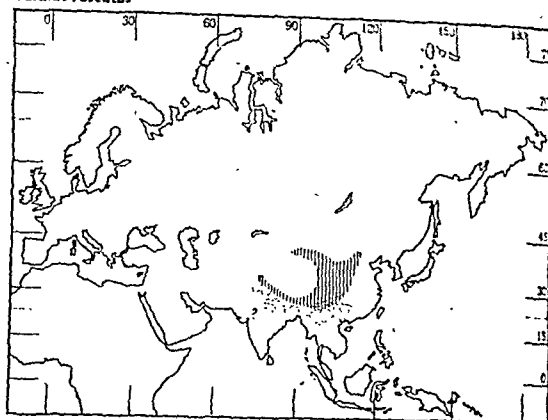
FIELD CHARACTERS. As in 1867, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common summer (breeding) visitor to the hills of Baluchistan (Chagai, Kalat and presumably the central

262

MOTACILLIDAE

east through Sikkim, Bhutan and Arunachal Pradesh. Breeds mostly above timber-line up to 4200 m, in Nepal 5300 m. Affects alpine meadows and boulder-strewn grassy slopes, especially about patches of melting snow and on marshy or sodden ground. Winters in the foothills (up to c. 1500 m) and in the northern parts of Pakistan (south to Sutlej-Indus confluence), India

Anthus roseatus

Distributional range

Winter

Breeding

(south to Sirsa [Haryana], Gwalior [northern M.P.] and central Bihar). Kathiawar (Bhavnagar, 21°46'N, 72°14'E. — Dharmakumarsinhji, JBNHS 50: 175). Bengal, and the whole of Bangladesh, Assam, Nagaland and Manipur. In winter largely a bird of marshes, jheels and rice-fields.

Extralimital. Breeds in the mountains of western China north to Shensi and Kansu and east to the Tarim Basin. Winters south to southern China and the northern Indochinese countries.

MIGRATION. Arrives in winter quarters in October, leaves in early April, a few being still seen in early May in the foothills. May be seen on summer grounds until November.

GENERAL HABITS. Keeps in pairs in the breeding season, otherwise in small loose flocks; young birds start flocking in the beginning of September.

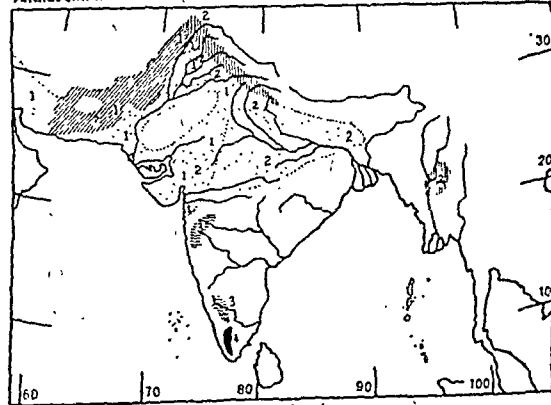
FOOD. Insects, seeds (probably from berries); grn.

VOICE AND CALLS. Call-note, usually uttered when rising, a single or double note similar to that of *A. pratensis* (Schäfer), softer and less shrill than that of *A. spinoletta*. Alarm-note near nest, a single, repeated mournful squeak (Whistler). Song, usually uttered during song-flight, given in two parts, a twittering phrase while rising followed by a long series of pleasant fading notes *tu-li-tu-li-tu-li*... as the bird descends slowly towards the ground on outstretched, quivering wings; more musical and more varied

MOTACILLIDAE

264

Makran Range, Quetta district), N.W.F.P. to Kohat, and western Punjab in the Salt Range. Breeds mostly above c. 1400 m and up to 2900 m, on open grassy slopes, sometimes fairly steep, with boulders, stones or shale.

Anthus similis

Distributional ranges

1 *decaptes* (1866) 2 *jerdoni* (1867) Winter range of 1 and 2
3 *similis* (1868) 4 *travancoriensis* (1869)

Winters in the lower valleys and foothills, extending to the Makran Coast (scarce), Gujarat, Khandesh, western Madhya Pradesh, Rajasthan and Haryana. In this season frequents grassy plains, open low scrub jungle, dry watercourses, fallow land and grassy canal banks.

Extralimital. Extends west to the Zagros Mts of Iran. The species also occurs in Lebanon, southern Arabia and Africa south of the Sahara.

MIGRATION. Occurs on summer grounds from the beginning of April to mid September.

GENERAL HABITS, FOOD AND VOICE. As in 1867.

BREEDING. As in 1867. Clutch size normally 3 or 4, occasionally 5. Average size of 30 eggs 23.3 × 16.6 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *jerdoni* (1867) in being paler and greyer; markings on throat and breast fainter, less numerous and paler.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	94-105	c. 20	80-91 mm
♀♀	95-101		80-87 mm

(H.W. SA)

Weight 1 ♂ (March) 31 g (Paludan).

COLOURS OF BARE PARTS. As in 1867.

PIPITS AND WAGTAILS

265

1867. **Brown Rock Pipit.** *Anthus similis jerdoni* Finsch

Anthus jerdoni Finsch, 1870, Trans. Zool. Soc. London 7 (4): 241
(Kotegurh, northwest Himalaya)
Baker, FBI No. 1191, Vol. 3: 286

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. A large pale brown, long-tailed pipit. Above, pale brown lightly streaked on head and back. A distinct buff supercilium. Wings and tail darker, the latter with whitish outer edge. Below, throat whitish, rest of underparts pinkish buff with faint brown streaks on breast, sometimes entirely wanting. Sexes alike.

Very similar to *A. campestris* and *A. n. rufus*, which are both markedly smaller. *A. n. richardi* is distinctly streaked with dark brown above and is higher on the legs. *A. sylvanus* is much darker and boldly streaked above.

STATUS, DISTRIBUTION and HABITAT. Common summer (breeding) visitor and partly resident, subject to vertical movements. The western Himalayan foothills from N.W.F.P. (Chitral) east to Almora, breeding between c. 600 and 1800 m, occasionally higher. Affects dry grassy and stony slopes. Winters mostly below c. 900 m, south to Gujarat and Madhya Pradesh, and east in the western Nepal terai, Bihar, northern Bengal, Sikkim foothills and northwestern Bangladesh. In winter frequents grassy plains, sparsely scrubbed country, fallow land, wheat-fields and sand dunes, etc.

EXTRALIMITAL. A disjunct population occurs in dry central Burma.

MIGRATION. See 1866. Noted in winter quarters from 5 September to 5 April.

GENERAL HABITS. Keeps singly or in pairs feeding on the ground, rising suddenly from near one's feet if unnoticed and flying to an exposed rock, mound or shrub. When flushed among standing crops, leaps a few metres up in the air and leisurely hovers in aimless zigzags before descending again into the crops a short distance away. This behaviour also frequently indulged in before sunset without provocation, and apparently just for fun. If followed up runs swiftly along the ground, taking cover behind a tuft of grass or a clod. Apparently does not wag tail. Flight rapid, strong and undulating.

FOOD. Insects and berries.

VOICE and CALLS. Call-note, a soft *plip* . . . *plip* reminiscent of that of *A. n. richardi* but louder and clearer. No song as such. Only a single note repeated at short intervals, sometimes higher, sometimes lower in tone (Osmaston), usually uttered during display which is described as a curious mounting hovering flight somewhat different from that of other pipits, there being a more frequent flapping of the wings (Jerdon).

BREEDING. Season, April to August. Nest, a shallow cup of coarse grass lined with finer grass and occasionally a small amount of hair, placed on the ground in the shelter of a tuft of grass, stone or small bush. Eggs, 3 or 4, pale grey-brown to pale green heavily marked with dark brown or grey-brown spots and blotches. Average size of 40 eggs 22.7 × 16.6 mm (Baker).

PIPITS AND WAGTAILS

267

1869. **Kerala Rock Pipit.** *Anthus similis travancoriensis* Ripley

Anthus similis travancoriensis Ripley, 1953, Postilla, Yale Peabody Mus., No. 17: 2
(Road to Muthukuzhi, Ashambu Hills, Travancore-Cochin State)
Baker, FBI No. 1190 (part), Vol. 3: 285

LOCAL NAME. *Peranirangan* (Malayalam).

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1867, q.v.

STATUS, DISTRIBUTION and HABITAT. Uncommon resident. Kerala and western Tamil Nadu from the Ashambu hills north probably to the Palni hills (cf. JBNHS 44: 405). Affects grassy and stony hillsides with rocky outcrops above c. 1000 m.

GENERAL HABITS, FOOD and VOICE. As in 1867.

BREEDING. Season, chiefly April and May. Nest and eggs, as in 1868.

MUSEUM DIAGNOSIS. Differs from *similis* (1868) in being uniformly darker above and below. Underparts cinnamon rather than buff. Edgings of outer rectrices darker, tawny olive rather than wood-brown. A larger area of dark brown on inner web of second outer rectrix.

MEASUREMENTS. As in 1868.

COLOURS OF BARE PARTS. Iris hazel brown. Bill: upper mandible dark horny brown, lower pale flesh-colour; gape yellow; mouth pinkish yellow. Legs and feet yellowish brown; claws horny brown.

1870. **Nilgiri Pipit.** *Anthus nilghiriensis* Sharpe

Anthus nilghiriensis Sharpe, 1885, Cat. Bds. British Mus. 10: 550
(Hills of Southern India = Nilgiri Hills)
Baker, FBI No. 1189, Vol. 3: 283

Plate 97, fig. 11

LOCAL NAME. *Pullian* (Malayalam).

SIZE. Sparrow ±; length c. 17 cm (6½ in.).

FIELD CHARACTERS. A dark, medium-sized pipit. Above, tawny olive with broad dark brown streaks. A buff supercilium. Tail dark brown, outer edge buffish. Below, buff streaked with dark brown on breast, upper belly and flanks. Sexes alike.

The distinct dark streaks extending to upper belly and flanks identify this pipit in its restricted range.

STATUS, DISTRIBUTION and HABITAT. Fairly common resident in the hills of Kerala and western Tamil Nadu. Breeds above c. 1500 m in the Nilgiris, Palni and High Range, and at about 1000 m in the Ponmudi hills. Affects open downs and hilltops covered with short grass. 'Coffee land a favourite haunt; rarely seen outside green woodland' (Bets, JBNHS 50: 225).

GENERAL HABITS. Keeps singly or in pairs. When flushed flies up onto nearest bush or tree.

FOOD. Insects and small seeds.

VOICE and CALLS. Unrecorded.

BREEDING. Season, April to July. Nest, a cup of coarse grass and grass-blades lined with finer grass and fine grass stems, placed among the roots of short grass, either on open hillsides or on some bank, well screened by

266

MOTACILLIDAE

MUSEUM DIAGNOSIS. First four primaries (as.) longest and subequal, fifth not more than 8 mm shorter than the fourth and usually under 5 mm shorter. Second to fifth emarginated. Tail-pattern dusky white or buff; pattern on inner web of second outer rectrix limited to a small triangle near tip. Hind claw short, curved and strong.

A complete moult about August; apparently no spring moult. Differs from *deceptor* (1866) in being darker and having more distinct spotting on breast. For distinction from *similis* see 1868.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	97-105	19-21	28-30	{ 80-91 mm 80-88 mm (HW, SA)
♀♀	95-99			

COLOURS OF BARE PARTS. Iris dark brown. Bill dark brown. Legs and feet flesh colour.

1868. **Rufous Rock Pipit.** *Anthus similis similis* Jerdon

Anthus similis Jerdon, 1840, Madras Jour. Lit. Sci. 11: 35 (Jalna, restricted by Whistler & Kinnear, 1934, JBNHS 37: 99, vide Jerdon, 1847, Ill. Ind. Orn., pl. 45)
Anthus cockburniae Oates, 1890, Fauna Brit. India, Bds. 2: 305 (Nilgiri hills)

Baker, FBI No. 1190 (part), Vol. 3: 285

Plate 97, fig. 4

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 1867, q.v.

STATUS, DISTRIBUTION and HABITAT. Uncommon resident. The Western Ghats in the Nilgiri hills, Biligirirangan and Bababudan hills (southwestern Karnataka); also known to breed near Poona (west-central Maharashtra—JBNHS 37: 98-99) and possibly Jalna (Jerdon, loc. cit. *supra*—undated but birds were displaying). A December record from Ahmednagar but subspecific identity uncertain, specimens not in existence. Affects grassy hillsides with boulder and sheet rock outcrops and stubble fields etc. from c. 1000 m up to the highest plateaux.

GENERAL HABITS, FOOD and VOICE. As in 1867.

BREEDING. Season, April to August. Nest and eggs, as in 1867. Average size of 10 eggs 22.8 × 17 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *jerdoni* (1867) in being darker. Underparts darker, richer and more rufous. Markings on breast more numerous and better defined. Tail-pattern rufous instead of rufous-white. Edges of coverts more rufous. For distinction from *travancoriensis* see 1869.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	90-96	19-21	26-28	{ 72-79 mm 70-75 mm
♀♀	89-90			

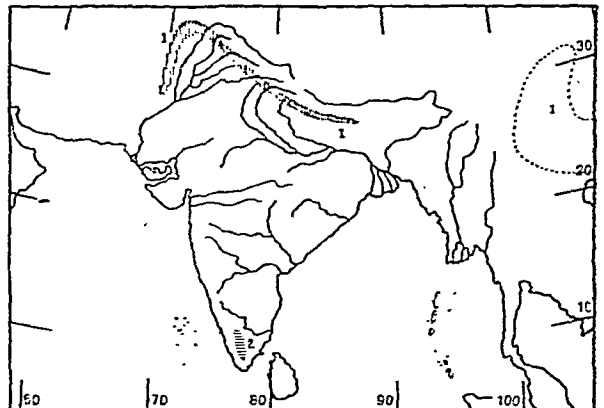
Hind claw 9-11 mm

(B. P. Hall, HW)

COLOURS OF BARE PARTS. As in 1869.

268

MOTACILLIDAE

Anthus nilghiriensis and *A. sylvanus*

Distributional ranges

1 *sylvanus* (1873)

2 *nilghiriensis* (1870)

grass or weeds. Eggs, 2 or 3, grey-white finely speckled with grey or grey-brown, sometimes with small blotches. Average size of 30 eggs 22.1 × 16.1 mm (Baker).

MUSEUM DIAGNOSIS. First four primaries (as.) subequal, the fifth 1-2 mm shorter. Second to fifth emarginated. Rectrices rather pointed. Tail-pattern buff, pattern on second outer rectrix a tapering triangle up the shaft, third outer rectrix with a small triangle at tip.

Young, like adult but dark markings on upperparts rather more pronounced and extending to rump and upper tail-coverts. Throat and sides of neck more spotted.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	76-81	{ 15-17 14-16	24-27	{ 53-66 mm 52-67 mm
♀♀	73-82			

Hind claw ♂♀ 9-13 mm

(B. P. Hall, SA)

COLOURS OF BARE PARTS. Iris brown. Bill blackish brown, paler at base of lower mandible. Legs and feet pale reddish fleshy; claws darker brown.

ANTHUS SPINOLETTA (Linnaeus)

Key to the Subspecies

- Spotting on underparts blacker and more distinct *A. s. jeynesii*
Spotting on underparts paler brown and less distinct *A. s. ceatellii*

PIPITS AND WAGTAILS

269

1871. Central Asian Water Pipit. *Anthus spinoletta coutellii* Audouin*Anthus Coutellii* Audouin, 1828, in Savigny, Descr. Egypte, Ois. 23, pl. 5: 360 (Egypte)*Anthus blakistoni* Swinhoe, 1863, Proc. Zool. Soc. London: 90 (Yangtze River, China)

Baker, FBI Nos. 1201 and 1202, Vol. 3: 297, 298

Plate 97, fig. 10

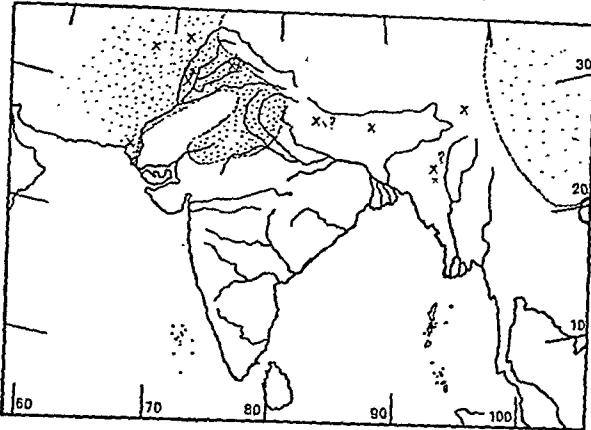
LOCAL NAMES. None recorded.

SIZE. Sparrow \pm ; length c. 15 cm (6 in.).

FIELD CHARACTERS. Above, fulvous brown indistinctly streaked on back and crown. Whitish supercilium and double wing-bar. Tail blackish brown with white outer edge. Below, whitish with brown streaks on breast in autumn and winter, or unstreaked and flushed with pinkish in spring and summer. Legs blackish. Sexes alike.

In autumn and winter, distinguished from other small-sized pipits by blackish legs and less boldly streaked underparts. See also call-notes. *A. roseatus* in spring plumage is darker and greyer above with distinct and darker streaks on flanks, and has yellowish brown legs.

STATUS, DISTRIBUTION AND HABITAT. Common winter visitor to Pakistan, from Gilgit and Kashmir south to Sind and Baluchistan (Chagai and the Makran coast), and to northwestern India east in the foothills and plains to Uttar Pradesh (Simla district, Etawah) and south through eastern

Anthus spinoletta

Winter range of *coutellii* (1871) X Isolated winter records of *japonicus* (1872)
Normal winter range of *japonicus*

PIPITS AND WAGTAILS

271

Extralimital. Breeds in eastern Siberia, winters mostly in China.

MIGRATION. Earliest record 4 December, latest 4 April.

GENERAL HABITS, FOOD AND VOICE. As in 1871.

MUSEUM DIAGNOSIS. Differs from *coutellii* in being darker and having sharply defined black spots on breast and flanks; these also present in spring though more sparse. White in tail often more extensive.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	86-91	15-17	22-25	54-62 mm
♀♀	79-88			53-60 mm

(B. P. Hall)

COLOURS OF BARE PARTS. Iris brown. Bill dark brown, yellow-brown at gape and base of lower mandible. Legs and feet brown (paler than in *coutellii*); claws dark brown.

1873. Upland Pipit. *Anthus sylvanus* (Hodgson)*H. (eterura) sylvana* Hodgson, 1845 (Aug.), Proc. Zool. Soc. London: 33 (central region ... Nepal)*H. (eterura) sylvana* Hodgson in Blyth, 1845 (after August), Jour. Asiat. Soc. Bengal 14: 556 (Nepal)*Oreocorys sylvanus oreinus* Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 21 (Korla, Kangra District, Punjab)

Baker, FBI No. 1204, Vol. 3: 299

Plate 97, fig. 12

LOCAL NAMES. None recorded.

SIZE. Bulbul —; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Above, heavily streaked with pale brown and dark rufous brown. A whitish supercilium. Outer edge of tail whitish. Below, chin whitish, a short, black malar streak. Rest of underparts fulvous with dark brown shaft-streaks. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements. Pakistan from the Sulaiman Range north to Kohat and east along the Himalayas at least to eastern Nepal (Fleming & Traylor, 1968). Breeds between c. 1200 and 3000 m, locally down to 900 m (Kangra), optimum zone 1200-2400 m. Withdraws from upper levels in winter (highest record 2500 m) but does not descend below c. 900 m (HW). A specimen from Etawah, U.P., mislabeled? Affects steep grassy slopes interspersed with bushes or broken up by rocky ground, abandoned terrace cultivation and open pine forest (*Pinus longifolia*) where there is abundant grass.

Extralimital. Range apparently disjunct. The species occurs again in southern China from Yunnan and Szechuan through Kwangsi, Kiangsi, Fukien and Chekiang (Cheng, 1958).

GENERAL HABITS. Keeps singly or in pairs, feeding on the ground, now and then standing quietly in a fairly erect position on a little eminence. Flicks tail quite sharply, unlike the slow wagging of other pipits (Jones).

FOOD. Unrecorded.

VOICE AND CALLS. Has a 'sawing' song of two notes repeated a half-dozen times, the stress on the first syllable: *seetyu-seetyu* ... or the reverse,

270

MOTACILLIDAE

Rajasthan (to Jodhpur, Mt Abu). Affects damp ground, marshes, grassy margins of jheels, ponds, canals, rice-fields and other irrigated cultivations.

Extralimital. Breeds in the alpine zone in the Caucasus and mountains of northern Iran, and in central Asia from the Pamirs north to the Sayan, Transbaikalia and northern Mongolia. Winters in China, the Middle East and Egypt. The species breeds in the mountains of central and southern Europe, on rocky coasts of the British Isles and Scandinavia, in the mountains of eastern Siberia, the tundra of North America and the alpine zone of western North America.

MIGRATION. First birds arrive in winter quarters in early October but most arrive in November and depart in March (latest 24 March).

GENERAL HABITS. Usually met with in small loose flocks, sometimes singly, feeding on the ground along the edge of water or in wet fields, frequently in association with Yellow Wagtails. Does not perch on trees or bushes.

FOOD. Insects.

VOICE AND CALLS. Call-note, a single or double unmusical *ist* (or *in*) uttered in flight.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters. First four primaries (as) longest and subequal. Second, third and fourth emarginated. Tail-pattern white; pattern on second outer rectrix usually confined to a small triangle near tip. A moult of body-feathers, tertials, median and inner greater coverts, and central rectrices from January to March.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	88-96	16-18	23-24	59-66 mm
♀♀	83-90			56-61 mm

(B. P. Hall)

Weight 1 ♀ (October) 18.7 g (RAP).

COLOURS OF BARE PARTS. Iris brown. Bill dark brown, fleshy at base of lower mandible. Legs and feet blackish.

1872. Japanese Water Pipit. *Anthus spinoletta japonicus* Temminck & Schlegel*Anthus pratensis japonicus* Temminck & Schlegel, 1847, in Siebold, Fauna Jap., Aves, pl. 24: 59 (Japan)

Baker, FBI No. 1203, Vol. 3: 299

LOCAL NAMES. None recorded.

SIZE. Sparrow \pm ; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1871, q.v.

STATUS, DISTRIBUTION AND HABITAT. Uncommon winter visitor to Pakistan (Kohat, Bannu, and the plains of the Indus south to Karachi), Nepal (Hodgson specimen in British Mus.; a record from Pokhara, western Nepal, subspecies undetermined — Fleming & Traylor, 1968), Darjeeling (Brooks, SF 8: 485, specimen in Brit. Mus.) and Manipur (Hume, SF 11: 238, no specimen extant). Habitat as in 1871.

MOTACILLIDAE

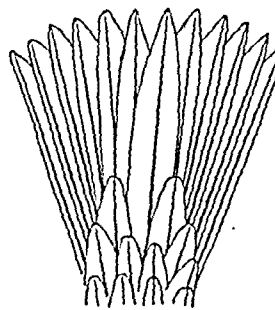
272

with stress on second note *tyu-see* ... very reminiscent of the song of *Parus major* but slower, less brisk (MD, BBO). Long-drawn, not unpleasant but monotonous whistling *wichee-wichee-wichee* ... repeated in series of 3 to 15, curiously reminiscent of a saw being sharpened with a file (SA). Ventri-loquial and difficult to locate. Apparently also has another song of five notes quite different from the above (Fleming) and more reminiscent of a chat or redstart than a pipit (GD). Song usually given from a boulder or other eminence; sometimes from a tree or during the typical pipit-like song-flight. Song period, mid February to early September, chiefly April to July (Proud).

BREEDING. Season, April to July. Nest, a cup of coarse grass roughly lined with finer grass, well concealed below a tuft of grass or under a stone. Eggs, 3 to 5, very similar to those of *A. similis*, white to pale grey, covered with numerous freckles and small blotches of grey-brown, reddish brown or purple-brown with underlying grey blotches. Average size of 30 eggs 22.6 × 17.5 mm (Baker). Once found brood-parasitized by *Cuculus canorus*.

MUSEUM DIAGNOSIS. The fine shaft-streaks on abdomen and those on breast dividing to form a triangle, the heavy bill and pointed rectrices, identify this species. By wear plumage becomes darker above, due to loss of pale fringes; underparts become dingy white and shaft-lines more conspicuous. A complete moult apparently takes place in September-October.

Young, like adult but dark brown centres on upperparts round-d, broader and edged with pale fulvous. Underparts as adult but whitish with very little fulvous.

Tail from above, \times c. 1

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	78-84	16-18	24-25	59-70 mm
♀♀	74-80			56-69 mm

Hind claw ♂ ♀ 8-11 mm

(B. P. Hall, BB)

COLOURS OF BARE PARTS. Iris dark brown. Bill: above horny black, below pale reddish horny or reddish flesh. Legs and feet dark flesh.

PIPITS AND WAGTAILS

273

Genus MOTACILLA Linnaeus

Motacilla Linnaeus, 1758, Syst. Nat., ed. 10, 1: 184.Type, by tautonymy, '*Motacilla*' = *Motacilla alba* Linnaeus*Dendronanthus* Blyth, 1844, Ann. Mag. Nat. Hist. 13: 116.Type, by monotypy, *Motacilla indica* Gmelin

Bill long and slender; edges of both mandibles smooth except for a small notch in the upper. Rictal bristles fairly well developed. Tarsus in front slightly scutellated.

Key to the Species

	Page
I No yellow in plumage	
A Centre of forehead black..... <i>M. maderaspatensis</i>	296
B Forehead white..... <i>M. alba</i>	288
II Some yellow in plumage	
C Yellow reduced to a faint wash..... <i>M. indica</i>	273
D Underparts bright yellow	
1 Back black or grey	
a Head yellow..... <i>M. citreola</i>	281
b Head grey..... <i>M. caspica</i>	285
2 Back olive..... <i>M. flava</i>	275

1874. Forest Wagtail, *Motacilla indica* Gmelin*Motacilla indica* Gmelin, 1789, Syst. Nat. 1: 962

(India, ex Sonnerat, restricted to Malabar by Ripley, 1961, Synopsis: 574)

Baker, FBI No. 1183, Vol. 3: 276

Plate 97, fig. 15

LOCAL NAMES. *Khānjōn* (Bengali—all wagtails); *Kodikāl vālati* (Tamil); *Uz-halla-jitta* (Telugu); *Kāttuvalkūlūkki* (Malayalam); *Gomarita* (Sinhala).

SIZE. Sparrow; length c. 17 cm (6½ in.).

FIELD CHARACTERS. *Above*, olive-brown. A pale supercilium and eye-ring. Wings blackish brown with large yellowish spots or patches forming two prominent bands across the coverts. Upper tail-coverts blackish brown. Tail dark brown with the outer rectrices white. *Below*, white washed with very pale yellow. A blackish brown collar across lower throat and a second interrupted band on breast. Sexes alike.



× c. 1

On the ground looks very like a pipit. The double gorget on breast and whitish double wing-bands are diagnostic.

STATUS, DISTRIBUTION and HABITAT. Mostly a winter visitor, very locally and capriciously distributed. Sri Lanka in forested areas of all zones in moderate numbers; southwestern India (where locally common) from Mahabaleshwar south through Goa, western Karnataka, Kerala and western Tamil Nadu (east to the Madurai district and south to the southernmost part of the Peninsula), from the foothills to c. 2100 m; northern Bengal and in the Khasi and Cachar hills (mostly above c. 1000 m), Tripura, Nagaland and Manipur; Andaman Islands.

18

PIPITS AND WAGTAILS

275

GENERAL HABITS. Usually met with singly in well-wooded country, sometimes in loose pairs or small parties. Forages mostly on the ground, running about quietly on shady forest paths or the mulch-covered floor. Stops short now and again to sway its tail and hind part of body laterally in a very characteristic manner. When disturbed flies up silently, or with the usual *pink* note, into an overhanging branch where it sits wagging its tail slowly up and down and pivoting the hind end from side to side. Descends to the ground to resume foraging immediately its suspicion is allayed. Is much more arboreal than other wagtails. A good deal of its food is procured in trees, the bird running along horizontal boughs and up and down at a steep angle with astonishing celerity. Roosts in company with other wagtails in reed-beds and sugarcane fields.

FOOD. Ants and other insects; spiders. Nestlings are fed on spiders, small grasshoppers, butterflies, beetles, cicadas, snails, molluscs and worms (Neufeldt).

VOICE and CALLS. Call-note, a characteristic finch-like *pink* or *pink-pink* reminiscent of the Crested Bunting. Song, a disyllabic *tri-fee* repeated four or five times, somewhat like the song of the Great Tit (Neufeldt). For details on song see Hoffmann, A., 1932. 'Über den Gesang der Indischen Baumstelze, *Dendronanthus indicus* (Gmelin)'. *Bonner Zool. Beitr.*, 1-2, 3: 11-16.

BREEDING. *Season*, May (Assam) or June (Amurland). *Nest*, a small, neat cup of soft twigs, leaves, fine grass and rootlets compactly matted together with shredded moss and cobweb, lined with hair and moss-roots and draped outside with lichen matching that growing on the supporting branches, thus effectively effacing the structure. It is placed on a horizontal bough (or in a crotch) of a small tree, usually by a stream, some 2 or 3 metres above the ground. *Eggs*, 4 (in Assam), very similar to those of the Chaffinch, grey with a lilac tinge, marked with a few large purple-brown blotches and more numerous secondary ones. Average size of 13 eggs 19.1 × 13.9 mm (above notes by Baker). Building of nest by female alone, accompanied by male. Incubation by female, fed by male at nest; period 13-15 days. Care of young by both parents. For further details of breeding (in Amurland) see Neufeldt, I., 1961, JBNHS 58: 559-79.

MUSEUM DIAGNOSIS. See Field Characters. Hind claw curved and almost as short as on the other toes. A prenuptial moult of body-feathers and central rectrices (HW). Postnuptial moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	79-83	16-18	23-24	69-77 mm
♀♀	76-82	16-17	c. 22	68-71 mm
20 ♂♀	78-86 (av. 83.1) mm			

(SA, HW, Koelz)

Weight 15 ♂♀ (winter) 14-17 g—SA.

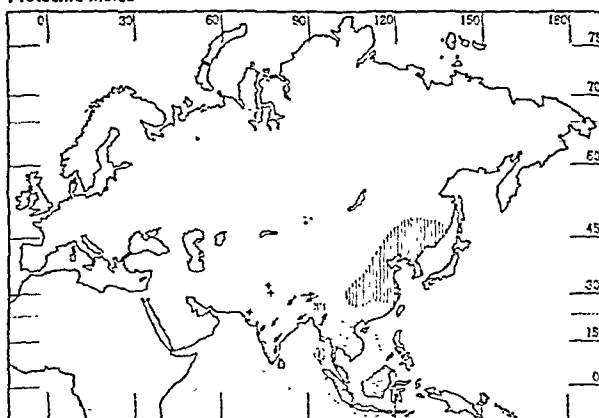
COLOURS OF BARE PARTS. Iris brown. Bill horny brown, paler at base of lower mandible; mouth yellowish pink. Legs, feet and claws horny black. Nestling: gape orange-yellow; tongue yellow with a grey fringe near base.

MOTACILLA FLAVA Linnaeus

Cf. John, T. M. & George, J. C., 1966, *Part 4: 1-14 and 58-64* for physiological studies.

274

MOTACILLIDAE

Motacilla indica

Winter

Passage records

Breeding

Stragglers

Breeds in North Cachar (Laisung stream above c. 1500 m. Detailed description of nest and eggs by Baker, *Nidification* 3: 136-8, tallies exactly with that of Neufeldt, 1961, JBNHS 58: 559). For possible breeding in Burma see JBNHS 34: 913. In China the species breeds as far south as southwestern Szechuan and Kweichow (Cheng, 1958).

In winter affects evergreen and deciduous forest. Favourite haunts are well-shaded coffee and cardamom plantations, footpaths through forest and glades or clearings in mixed bamboo jungle. In summer (in Assam) frequents streamsides, glades and tracks in deep evergreen forest.

EXTRALIMITAL. Breeds in eastern Asia from the Ussuri region south through Korea, Manchuria and China to Kweichow and southwestern Szechuan. Winters mostly in southern China, the Indochinese countries, Sumatra, Java and Borneo.

MIGRATION. Arrives in winter quarters in the third week of September, leaves in April (latest 1 May). Has been recorded on passage in Sikkim (both spring and autumn, earliest 9 September), northern Bihar (October), Calcutta, Madhya Pradesh and Godavari valley (undated), Andhra Pradesh (Mananur, Farahabad, Nellore) and eastern Tamil Nadu (Madras, Chingleput) [Sept. and Oct.], and Maharashtra (Bombay) (Feb., Mar., Apr.; once Oct.). Has straggled to Kutch (December-January—JBNHS 65: 225, 67: 333), Simla (Koteghar—April) and Suru Valley (August). A bird ringed in Kerala (c. 9°N., 76°E.) on 25.ii.1963 was recovered two months later, on 25 April at Tiddim in the Chin Hills of Burma (c. 23°N., 93°E.)—2400 km northeast.

276

MOTACILLIDAE

Key to the Subspecies

	Page
A Head white..... <i>M. f. leucocephala</i>	280
B Head yellow..... <i>M. f. lutea</i>	279
C Head olive-green with yellow supercilium..... <i>M. f. taiciana</i>	281
D Head black..... <i>M. f. melanogrisea</i>	280
E Head grey	
1 Supercilium vestigial or lacking..... <i>M. f. thunbergi</i>	276
2 Supercilium complete	
a Ear-coverts pale grey mixed with white; a white malar streak..... <i>M. f. beerna</i>	278
b Ear-coverts dark grey; no malar streak..... <i>M. f. simillima</i>	277

1875. Greyheaded Yellow Wagtail, *Motacilla flava thunbergi* Billberg*(Motacilla) Thunbergi* Billberg, 1828, Synops. Faun. Scand. 1 (2): 50 (Lapland)

Baker, FBI No. 1176, Vol. 3: 269

LOCAL NAMES. *Pilkyā* (Hindi); *Metano pilakyo* (Gujarati); *Charattalayan vālkūlūki* (Malayalam); *Fanfouduni* (Maldivian).

SIZE. Sparrow, with a long tail; length c. 17 cm (6½ in.).

FIELD CHARACTERS. *Above*, head, nape and ear-coverts dark slate-grey, sometimes with a trace of a white supercilium. Back olive. Wings brown with two yellowish bars. Tail dark brown with white outer edge. *Below*, bright yellow from chin to under tail-coverts. Winter plumage duller, with the grey on head mixed with olive. Sexes more or less alike.

STATUS, DISTRIBUTION and HABITAT. Widespread and common winter visitor. Pakistan (Peshawar, Jhang district; not reported from Sind and Baluchistan) and India from the plains of the Ganges south through Kutch to Kanyakumari (Cape Comorin), Sri Lanka and the Maldives (sight only), and east through Bengal, Assam and Bangladesh; Andamans and Nicobars. Abundant passage migrant in the Himalayas west of Simla and south to Quetta, and in northwestern India. Rare in Nepal in April and early May (terai and Valley—Proud, 1955). Affects pastures and moist grassy ground especially along riversides and on jheel margins.

EXTRALIMITAL. Breeds from Scandinavia to northwestern Siberia. Winters mostly in Africa south of the Sahara.

MIGRATION. A. E. Jones's observations at Simla suggest that the migrating hordes of Yellow Wagtails which are such a feature in Punjab fly directly over the Himalayan ranges by night (HW). First migrants arrive by the end of August (Quetta); autumn passage mostly in September and October, spring passage from end of March to early May (latest 13 May—N.W.F.P.). Arrival in Sri Lanka end of September, latest seen early May.

Four birds ringed in Kerala in December and January, 1962-4, were recovered 4 to 16 months later in the Kazakh and Kirghiz Republics of the U.S.S.R., at map distances of between 3700 and 4200 km north. For details see JBNHS 60: 461, 736; 61: 451, 693.

PIPITS AND WAGTAILS

277

GENERAL HABITS, FOOD and VOICE. As in 1876. Among the stomach contents in Bihar were found caterpillars and small beetles, chiefly Hydrophilidae (Water Scavengers); also spiders (Mason & Lefroy, 1912).

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies.

Immature (first-year) birds cannot be identified with absolute certainty.

For details of plumages see Ticehurst, 1922, JBNHS 28: 1087. Distinguished from *M. caspia* by the hind claw which is less curved and longer than hind toe.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	81-85	15-16	23-24	71-77 mm
♀♀	70-80		22-25	70-71 mm
				(HW, SA)

Weight 13 ♂♀ (winter) 14-17 g—SA. 1 ♂ 17.3; 1 ♀ 16.8; 1 ♂ 13.6 g (thumbergi? — Bangladesh) — RAP.

COLOURS OF BARE PARTS. As in 1876.

1875a. Short-tailed Greyheaded Yellow Wagtail. *Motacilla flava similima* Hartert

Motacilla flava similima Hartert, 1905, Vög. pal. Fauna: 289 (Kamchatka)
Baker, FBI No. 1176a, Vol. 8: 660

LOCAL NAMES. As in 1875.

SIZE. Sparrow, with a long tail; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Spring plumage as in *thumbergi* but white supercilium well marked (as in *beema*) and ear-coverts very dark. Breast usually marked with blackish spots. Winter plumage not differentiable.

STATUS, DISTRIBUTION and HABITAT. Common winter visitor to Kerala (Sálim Ali, JBNHS 38: 762 and *Birds of Kerala*: 400; Primrose, JBNHS 40: 502; cf. also JBNHS 60: 411-12), Sri Lanka (Phillips, SZ 28, part 2: 189) and the Andaman Islands (Vaurie, 1959). Recorded on passage from Bharatpur, Rajasthan, between 17 March and 9 April (JBNHS 60: 413). Habitat as in 1875.

Extralimital. Breeds in Kamchatka. Winters in the Indochinese countries, Malaya, Indonesia and Philippines.

GENERAL HABITS, FOOD and VOICE. As in 1876.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies. 'Indistinguishable in winter plumage from *beema* except [doubtfully] by its longer and straighter (less curved) hind claw' (H. Johansen, pers. comm.).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
2 ♂♂	78, 83	14, 16	24 (1)	69 mm
2 ♀♀	78, 78		23 (1)	66, 67 mm
				(HW, Phillips)

COLOURS OF BARE PARTS. Iris brown. Bill horny brown, paler (yellowish) on commissure and at base of lower mandible; mouth pale yellowish pink. Legs, feet and claws blackish brown; soles yellow.

PIPITS AND WAGTAILS

279

characteristic of the family, a few rapid flaps followed by a shallow dip with wings closed.

FOOD. Insects. Identified items include flies (muscid), pentatomid bugs (*Cydnius nigrilus*), tenebrionid and elatrid beetles (*Mesomorpha villiger*, *Heteroderes* sp.) and weevils (*Myloceus* sp.) — Mason & Lefroy, 1912.

VOICE and CALLS. Call-note uttered chiefly when taking off and in flight, a high-pitched wizz or weesp (or a double weesp-weep), characteristic of the species. Song undescribed.

BREEDING. Season, chiefly June. Nest, a cup of grass and rootlets lined with wool and placed among the roots of grass tussocks. Eggs, about 4, white more or less tinged with grey, densely stippled with pale grey or pale reddish brown. Average size of 40 eggs 19.5 × 14.8 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies. Supercilium of male often includes a few yellow feathers, occasionally numerous enough to make the supercilium appear yellow. Distinguished from other races by pale grey head, prominent supercilium, white chin and malar streak, and pale grey-and-white ear-coverts. In winter plumage difficult to distinguish from *similima* and *thumbergi* but darker ear-coverts of latter usually suggestive. For details of plumages see Ticehurst, JBNHS 28: 1087.

Spring moult of body-feathers, lesser, median and some greater coverts, central pair of rectrices and some secondary remiges from January to April. A complete moult from July to September.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	76-84	15-16	22-25	67-73 mm
♀♀	77-88		22-23	67-71 mm
				(HW, CBT)

Wing 20 ♂♀ 76-85 (av. 79.9) mm — SA.

Weight 12 ♂♀ (winter) 14-21 (av. 17.3) g — SA. 8 ♂♂ 15.3-16.8 (av. 16.2); 2 ♀♀ 13.4, 14.5 g — Dementiev.

COLOURS OF BARE PARTS. Iris brown. Bill horny brown, paler at base of lower mandible; gape dull lemon-yellow; mouth yellowish pink. Legs, feet and claws horny brown.

1877. Yellowbacked Wagtail. *Motacilla flava lutea* (Gmelin)

Parus luteus Gmelin, 1774, Reise d. Russ. 3: 101 (Astrakhan)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow, with a long tail; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in 1876 but most of head yellow without distinct supercilium.

STATUS, DISTRIBUTION and HABITAT. Winter visitor to India south to Sri Lanka (Vaurie, 1965). Habitat as in 1875.

Extralimital. Breeds between the lower Volga and the Ittysh rivers. Winters chiefly in eastern Africa from the Equator south to Transvaal.

MIGRATION Presumably as in 1875.

GENERAL HABITS, FOOD and VOICE. As in 1876.

278

MOTACILLIDAE

1876. Blueheaded Yellow Wagtail. *Motacilla flava beema* (Sykes)

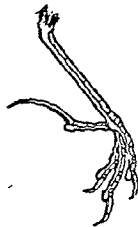
Budytes beema Sykes, 1832, Proc. Zool. Soc. London: 90 (Dukhun)
Baker, FBI No. 1175, Vol. 3: 267

LOCAL NAMES. As in 1875.

SIZE. Sparrow, with a long tail; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Above, head pale bluish grey with a prominent white supercilium and a white malar streak. Rest of plumage as in 1875.

Sexes more or less alike, but upperparts of female brown with a strong olive-green wash except on head. Underparts paler yellow than in male. Winter plumage similar but duller.



Foot, showing well curved hind claw, x c. 1

STATUS, DISTRIBUTION and HABITAT. Abundant and widespread, winter visitor. Pakistan from Punjab to Sind, Nepal Valley, and India from the plains of the Ganges south to Andhra Pradesh, Kerala (in the hills up to c. 1500 m), and east through Bangladesh and Assam; also Nicobar and Maldiva islands. Breeds in Ladakh and possibly northern Kashmir between c. 3600 and 4500 m (cf. Baker, *Identification* 3: 134; Meinerzhagen, *Ibis* 1927: 404). Abundant passage migrant in the western Himalayas, N.W.F.P. and northern Baluchistan (spring). Habitat as in 1875.

Extralimital. Breeds in the central Palaearctic from the Volga to Baikal. Winters also in eastern Africa south to Kenya and Uganda.

MIGRATION. Periods as in 1875. A bird ringed on 2 February 1963 in Kerala was recovered on 10 May of the same year near Kabul, 2800 km north, presumably on passage.

GENERAL HABITS. Usually seen in small loose flocks often intermixed with other subspecies; occasionally, during the migration season, in more or less compact aggregations of several birds. They are usually seen on moist pastures or urban areas, commonly in attendance on grazing cattle. Trips lightly or in short runs in and out among the animals' feet, the birds sometimes leaping over one another or flying ahead in their eagerness to head off the insects disturbed in the grass. Stops intermittently and wags its tail up and down in the typical manner. In some localities, e.g. around the coastal backwaters in Kerala, the squelchy newly-cut paddyfields virtually ripple with hundreds upon hundreds of Yellow Wagtails (mainly the subspecies *beema*, *thumbergi* and *similima*), the birds running about and feeding on the wet mud, flying up in loose rambling flocks now and again and re-settling close to the reapers at work. Roosts at night along with other wagtails, often in phenomenal numbers, in reed-beds and sugarcane fields, sometimes commuting to and from distances up to 30 km or more. The returning parties of birds coalesce to mill around above the roost site at sunset like a dense swarm of bees, before dropping into the reeds like flurries of falling leaves. For description of one such typical roost see Sálim Ali, JBNHS 59: 294-6. Flight undulating, as

280

MOTACILLIDAE

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

Wing 20 ♂♂ 77-85 (av. 80.3) mm — Dementiev.

COLOURS OF BARE PARTS. As in 1876.

1878. Turkestan Blackheaded Wagtail. *Motacilla flava melanogrisea* (Homeyer)

Budytes melanogriseus Homeyer, 1878, Jour. f. Orn. 26: 128 (India)
Baker, FBI No. 1180, Vol. 3: 272

Plate 97, fig. 17

LOCAL NAME. *Pilā māmols* (Urdu).

SIZE. Sparrow, with a long tail; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in 1875 but head black, no supercilium. Sexes more or less alike but upperparts of female brownish grey tinged with olive-green, head darker. Underparts yellowish white, often with dark spots in the pectoral region. In winter plumage not distinguishable from other subspecies.

STATUS, DISTRIBUTION and HABITAT. Common winter visitor to Pakistan and India from the foothills east to the western Nepal terai and Varanasi, and south to Sind, Kerala (JBNHS 60: 412) and northern Andhra Pradesh (JBNHS 36: 909); vagrant to Sri Lanka. Passage migrant in Baluchistan (Chagai, Quetta, Makran coast) and western Himalayas. Habitat as in 1875.

Extralimital. Breeds in Russian Turkestan.

MIGRATION. As in 1875. Earliest date (Kutch) 30 Aug. A bird observed at late as 22 June near Sukkur, Sind (JBNHS 66: 26).

MUSEUM DIAGNOSIS. See Key to the Subspecies. For details of plumages see Ticehurst, JBNHS 28: 1086.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	75-85	16-18	23-24	64-76 mm
				(CBT, SA)

Weight 19 ♂♀ (winter) 14-17 (av. 15.7) g — SA.

COLOURS OF BARE PARTS. Iris brown. Bill horny brown, paler at base of lower mandible; gape dull lemon-yellow; mouth yellowish pink. Legs, feet and claws dark slate.

1879. Whiteheaded Yellow Wagtail. *Motacilla flava leucocephala* (Przevalski)

Budytes leucocephala Przevalski, 1887, Zap. Imp. Acad. St. Pétersb. 53: 83 (Altai)
Baker, FBI No. 1178, Vol. 3: 270

LOCAL NAME. *Pilyā* (Hindi).

SIZE. Sparrow, with a long tail; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in 1876, but easily distinguishable by the almost pure white crown and ear-coverts.

PIPITS AND WAGTAILS

281

STATUS, DISTRIBUTION and HABITAT. Scarce passage migrant (possibly winter visitor, but see Migration below). Recorded mostly from Punjab (Pakistan) [cf. *Ibis* 1916: 75; JBNHS 24: 189 and 40: 561; *Ibis* 1940: 335-7 and 732; JBNHS 59: 963]; also observed near Delhi (JBNHS 62: 304-5). Winter quarters, if within our limits, unknown. Habitat as in Greyheaded Yellow Wagtail (1875).

Extralimital. Breeds in northwestern Mongolia, perhaps northern Dzungaria and occasionally in the Kirghiz steppes (Vaurie). Winter quarters unknown.

MIGRATION. All published records fall between 11 April and 10 May and all but one in the Rawalpindi district. Birds were observed in flocks up to 20 individuals, or singly among other subspecies.

GENERAL HABITS, FOOD and VOICE. As in 1876, q.v.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Whole head to the nape white with a faint grey shadow on the ear-coverts and posterior part of the crown.

MEASUREMENTS and COLOURS of BARE PARTS unrecorded.

1880. Greenheaded Yellow Wagtail. *Motacilla flava taiwana* (Swinhoe)

Budytes taiwana Swinhoe, 1863, Proc. Zool. Soc. London: 274, 334 (Formosa)

Baker, FBI No. 1177, Vol. 3: 270

Plate 97, fig. 16

LOCAL NAME. *Pilkyā* (Hindi).

SIZE. Sparrow, with a long tail; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Above, olive-green. A broad yellow supercilium. Lores and ear-coverts blackish. Below, deep yellow. Sexes more or less alike.

STATUS, DISTRIBUTION and HABITAT. Winter vagrant. Two records: Howrah, Bengal; western Bhutan, 4850 m Sept. (SDR coll.).

Extralimital. Breeds in southeastern Siberia and Sakhalin Islands. Winters in Taiwan, southern China, the Indochinese countries, Malaysia and Indonesia east to Celebes (Sulawesi).

GENERAL HABITS, FOOD and VOICE. As in 1876.

MUSEUM DIAGNOSIS. See Field Characters. Flanks, and often breast, washed with dull greenish.

MEASUREMENTS

Wing ♂♂ 78-84; ♀♀ 77-82. Tail 65-74 mm (Dementiev, Baker)

Weight 1 ♂ 19 g (SDR).

COLOURS of BARE PARTS. As in 1876.

MOTACILLA CITREOLA Pallas

Key to the Subspecies

Page

- A Back grey
 a Darker; a black hind-collar between yellow head and upper back *M. c. citreola* 282
 b Paler; black hind-collar usually absent *M. c. werae* 283
 B Back black or mixed with black *M. c. calcarata* 284

PIPITS AND WAGTAILS

283

GENERAL HABITS, FOOD and VOICE. As in 1883.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Adult male. Back, including rump and upper tail-coverts grey. Generally a black hind-collar separating yellow head from upper back. For details of plumages see Ticehurst, JBNHS 28: 1082-4.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	81-88	15-17	23-27	71-84 mm
♀♀	83-84			79-80 mm

Hind claw 10-12 mm; median toe and claw 20-22 mm

(GBT, BB, Rand & Fleming)

Weight 1 ♂ (Nov.) 18.2; 1 ♀ (Nov.) 17.9 g (BB).

COLOURS of BARE PARTS. Iris very dark brown. Bill, legs and feet black.

1882. Western Yellowheaded Wagtail. *Motacilla citreola werae* (Buturlin)

Budytes citreola werae Buturlin, 1907, Orn. Monatsb. 15: 197

(Sura Valley, Simbink, southeastern Russia)

Baker, FBI No. 1181 (part), Vol. 3: 273

LOCAL NAMES. As in 1881.

SIZE. Sparrow, with a long tail; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in 1883 but always grey-backed, rarely with black hind-collar (cf. 1881). Subspecies not differentiable in the field.

STATUS, DISTRIBUTION and HABITAT. Winter visitor, locally common. Pakistan in Kohat, Bannu, Punjab and probably Sind, and India from the Himalayan foothills south at least to N. Karnataka (Londa, Koelz) and Hyderabad (SA) and east through Assam and Bangladesh. Habitat as in 1883.

Extralimital. Breeds in southwestern Siberia from the Ob river to the Volga.

MIGRATION. Arrives in winter quarters in September, leaves in March-April (extreme dates 5 September and 17 May). Common on passage in northern Baluchistan (February to early May, not observed in autumn); also in the western Himalayas (Kashmir, Gilgit). Two ring recoveries to date give an indication of the pattern of local movements within the country. A bird ringed in Rajasthan (Bharatpur, 27°13'N., 77°32'E.) on 4 October 1962 on autumn passage was recaptured in Kerala (9°20'N., 76°38'E.) on 13 January 1964. Another example (ssp.?) ringed near Calcutta (c. 22°N., 89°E.) on 25 May 1963 on late spring passage was recaptured in Kerala (same coordinates) on 29 November 1963, presumably on return from its breeding grounds.

GENERAL HABITS, FOOD and VOICE. As in 1883.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Similar to nominate *citreola* [1881] but paler. Adult males grey above, yellow parts paler and not, or only slightly, tinged with grey on flanks. Averages smaller.

282

MOTACILLIDAE

1881. Northern Yellowheaded Wagtail. *Motacilla citreola citreola* Pallas

Motacilla citreola Pallas, 1776, Reise Russ. Reichs 3: 696 (Siberia)

Baker, FBI No. 1181 (part), Vol. 3: 273

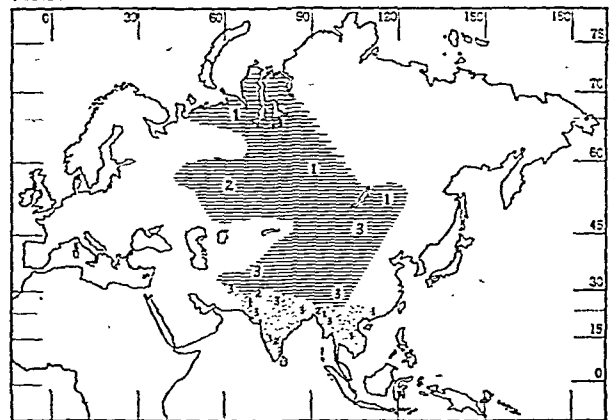
Plate 97, fig. 20

LOCAL NAMES. *Pilkyā*, *Pāni-kā-pilkyā* (Hindi); *On munda* (Chota Nagpur); *Tooni* (Assam).

SIZE. Sparrow, with a long tail; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in 1883 but back grey instead of black; plumage phases variable and confusing, and subspecific identification especially in winter often unreliable.

STATUS, DISTRIBUTION and HABITAT. Fairly common winter visitor. Pakistan [Kohat and the Punjab foothills south through Sind, and very locally in Baluchistan (Hab Valley)], and India from the Himalayan foothills including the Nepal terai east through Assam and Bangladesh, south

Motacilla citreola

Distributional ranges

■ Breeding

■ Winter

1 *citreola* (1881)

2 *werae* (1882) 3 *calcarata* (1883)

at least to northern Karnataka and Point Calimere, Tamil Nadu (JBNHS 60: 412); sight records from Sri Lanka (ssp.? cf. Phillips, SZ 28, part 2: 89). Habitat as in 1883.

Extralimital. Breeds in Siberia from the Pechora river east to the Khatanga river and south to Transbaikalia. Winters east through the Indochinese countries and southern China.

MIGRATION. Arrives in winter quarters in September (earliest 5 Sept.), leaves in April and early May (latest 15 May). A passage migrant in northern Baluchistan and western Himalayas.

284

MOTACILLIDAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	75-86	15-17	23-26	69-75 mm
♀♀	72-79			— mm

(HW, NBK, Koelz)

Weight 2 ♂♂ 16, 19 g (Dementiev).

COLOURS of BARE PARTS. Iris brown. Bill horny brown, paler at base of lower mandible; gape dull lemon-yellow; mouth yellowish pink. Legs, feet and claws horny brown.

1883. Blackbacked Yellowheaded Wagtail. *Motacilla citreola calcarata*

Hodgson

Motacilla (Budytes) Calcarata Hodgson, 1836, Asiatic Res. 19: 190 (Nepal)

Baker, FBI No. 1182, Vol. 3: 274

LOCAL NAMES. *Ledor dabbai*, *Peench kani* (Kashmir); *Pilkyā*, *Pāni-kā-pilkyā* (Hindi); *Pān pillākh* (Bihar mirshikars); *On munda* (Chota Nagpur); *Tooni* (Assam).

SIZE. Sparrow, with a long tail; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Male. Above, head rich lemon-yellow. Back and rump jet black. Wings dark brown with white edgings to coverts and tertials. Tail dark brown with white outer edges. Below, rich lemon-yellow, sides of breast black. In winter the back is dark grey more or less mixed with black.

Female variable: either similar to male or with yellow of head paler; many individuals with dark greyish crown and mantle, yellow forehead, supercilium and ear-coverts, the last more or less streaked with grey.

First-year birds of both sexes have whitish underparts. Males may be found breeding in this plumage.

STATUS, DISTRIBUTION and HABITAT. Common summer (breeding) visitor to Pakistan, from northern Baluchistan through N.W.F.P. to Chitral, east through Kashmir, Gilgit, Balistan, Ladakh, Lahul, Spiti and southern Tibet (Mt Everest, JBNHS 32: 325) north of the main range. Breeds mostly between 3000 m and 4600 m; in the Kagan Valley down to 2600 m, in Chitral to 1800 m and in Kashmir to 1500 m. Affects sedges and grassy margins of lakes, streams, water-meadows, bogs and irrigated ploughed land. Winters in Pakistan (Indus plains south to Sind) and northern India (a few in the Nepal Valley) south to Kutch, Madhya Pradesh, Bengal and east through Bangladesh and Assam. In winter frequents marshes, squelchy grassy margins of tanks and jheels, and irrigated rice-fields, etc.

Extralimital. Breeding range extends west to eastern Iran, north on the Tibetan plateau to southern Tsinghai and Inner Mongolia, and east to Szechuan. Winters from southern Afghanistan to Burma.

MIGRATION. Arrives on breeding ground in April, remains until September. Autumn passage in September and October, in Punjab noted as early as the beginning of August. Spring passage March to early May. Extreme dates in winter quarters 5 September and 9 May.

GENERAL HABITS. Typical of the genus, but is essentially a marsh-inhabiting or water wagtail. Gregarious in winter. Keeps in scattered pairs or parties, sometimes large flocks, usually in association with Yellow and

PIPITS AND WAGTAILS

285

other wagtails, seldom away from damp or marshy ground. Often seen on tanks and jheels tripping lightly over floating lotus leaves and partly submerged vegetation in search of insect food. Sometimes springs up in the air and launches fluttering sallies in pursuit of escaping midges etc. Runs about briskly with sprightly mincing steps, stopping now and again and wagging the tail up and down. Undulating flight and other habits as of other wagtails.

FOOD. Insects and larvae; tiny molluscs.

VOICE AND CALLS. Call-note *chiz-zit*. Song undescribed.

BREEDING. Season, May to August. Nest, a compact cup of dry grass, rootlets and moss lined with wool or hair, placed on the ground in tufts of grass, at the foot of a bush or occasionally under a stone. Eggs, normally 4, sometimes 3 or 5, greenish grey heavily spotted and speckled with grey or olive-grey. Average size of 80 eggs (Ladakh) 20.9 × 15.1 mm, of 60 eggs (Kashmir) 20.1 × 14.5 mm (BBO), of 80 eggs 20.7 × 15.6 mm (Baker). Sometimes brood-parasitized by *Cuculus canorus*. Building of nest, incubation and care of young by both sexes. Incubation period undetermined.

MUSEUM DIAGNOSIS. Distinguished from other subspecies by black back; underparts darker and richer yellow. Tarsus longer than in the other two races; also longer than in the Yellow wagtails. For details of plumages see Ticehurst, JBNHS 28: 1082-5.

Young: Above, rich brown. Supercilium buffish surmounted by a broad, nearly black line. Below, buffish brown, whitish on vent and throat, with a black moustachial line running down each side to the spotted pectoral band.

A spring moult of body-feathers, tertials, median coverts, part of lesser or greater coverts and central rectrices in February and early March. Postnuptial moult complete. Adult plumage not acquired in the first spring; first-summer birds distinguished from adults by less bright yellow, a yellowish olive-brown crown, and darker less yellow ear-coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	80-88	18-19	26-28	68-84 mm
♀♀	77-81			66-80 mm
				(CBT, Paludan, BB)

Weight 13 ♂♂ (Mar.-Apr.) 15-21 (av. 18.1) g — SA. 7 ♂♂ (June-July) 15-19; 2 ♀♀ (June-July) 18, 23; 2 ♀♀ (Sept.) 15, 16 g (Paludan). 1 ♂ (Nov.) 18.2; 1 ♀ (Nov.) 17.9 g (BB).

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet black.

1884. Grey Wagtail. *Motacilla caspica caspica* (Gmelin)

Parus Caspicus Gmelin, 1774, Reise d. Russ. 3, pl. 20, fig. 2: 104 (southern shore of Caspian Sea)

Motacilla Melanope Pallas, 1776, Reise Russ. Reichs 3: 696 (Dauria, E. Siberia)

Motacilla cinerea Tunstall, 1771, Orn. Brit.: 2 (England)
Baker, FBI No. 1174, Vol. 3: 265
Plate 97, fig. 19

LOCAL NAMES. *Khak dobbai* (Kashmir); *Balkatara* (Punjab); *Haldijā bālimāhi* (Assam); *Mudi-tippudu-jitta* (Telugu); *Vazhikulukki* (Malayalam).

PIPITS AND WAGTAILS

287

Extralimital. Breeds in mountainous regions of the Palaearctic from Kamchatka, Japan, Kansu and probably Szechuan (specimens in U.S. Nat. Mus. collected in July) west to the British Isles and Morocco. Other subspecies in Atlantic islands. Winters in the Mediterranean region, Africa, south to Congo and Kenya, the Middle East, Turkistan, southern China, Taiwan, the Indochinese countries, Indonesia including West Irian, and the Philippines.

MIGRATION. First winter visitors arrive in the Peninsula about the end of August (earliest 21 August, Kerala, 22 August, Berar). Departure mostly in April, a few birds remaining until early May (latest and rather exceptional, 22 May, Kerala). Passage noted in northern Baluchistan (Chagai) and throughout the Himalayas including Sikkim, Bhutan and Arunachal Pradesh. Several birds observed at c. 4400 m in Chamba in August. For a summary of observational data on migration up to 1923, see Whistler, H., JBNHS 29: 287. For records of attachment to specific winter quarters and clockwork punctuality of return to the same in autumn (September) — in one case for at least five consecutive years after ringing — see JBNHS 47: 160; 48: 185.

GENERAL HABITS. Keeps singly at all seasons, sometimes in separated pairs, but during winter numbers may gather at sunset to roost in trees, dense patches of tamarisk or reeds, or sugarcane fields, occasionally (rare) in company with other wagtails. A pure communal roost may hold up to 40 or 50 individuals but never such large congregations as, e.g. of Yellow wagtails. Is fond of running about and feeding at streamlets and trickles across forest paths or alongside hill roads. The bird often keeps flying ahead at disturbance from an oncoming car and resettling a hundred metres further to be supplanted again almost immediately, and again and again. At the end of its beat it veers off into the forest and circles back to the starting-point. Sometimes captures midges in the air by springing up from a rock beside a stream, turning and twisting in the pursuit with remarkable agility and returning to the base. The long tail is vehemently wagged up and down as the bird pauses between short zigzag runs or upon alighting after a flight. Flight undulating, typical of the family.

Display. In the breeding season the male constantly launches himself a few metres up in the air and descends at a tangent on fluttering wings some distance away uttering a pretty little song — a rapid *chi-chi-chi-chi-chi*.

FOOD. Chiefly insects, including butterflies occasionally; tiny molluscs.

VOICE AND CALLS. Call-note a sharp *chi-cheep*, *chi-cheep* uttered in flight. Song a thin twitter rendered as *piti*, *pi-iti*, *pitiiti* (Bates & Lowther); see also Display (above).

BREEDING. Season, end April to end July. Nest, a cup of dry grass and weeds lined with hair and wool, placed in banks, stone walls or among boulders, occasionally in a clump of weeds. Eggs, 4 or 5, rarely 6, whitish profusely marked with pale grey or pale reddish brown stipples, so finely and evenly distributed over the whole surface that the egg appears uniform and 14.1 mm (BBO). Building of nest, incubation and care of young by both sexes. Incubation period unrecorded.

286

MOTACILLIDAE

SIZE. Sparrow, with a long tail; length c. 17 cm (7 in.).

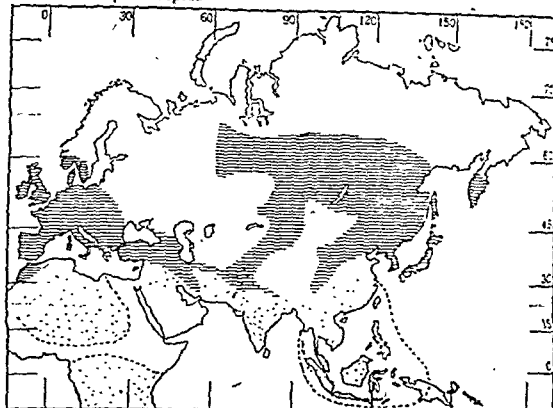
FIELD CHARACTERS. Male (summer). Above, head and back grey. A white supercilium. Upper tail-coverts greenish yellow. Wings dark brown with whitish margins to tertials showing as a prominent V on back. Tail blackish brown with white outer edges. Below, throat black with a white malar streak. Rest of underparts bright yellow.

Male in winter has a buffish throat, paler yellowish underparts (brighter yellow on vent) and V on back indistinct.

Female has a buff throat (mottled with black in summer) and paler underparts. Sexes indistinguishable in winter.

STATUS, DISTRIBUTION AND HABITAT. Common summer (breeding) visitor to the ranges of Pakistan from northern Baluchistan to Chitral, thence east through Gilgit, Baltistan, Ladakh and Kashmir to central Nepal. Breeds between 2100 and 2900 m (Quetta), 1800-2400 m (Safed Koh), 1800-3900 m (western Himalayas), locally down to 1200 m (Kulu) and between 2100 and 4300 m (Nepal). Winters in the foothills, sparsely up to c. 1500 m, in Nepal,

Motacilla caspica caspica



Breeding

Winter

M. c. caspica (1884)

Sikkim and Bhutan to 2000 m, and south throughout the Indian Peninsula and Sri Lanka, Pakistan (Gilgit, Kashmir, N.W.F.P. foothills, Indus Plains and Makran coast), Bangladesh, Assam, Arunachal foothills, Nagaland and Manipur; also the Maldives, Andaman and Nicobar islands. Common in winter in the plains as well as at all elevations in the peninsular hills. Winter population largely augmented by palaearctic migrants. In summer affects rapid mountain streams especially those with rocky banks and boulders. In winter also placid rocky streams and trickles in the plains and foothills. Rock pools in dry stony river beds.

MOTACILLIDAE

288

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species. Distinguished from *M. flava* (all races) by the hind claw which is much curved and shorter than hind toe.

Young. Above, as winter adult but tinged brown. Rump and upper tail-coverts duller. Median and greater coverts with pale tips. Below, dull buffy white, whitish on belly. Under tail-coverts pale buffy yellow. Postjuvinal moult of body-feathers, lesser, median and greater coverts, tertials and central rectrices.

A spring moult of body-feathers, median, inner greater coverts, tertials and tail.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	81-87	15-17	18-22	88-98 mm
♀♀	78-84			80-97 mm
				(HW, BB, SA, Rand & Fleming)

Weight 34 ♂♂ (Sept.-Oct.) 13-20 (av. 16.3) g — SA. 7 ♂♂ (March-June) 14-16; 6 ♀♀ (March-June) 14-16 g (Paludan).

COLOURS OF BARE PARTS. Iris brown. Bill horn grey; mouth greyish pink. Legs and feet brownish flesh.

MOTACILLA ALBA Linnaeus

Cf. John, T. M. & George, J. C., 1966, *Pazo* 4: 1-14 and 58-61 for physiological studies.

Key to the Subspecies

	Page
A Back black	
1 Ear-coverts black.....	M. a. alboides 292
2 Ear-coverts white.....	M. a. leucotis 293
B Back grey	
3 A black streak through eye.....	M. a. ocularis 294
4 No black streak through eye	
a Ear-coverts black.....	M. a. persensis 291
b Ear-coverts white	
i Chin white.....	M. a. baicalensis 295
ii Chin black.....	M. a. dukhunensis 292

1885. Indian White Wagtail. *Motacilla alba dukhunensis* Sykes

Motacilla Dukhunensis Sykes, 1832, Proc. Zool. Soc. London: 91 (Dukhun)

Baker, FBI No. 1166, Vol. 3: 257

Plate 97, fig. 14

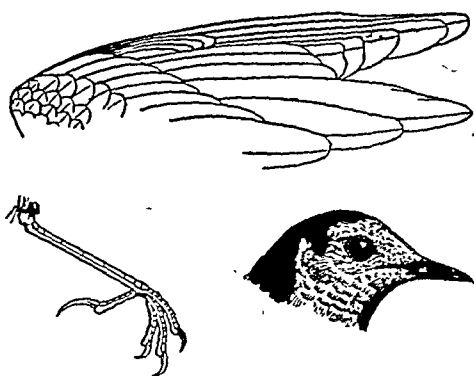
LOCAL NAMES. *Perushkani*, *Dobbei* (Kashmir); *Balkatara* (Punjab); *Dhale* (Hindi); *Khidriani* (= 'woman dyer', Gujarati); *Nachargh* (Bhili); *Kid-est* (Chota Nagpur, Bengali); *Bilimati*, *Tifoni* (Assam); *Villa edilallali* (Malayalam).

SIZE. Bulbul; length c. 18 cm (7 in.).

FIELD CHARACTERS. An unmistakable slim black, white and grey bird with a long tail constantly wagged up and down.

PIPITS AND WAGTAILS

289

Head, foot, and wing, $\times c. 1$

Male adult, winter. Above, forehead, round eyes and sides of head white. A large black patch on hind crown and nape. Back and rump ashy. Wings brown, coverts and tertials broadly margined with white. Tail blackish brown with white outer rectrices. Below, white with a large crescent-shaped black patch on breast. Sides of breast and flanks ashy. Sexes practically alike.

In spring and summer the chin, throat and breast are black.

Distinguishable at all seasons from the confusingly similar *personata* (1886) by white ear-coverts (v. black).

STATUS, DISTRIBUTION AND HABITAT. Widespread and common winter visitor. Pakistan in the plains and foothills (in Punjab up to c. 1000 m, in Baluchistan 1800 m), Nepal (up to 1500 m) and the Himalayan foothills south through the Indian Peninsula to Karnataka and Andhra Pradesh, rare in Kerala and Tamil Nadu (in the hills up to c. 1500 m), occasional in Sri Lanka; also Bangladesh (all parts), Assam, Nagaland (?) and Manipur. Affects open country in the vicinity of rivers, streams, tanks, flooded lawns, maidans, paddy- and wheat-fields, compounds and suburbs.

Extralimital. Breeds in western Siberia from the Yenisey to the Ural Mts. The species ranges over the whole of Eurasia from the Chukchi Peninsula, Japan and China west to Morocco, the British Isles and Iceland, and winters from the southern parts of the breeding range south to the Congo, Kenya, Arabia, the Indochinese countries and the Philippines.

MIGRATION. Passage observed in northern Baluchistan, N.W.F.P. and from Gilgit and Kashmir east to Sikkim. Autumn passage, end of September and October (earliest 13 Sept.); northward movements noted from the middle of February until the end of April (last date 5 May in Kangra). Waves of passage migrants observed both in autumn and spring on the coast of Maharashtra (Bombay). Two birds banded in Kutch (c. 22°N,

PIPITS AND WAGTAILS

291

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	87-96	15-16	23-25	82-96 mm
♀♀	83-92		20-22	81-93 mm

(HW, CBT, SA, BB, Rand & Fleming)

Weight 2 ♀♀ (Oct., Nov.) 16.5, 20.4 g (BB). 17 ♂♂ (Dec.-Feb.) 18-24 (av. 20.2) g—SA. 4 ♂♂ (March-April) 23-27, 4 ♀♀ (March-April) 19-25, 16 ♂♂ (Sept.-Oct.) 19-25.5 g (Paludan).

COLOURS OF BARE PARTS. Iris brown. Bill brownish black; mouth yellow and greyish pink, or greyish pink. Legs, feet and claws brownish black.

1886. Masked Wagtail. *Motacilla alba personata* Gould

Motacilla personata Gould, 1861, Bds. Asia 4, pl. 63 (Bengal)

Baker, FBI No. 1168, Vol. 3: 259

Plate 97, fig. 13 (left) (head)

LOCAL NAMES. *Buyachin* (Hunza); elsewhere as in 1885.

SIZE. Bulbul; length c. 18 cm (7 in.).

FIELD CHARACTERS. As in 1885 but ear-coverts and sides of neck black; no interruption between black of throat and black of nape. White on head limited to forehead, a small area around the eye and a short supercilium. White on wing more extensive. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Fairly common summer (breeding) visitor and partial migrant in northern Baluchistan, N.W.F.P. (Kurram and Kagan valleys, Chitral), Hunza, Gilgit, Baltistan and sporadically eastwards in Ladakh (Shushal—Osmaston, *Ibis* 1925: 700), Kashmir (Liddar Valley, JBNHS 19: 992), Kulu (perhaps exceptional at low altitude, cf. Whistler, JBNHS 22: 282 and 31: 473). Recorded at Manangbhot, central Nepal in July at c. 3500 m (Lowndes, JBNHS 53: 35). Hybridizes or intergrades with *alboides* in Nuristan (Paludan), Hunza, Gilgit, Astor, Sind Valley and Pir Panjal. Breeds from c. 800 m upwards in the Kurram Valley, between 900 and 2700 m in the Kagan Valley, 1500-3600 m in Chitral, at c. 2700 m in the Liddar Valley, 4300 m in Ladakh, and 1350 m in Kulu. In summer affects streambanks in open country. Winters in most parts of Pakistan, India and Bangladesh (everywhere less common than *dukhunensis*; scarce in extreme south), in the foothills up to c. 1500 m (Nepal and western Himalayas). In winter frequents ploughland, watercourses, lawns, etc.

Extralimital. Breeds also in Afghanistan and Turkestan.

MIGRATION. Much as in 1885. First autumn migrants arrive in the foothills at the end of August. On passage noted as high as 5500 m.

GENERAL HABITS, FOOD AND VOICE. As in 1885.

BREEDING. As in 1887. Breeding side by side with *M. madraspatensis* described, Whistler, JBNHS 29: 282. Average size of 45 eggs 20.1 \times 15.2 mm (Baker).

MUSEUM DIAGNOSIS. Grey back in conjunction with black ear-coverts and sides of neck connecting black of nape to that of throat easily identify this subspecies in summer plumage. In winter similar to *alboides* but mantle paler.

Young like that of *dukhunensis* but cheeks and ear-coverts dark grey; not distinguishable from young of *alboides*.

290

MOTACILLIDAE

69°E.) on 16 and 17 March 1961 were recovered in the U.S.S.R., one at Kirov (c. 58°N., 49°E.) in June/July 1961, the other near Volgograd (c. 49°N., 49°E.) on 11.vii.1961, at distances of c. 4200 and 3600 km north-west.¹

GENERAL HABITS. Keeps singly, in pairs or in small loose flocks. Large numbers gather in the evenings to roost in reed-beds, sugarcane, tamarisks or leafy trees. Feeds almost exclusively on the ground, walking or running with quick mincing steps, darting here and there for tiny insects, often fluttering into the air for flying prey. May often be seen perching on rooftops, and is commonly active on urban playing fields regardless of cricket and other games in progress. Tail vigorously wagged up and down when alighting and between short pauses when feeding. Flight very undulating, as of the family. Much competition for feeding territory noticeable at migration stop-overs and on first arrival in autumn. Two rivals, some 30 cm apart, will run parallel to one another for a metre or so, both in the same direction or passing one another in opposite directions, turning about at the end and repeating the tactic. From time to time one will spring up vertically, obviously with intention to attack. Its adversary will leap up in the same way as if to ward off the attack. Now and again one of the combatants will move away from the invisible barrier as if tired of the game, but will presently change its mind and return to the sparring. This patrolling may be continued for many minutes at a time, seldom with any actual clinch, and the whole manoeuvre may be renewed periodically.

FOOD. Chiefly insects. Specifically identified among stomach contents are ants, *Phidole malinsi*, *Camponotus compressus* (Formicidae); *Rhyssalus germanus* (Aphodiinae); water scavengers; *Hydrophilus* sp. (Hydrophilidae); beetles, *Scleron orientale* (Coleoptera), bugs, *Chrysocoris alba* (Pentatomidae); small molluscs (*Hydrobia* sp.); and oat grains (Mason & Lefroy, 1912); also a variety of other insects and larvae—bibionid flies, small caterpillars, weevils and other small beetles including Carabidae.

VOICE AND CALLS. Ordinary call-note a sharp *chi-cheep* usually uttered in flight.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Distinguished from *personata* (1886) by white ear-coverts in all plumages; for other subspecies see Key.

Prenuptial moult from January to March, involving body-feathers, tertials, lesser, median and all except two or three greater coverts, and central rectrices.

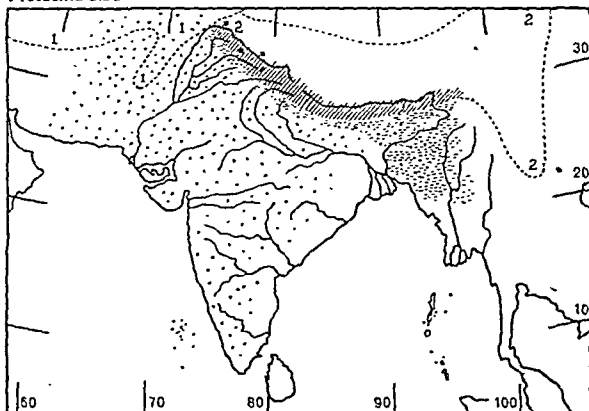
Young. Upperparts and lesser coverts grey tinged with brown, rump darker slate, upper tail-coverts blackish. Broad supercilium, cheeks and ear-coverts dull white. Median coverts tipped with whitish, greater coverts brown with whitish outer edges and tips. Postjuvénal moult of body, lesser, median and inner half of greater coverts.

First-winter male like adult but crown more or less mixed with grey. White of forehead not so pure or so extensive. Ear-coverts often tipped with grey. First-winter female like male but no black in crown. Forehead white sullied with grey to almost no white at all.

¹ These probably belonged to nominate *alba*, hitherto considered extralimital, being so far westward of the known range of *dukhunensis* (see above). In immature and winter plumages, as mostly seen in India, the two subspecies cannot be separated.

292

MOTACILLIDAE

Motacilla alba

Distributional ranges

- 1 *personata* (1886). Winter
 2 *alboides* (1887). Winter
 3 *alboides*. Breeding
 4 Sporadic breeding of 1 within range of 2
 1 beyond broken line, breeding and partial migrant
 2 within broken line, breeding and partial migrant

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	90-98	16-18	93-102 mm
♀♀	87-95	16-17	84-100 mm

(Paludan, CBT)

Weight 15 ♂♂ (March-July) 21-29; 14 ♀♀ (March-July) 22-28 g (Paludan).

COLOURS OF BARE PARTS. As in 1885.

1887. Hodgson's Pied Wagtail. *Motacilla alba alboides* Hodgson

(*Motacilla*) *Alboides* Hodgson, 1836, Asiat. Res. 19: 191 (Nepal)

Motacilla alba albula Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 20 (Bara Pani, Khasia Hills)

Baker, FBI No. 1171, Vol. 3: 262

LOCAL NAMES. *Tengchenflew* (Lepcha); elsewhere as in 1885.

SIZE. Bulbul; length c. 18 cm (7 in.).

FIELD CHARACTERS. As in 1886 but back and rump black (v. grey).

STATUS, DISTRIBUTION AND HABITAT. Common summer (breeding) visitor, vertical and short-range migrant. Breeds from Gilgit (rare) eastwards commonly in Balistan, 2500 m, Ladakh from the lowest levels up to 4500 m, Kashmir above c. 1500 m, Lahul and Spiti 3900 m, Sutlej Valley 2500-2800

m (Waite, JBNHS 45: 539), Garhwal 3600 m (Lavkumar, *ibid.* 53: 326), Kumaon (Walton, JASB 1900: 163), central Nepal 3600 m (Lowndes, JBNHS 53: 35), eastern Nepal, apparently only in the alpine zone, 4000–4500 m (Biswas, *ibid.* 58: 449; Diesselhorst, 1958), Mt Everest region 3600–4200 m (*Ibis* 1922: 516), Sikkim and Chumbi Valley from c. 2700 m up to nearly 5000 m (Hingston, JBNHS 32: 325; Sâlim Ali, *Birds of Sikkim*: 307), Bhutan 2400–3000 m (Ludlow, *Ibis* 1937: 516), Arunachal Pradesh and southeastern Tibet (*ibid.* 1944: 362). Affects river beds, rocky streams and wet fields. Winters mostly below c. 1500 m (a few individuals up to c. 2700 m), in the eastern parts extending to the plains of northern Bihar, northern Bengal, Assam, Nagaland, Manipur and Bangladesh (all parts — Rashid).

Extralimital. Breeds in adjacent parts of southern Tibet (northern limits unknown), Szechuan and Yunnan south to northern Vietnam. Winters south to Tenasserim, Thailand and Cambodia.

GENERAL HABITS, FOOD and VOICE. As in 1885.

Display. ‘The male shuffles round the hen with the tail and wing nearest the latter spread out and sloped downwards’ (HW).

BREEDING. *Season*, May to early August. *Nest*, a cup of dry grass, roots and leaves lined with hair, wool or feathers, placed under a boulder, among roots of bushes or in heaps of flotsam on river islands or banks, occasionally in holes in walls or under the eaves of houses. *Eggs*, 4 to 6, white tinged with grey marked with numerous brownish grey specks. Average size of 80 eggs 21.3 × 15.5 mm (Baker), of 10 eggs 21.9 × 15.6 mm (BBO). Building of nest, incubation and care of young by both sexes.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Differs from *personata* in having the back and rump black. Female similar to male but black of back more or less mixed with grey. Postnuptial moult complete in August and September. Other moult as in 1885.

First-winter male. Upperparts and lesser coverts sooty black edged or mixed with grey; often shows more white on throat than adult. First-winter female like male but upperparts and lesser coverts dark ashy grey, somewhat darker on crown.

Young not distinguishable from that of *personata*. From *dukhunensis* distinguishable by more white in wing-coverts, darker ear-coverts, chin and throat sullied with dusky brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	90–105 }	18–19	23–25	{ 87–97 mm
♀♀	87–95 }			{ 84–94 mm
				(HW, BB)

Weight 15 ♂♂ (Aug.–Nov.) 22–26.1; 10 ♀♀ (Aug.–Nov.) 20.1–23.7 g (GD).

COLOURS OF BARE PARTS. Iris dark brown. Bill black; mouth blackish in male, fleshy or blackish livid in female. Legs and feet black (HW).

1888. **Whitefaced Pied Wagtail.** *Motacilla alba leucopsis* Gould

Motacilla leucopsis Gould, 1838 (1837), Proc. Zool Soc. London: 78 (India)
Baker, FBI No. 1173, Vol. 3: 264

LOCAL NAMES. *Dhobân* (Hindi); *Khânjânâ*, *Gara chanchir* (Chota Nagpur); *Bâlimâti*, *Tipori* (Assam); *Tangchenfêu* (Lepcha).

FIELD CHARACTERS. As in Indian White Wagtail (1885), i.e. grey back and white sides of head, but easily distinguished from it by black streak through eye.

STATUS, DISTRIBUTION and HABITAT. Uncommon winter visitor to Assam, Nagaland, Manipur, Bangladesh and west to central Nepal (rare). Habitat as in 1888.

Extralimital. Breeds in Siberia from the Yenisey to Chuckchi Peninsula. Winters in southeastern Asia.

MIGRATION. Noted as common on passage in the Nepal Valley in March–April and October.

GENERAL HABITS, FOOD and VOICE. As in 1885.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Dark eye-streak, present in all plumages, identifies this subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	92–101 }	16–18	{ 93–99 mm
♀♀	88–94 }		{ 86–95 mm
			(HW)

COLOURS OF BARE PARTS. As in 1885.

1890. **Swinhoe's Pied Wagtail.** *Motacilla alba baicalensis* Swinhoe

Motacilla baicalensis Swinhoe, 1871, Proc. Zool. Soc. London: 363
(Eastern Asia = Lake Baikal)
Baker, FBI No. 1169, Vol. 3: 260

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 18 cm (7 in.).

FIELD CHARACTERS. As in Indian White Wagtail (1885), i.e. grey back and white sides of head, but chin and upper throat white at all seasons. Not distinguishable in winter.

STATUS, DISTRIBUTION and HABITAT. Uncommon winter visitor. ‘Assam’ (Baker), Bangladesh (all parts *vide* Rashid), Madhupur (Bihar), Sikkim, Bengal duars (Roonwal, *Rec. Indian Mus.* 41: 293), Nepal (Proud, JBNHS 53: 67) and probably farther west in the plains of northern India. According to Roonwal (*loc. cit.*) ‘in the Indian Museum there are a number of well-preserved skins of *baicalensis* (≧ *personata*) from as far west as Kashgar, Gilgit and Ladakh, and also from Simla and Sikkim’. Cf. also extralimital winter range and migration. Habitat as in 1888.

Extralimital. Breeds in Mongolia and Transbaikalia. Winters in the Indo-Chinese countries, southern China and in Afghanistan and southeastern Iran.

MIGRATION. Recorded on passage in Nepal both in March–April (latest 30 April) and in September (Proud, Biswas, Polunin, Diesselhorst), and presumably throughout the Himalayas (cf. Roonwal, above).

GENERAL HABITS, FOOD and VOICE. As in 1885.

BREEDING. Extralimital.

SIZE. Bulbul; length c. 18 cm (7 in.).

FIELD CHARACTERS. As in *alboides* (1887) black back but ear-coverts and sides of neck white. Distinguishable from *personata* (1886) by black back (c. grey), white sides of neck and white upper throat; *dukhunensis* has a grey back and black chin and throat.

STATUS, DISTRIBUTION and HABITAT. Common winter visitor. Assam, Nagaland, Manipur, Bangladesh and Bengal west through Bihar to eastern Uttar Pradesh and central Nepal (possibly Simla, cf. Beavan, *Ibis* 1868: 73, as ‘*luzonensis*’); in the terai, duars and foothills up to c. 1500 m, in the hills south of the Brahmaputra up to c. 1000 m. Also Andaman Islands. Affects dry river-beds, streams, ponds, roads and cultivation.

Extralimital. Breeds in western and northern China, Korea and Amurland. Winters in southern China and Indochinese countries.

MIGRATION. Occurs in winter quarters chiefly from mid September to the beginning of April. Common on passage at high altitudes in southern Tibet and eastern Himalayas from the middle of August to the middle of September (Ludlow, Diesselhorst); on Mt Everest up to 5300 m.

GENERAL HABITS, FOOD and VOICE. As in 1885.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters. Female as male but upperparts dark slaty usually mixed with some black (sometimes without any black or nearly as black as male).

First-winter male. Crown usually black, sometimes mixed with dark grey. Mantle and lesser coverts dark slate-grey, mixed or not with black to sooty black, fringed with dark grey. Flight-feathers and primary-coverts browner than in adult, greater coverts browner and only narrowly edged with white (retained from young).

First-winter female. Above brownish slate-grey. Crown like back or darker. Forehead less pure white than in adult or first-winter male.

Young as *dukhunensis* but rump blackish with narrow brown fringes. Median coverts white, grey at base and dark along shafts.

Plumages very variable. Those that resemble the grey-backed forms may be distinguished by the browner tinge of upperparts, darker rump and lesser coverts and large amount of white in median and greater coverts (HW).

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	87–96 }	17–18	{ 85–93 mm
♀♀	85–91 }		{ 82–92 mm
			(HW, BB)

Weight 5 ♂♂ (Sept.–Oct.) 20.2–27 g (GD).

COLOURS OF BARE PARTS. As in 1887.

1889. **Streaked Pied Wagtail.** *Motacilla alba ocularis* Swinhoe

Motacilla ocularis Swinhoe, 1860, *Ibis*: 55 (Amoy, China)
Baker, FBI No. 1170, Vol. 3: 261

LOCAL NAMES. As in 1888.

SIZE. Bulbul; length c. 18 cm (7 in.).

MUSEUM DIAGNOSIS. See Field Characters. White in wing-coverts more extensive than in *dukhunensis*, about as in *personata*. In winter plumage doubtfully differentiable from *dukhunensis*; larger size and larger amount of white in wing, especially median coverts, may be helpful characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	93–100 }	16–18	c. 24	{ 88–98 mm
♀♀	86–94 }			{ 88–94 mm
				(HW, Roonwal)

Weight 2 ♀♀ (Sept.) 22.8, 23.5 g (GD).

COLOURS OF BARE PARTS. As in 1885.

1891. **Large Pied Wagtail.** *Motacilla maderaspatensis* Gmelin

(*Motacilla maderaspatensis* Gmelin, 1789, Syst. Nat. 1: 961
(India = Madras *vide* Whistler & Kinnear, 1933, JBNHS 36: 842)
Motacilla maderaspatensis kangrae Koelz, 1939, Proc. Biol. Soc. Washington 52: 75
(Badhwar, Kangra District, Punjab)
Baker, FBI No. 1172, Vol. 3: 263
Plate 97, fig. 18

LOCAL NAMES. *Mârûlâ*, *Bhain mârûlâ*, *Khânjân* (Hindi); *Nachengli*, *Hata roui* (Chota Nagpur); *Bâlimâti*, *Tipechi* (Assam, all wagtails); *Khangrangchak* (Manipur, all wagtails; regarded as an incarnation of Durga); *Sakala varala-gâda* (Telugu); *Vannathi kûrûri*, *Kulathu kûrûri* (Tamil); *Vêlkumâlî pakshi* (Malayalam).

SIZE. Bulbul; length c. 21 cm (8½ in.).

FIELD CHARACTERS. A large black-and-white wagtail. Above, black with a conspicuous white supercilium from lores to nape, a large white band on wing and white outer rectrices. Below, throat and breast black, rest of underparts white, ashy on flanks. Sexes alike but female sometimes duller and browner. Summer and winter plumages alike.

Colour-pattern very similar to Magpie-Robin, but prominent white supercilium diagnostic.

The black-backed races of *M. alba* have a less extensive white patch on wing and an entirely white forehead; in *maderaspatensis* the black of crown projects in a point over forehead to base of bill.

STATUS, DISTRIBUTION and HABITAT. Common resident. The entire Indian Peninsula from the Himalayan foothills (Kohat, Salt Range and Punjab to Sikkim and Bengal duars) south through Kutch to Kanyakumari; lower Bengal and adjoining parts of Bangladesh. One old record (presumably before 1870) from Sri Lanka (Whistler, 1914). In the Himalayan foothills up to c. 900 m (Sikkim) and locally 1500 m (Garhwal, Kulu) or 1700 m (Nepal — Diesselhorst); in the hills of southern India up to 2200 m. Affects watercourses, preferably smooth-running rocky streams, and also dammed irrigation tanks, pools, masonry wells, and occasionally neighbouring rice paddies and lawns.



PIPITS AND WAGTAILS

297

GENERAL HABITS. Usually in pairs which hold together throughout the year. In winter may gather in flocks to roost in tamarisks or reeds in company with other wagtails and swallows. Feeds along the water's edge in typical wagtail manner, vigorously wagging its tail up and down during short stops. Often perches on roof-tops.

Display. As observed by SA: The male of a pair flies down to ground on hovering wings, singing lustily, his plumage fluffed out flaunting the contrasting colours. Lands in front of female, raises open both wings vertically back to back with only the tips quivering and breast-feathers fully puffed. Approaches female thus, with stiff mincing steps. She responds by a slight crouch and opening out of wings at the armpits, shivering them as in food-begging. Copulation ensues. Male with upraised wings continues to sing during the act and for several seconds after coming off female's back. Wings now lowered, but body-feathers still loosely fluffed. (Birds disturbed by passer-by.)

A probable sequence of the above described by another observer (Kirkpatrick, JBNHS 52: 602). After copulation on a flat roof-top [with the same preliminaries as above] the male moves away a few centimetres and suddenly springs upward in the air for a metre or so with a single rapid wing-beat. He slowly sinks back to the roof like a puff-ball on stiffly outspread wings, rump and belly feathers fluffed out, tail slightly spread and thrown well over back, legs dangling stiffly below, and the bird singing loudly all the time. As soon as he touches down he sidles up with a stiff mincing gait to the responsive female and copulation is repeated.

FOOD. Stomachs examined contained small beetles (Tridactylinae and others), locusts, dragonflies, snails and small seeds. To capture Tridactylinae beetles in sand, the birds often work in pairs and systematically search the sand. When the insect is spotted there is a swift rush, and a jet of sand is shot into the air as the prey is seized (Hingston).

VOICE AND CALLS. Call-note, a loud *chiz-zit* chiefly uttered in flight. Song, a clear high-pitched jumble of loud pleasant whistling notes somewhat reminiscent of Magpie-Robin's; sometimes also given by both sexes as a demonstration of anger or alarm on an intruder's approach to the nest. Song period in Nepal January to October, chiefly April to July (Proud).

BREEDING. Season, in the north March to May or June, rarely till September or October. In the south the season begins as soon as the rivers drop to dry-season level about the end of December and continues until the break of the rains in June (Betts). *Nest*, a rough collection of roots, coarse grass, scabs of dry algae and miscellaneous rubbish, in the centre of which is a neat cup lined with hair, wool, etc. Almost invariably placed in the vicinity of water, under bridges, in holes in walls or buildings, in hollows of stranded tree-trunks or among the roots of grass tufts growing out of rock overhanging streams; frequently in close proximity to nest of Wiretailed Swallow. A pair has been known to occupy a disused dipper's nest; another to place nest in a river ferry-boat in constant use. *Eggs*, normally 4, sometimes 3, rarely 5, greyish white with brown specks all over, denser round the large end, darker and browner than those of *M. alba*. Average size of 100 eggs 21.9 × 16.2 mm (Baker). Building of nest and care of young by both sexes. Incubation period undetermined.

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299

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298

MOTACILLIDAE

MUSEUM DIAGNOSIS. See Field Characters. Unlike *M. alba*, summer and winter plumages are alike. First-winter male and female alike, duller (browner) than adults. A complete moult about September; no spring moult. Female may have the upperparts dark sooty grey (cf. Whistler, JBNHS 38: 759).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	91-103 (107)	19-20	27-28	93-107 mm
♀♀	88-103	18-20	26-28	90-103 mm

(HW, BB, SA, Koelz)

Weight 2 ♂♂ 30, 30; 1 ♀ 26; 1 ♂ 36 g (GD, BB, Roonwall).

COLOURS OF BARE PARTS. Iris dark brown. Bill black; mouth slaty black. Legs and feet blackish. In nestling gape pale yellow, mouth orange.

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300

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Order PASSERIFORMES (cont.)

Family DICAETIDAE: Flowerpeckers

For description see Van Tyne, J. & Berger, A. J., 1959: 540; Salomonsen, Finn, 1964, article 'Flowerpecker' in Thomson, A. L. (ed.), *A New Dictionary of Birds*, London and New York.

Genus DICAETUM Cuvier

Dicaetum Cuvier, 1817, *Régne Anim.* 1: 410. Type, by subsequent designation, *Certhia erythronotos* 'Vieillot', 1802, *Ois. dor.* 2, pl. 35: 70 = *Certhia erythronotos* Latham ex Sonn. *Dicaetum cruentatum erythronotos* (Latham), (Gray, G. R., 1840, *List Gen. Bds.*: 13)

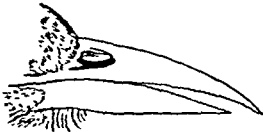
Pachyglossa 'Hodgson' = Blyth, 1843, *Jour. Asiat. Soc. Bengal* 12: 1009. Type, by monotypy, *P. melanoxantha* Blyth

Piprisoma Blyth, 1844, *Jour. Asiat. Soc. Bengal* 13: 394. Type, by monotypy, *Fringilla agilis* Tickell

Aemonorhynchus Oates, 1890, *Fauna Brit. Ind.*, Bds. 2: 381. Type, by monotypy, *Prionochilus virens* Selater

Cf. Mayr, E. & Amadon, D., 1947, *Amer. Mus. Novit.*, No. 1360: 16-29.

Bill short, triangular, edges finely serrated; nostrils exposed but partly covered by a membrane. Rictal bristles short. Wing with nine primaries.



x c. 4

Key to the Species

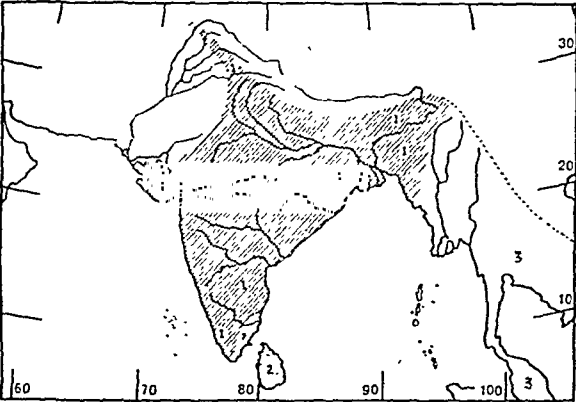
	Page
I Tail with white spots or terminal band	
A White on all rectrices forming narrow terminal band; plumage olive-grey.....	<i>D. agile</i> ♂ ♀ 2
B No white on central rectrices; abdomen yellow	
1 White spots on inner webs only.....	<i>D. melanoxanthum</i> ♂ ♀ 6
2 White spots on both webs at tip	
a Upperparts olive.....	<i>D. virens</i> ♀ 8
b Upperparts slaty blue.....	<i>D. virens</i> ♂ 8
II No white in tail	
C Plumage with some crimson colour	
3 Crimson on breast.....	<i>D. ignipictus</i> ♂ 17
4 Crimson on back	
c Crimson from crown to rump.....	<i>D. cruentatum</i> ♂ 15
d Crimson on rump only.....	<i>D. cruentatum</i> ♀ 15

FLOWERPECKERS

3

south. In the western Himalayan foothills breeds up to c. 1500 m, in Darjeeling district and Nepal to c. 2100 m; in Garhwal observed at 3000 m in June in clumps of rhododendron. May be seen at these higher elevations till October, withdrawing in winter to the foothills below c. 800 m. Affects

Dicaetum agile



Distributional ranges

1 *agile* (1892). 2 *zeylonense* (1893). 3 extralimital subspecies.

large flowering or fruiting trees and shrubs (especially those infested with the plant parasites *Loranthus* and *Viscum*) in a variety of biotopes — dry to moist-deciduous or semi-evergreen forest and cultivated country — orchards, village groves and suburban gardens.

Extralimital. Northern Burma. The species ranges east through the Indochinese countries, Malaysia, Lesser Sunda and Philippine islands.

GENERAL HABITS. Keeps singly or in pairs, hopping restlessly about the foliage, carefully searching the end twigs or petioles and underside of the leaves, or flying from one plant parasite clump to another within its accustomed beat. Has a characteristic habit of twitching the stumpy square tail from side to side.

FOOD. Chiefly figs of peepul (*Ficus religiosa*), banyan (*F. bengalensis*), gulair (*F. glomerata*), and berries of *Lantana*, *Bridelia*, *Viscum* and *Loranthus* but somewhat less closely dependent upon the last than other flowerpeckers, e.g. 1899. Instead of swallowing *Loranthus* berries entire, like *D. erythrorhynchos*, it usually revolves them in the finch-like bill to strip them of the edible epicarp and wipes off the viscous seeds on to the perch or adjoining branches. Thus it helps to spread the parasite over the same host-tree rather than disseminate it farther afield. Also fond of the nectar of *Bombax*, *Erythrina*, and other blossoms, and the juicy flesh of mhowa (*Madhuca indica*) flowers. Spiders are also taken, and presumably various insects.

	Page
D No crimson in plumage	
5 Underparts striped.....	<i>D. chrysomela</i> ♂ ♀ 5
6 Underparts not striped	
e Abdomen yellow or orange	
i Upperparts slaty blue, back and rump orange-red.....	<i>D. trigonastigma</i> ♂ 9
ii Upperparts olive-grey; orange or yellow restricted to rump.....	<i>D. trigonastigma</i> ♀ 9
f Abdomen buff	
iii Upperparts dark olive-green; bill black.....	<i>D. ignipictus</i> ♀ 17
iv Upperparts brownish or greyish tinged with olive	
o' Bill pale coloured; no supercilium.....	<i>D. erythrorhynchos</i> ♂ ♀ 10
o'' Bill dark coloured; a whitish supercilium.....	<i>D. cancelor</i> ♂ ♀ 12

DICAETUM AGILE (Tickell)

Key to the Subspecies

Upperparts brownish olive, underparts greyish white	
1 Paler, rump yellow.....	<i>D. a. agile</i> 2
2 Darker, rump greener.....	<i>D. a. zeylonense</i> 4

1892, 1894. **Indian Thickbilled Flowerpecker.** *Dicaetum agile* (Tickell).

Fringilla Agilis Tickell, 1833, *Jour. Asiat. Soc. Bengal* 2: 578

(Borabhum and Dholbhum)

Piprisoma agile saturatior Koelz, 1939, *Proc. Biol. Soc. Washington* 52: 77

(Londa, Bombay Presidency)

Dicaetum agile deignani Ripley, 1932, *J. Bombay nat. Hist. Soc.* 50: 510

(Kohima, Assam)

Baker, FBI No. 1311 (part), Vol. 3: 435

Plate 98, fig. 1

LOCAL NAMES. *Phul sūnghāni* (Gujarati); *Che* (Chota Nagpur); *Chitta-jitta* (Telugu); *Itakkannikkūūi* (Malayalam).

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. A drab stumpy-tailed flowerpecker with a short, thick bill. Above, olive-grey, greener on rump. A narrow white terminal band on tail. Below, greyish white faintly brown-streaked on breast. Sexes alike.

The bluish almost finch-like bill and orange-red eyes are diagnostic.

STATUS, DISTRIBUTION AND HABITAT. Common resident; in the Himalayan foothills a vertical migrant. The Indian Peninsula from the outer Himalayas (western Punjab (Rawalpindi) to Bhutan and Assam north and south of the Brahmaputra with Meghalaya and Nagaland). South through Gujarat (Gir Forest, JBNHS 66: 378) to Kerala (Peermade, Maraiyur), and on the eastern side through Bengal, Orissa, Andhra Pradesh and Tamil Nadu south at least to the Shevaroy Hills c. 11°N. (SA). No records from farther

DICAETIDAE

VOICE AND CALLS. Call-notes a sharp metallic *chik, chik, chik*... similar to but easily distinguishable from those of *D. erythrorhynchos*. While uttering these, spreads out tail and screws it nervously from side to side.

BREEDING. Season, overall January to June, but mostly early in the season when the trees are still bare, somewhat later in the hills. Nest, a hanging oval purse about 10 cm long with the roof slung for 8 cm or so along a twig; the entrance somewhat elongated horizontally, about 2 cm in length and immediately below the supporting twig. Built of a peculiar reddish brown vegetable down mixed with cocoons compacted into a soft, pliable and resilient felt; structure resembles that of *D. erythrorhynchos* in shape but instead of being hidden in a bunch of leaves it is usually fully exposed near the tip of a bare twig. Despite this, its cryptic coloration makes it look so deceptively like a dry rolled-up leaf that it eludes casual notice. Frequently builds among the leaf nests of the vicious red ant (*Oecophylla*) without apparent harm, and possibly for protection. Nest suspended at heights varying from two to nine metres on large- or medium-sized trees, usually quite high. Eggs, normally 3, sometimes 2, rarely 4, pale pink with reddish brown speckles and blotches. Average size of 76 eggs 15.9 × 11.5 mm (Baker). Building of nest, feeding young and nest sanitation by both sexes; share in incubation, and period, undetermined.

MUSEUM DIAGNOSIS. See Key to the Species and Subspecies.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	55-65	10	14-15	31-34 mm
♀♀	58-64	9-10	13-14	27-30 mm

(Koelz, HW, SA, Rand & Fleming)

Weight 11 ♂ ♀ 7.5-11 (av. 9) g — SA. 1 ♂ 8.5 g (GD). 1 ♀ 8 g — SDR.

COLOURS OF BARE PARTS. Iris orange-brown or orange-red. Bill horny grey, dusker on upper mandible; mouth bright yellow and pink. Legs and feet dark slate. In fledgling bill brown, gape yellow.

1893. **Ceylon Thickbilled Flowerpecker.** *Dicaetum agile zeylonense* (Whistler)

Piprisoma agile zeylonicum Whistler, 1914, *Spolia Zeylanica* 23: 210

(Kumbalgamuwa, Ceylon)

Baker, FBI No. 1311 (part), Vol. 3: 435

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. As in 1892, q.v.

STATUS, DISTRIBUTION AND HABITAT. Sri Lanka, widely distributed in small numbers, in the hills up to c. 1200 m and in the northern forest tract. Affects tree-tops in forest and well-wooded areas. Keeps to a higher stratum than Tickell's Flowerpecker.

GENERAL HABITS. As in 1892.

FOOD. Spiders, insects, berries, fruit and nectar. Nestling in early stage fed mostly on berries and fragments of succulent fruit; later spiders (mostly) and insects are given.

VOICE AND CALLS. As in 1892.

FLOWERPECKERS

5

BREEDING. Season, February to August. Nest and eggs as in 1892; clutch size 2.

MUSEUM DIAGNOSIS. Differs from *agile* (1892) in, being darker, rump more olive, less yellow. Postnuptial moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
1 ♂	56	10	12	28 mm
1 ♀	57	9	12	29 mm
6 ♂ juv.	55-57	—	—	24-28 mm
2 ♀ juv.	54, 56	—	—	25, 26 mm
				(HW)

COLOURS OF BARE PARTS. As in 1892.

1895. **Yellowvented Flowerpecker.** *Dicaeum chrysorrheum chrysochlore* Blyth

Dicaeum chrysochlore Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 1009 (Arracan)

Dicaeum chrysorrheum intensum Baker, 1921, Bull. Brit. Orn. Cl. 41: 108 (Sikkim)

Baker, FBI Nos. 1301 and 1302, Vol. 3: 426, 427
Plate 98, fig. 5

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. A flowerpecker with distinctly streaked underparts. Above, olive-green; wings and tail dark brown. Below, buffish white streaked with dark brown. A dark moustachial streak. Under tail-coverts bright yellow. Sexes alike.

The streaked underparts identify this species.

STATUS, DISTRIBUTION AND HABITAT. Resident, common south of the Brahmaputra. The Himalayan foothills from Nepal (one Hodgson record)¹ east through Darjeeling, Sikkim, Bhutan and (?) Arunachal Pradesh, the Patkai Range, Meghalaya, Nagaland, Manipur south to Tripura, Mizo Hills and the Chittagong Hill Tracts; apparently only in the hills, up to over 1200 m, in Sikkim to over 2000 m. Affects open jungle, edges of forest and orange orchards.

Extralimital. Ranges east to Vietnam. Nominate subspecies in Malaysia, Sumatra, Java and Borneo.

GENERAL HABITS. Those of the genus.

FOOD. Berries, especially *Loranthus*, flower-nectar, small beetles and other insects.

VOICE AND CALLS. Unrecorded.

BREEDING. Season, April to July. Nest, similar to that of other flowerpeckers; scraps of moss are often used on the exterior and more grass or fibre incorporated to support the vegetable down; nest usually placed under c. 6 metres. Eggs, 2 or 3, similar to others of the genus. Average size of 16 eggs 15.3 × 11 mm (Baker). Building of nest and incubation by both sexes.

MUSEUM DIAGNOSIS. See Field Characters.

¹ Rediscovered in 1973 along Tamur river, southwest of Dhankuta, c. 300 m, in SE Nepal (R. L. Fleming, Jr., Nepal Nature Conservation Society Newsletter No. 22: 4, January 1974).

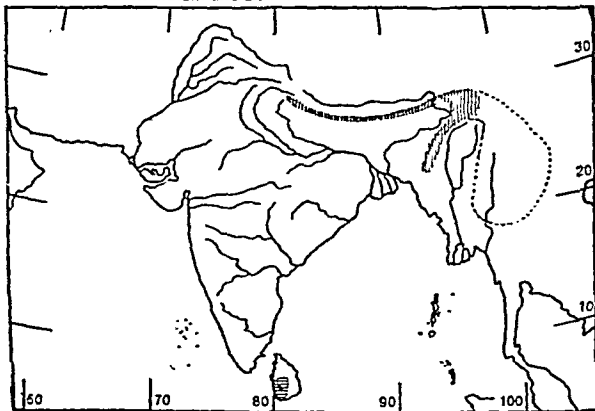
FLOWERPECKERS

7

Female. Like male but black replaced by olive-brown, paler on sides of head, neck and breast. Middle of chin, throat and breast greyish white. Belly and under tail-coverts yellow.

STATUS, DISTRIBUTION AND HABITAT. Status and distribution little known. Scarce resident, local and subject to vertical movements. The Himalayas from Almora (Prater, JBNHS 42: 187) east through Nepal (cf. Biswas, 1963 and Diesselhorst, 1968), Sikkim (SF 2: 455, SF 5: 348; cf. also Sálím Ali, *Birds of Sikkim*: 356), Bhutan (?) and Arunachal Pradesh (Joonkotollee, Dibrugarh dist., specimens in British Mus.), thence south through Nagaland

Dicaeum melanoxanthum and *D. vinctus*



□ *D. melanoxanthum* (1896). ■ *D. vinctus* (1897).

(SF 11: 85) and Manipur (British Mus.). Obtained in summer at 2000 m (Almora), 2400 m (Nepal), 2700 m (Sikkim) and up to 3600 m *vide* Salomonsen in Peters's Check-list 12: 179; recorded in winter at c. 1400 m (Nepal Valley) and between 1600 and 1800 m (Sikkim). Affects tall trees in open forest and clearings in dense forest.

Extralimital. Ranges east to northern Yunnan, the Shan States of Burma, northern Thailand and extreme northern Vietnam.

GENERAL HABITS. Little known. A lively but apparently elusive bird frequenting the foliage of tall trees and climbers, visiting flowers, creeping in and out in incessant motion. Has been observed to make sallies from dead branches after insects in flycatcher style. Usually solitary and silent.

FOOD. Probably as of other flowerpeckers.

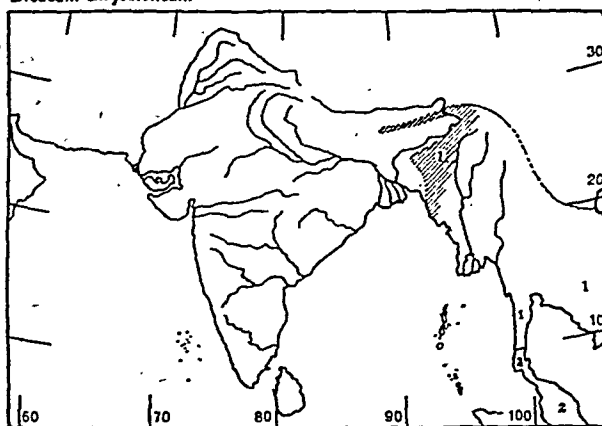
VOICE AND CALLS. Unrecorded.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. See Field Characters.

6

DICAIEIDAE

Dicaeum chrysorrheum

Distributional ranges

□ *D. chrysorrheum* (1895), ■ *D. chrysorrheum* (RE).

Young, like adult but underparts more greyish; streaks finer, less defined. Upperparts rather less bright. Postjuvénal moult of body-feathers and probably all coverts except primary series.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	55-62	13-14	14-15	27-31 mm
				(Baker, MD)

Weight 1 ♂ 9 g (SDR).

COLOURS OF BARE PARTS. Iris orange-red. Bill blackish. Legs and feet plumbeous.

1896. **Yellowbellied Flowerpecker.** *Dicaeum melanoxanthum*¹ (Blyth)

P.(achyloglossa) melanoxantha 'Hodgson' = Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 1010 (Nepal)

Baker, FBI No. 1315, Vol. 3: 439

Plate 98, fig. 2

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (4½ in.).

FIELD CHARACTERS. A relatively large, black-and-yellow flowerpecker. Male. Above, entirely slaty black; white spots in tail. Below, sides of head, neck and breast slaty black; a white band from chin down centre of throat and centre of breast. Rest of underparts bright yellow.

¹ On spelling of this word see Peters's Check-list vol. 12: 179, footnote.

8

DICAIEIDAE

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	72-76	8-9	14-15	40-42 mm
		(from skull)		(Baker)
1 ♂	71	11	—	41 mm
1 ♂	70	11	—	37 mm
(sub-ad.)				(BB)

Wing 2 ♂ 70, 75; 3 ♀ 63-69 mm (Stres., Rand & Fleming)

COLOURS OF BARE PARTS. Iris red. Bill black. Legs and feet dark plumbeous.

1897. **Legge's Flowerpecker.** *Dicaeum vinctus* (Sclater)

Prionochilus vinctus Sclater, 1872, Proc. Zool. Soc. London: 730 (Ceylon)

Baker, FBI No. 1310, Vol. 3: 434

Plate 98, fig. 6

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. Male. Above, slaty blue. Wings and tail black, the latter with large white terminal spots. Below, throat white, belly bright yellow.

Female. Above, head grey. Back dull olive. Wings and tail dark brown; terminal spots on rectrices smaller than in male. Below, throat whitish; belly pale yellow, flanks olive.

STATUS, DISTRIBUTION AND HABITAT. Widely distributed in small numbers in the Wet zone of Sri Lanka up to c. 900 m. Affects foliage of tall trees and creepers entwining their trunks in rain-forest.

GENERAL HABITS. Keeps solitary, in pairs or in small family parties. Frequents mainly the tops of tall trees.

FOOD. Nectar, berries, spiders and small insects.

VOICE AND CALLS. Call-notes described as 'tchip', 'tchip-twee-see-see'; also has two types of song, one of which, the breeding song, is uttered, often during stormy southwest monsoon weather, from exposed twigs high up in tall trees' (Cicely Lushington).

BREEDING. Season, February to June, occasionally in July and August. Nest, a small pear-shaped structure with the entrance near the top sheltered by an eave projecting about 2 cm and suspended from a twig; rather similar to that of Tickell's Flowerpecker (1899) but larger, more neatly built and reddish brown in general colour. Material consists of fine, very soft vegetable down felted with cobweb into a fine wool-like material, on the outside of which are fastened many pieces of reddish sheaths from leaf-buds, some of the larger pieces hanging down below the nest, loosely attached by one end. The whole nest resembles a dead leaf and is very difficult to make out without powerful binoculars as it is placed high up among the foliage at the end of a branch of a large tree, from c. 18 up to 37 metres

FLOWERPECKERS

9

above the ground. Eggs 2, white profusely speckled with small blotches, spots and specks of purplish brick-red with underlying lavender markings of the same type. One egg measured 15.4 x 11.2 mm (Phillips). Building of nest and incubation apparently by female only, the male spending much of his time singing nearby. The nest is so well insulated that during the heat of the day the female often leaves it for long intervals (Lushington, C., JBNHS 42: 186; Phillips, W. W. A., *Ceylon Jour. Sci.* 24: 18-20).

MUSEUM DIAGNOSIS. See Field Characters. Postnuptial moult complete, August to October.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
2. ♂♂	58, 59	12	(10), 12	28, 31 mm
♀♀	56-59	c. 12	c. 13	26-30 mm

(HW, SDR)

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible black, lower blue-grey on basal half. Legs and feet black.

1898. Orangebellied Flowerpecker. *Dicaeum trigonostigma rubropygium* Baker

Dicaeum trigonostigma rubropygium Baker, 1921, Bull. Brit. Orn. Cl. 41: 108 (Mergui)

Baker, FBI No. 1300, Vol. 3: 425

Plate 98, fig. 7

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (3½ in.).

FIELD CHARACTERS. Male. Above, slaty with bright orange back and rump. Below, throat pale grey; rest of underparts bright orange.

Female. Above, olive-grey; lower rump orange. Below, throat and flanks grey tinged with olive. Abdomen yellow.

STATUS, DISTRIBUTION AND HABITAT. Scarce and very local resident. The submontane tracts of the Lakhimpur district, eastern Assam (Baker) and in the Sunderbans (Ripley, *Synopsis*: 581). Affects glades and margins of evergreen forest.

Extralimital. Southern Burma, Malaysia, Indonesia and the Philippines.

GENERAL HABITS. Those of the genus.

FOOD. Unrecorded.

VOICE AND CALLS. Unrecorded.

BREEDING. Season, April and May. Nest and eggs similar to those of other members of the genus; nest usually placed on a high tree c. 10 or 12 metres above the ground. Average size of 10 eggs 15.5 x 11.2 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	45-51	9-10	c. 13	24-27 mm

(Baker)

Bill from skull c. 13 mm

FLOWERPECKERS

11

of Uttar Pradesh to the Jalpaiguri duars and Bhutan foothills and through Assam to Dibrugarh and North Cachar, south to Bengal, Bangladesh, Bihar and the Indian Peninsula from Jabalpur and Baroda south to Kanyakumari (Cape Comorin). In Nepal occurs up to c. 1400 m in summer, withdrawing from this level in winter. In the hills of southern India occurs up to the summits, but is more abundant in the plains. Affects deciduous forest, forest plantations, groves of mango and other orchards, and fig trees in open country or cultivation; sometimes coastal mangroves. Local distribution almost entirely dependent on the presence or absence of plant parasites of the mistletoe family (Loranthaceae).

Extralimital. Occurs very locally in Burma south to Tenasserim.

GENERAL HABITS. Keeps singly or in pairs; occasionally in small loose parties of 4 or 5 individuals. Incessantly on the move, flitting restlessly among the parasite clumps or darting from tree to tree. Frequents the foliage canopy of trees, seldom coming down to bushes. Very strong on the wing; flies high and rapidly for long distances in a series of dips and bounds. Has regular 'beats' or feeding territories of infested host-trees — in effect parasite plantations raised and maintained by the bird's own activities.

FOOD. Predominantly berries of parasitic *Loranthus* and *Viscum* spp. Along with other flowerpeckers is largely responsible for the dispersal of their seeds and thus for considerable damage and economic loss in forest plantations (teak, sal, etc.) and orchards (mango, guava, etc.). The ripe berries are either swallowed entire or the viscous contents squeezed out in the mandibles and the peel discarded. The undigested slimy seeds pass through the body with great rapidity and adhere to the branches on which they are excreted, sprouting in a few days and sucking the sap of the host. Spreads the infestation over a wide area rather than to adjacent branches of the same tree, cf. 1892.* Also takes other berries and fruit, nectar, spiders and small insects.

VOICE AND CALLS. A sharp, almost incessant *chik-chik-chik* uttered while hopping about and in flight. A series of twittering notes in the nature of a song (SA). A call like a cricket's reel and a piercing alarm-note *utit*, *utit* (Lowther).

BREEDING. Season, in the north February to June, in the south February to May and again in August-September (Betts). Nest, a small oval purse of fine grass, vegetable down, pieces of bark, green moss and cocoons; resembles that of the Purple Sunbird but lacks the 'porch' over the entrance and the trailer of rubbish dangling underneath. It is suspended from the tip of a twig from c. 3 to 12 metres above the ground and well hidden in a bunch of leaves. Eggs, 3 more usually than 2 [Lowther, Bihar (Manbhum district)], white, unmarked. Average size of 30 eggs 14.4 x 10.5 mm (Baker). Building of nest, care of young and probably also incubation, by both sexes. Incubation period undetermined. Nest-young fed largely on peeled loranthus berries.

* For structure etc. of alimentary canal see H. Desselberger (1931) 'Der Verdauungskanal der Dicaeiden', J. Orn. Soc. (1): 353-70.

* For details see Salim Ali (1931) 'The role of sunbirds and flowerpeckers in the propagation and distribution of the tree-parasite *Loranthus longiflorus* Desr. in the Konkan (W. India)', JBNHS 33: 144-9.

10

DICAETIDAE

COLOURS OF BARE PARTS. Male. Iris brown. Bill black. Legs and feet horny black. Female. Iris grey to brown. Bill: base of upper mandible reddish brown; tip of both mandibles blackish horn; rest of lower mandible orange-brown to orange-vermilion (HW MS.).

DICAETUM ERYTHORRHYNCHOS (Latham)

Key to the Subspecies

Paler and greyer.....*D. e. erythrorhynchus*
Darker and more olive.....*D. e. ceylonensis*

1899. Tickell's Flowerpecker. *Dicaeum erythrorhynchus erythrorhynchus* (Latham)

Certhia erythrorhynchus Latham, 1790, Index Orn. 1: 299

(India, restricted to Bombay by Baker, 1926, 'Fauna' ed. 2, vol. 3: 432)

Baker, FBI No. 1308, Vol. 3: 432

Plate 98, fig. 8

LOCAL NAMES. Phoolchiki (Hindi); Sāngā-pra-pho (Lepcha).

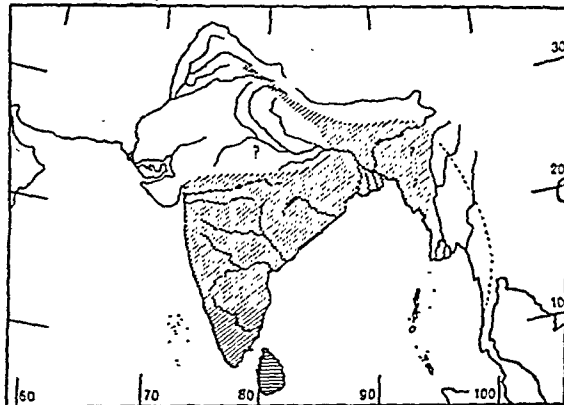
SIZE. Sparrow —; length c. 8 cm (3 in.).

FIELD CHARACTERS. A plain olive-brown bird with greyish white underparts, rather like a female sunbird but smaller, with the bill much shorter and flesh-coloured. Sexes alike.

The very similar *D. concolor* has a dark bill and pale supercilium.

STATUS, DISTRIBUTION AND HABITAT. Common resident. From Dharmasala and Kangra east along the Himalayan foothills and adjacent plains

Dicaeum erythrorhynchus



Distributional ranges

erythrorhynchus (1899).

ceylonensis (1900).

12

DICAETIDAE

MUSEUM DIAGNOSIS. See Field Characters and keys to the Species and Subspecies.

Young, like adult but greyer above and more greyish below.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	46-52	11-13	11-13	22-27 mm
♀♀	46-50	11-13	c. 12	22-25 mm

(SA, HW, Rand & Fleming, BB)

Weight 17 ♂♂ 4-8 (av. 6.3) g — SA.

COLOURS OF BARE PARTS. Iris hazel. Bill pale horny brown, pinkish flesh at gape and on lower mandible excepting tip; mouth pale pink. Legs, feet and claws dark slate. Young: Iris hazel. Bill orange-yellow; mouth bright orange. Legs and feet slate; claws horny brown.

1900. Ceylon Small Flowerpecker. *Dicaeum erythrorhynchus ceylonensis* Babault

Dicaeum erythrorhynchus ceylonensis Babault, 1920, Mission Babault: 293

(Boista, Ceylon)

Baker, FBI No. 1309, Vol. 3: 433

LOCAL NAME. Piliher-geddi sūnikka (Sinhala).

SIZE. Sparrow —; length c. 8 cm (3 in.).

FIELD CHARACTERS. As in 1899, q.v.

STATUS, DISTRIBUTION AND HABITAT. Plentiful and widely distributed throughout Sri Lanka, in the hills up to over 2100 m. Affects tall trees in forest, groves, cultivation, and shade trees in tea plantations.

GENERAL HABITS, FOOD AND VOICE. As in 1899.

BREEDING. Season, January to July with a peak in March (Phillips); breeding specimens also obtained in September and November (Ripley). Nest and eggs as in 1899. For details see Phillips, 1951, *Ceylon Jour. Sci.* 24(3): 145-63. Clutch size 2. Average size of 4 eggs 14.6 x 10.5 mm (Baker, Henry).

MUSEUM DIAGNOSIS. Differs from nominate race (1899) in being darker, more olive both above and below. Lower mandible dark brown instead of pinkish.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	46-50	12-13	12-13	22-25 mm
♀♀	43-50			22-25 mm

(HW)

COLOURS OF BARE PARTS. Iris yellowish brown. Bill plumbeous brown. Legs and feet greyish.

DICAETUM CONCOLOR Hume

Key to the Subspecies

		Page
A	Belly bright pale yellow..... <i>D. e. cinctus</i>	15
B	Belly with a faint buffy yellow tinge	
1	Above more olive-green..... <i>D. e. olivaceus</i>	13
2	Above browner, less olive..... <i>D. e. concolor</i>	14

FLOWERPECKERS

13

1901. Plain-coloured Flowerpecker. *Dicaeum concolor olivaceum* Walden*Dicaeum olivaceum* Walden, 1875, Ann. Mag. Nat. Hist. 15: 401 (Toungchoo)

Baker, FBI No. 1306, Vol. 3: 430

Plate 98, fig. 4

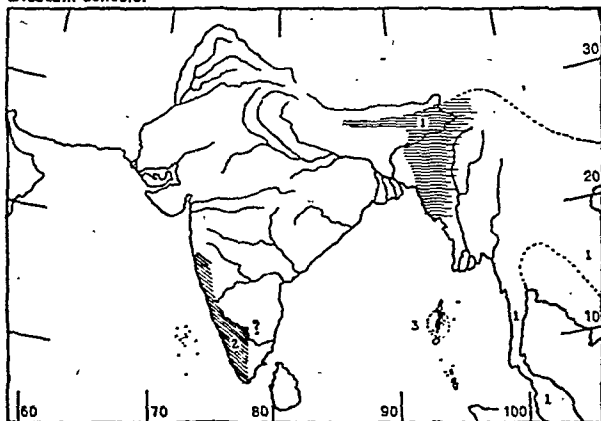
LOCAL NAME. *Bongfang daotisha* (Cachari).

SIZE. Sparrow —; length c. 8 cm (3 in.).

FIELD CHARACTERS. A small plain-coloured flowerpecker, olive-brown above, greyish white below.

Very similar to *erythrorhynchus* (1899) but recognizable at close range by blackish bill and pale lores and supercilium.

STATUS, DISTRIBUTION and HABITAT. Common resident. The Himalayan foothills from central Nepal east through Sikkim, northern Bengal, Bhutan and Arunachal Pradesh, thence south through the plains and hills of Assam, Meghalaya, Nagaland and Manipur south to the Chittagong Hill Tracts.

Dicaeum concolor

Distributional ranges

1 *olivaceum* (1901). 2 *concolor* (1902). 3 *virens* (1903).

Occurs mostly in the hills, in the Himalayas up to at least 1400 m, in Arunachal up to 1800 m, but more common between 700 and 1000 m. Affects groves of trees in open country, orange orchards, outskirts of forest, wide glades and sides of streams in forest.

Extralimital. Ranges east through the Indochinese countries and southern China to Kwangtung. Other subspecies in Taiwan, Hainan, Malaysia, Borneo, the Sunda Islands and the Andamans. A disjunct population (nominate) in southwestern India.

GENERAL HABITS. Usually keeps in pairs, though several pairs may be seen feeding on the same tree. A very energetic, restless species turning

FLOWERPECKERS

15

groves of trees in the vicinity of villages. Inseparable from the tree parasites (family Loranthaceae).

Extralimital. Range of this subspecies widely disjunct from that of *olivaceum* (1901) [Assam].

GENERAL HABITS. As in 1901.

FOOD. As in 1901.

VOICE and CALLS. 'Call, a sharp *cheek*; sometimes a rapid series of ticks. Song, a high-pitched trill, weak and wiry' (Nichols). Voice and notes indistinguishable from those of Tickell's Flowerpecker (SA).

BREEDING. Season, January to April with second broods in May and June. Nest and eggs, as in 1901. Average size of 20 eggs 14.7 × 10.6 mm (Baker).

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	45-52	12-13	c. 13	{ 23-26 mm c. 25 mm (Koelz, HW, SA)
♀♀	44-52			

Weight 15 ♂♀ 5.8 (av. 6.2) g — SA.

COLOURS OF BARE PARTS. Iris brown. Bill bluish grey, dark horny brown on culmen; mouth grey, brownish and pink. Legs, feet and claws brownish black.

1903. Andaman Flowerpecker. *Dicaeum concolor virens* Hume*Dicaeum virens* Hume, 1873, Stray Feathers 1: 482

(Neighbourhood of Port Blair, Andamans)

Baker, FBI No. 1307, Vol. 3: 431

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 8 cm (3 in.).

FIELD CHARACTERS. As in 1901, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident in South and Middle Andaman islands. Affects trees parasitized by *Loranthus*.

GENERAL HABITS, FOOD and VOICE. As in 1901.

BREEDING. Unrecorded, probably as in 1901. A female with mature ovary and distended oviduct, 20 March (Abdulali, JBNHS 58: 411).

MUSEUM DIAGNOSIS. Very similar to *concolor* (1902) but brighter and greener than it or *olivaceum* (1901). Lores whitish but no white on forehead and a mere trace of a supercilium. Below, differs from both the above races in having the abdomen bright pale yellow contrasting with the pale grey of breast.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1902.

1904. Scarletbacked Flowerpecker. *Dicaeum cruentatum cruentatum* (Linnaeus)*Certhia cruentata* Linnaeus, 1758, Syst. Nat., ed. 10, 1: 119 (Benghala)

Baker, FBI No. 1297, Vol. 3: 421

Plate 98, fig. 10

LOCAL NAME. *Damaji gejae* (Cachari).

SIZE. Sparrow —; length c. 7 cm (3 in.).

DICAIEIDAE.

14

and twisting about in every kind of attitude while searching leaves, blossoms and parasitic plants for insects, nectar and berries.

FOOD. Berries, especially of the Loranthaceae, nectar, insects and spiders. VOICE and CALLS. When feeding utters the usual twitter of the genus, and when flying from one tree to another a constant *chip, chip, chip* (Baker). 'Very noisy as they pour out their trill from the top of lofty trees.'BREEDING. Season, March to August, chiefly May and June. Nest, a very small hanging purse (c. 5 × 7 cm) made mostly of the silky whitish floss of *Salmalia malabarica*, usually placed on trees between c. 6 and 12 metres above the ground, sometimes in high bushes or in low plants growing among weeds, nettles and briars. Eggs, 2 or 3, white, unmarked. Average size of 40 eggs 14.5 × 10.6 mm (Baker). Building of nest, incubation and care of young by both sexes. Incubation period undetermined.MUSEUM DIAGNOSIS. Differs from *concolor* (1902) in being more olive-green above and on edges of wings; underparts rather duller and more ashy with a slight buffy yellow tinge. In worn plumage the olive-green is lost and the differences are far less.

Young, like adult but upperparts a little browner, less olive; underparts more ashy.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	43-48	11-12	{ 21-23 mm c. 22 mm (BB, SDR)
♀♀	42-45		

Weight ♂♀ 4-6 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill plumbeous grey. Legs and feet plumbeous; soles grey.

1902. Nilgiri Flowerpecker. *Dicaeum concolor concolor* Jerdon*Dicaeum concolor* Jerdon, 1840, Madras Jour. Lit. Sci. 11: 277

(Malabar Coast)

Dicaeum minutum subflavum Baker, 1921, Bull. Brit. Orn. Cl. 42: 12 (Belgaum)*Dicaeum concolor unicolor* Koelz, 1939, Proc. Biol. Soc. Washington 52:

121 (Kodaikanal, Palni Hills, Madras Presidency)

Baker, FBI Nos. 1304 and 1305, Vol. 3: 429, 430

LOCAL NAME. *Itikkamikkiruvu* (Malayalam).

SIZE. Sparrow —; length c. 8 cm (3 in.).

FIELD CHARACTERS. As in 1901, q.v. Very similar to co-existing Tickell's Flowerpecker (1899) but somewhat dumper; distinguished also by blackish (v. pinkish) bill, white shoulder of closed wing, and yellowish white underparts.

STATUS, DISTRIBUTION and HABITAT. Common resident. Southwestern India from Mahabaleshwar south through western and southern Karnataka, Kerala and western Tamil Nadu east to the Shevaroy (Yercaud — SA), in the low country and hills up to the summits but more abundant in the foothills up to c. 1000 m. Affects deciduous and mixed deciduous-and-evergreen forest, clearings in and about tea and coffee plantations, and

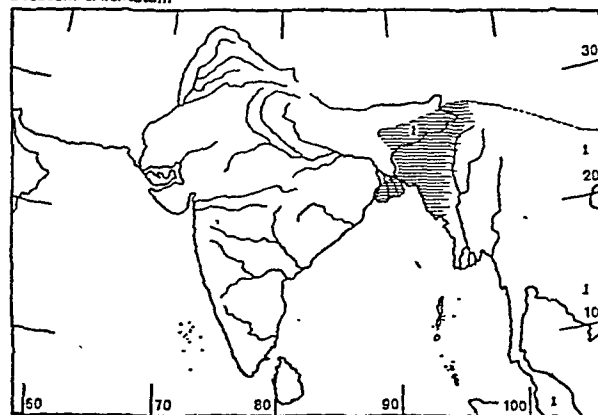
DICAIEIDAE

16

FIELD CHARACTERS. Male. Above, crown, back and rump crimson. Sides of head black. Wings and tail glossy blue-black. Below, centre of throat, breast and belly pale buff. Sides of throat and breast black, flanks grey.

Female. Above, olive. Upper tail-coverts crimson. Tail black. Wings dark brown. Below, buff with grey sides.

STATUS, DISTRIBUTION and HABITAT. Common resident. The Himalayan foothills from eastern Nepal (not recorded since Hodgson), east through Darjeeling, Sikkim, Bhutan and Arunachal Pradesh, south in the plains and hills through Bengal (Jalpaiguri dist., Calcutta, Sunderbans), the

Dicaeum cruentatum

Distributional range

Brahmaputra Valley, Nagaland, Manipur and south to Dacca, Comilla and the Chittagong region. In the hills up to c. 1400 m. Affects open forest, orchards, and groves of trees in cultivation.

Extralimital. Ranges east through the Indochinese countries and southern China to Fukien. Other subspecies in Sumatra, Borneo and small neighbouring islands.

GENERAL HABITS. Those of the genus. Generally keeps to the tops of high trees but will often come down to bushes when abundance of food

FLOWERPECKERS 17

attracts. Favourite hunting grounds are dense clusters of parasitic plants (Loranthaceae).

FOOD. Insects, spiders, berries and nectar. Has been observed hawking flying insects from a perch in a tree and hovering motionless to capture them (Roseveare).

VOICE and CALLS. Call-note, a surprisingly loud *chik-chik* reminiscent of the Tailor Bird's (1535) or Streaked Fantail Warbler's (1498). Also a constant twittering while feeding. 'A series of sharp notes most nearly imitated by drawing the point of a nail or hard-pointed substance in a series of jerks over a glass pane' (Davison, SF 6: 192).

BREEDING. Season, April to August, chiefly May and June. Nest, an oval purse of vegetable down kept together, by shreds of grass, rootlets and cobweb. The rather broad entrance near the top occasionally has a downy 'porch' projecting above it. Size of nest c. 9 x 6 cm. It is suspended on a twig at the end of a branch but well hidden by leaves, at heights varying from 2 to 15 metres, usually between 6 and 9 metres. Eggs, 2 or 3, unmarked white. Average size of 40 eggs 14.4 x 10.3 mm (Baker). Building of nest and incubation by both sexes; period of incubation 10 or 11 days.

MUSEUM DIAGNOSIS. See Field Characters. Postnuptial moult complete, June to September. Some body moult in February. Postjuvinal moult of body-feathers, lesser, median and most greater coverts, tertials and tail.

MEASUREMENTS

	Wing	Tarsus	Tail
♂ ♀	46-51	c. 13	25-28 mm (Baker)

Bill from skull c. 12 mm
Weight 3 ♂♂ 7-8 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill black; mouth black in male, flesh-coloured in female; bill in juvenile orange. Legs and feet black.

1905. Firebreasted Flowerpecker. *Dicaeum ignipectus ignipectus* (Blyth)

M. (zantho) ignipectus 'Hodgson' = Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 983 (Nepal and Bootan)

Dicaeum ignipectus pulchellum Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 21 (Sangau, Lushai Hills)
Baker, FBI No. 1303, Vol. 3: 427
Plate 98, fig. 8

LOCAL NAME. *Sangti-pro-pho* (Lepcha).

SIZE. Sparrow —; length c. 7 cm (3 in.).

FIELD CHARACTERS. Male. Above, metallic greenish black. Below, rich buff with a scarlet patch on breast and a black patch below this on centre of belly. Flanks olive.

Female. Above, olive-green, yellower on rump. Below, pale buff washed olive on sides.

STATUS, DISTRIBUTION and HABITAT. Common resident subject to vertical movements. The Himalayas from Kashmir (Kishtwar) east through Arunachal Pradesh, thence south through Meghalaya, Nagaland and Manipur to the Mizo Hills. Breeds between c. 1400 m (locally probably

SUNBIRDS 19

Key to the Genera

- | | Page |
|---|------------------------|
| A Sexes alike; plumage non-metallic..... | <i>Arachnothera</i> 52 |
| B Sexes different; plumage of male in part metallic; bill slender | |
| 1 Lower mandible straight or nearly so..... | <i>Anthreptes</i> 19 |
| 2 Lower mandible distinctly curved downwards | |
| a Tail short, rounded; females yellowish below..... | <i>Nectarinia</i> 21 |
| b Central rectrices lengthened; females greenish below..... | <i>Aethopyga</i> 38 |

Genus ANTHREPTES Swainson

Anthreptes Swainson, 1837, Nat. Hist. Class. Bds. 2: 329.

Type, by monotypy, *A. javanica* Horsfield = *Certhia malaccensis* Scopoli

Chalcoparia Cabanis, 1851, Mus. Hein. 1: 103.

Type, by original designation, *Sylta singalensis* Gmelin

Cf. Delacour, J., 1944, *Zoologica* 29: 17-38. (Review of family)

Bill shorter than, or equal to head, nearly straight. Nostrils operculated, exposed. First primary (as.) short. Tail square or slightly rounded, shorter than wing. Tarsus entirely covered with scales.

1906. Rubycheek. *Anthreptes singalensis rubinigenis* (Baker)

Chalcoparia singalensis rubinigenis Baker, 1930 (23 April, or more probably 14 March) [cf. Biswas, JBNHS 60: 684], Fauna Brit. Ind., Bds. 7: 282, new name for *Chalcoparia singalensis lepida* (Latham), cited in Baker, 1926, FBI 3: 370 (India, restricted to Cachar), nec *Certhia lepida* Latham, 1790, nor *Certhia lepida* Sparrman, 1787 = *Certhia malaccensis* Scopoli, 1786

Chalcoparia singalensis assamensis Kloss, 1930 (7 May), Bull. Brit. Orn. Cl. 50: 69-70, new name for *Chalcoparia singalensis lepida* (Latham), cited in Baker, 1926 (FBI 3: 370) Baker, FBI No. 1258, Vol. 3: 370
Plate 99, fig. 3

LOCAL NAME. *Daotisha sindai* (Cachar).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Male. Above, brilliant metallic green. Ear-coverts copper coloured, bordered below by a brilliant violet-purple line. Below, throat and breast rufous; rest of underparts lemon-yellow.

Female. Above, olive-green, yellowish on wing. Below, like male.

Young, like female but throat yellow.

STATUS, DISTRIBUTION and HABITAT. Common resident. Extreme eastern Nepal (Ripley 1950, Fleming & Traylor 1964) east through Darjeeling, Sikkim, Bhutan, Assam, Nagaland, Manipur and Bangladesh south to Dacca. Affects open forest, scrub jungle and glades or tracks in dense evergreen forest, in the foothills up to c. 700 m and in adjacent plains, but does not seem to wander away from broken ground.



NECTARINIIDAE 18

lower) and 2100 m (Kangra), 2700 m (Nepal — Polunin), 3000 m (Sikkim fide Stevens), 2300 m (Bhutan). In winter occurs between c. 600 m and 1200 m (Kangra), 900-2300 m (Nepal), 750-2000 m (Sikkim) and from the foothills to 2000 m in Arunachal. In Nagaland occurs between 750 and 2500 m, in Meghalaya up to at least 1800 m. Affects subtropical evergreen or deciduous forest; inseparable from the parasitic *Loranthus* clumps on tall trees. Also secondary growth, and trees in orchards and cultivation.

Extralimital. Ranges east through N. Burma and the northern Indochinese countries and China to Hupeh and Fukien. The species ranges south to Sumatra and Cambodia, and east to the Philippines and Taiwan.

GENERAL HABITS. Keeps singly, or in pairs in the breeding season, doing the rounds of *Loranthus*-laden trees, hopping energetically among the parasite clusters. Sometimes in small parties in winter, joining up with flocks of other small birds wandering from tree to tree in the forest.

FOOD. Insects, spiders, nectar and berries, especially of the mistletoe family Loranthaceae.

VOICE and CALLS. A single clicking *chip* uttered in flight. Song, a long continuous series of clicks uttered from a perch while swaying its body from side to side (Smythies); also described as a shrill *titty-titty-titty*... recalling the noise of the rapid opening and closing of a pair of scissors (HW). Song period in Nepal, mid February to June (Proud).

BREEDING. Season, March to June. Nest, as in 1904, placed in trees between 3 and 9 m above the ground. Eggs, 2 or 3, white. Average size of 18 eggs 14.8 x 10.3 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. Juvenile (♀). Chin and throat white. Buff on underparts much paler and duller than in adult (Biswas).

MEASUREMENTS

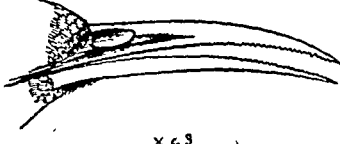
	Wing	Bill (from skull)	Tarsus	Tail
♂♂	46-53	9-12	12-14	25-30 mm
♀♀	45-49			23-26 mm (BB, SA)

Weight 16 ♂♂ 4-8 g; 5 ♀♀ 5.5-6.1 g (SDR, GD, SA).

COLOURS OF BARE PARTS. Iris brown. Bill black with a patch on the base of lower mandible — whitish in male, yellow to orange in female. Legs, feet and claws dark horny.

Family NECTARINIIDAE: Sunbirds

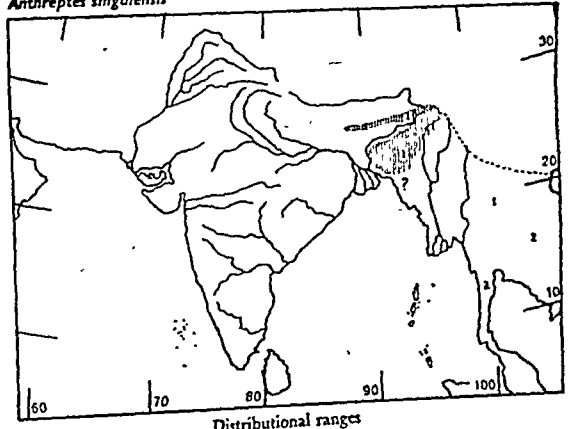
For description see Baker, E. C. Stuart, 1926, FBI 3: 372 (excludes *Anthreptes*); Van Tyne, J. & Berger, A. J., 1959: 539; Bannerman, D. A., 1964, article 'Sunbird' in Thomson, A. L. (ed.), *A New Dictionary of Birds*, London and New York



A sunbird's bill, showing finely serrated mandibles

NECTARINIIDAE 20

Anthreptes singalensis



1 *rubinigenis* (1906). 2 extralimital subspecies.

Extralimital. Extends east to northern Thailand. The species ranges throughout the Indochinese countries, Malaysia, Borneo and the Sunda Islands.

GENERAL HABITS. Keeps singly, in winter sometimes in small parties, moving and working together like a flock of tits. Flits actively around bushes and trees searching the leaves for insects or probing into blossoms for nectar. Actions somewhat reminiscent of White-eye (*Zosterops*, 1933).

FOOD. Insects and nectar.

VOICE and CALLS. A shrill and rather loud chirp when flying from one bush to another.

BREEDING. Season, end of March to June. Nest, a pear-shaped structure of very fine fibres mixed with fern stalks and lined with the same material; the rather large entrance is protected by an overhanging porch. The nest is suspended on small drooping twigs of bushes within a couple of metres above the ground. Eggs, 2, white speckled with brown-grey. Average size of 8 eggs 16.9 x 12 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	—	15-17	15-17	41-43 mm
♂♀	52-55			
♀♀	—	14-16		(Baker, MD, SA)

COLOURS OF BARE PARTS. Iris red. Bill blackish. Legs and feet greenish grey.

SUNBIRDS

21

Genus NECTARINIA Illiger

Nectarinia Illiger, 1811, Prodrum: 210.Type, by subsequent designation, *Certhia farnosa* Linnaeus*Cinnyris* Cuvier, 1817, Règne Anim. 1: 411.Type, by subsequent designation, *Certhia superba* Shaw*Chalcostetha* Cabanis, 1851, Mus. Hein. 1: 103. Type, by original designation,*Ch. pectoralis* Temm. = *Nectarinia chalcostetha* Jardine*Leptocoma* Cabanis, 1851, Mus. Hein. 1: 104. Type, by original designation,*L. zeylonica* = *Certhia zeylonica* Linnaeus

Bill much longer than head, strongly curved and pointed. Nostrils operculated, exposed. No rictal bristles. First primary (as.) short. Tail shorter than wing, square or slightly graduated. Tarsus anteriorly covered with transverse scales. Plumage of male with metallic colours.

Key to the Species

Males

	Page
I Throat dark coloured and metallic	
A Abdomen yellow	
1 Throat metallic dark blue..... <i>N. jugularis</i>	30
2 Throat metallic purple-red	
a Upper tail-coverts metallic purple..... <i>N. zeylonica</i>	21
b Upper tail-coverts metallic red..... <i>N. minima</i>	25
B No yellow on abdomen	
3 Abdomen purple-blue..... <i>N. asiatica</i>	33
4 Lower abdomen dull brown	
c A black band between metallic green of crown and blue-green of back..... <i>N. sperata</i>	26
d Upperparts uniform metallic blue-green..... <i>N. lotenia</i>	27

Females

II Throat pale and not metallic	
C Throat ashy contrasting with breast..... <i>N. zeylonica</i>	21
D Underparts uniform yellow or olive-yellow	
5 Upper tail-coverts red..... <i>N. minima</i>	25
6 Upper tail-coverts olive like back	
e Underparts rich yellow..... <i>N. jugularis</i>	30
f Underparts dull yellow or olive-yellow	
i Bill from skull over 24 mm..... <i>N. lotenia</i>	27
ii Bill from skull under 24 mm	
o' Smaller, tarsus 13 mm or less..... <i>N. sperata</i>	26
o' Larger, tarsus 14 mm or more..... <i>N. asiatica</i>	33

NECTARINIA ZEYLOINICA (Linnaeus)

Key to the Subspecies

Wing averaging longer, c. 56 mm..... <i>N. z. sola</i>
Wing averaging shorter, c. 53 mm..... <i>N. z. zeylonica</i>

SUNBIRDS

23

secondary jungle and dry cultivated country in the neighbourhood of villages with tamarind and babool trees, cactus hedges and gardens; prefers deciduous biotope.

Extralimital. Extends to Arakan, Burma (Smythies).

GENERAL HABITS AND FOOD. Not different from other sunbirds, e.g. the Purple, 1917. Usually keeps in pairs the year round. Hops and flits vivaciously among foliage and flower-clusters searching for small insects and nectar, clinging to the branchlets in all manner of acrobatic positions to probe the corollas, sometimes hovering momentarily in front of a sprig to take a spider, or cobweb for nest. Territorial and very pugnacious, especially on its feeding tree. Nectar of large-petalled flowers which preclude access by direct probing with bill is reached by a short-cut through a hole pierced at the base of the calyx. For its role in the propagation of the mischievous *Loranthus* tree-parasite see Salim Ali (1931).

VOICE AND CALLS. Song, a sharp twittering *tityou, tityou, tityou, tr-r-r-tit, tityou*, etc. uttered while hopping about and feeding among flowers. Also a feeble mousy *Sisiree, sisiree*... almost identical with that of Small Sunbird (1909) given from a perch while the bird pivots from side to side and excitedly opens and shuts its wings and tail (SA).

BREEDING. Season: Nests are found in every month, but a period of increased breeding activity occurs from March to May in Bengal and from February to April in southern India, with a second peak from July to September in the latter region where the species breeds freely after the monsoon. Nest, a pear-shaped or roundish oval purse composed mostly of grass and other fibrous material mixed with a variety of oddments, lined with soft vegetable down and draped on the outside with bits of lichen, bark, caterpillar frass, moss, broken leaves and other rubbish fastened with cobweb. Most nests, but not all, have a porch-like projection over the entrance. Nest very much like that of *N. asiatica* and almost impossible to distinguish; placed from as low as a couple of metres, sometimes up to 12 or 15, in trees and shrubs. Usually suspended at the tip of a branch, often in creepers growing on the trellis-work of verandas; sometimes even on pendent electric light bulbs and sockets, or a wire dangling from the ceiling actually within a bungalow, regardless of the movements of the inmates. Eggs, nearly always 2, very exceptionally 3, grey with a greenish or buff tinge, flecked and speckled with greyish brown, more profusely around the broad end. Average size of 100 eggs 16.4 × 11.8 mm (Baker). Building of nest by female alone, accompanied to and fro on her material-gathering trips by male. Old nests are frequently reoccupied. Incubation by female alone; she sits within with bill projecting from entrance-hole. Incubation period 14-15 days. Care of nestlings by both parents; young leave nest when 16 or 17 days old, after that male takes over most of feeding.

MUSEUM DIAGNOSIS. See Field Characters. Male does not moult into non-metallic winter (or eclipse) plumage. Postnuptial moult complete.

Young (♂ and ♀), like female but whole underparts very pale lemon-yellow. Distinguished from young of *N. asiatica* (1917) by rufous tinge to edges of secondaries and tertials. Young male assumes metallic plumage at postjuvinal moult, which is complete.

22

NECTARINIIDAE

1907. Indian Purplerumped Sunbird. *Nectarinia zeylonica sola* (Vieillot)

Cinnyris sola Vieillot, 1819, Nouv. Dict. d'Hist. Nat. 31: 512 (Pondichéry)

Nectarinia zeylonica whistleri Ripley, 1946, Spolia Zeylanica 24: 238 (Muddur, Mysore)

Baker, FBI No. 1287 (part), Vol. 3: 406

Plate 99, fig. 4

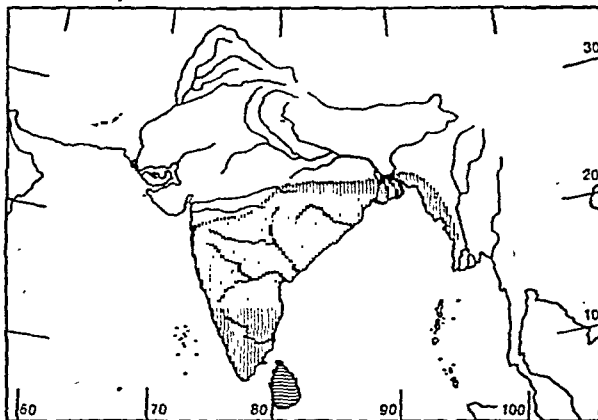
LOCAL NAMES. *Shākār khōrā* (Hindi); *Chūmka* (Marathi); *Man choongi* (Bengali); *Manja tinkili* (Malayalam).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Male. Above, crown metallic green. Back deep chestnut. Rump metallic purple. A metallic green shoulder-patch. Below, throat metallic purple. Sides of head and band across lower throat deep chestnut. Breast and centre of belly lemon-yellow. Flanks greyish white.

Female. Above, brown, more rufous on wing. Throat and flanks greyish white. Breast and centre of belly lemon-yellow.

STATUS, DISTRIBUTION and HABITAT. Common resident. Peninsular India south of a line from Nasik (NW. Maharashtra), Jabalpur (M.P.) and Lohardaga (Bihar), southern Bengal and Bangladesh north to Dacca and east presumably to the Chittagong region. In the plains and lower hills

Nectarinia zeylonica

Distributional ranges

sola (1907).

zeylonica (1908).

up to c. 750 m (Nilgiris), 1000 m (Maraiyur) and 2100 m (probably non-breeder) [Kodaikanal — Nichols, JBNHS 44: 407]. Affects scrub, light

24

NECTARINIIDAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	51-58	17-19	15-17	30-38 mm
♀♀	51-56	16-18	14-15	30-35 mm

(HW, SA, SDR)

21. ♂♀ Wing av. 56.2 mm; Tail av. 35.2 mm

Weight 8 ♂♂ 7-11; 9 ♀♀ 7-9 g — SA.

COLOURS OF RARE PARTS. Iris orange-brown or reddish brown. Bill brownish black; mouth dull orange-pink or pinkish brown. Legs, feet and claws horny brown or black; soles yellowish flesh.

1908. Ceylon Purplerumped Sunbird. *Nectarinia zeylonica zeylonica* (Linnaeus)

Certhia zeylonica Linnaeus, 1766, Syst. Nat., ed. 12, 1: 181 (Ceylon)

Baker, FBI No. 1287 (part), Vol. 3: 406

LOCAL NAMES. *Māl sūkkā* (Sinhala); *Thē-kūñ, Pū-kūñchān* (Tamil).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1907, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. Sri Lanka in all zones in the lowlands and lower hills up to c. 1400 m. Less common in the highlands, more abundant in the Wet zone. Affects open jungle, cultivation and gardens.

GENERAL HABITS. As in 1907.

FOOD. Nectar and small insects, soft caterpillars, spiders, etc.

VOICE AND CALLS. As they hop and flit about, both sexes constantly utter a chirp which though quite musical sounds like the opening and shutting of a large pair of scissors: *sweetly-snee, sweetly-snee*. At the same time the closed wings are flitted upwards and the tail opened and shut (Henry).

BREEDING. Season, February to June, many birds raising a second brood from August to November. Nests may be found throughout the year. Nest and eggs as in 1907. For details see Phillips, *Ceylon Jour. Sci.* 24, pt. 3: 11-14.

MUSEUM DIAGNOSIS. Differs from *sola* (1907) in being smaller. No significant colour difference although some Indian specimens have somewhat more extensive iridescence in the post-ocular area, tinted in some cases with bronze rather than green.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	50-57	17-18	14-16	30-35 mm
♀♀	50-54	16-18	15-16	29-32 mm

(HW, SDR)

11 ♂♀ Wing av. 52.9 mm; Tail av. 32.4 mm (SDR)

COLOURS OF RARE PARTS. As in 1907.

SUNBIRDS

25

1909. *Small Sunbird*. *Nectarinia minima* (Sykes)*Cinnyris minima* Sykes, 1832, Proc. Zool. Soc. London: 99

(Chauts, Dukkun)

Baker, FBI No. 1286, Vol. 3: 405

Plate 99, fig. 7

LOCAL NAMES. *Chhotā shākār khārā* (Hindi); *Cheru tēnkili* (Malayalam).

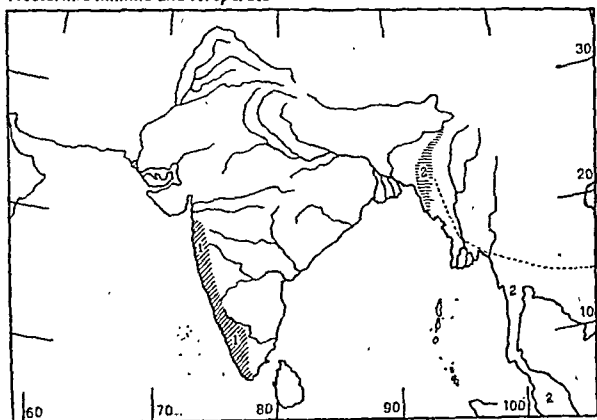
SIZE. Sparrow —; length c. 8 cm (3 in.).

FIELD CHARACTERS. Male. Above, very similar to *N. zeylonica* (1907) but back deep crimson-brown or maroon instead of chestnut (difference not appreciable in the field), and without the metallic shoulder-patch. Below, also similar but collar broader, covering breast. Belly dull yellow with bright lemon tufts on sides. Flanks greyish white.

Female. Above, olive; lower rump deep crimson-brown. Below, dull yellow.

Small size and crimson-brown rump identify the female.

STATUS, DISTRIBUTION AND HABITAT. Fairly common resident. The Sahyadri or Western Ghats complex from Suriamal (north of Bombay) south

Nectarinia minima and *N. sperata*

Distributional ranges

1 *N. minima* (1909). 2 *N. s. brasiliana* (1910).

to the southernmost hills of Kerala, including the Bababudans, Biligirirangans, Nilgiris and Palnis¹, between c. 300 and 2100 m. In the Palnis occurs from c. 1600 m to the summits; in Karnataka replaces *N. lotenia*

¹ Unconfirmed reports from Sri Lanka appear to be erroneous (cf. Phillips, W. W. A., 1951, Ceylon Jour. Sci. Vol. 24, pt. 3: 13).

SUNBIRDS

27

FIELD CHARACTERS. Male. Above, crown metallic green. Upper back black. Rump and shoulder-patch metallic purple-blue. Tail and wings blackish. Below, throat metallic purple. Breast and upper belly deep maroon-crimson. Rest of underparts sooty brown.

Female. Above, olive; tail black. Below, yellow, brighter on belly.

STATUS, DISTRIBUTION AND HABITAT. Resident, apparently with some seasonal movements; locally distributed. Assam in Dibrugarh, Cachar (rare), Silchar, Hailakandi, Tripura and Manipur; Bangladesh in south Sylhet ('exceedingly plentiful from October to about mid January, rare thereafter' — Primrose, JBNHS 14: 594), Comilla and the Chittagong region. Affects forest and gardens and dense cover in swampy land.

Extratropical. Ranges east to southern Thailand and south to Sumatra and Borneo. The species extends east to the Philippines and Celebes (Sulawesi).

GENERAL HABITS. Typical of the sunbirds, cf. 1917.

FOOD. 'Feeds almost exclusively on nectar' (Hume).

VOICE AND CALLS. Call-note, a feeble *chip chip* uttered as it flies from flower to flower (Hume).

BREEDING. Records within our limits not beyond doubt (see Baker, Nidification 3: 219).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	45-50	16-17	12-13	28-29 mm (Baker, MD)

COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet black.

NECTARINIA LOTENIA (Linnaeus)

Key to the Subspecies

- Larger, bill usually 30 mm or over..... *N. l. lotenia*
Smaller, bill usually less than 30 mm..... *N. l. hindustanica*

1911. *Indian Maroonbreasted Sunbird*. *Nectarinia lotenia hindustanica* (Whistler)

Cinnyris lotenia hindustanica Whistler, 1944, Spolia Zeylanica 23: 199
(Kumta, North Kanara)

Baker, FBI No. 1277 (part), Vol. 3: 394

Plate 99, fig. 9

LOCAL NAMES. *Tēnkili*, *Valia tēnkili* (Malayalam); *Pān chittū*, *Thēn chittū* (Tamil, Madurai).

SIZE. Sparrow —; length c. 13 cm (5 in.) including long bill.

FIELD CHARACTERS. A dark sunbird with long, slender, deeply arched bill.

Male. Above, whole head, back, shoulders and rump black with glistening metallic green and purple sheen. Wings and tail dull blackish. Below, throat

26

NECTARINIIDAE

above c. 1200 m. Affects evergreen biotope chiefly in foothills country: forest, sholas, gardens and shade trees in tea and coffee plantations.

GENERAL HABITS. Typical of sunbirds. Hunts actively among flower-clusters and leaf-buds, for insects and nectar, clinging upside down or sideways or hovering momentarily in front of them in the quest (SA). Partial to blossoms of *Erythrina* spp., and almost invariably present on clumps of the parasitic *Loranthaceae* in flower; also on a wide range of flowers in hill-station gardens. 'In Londa it did not frequent flowering *Butea* trees like *N. asiatica*' (Koels).

FOOD. Nectar, insects and spiders.

VOICE AND CALLS. Song, a squeaky *see-see-who-see-see-suree* etc. for five or ten seconds at a stretch and frequently repeated after short pauses; the bird pivots restlessly on its perch from side to side while singing (SA). Call-note a single metallic *chik* constantly repeated while foraging.

BREEDING. Season, chiefly December to April with a second and lesser peak (at least in the southern part of the range) in September and October. Nest, the usual hanging pouch characteristic of sunbirds, but smaller and neater in appearance and more roundish than those of other species; made largely of fine bast fibres and green moss with a little cobweb, and usually lacking the tail of rubbish dangling below. Suspended from the tip of a twig, generally under 2 metres up in a bush or sapling on the edge of a path or clearing, commonly on strobilanthes plants (*Karcia*). Eggs, 2, white with a dense ring of dark reddish spots and a few reddish speck elsewhere. Average size of 20 eggs 14 × 10.2 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. In April or early May, male assumes an eclipse plumage which is similar to that of the female except that the metallic purple rump is retained (female has a crimson-brown rump). Moults to full metallic plumage takes place before August.

Young of both sexes alike and similar to the adult female, though rather yellower below. Young male acquires metallic plumage by complete moult, about May-June.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	44-50	14-17	12-13	27-31 mm
♀ ♀	42-46	c. 15	c. 13	26-27 mm

(HW, SA, Koels)

Weight 8 ♂♂ (Apr.-May) 4-6; 8 ♀♀ (Apr.-May) 4-5 g—SA.

COLOURS OF BARE PARTS. Iris brown. Bill, legs, feet and claws in male blackish brown, in female somewhat paler.

1910. *Van Hasselt's Sunbird*. *Nectarinia sperata brasiliana* (Gmelin)*Certhia brasiliana* Gmelin, 1788, Syst. Nat. 1: 474

(Brazilia error = Java)

Baker, FBI No. 1281, Vol. 3: 400

Plate 99, fig. 6

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 9 cm (3½ in.).

NECTARINIIDAE

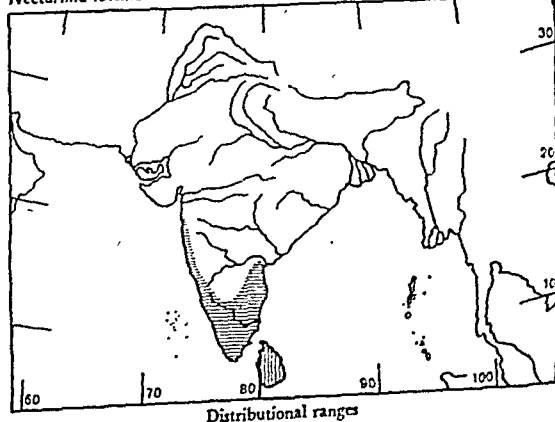
28

metallic green and purple changing to metallic purple on breast. A dark crimson or maroon band across breast and bright yellow tufts on sides of breast, at 'armpits'. Rest of underparts sooty brown.

Female. Above, dull olive. Tail blue-black with white tips. Below, entirely dull yellow.

The brilliant yellow feather-tufts at male's armpit are erected in sexual display to such an extent as to be strikingly conspicuous even on a rear view of the bird.

STATUS, DISTRIBUTION AND HABITAT. Fairly common resident in the southern Indian Peninsula, on the east side north to the Nallamalai Hills (c. 16°N.) and on the west side north to the Thana and Kolaba districts near Bombay (c. 20°N.). Occurs in the low country and hills up to c. 1600 (Kerala); in

Nectarinia lotenia

hindustanica (1911).

lotenia (1912).

Karnataka replaced by *N. minima* above c. 1200 m. Affects moist-deciduous biotope in well-wooded but fairly open country with plenty of flowering trees and shrubs, gardens and cultivation. Generally avoids dense evergreen forest but where it occurs it is confined to the canopy (Betts).

GENERAL HABITS. Keeps singly or in pairs flitting from flower to flower in quest of nectar. Parasitic loranthus clumps with their explosive ornithophilous flowers are particularly favoured. The bird springs the mature buds open by a pinch with the mandibles and probes the long tubular corollas with the specially adapted bill and extensible tubular tongue (common to the sunbird family). Usually alights on the flower-stalk or an adjacent branchlet for the purpose, but where large petals or otherwise unsuitable structure precludes feeding in the normal way, will take short-cut to the

SUNBIRDS

29

nectary through a hole pierced at the base of the calyx. Sometimes also hover momentarily above or in front of such flowers, like a hawk-moth, and shoot the suctorial tongue rapidly back and forth, well beyond the bill-tip, to reach the nectar.

Display. As in 1912.

FOOD. Nectar of many species of flowers, in particular *Loranthus*, *Lantana*, *Erythrina* and *Salmalia*. Also spiders and tiny insects.

VOICE AND CALLS. Call-note, a sharp, metallic *chit*, *chit*. Song *cheewit-cheewit-cheewit* quickly repeated two to six times from an exposed branch as the bird pivots from side to side and nervously raises and lowers his wings, erecting the bright yellow pectoral tufts (SA). See also 1912. The female has a soft sub-song.

BREEDING. *Season*, not well defined. Chiefly March to May but nests may be found in every month. *Nest*, a pear-shaped or oval pouch made of fine fibres, grass, moss, small leaves, roots and other material, lined with vegetable down or wool. The entrance is protected by a protruding porch. Nest distinguishable from that of other sunbirds by the comparative lack of cobweb in exterior construction; outside very untidy, covered with moss, dead leaves, caterpillar frass and oddments loosely attached and often hanging below the nest in a ragged tail. Suspended on a twig c. 3 metres or more above the ground, usually in the shady interior of some fairly dense-foliaged tree (Betts). Other nests however are wedged between twigs or creepers or built in a mass of spider webs and have been found in bushes as low as 50 cm above the ground. One has been observed close to the nest of red ants (*Oecophylla*), apparently in peaceful co-existence with the vicious insects. *Eggs*, 2, brownish white with dull brown spots at the small end, passing into large blotches and forming a cap at the large end. Average size of 50 eggs 17 × 12 mm (Baker). Building of nest by female accompanied by male flying back and forth and singing in the neighbourhood. Incubation by female only but male visits nest. Period 15 days. Both parents feed the nestlings; young out of nest fed mostly by male.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies. Postnuptial moult from September to November, from metallic plumage to metallic plumage. No eclipse plumage.¹

Young, similar to female. Postjuvénal moult complete to adult plumage.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	56-60	27-29	15-16	36-40 mm
♀♀	53-56	26-28	14-16	32-35 mm

(HW, SA, Koelz)

Weight 8 ♂♂ 8-11; 7 ♀♀ 7-8 g-SA.

COLOURS OF BARE PARTS. Iris brown or reddish brown. Bill black; mouth pinkish brown. Legs and feet horny black.

¹ This, however, is equivocal. Some males observed (and filmed) by SA in February in plumage identical with that on *N. asiatica* (1917) in eclipse, namely more or less like female but with a broad black median band on underparts. See also Henry, 1955: 109 (footnote).

SUNBIRDS

31

1913. Andaman Olivebacked Sunbird. *Nectarinia jugularis andamanica* (Hume)

Arachnechthra andamanica Hume, 1873, Stray Feathers 1: 404

(Andaman group)

Baker, FBI No. 1285, Vol. 3: 404

LOCAL NAMES. None recorded.

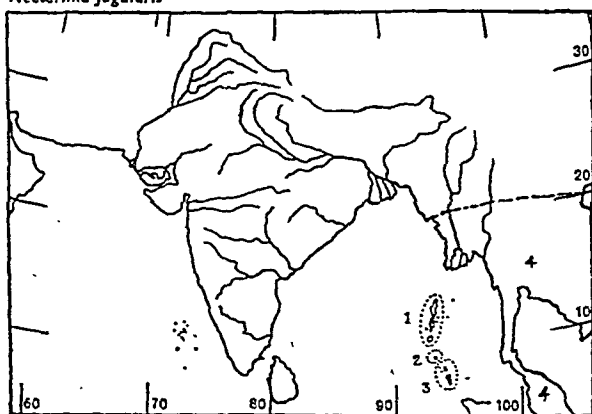
SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Male. Above, olive-brown. Tail black with whitish tips. Below, throat and breast metallic purple and blue-green bordered on breast with a rusty band. Pectoral tufts bright yellow; rest of underparts pale yellow. In eclipse plumage like female but with a dark gular stripe.

Female. Above, olive. Tail dark brown with whitish tips. Below, pale yellow, brighter on belly.

STATUS, DISTRIBUTION AND HABITAT. Common resident in the Andaman Islands. Affects forest, scrub and coastal mangroves.

Nectarinia jugularis



1 *andamanica* (1913), 2 *proselia* (1915), 3 *klossi* (1914), 4 extralimital subspecies.

Extralimital. Numerous subspecies in the Indochinese countries, Malaysia, Indonesia, the Philippines, New Guinea, the Solomon Islands and Queensland, Australia.

GENERAL HABITS. Those of the genus.

FOOD. Nectar [*Loranthus* spp., *Firmiana colorata*, *Moringa oleifera*, *Hibiscus* spp. and coconut (*Cocos nucifera*) specifically recorded]. Presumably also spiders and small insects.

30

NECTARINIIDAE

1912. Ceylon Maroonbreasted Sunbird. *Nectarinia lotenia lotenia* (Linnaeus)

Certhia Lotenia Linnaeus, 1766, Syst. Nat., ed. 12, 1: 188

(Ceylon)

Baker, FBI No. 1277 (part), Vol. 3: 394

LOCAL NAMES. *Ran sūikkā* (Sinhala); *Thēn-kūdi*, *Pē-kūdi-chān* (Tamil).

SIZE. Sparrow —; length c. 13 cm (5 in.) including long bill.

FIELD CHARACTERS. As in 1911, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Sri Lanka in all zones, in the lowlands and hills up to c. 2100 m, more common below c. 1000 m. Affects open scrub, tea plantations and gardens.

GENERAL HABITS. As in 1911. Also hunts insects among the foliage and petals of flowering trees, and spiders for which it searches tree-trunks. 'Has a habit of continually jerking the head to and fro' (Henry).

Display. The male tightens all his feathers, looking strangely slim while his metallic colours gleam and scintillate. The bright yellow pectoral tufts — normally hidden under the closed wings — are puffed out, and the bird flies about in a series of deep loops singing all the while (Henry).

FOOD. Nectar, spiders and soft-bodied insects.

VOICE AND CALLS. Call-note *tuit* or *chit*. Song, a pleasing *titti-titu-weechi weechi weechi* (Henry).

BREEDING. *Season*, February to May in the low-country Dry zone, with a second period from August to December in the hills and in the Wet zone. *Nest*, of two types: (1) pear-shaped suspended from the tip of a twig, (2) built in the interior of a large mass of spider-webs usually in a bush or low tree. In the latter case (more common in the Dry zone) the female excavates a hole in the middle of the side of the cobweb mass, then presses out with her body a sufficiently large cavity and lines it first with a little fibre and bits of dead leaf to strengthen the walls and then with a generous amount of vegetable down. The entrance is neatly finished off with a small porch over it. The same nest may be used for several successive broods (Phillips). *Eggs* and breeding activity as in 1911.

MUSEUM DIAGNOSIS. Differs from *hindustanica* (1911) in being larger and having a longer bill.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	58-60	30-32	14-15	37-41 mm
♀♀	50-57	30-31		33-36 mm

(HW)

COLOURS OF BARE PARTS. As in 1911.

NECTARINIA JUGULARIS Linnaeus

Key to the Subspecies

	Page
A Smaller; bill from skull usually 20 mm or less <i>N. j. proselia</i>	33
B Larger; bill from skull usually 21 mm or more	
a Upperparts olive-brown, forecrown usually without metallic colour	
..... <i>N. j. andamanica</i>	31
b Upperparts olive, forecrown usually with metallic purple <i>N. j. klossi</i>	32

32

NECTARINIIDAE

VOICE AND CALLS. Unrecorded.

BREEDING. *Season*, January-February and May to July. *Nest*, hung from some twig or grass stem, often close to the ground, less frequently at some considerable height up in a shrub or tree. The oval purse is made of grasses, bark, cocoons, moss, lichens, bits of leaves and vegetable fibres, and lined with fine grass and vegetable down; similar to that of *N. asiatica* but smaller and neater though many nests have miscellaneous rubbish hanging about and below them. *Eggs* 2, pale greyish white to pale brown, mottled over the whole surface with various shades of brown; markings very variable. Average size of 46 eggs 16.6 × 11.5 mm (Baker).

MUSEUM DIAGNOSIS. Male differs from both *klossi* and *proselia* in lacking (usually) any metallic colour on forecrown, and in having the upperparts brown only faintly tinged with olive. Metallic plumage on breast and sides of throat blue-green rather than purple-blue. Abdomen pale yellow (v. bright yellow), separated from metallic of breast by a narrow rusty band. Pectoral tufts bright yellow (v. orange-yellow) [MD].

Female differs in being browner, not olive above, and paler yellow below.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
6 ♂♂	51-54	23-24 (25)	14	32-33 mm
2 oo?	50, 51	22, 23		30, 32 mm

(MD)

COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet black.

1914. Nicobar Olivebacked Sunbird. *Nectarinia jugularis klossi* (Richmond)

Arachnechthra klossi Richmond, 1902, Proc. U.S. Nat. Mus. 25: 297

(Great Nicobar)

Cyrtostomus pectoralis blanfordi Baker, 1921, Bull. Brit. Orn. Cl. 41: 71

(Kondol Is., Nicobars)

Baker, FBI Nos. 1282 (part) and 1283, Vol. 3: 401-2

Plate 99, fig. 5

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Male. Above, olive, usually with metallic purple forecrown. Below, throat metallic purple (centre), metallic purple-blue (sides and breast). Belly bright yellow. Pectoral tufts orange-yellow.

Female. Above, olive. Below, yellow.

STATUS, DISTRIBUTION AND HABITAT. Common resident in the Nicobar Islands, except Car Nicobar (where replaced by *proselia*). Affects forest, scrub and coastal mangroves.

Extralimital. See 1913.

GENERAL HABITS, FOOD AND VOICE. As in 1913, q.v.

BREEDING. As in 1913. Nest usually in mangroves, overhanging water.

MUSEUM DIAGNOSIS. Differs from *proselia* in being larger and having a longer bill. For differences from *andamanica* see 1913 (Museum Diagnosis). Rusty band between metallic breast and yellow belly only faintly indicated or absent.

SUNBIRDS

33

34

NECTARINIIDAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂♂	50-53	21-23	14	30-32 mm (MD)

Bill (from feathers) 17-18 mm (Nancowry, Trinkat, Camorta); 20-21 mm (Kondal, Great Nicobar) — (Abdulali).

COLOURS OF BARE PARTS. As in 1913.

1915. **Car Nicobar Olivebacked Sunbird.** *Nectarinia jugularis proselia* (Oberholser)

Cinnyris ornata proselia Oberholser, 1923, Jour. Washington Acad. Sci. 13: 230 (Car Nicobar) —

Baker, FBI No. 1282 (part), Vol. 3: 401

LOCAL NAME. *Raycha* (Car Nicobar).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1914, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident in Car Nicobar Island. Habitat as in 1913.

GENERAL HABITS and FOOD. As in 1913.

VOICE and CALLS. A feeble twittering song uttered from an exposed perch while slightly opening wings and raising pectoral tufts.

BREEDING. As in 1913.

MUSEUM DIAGNOSIS. Differs from both *andamanica* and *klassi* in being smaller and having a shorter bill. In colour very similar to *klassi*. For differences from *andamanica* see 1913.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
5 ♂♂	47-52	18-19	14	30-31 mm
2 ♀♀	47, 49	(one) 19		28 mm (MD)

COLOURS OF BARE PARTS. As in 1913.

NECTARINIA ASIATICA (Latham)

Key to the Subspecies

	Page
A Bill shorter, under 18 mm..... <i>N. a. brevirostris</i>	33
B Bill longer, usually over 18 mm	
1 Metallic colour more green, less purple..... <i>N. a. asiatica</i>	35
2 Metallic colour more purple, less green..... <i>N. a. intermedia</i>	37

1916. **Sind Purple Sunbird.** *Nectarinia asiatica brevirostris* Blanford

Nectarinia (Arachnechthra) brevirostris Blanford, 1873, Ibis: 86.

[(Persian) Baluchistan near Jask]

Baker, FBI No. 1280, Vol. 3: 399

LOCAL NAMES. *Shākār khārā* (Urdu); *Dumbarg* (Sind); *Phūl chākli* (Gujarati).

SIZE. Sparrow —; length c. 10 cm (4 in.).

SUNBIRDS

35

Bill (from skull) ♂ ♀ 14-15, mostly 15 mm (HW); 3 ♀ ♀ from Sind 19-20 mm (MD).

COLOURS OF BARE PARTS. As in 1917.

1917. **Indian Purple Sunbird.** *Nectarinia asiatica asiatica* (Latham)

Certhia asiatica Latham, 1790, Index Orn. 1: 288 (India = Gurgaon)

Baker, FBI No. 1278, Vol. 3: 396

Plate 99, fig. 10

LOCAL NAMES. *Kālā piddā* (Punjab); *Shākār khārā*, *Phūl soongni* (Urdu, Hindi); *Phūl chākli* (Gujarati); *Jugi-jugi* (Bhagalpur); *Suā* (Chota Nagpur); *Chūmka* (Marathi); *Karuppan tunkili* (Malayalam); *Thēna-pittā* (Telugu); *Thēn-kūdi*, *Pū-kūdičān* (Tamil); *Sūhikkā*, *Geval kūrilla* (Sinhala).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Male, breeding. Above, metallic dark blue and purple. Below, throat and breast metallic purple, sides blue-green. Belly dark purple separated from breast by a narrow, inconspicuous reddish brown band. Pectoral tufts bright yellow and scarlet. At a distance the bird appears all black.

Male, non-breeding (or eclipse plumage).

Above, pale olive-brown with blackish wings and tail. Below, yellow with a broad black band down middle of throat and breast.

N.B. Males in breeding as well as non-breeding plumage may be seen at almost any season.

Female. Above, olive-brown. Below, dull yellow. Distinguished from similar female Purplerumped (1907), often found alongside, by uniform yellow underparts (v. ashy throat contrasting with yellow breast).

STATUS, DISTRIBUTION and HABITAT. Common and widespread resident subject to local movements. The whole of India (east of the range of *brevirostris*) from the Himalayan foothills (Punjab to Sikkim) south to Kanyakumari, and Sri Lanka in all zones. Intergrades with *intermedia* in Bengal. A summer visitor to Punjab (March to September) and the Himalayan foothills (up to c. 1200 m in Kangra, 1400 m in Nepal, locally to 1700 m). In the hills of southern India generally up to c. 900 m, in the Madurai district to c. 1600 m, in the Nilgiris to 2400 m (Nichols, JBNHS 44: 406). In Sri Lanka occurs at all altitudes in winter but the majority breed in the lowland dry zone, leaving the hills early in December and returning in July (Phillips). Affects light deciduous forest, semi-cultivation, gardens and compounds.

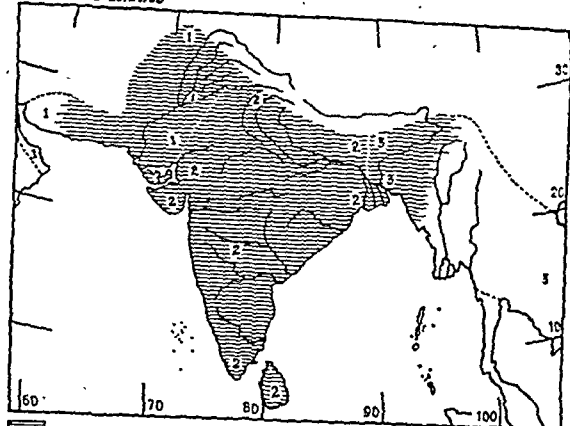
Local movements. A male ringed at Bharatpur, 5.iii.1968, was recovered three years later, on 30.iii.1971, at Dehra Dun, c. 350 km north — presumably moving up to its annual summer quarters.

GENERAL HABITS. Very similar to those of Purplerumped and Maroon-breasted sunbirds (1907, 1911), q.v. Keeps singly or in pairs. Inseparable from flowering trees and lorchanthus clumps in gardens, orchards and the countryside. Probes into blossoms of a wide variety of trees and shrubs with the specially adapted nectar-eating bill and tongue and plays an important role in cross-pollinating many species. Along with other sunbirds it is amongst the chief pollinators of the 'explosive' lorchanthus flowers. Individual birds not uncommonly seen hawking goats in the flycatcher manner, but an

FIELD CHARACTERS. As in 1917, q.v.

STATUS, DISTRIBUTION and HABITAT. Partial migrant, common. Baluchistan in coastal and central Makran, Quetta district, N.W.F.P. north to Peshawar, the northern foothills east to the Sutlej river, the plains of the

Nectarinia asiatica



Distributional ranges 1 *brevirostris* (1916), 2 *asiatica* (1917), 3 *intermedia* (1918).

Indus south through Sind, western Gujarat (Kutch) and western Rajasthan; intergrades with nominate race (1917) east of these limits. In the hills generally up to c. 1200 m, locally 1500 m. Affects gardens, cultivation, tamarisks along river beds, thorn and dry forest.

Extralimital. Extends west to southern Iran and southeastern Arabia (Muscat). The species ranges east through the Indochinese countries.

MIGRATION. A summer visitor to the northern foothills and most of Punjab plains; arrives March or April according to altitude, departs end August or early September (latest 17 Sept.). A few birds winter in the plains of Punjab. In Sind, partly a summer visitor partly resident, the winter population increased by migrants from the north. May winter in western India as far south as Londa (cf. Koelz, JBNHS 43: 22).

GENERAL HABITS, FOOD and VOICE. As in 1917.

BREEDING. Season, end March to July. Nest and eggs as in 1917. Clutch size 2 or 3. Average size of 30 eggs 16.7 x 11.6 mm (Baker).

MUSEUM DIAGNOSIS. Like *asiatica* (1917) but bill shorter. Above rather more green. Reddish brown pectoral band often absent. Female like *asiatica* but paler. Bill shorter.

MEASUREMENTS

	Wing	Tarsus	Tail
♂ ♀	55-57	15-16	34-35 mm (Baker)

NECTARINIIDAE

36

unusual gathering of 40 or 50 once observed energetically catching midges swarming over a stagnant stream. Several birds at a time would spring up in the air from the bordering shrubbery and snap up the minute insects; or they would launch out horizontally for a distance of 15 metres or so over the water and hover and zigzag and twist and turn in agile pursuit returning to the perch after each capture, evincing extraordinary acuity of vision (SA).

Display. The male, with slightly raised head and perched in front of the female, flutters his partially opened wings to display the pectoral tufts, singing the while. For further details see A. R. K. Das, *Pavo* 2: 72, 1964. Also displays by hovering vertically in the air, his wings beating so rapidly as to show only as a blur, while the pectoral plumes stand out in front of them like a blaze. For a few seconds this attitude is maintained, then with a flick of his wings he is away, only to return in a few moments and repeat the performance (Baker).

FOOD. Nectar of lorchanthus and many other flowers. For a list of some of the more commonly patronized species see Salim Ali, 1931 and 1932. Very fond of the fleshy blossoms of *mhowa* (*Madhuca indica*) and the sugary exudation from *Borassus* palms tapped for toddy. Small spiders and insects are also taken, especially when rearing young. Among the insect items specifically recorded in stomach contents are Tineid and Geometrid larvae, weevils (*Myloecerus* sp.), bugs (*Cydnius nigrifrons*), Jassids and small flies (Mason & Lefroy, 1912). For notes on feeding habits, see A. R. K. Das, 1963, *Pavo* 1: 60-65.

VOICE and CALLS. Call-notes, a single chip and a frequently uttered, loud *chevret* (Henry). Song, usually given by male from the topmost twig of a leafless tree or a telegraph wire, an excited *chevret-chevret* ... repeated rapidly two to six times while the bird pivots from side to side and nervously raises and lowers his wings, flaunting the brilliant crimson and yellow pectoral tufts erected laterally. Approaches singing perch with a curious hovering flight with tail well expanded (SA). Male in non-breeding plumage often utters a low twittering sub-song which goes on for a long time without any appreciable pause 'invariably in the afternoon hours' (Neelakantan). Song may be heard the year round. Main period in Nepal February to early June and September-October (Proud).

BREEDING. Season, varies according to climate and altitude, chiefly in the dry season though nesting has been reported in nearly every month. In Nepal Valley breeds chiefly in June; in Haryana from March to June; in most parts of the Peninsula from February to June, starting even earlier in the south. Two broods are commonly raised. In Sri Lanka breeds from January to June, occasionally till September, with a peak in March-April. Nest, an oblong purse of soft grass and fibres, small leaves, bark, cobweb, etc., untidily draped on the outside with pieces of bark, caterpillar droppings, bits of paper, string and other rubbish; most nests have a porch-like projection over the entrance. Usually suspended on a twig within a couple of metres from the ground; occasionally up to six metres. Some nests are hung from the trellis-work of verandas, or creepers growing over them, or from the fleshy thorny leaves of prickly pear (*Opuntia*) bushes; one was found hanging from a bush growing in a disused well about a metre and a half below ground level. Despite the usual lack of concealment, the nest

SUNBIRDS

37

often escapes notice as it may easily pass for a casual wind-blown collection of cobwebs and rubbish. Nests frequently found within the greyish flocculent nest masses of the gregarious Eresid spider *Stegodyphus sarasinorum*, and perhaps other species, in thorny trees and hedges. The nest is completely enveloped by the adhesive cobweb fabric except for the entrance-hole, thus enjoying additional cryptic value and concealment. Examination of such nests has failed to reveal conclusively whether the bird chooses the cobweb mass for building within, or whether the spider builds over an old nest which the bird uses again for the second brood as seems more probable (see *Bombay Newsletter for Birdwatchers*, June 1963, p. 2 and August 1963, p. 7). Some unusual sites recorded: Punkah-pulling rope (Gill, JBNHS 29: 967), hanging electric wire of portico lamp in regular use (Shipp, *ibid.* 28: 1136), rafter in veranda (Bates, *ibid.* 31: 282), pendent flush-tank chain in temporarily disused lavatory (Joseph George, *ibid.* 54: 943), pocket of nightgown and fold in canvas drying on a clothes line (Munidas, *ibid.* 66: 169-71, and *Ceylon Bird Club Notes*, May 1968). For details on building method see Joseph George, JBNHS 55: 420-28. Eggs, normally 2, sometimes 1 or 3, greyish white with chocolate streaks tending to form a band around the large end. Average size of 100 eggs 16.3×11.6 mm (Baker). Female alone collects materials and builds nest, sometimes accompanied to and fro by male; exceptionally male may also help; building may take from six days to three weeks. Incubation, starting with first egg, by female alone; period 14 or 15 days. Nestling period 13 to 17 days. Feeding of nestlings and sanitation by both parents though in some cases the latter chore apparently done by female only. Two successive broods often reared in the same nest. For further details on breeding biology see Das (1964, 1966). Brood-parasitism by Plaintive Cuckoo, *Cacomantis m. passerinus* (584) recorded — M. Suter, 1945, JBNHS 45(2): 235.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies. Prenuptial moult November to February. Postnuptial moult complete, mostly July to December.

Young, like female. Postjuvénal moult complete or wing not moulted till prenuptial moult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	54-60	20-22	14-16	31-38 mm
♀♀	51-56	20-22	14-15	29-34 mm
				(HW)

Weight 3 ♂♂ (March-April) 6.9-8.6 g (GD). 10 ♂♂ (July) 7-11 (av. 8.2); 8 ♀♀ (July) 5-10 (av. 8) g — SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet brownish black; mouth pinkish yellow.

1918. Assam Purple Sunbird. *Nectarinia asiatica intermedia* (Hume)

Arachnechthra intermedia Hume, 1870, Ibis: 436 (Tippera)

Baker, FBI No. 1279, Vol. 3: 398

LOCAL NAMES. *Thün-thüni*, *Mauchung* (Bengal).

SUNBIRDS

39

1919. Mrs Gould's Sunbird. *Aethopyga gouldiae gouldiae* (Vigors)

Cinnyris Gouldiae Vigors, 1831, Proc. Zool. Soc. London: 44

(Himalayan mountains = Simla-Almora area, vide Ticehurst & Whistler, 1924, Ibis: 471)

Baker, FBI No. 1269 (part), Vol. 3: 385

Plate 99, fig. 8

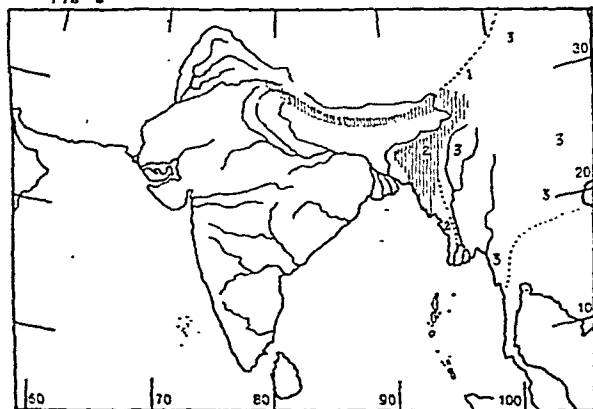
LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length ♀ c. 10 cm (4 in.); ♂ c. 15 cm (6 in.) including long tail.

FIELD CHARACTERS. Male. *Above*, crown, ear-coverts and a patch on sides of neck metallic purple-blue; sides of head, neck, supercilium, nape and back crimson; rump bright yellow; upper tail-coverts and upper surface of tail metallic purple-blue. Tail graduated, outer rectrices brown tipped with buffish, central rectrices greatly elongated. *Below*, throat metallic purple-blue. Rest of underparts yellow streaked with scarlet on breast and tinged with olive on vent.

Female. *Above*, head and nape grey. Rest of upperparts olive, yellowish on rump. *Below*, throat pale grey. Rest of underparts yellow.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, locally common. The Himalayas from the Sutlej Valley east to Arunachal Pradesh (Ludlow, *Ibis* 1944: 366). Breeds between 1800 and

Aethopyga gouldiae

3300 m, in Nepal up to 3600 m. Withdraws from the higher levels in winter but observed as high as 2700 m in Nepal in the coldest weather; in Bhutan

38

NECTARINIIDAE

SIZE. Sparrow — ; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1917, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Assam and Bangladesh, from the plains to c. 1400 m, exceptionally 1500 m. Habitat as in 1917. *Extralimital*. Ranges east to the Indochinese Peninsula.

GENERAL HABITS, FOOD AND VOICE. As in 1917.

BREEDING. Season, January to June with a peak in April. Nest and eggs, as in 1917. Average size of 35 eggs 15.9×11.5 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *asiatica* (1917) in having the upperparts, chin and throat more violet-purple. Female like *asiatica* but darker above and richer yellow below.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	53-59	19-22	34-40 mm
♀♀	50-55	19-20	30-35 mm
			(HW)

COLOURS OF BARE PARTS. As in 1917.

Genus AETHOPYGA Cabanis

Aethopyga Cabanis, 1851, Mus. Hein. 1: 103.

Type, by original designation, *A. siparaja* = *Certhia siparaja* Rafines

Bill slightly longer than head, curved. Culmen ridged. Nostril bare, longitudinal, operculated. Tail much graduated, central rectrices (in male) projecting far beyond the rest. Sexes very different.

Key to the Species

Males		Page
A	Chin and throat scarlet	<i>A. siparaja</i> 47
B	Chin and throat dark, not scarlet	
1	Central rectrices red	<i>A. ignicauda</i> 50
2	Central rectrices metallic green	<i>A. nipalensis</i> 41
3	Central rectrices metallic purple	
a	Sides of head crimson	<i>A. gouldiae</i> 38
b	Sides of head black	<i>A. saturata</i> 44
Females		
A	Crown grey; a yellow band across rump	
1	Belly yellow contrasting with grey breast and throat	<i>A. gouldiae</i> 38
2	Underparts greyish olive	<i>A. saturata</i> 44
B	Crown olive; no yellow band across rump	
3	Outer rectrices not tipped with white	<i>A. ignicauda</i> 50
4	Outer rectrices tipped with white	
a	Tail under 40 mm; lower mandible pale brown	<i>A. siparaja</i> 47
b	Tail over 40 mm; lower mandible dark brown to black	<i>A. nipalensis</i> 41

AETHOPYGA GOULDIAE (Vigors)

Key to the Subspecies

	Page
A Breast scarlet	<i>A. g. dabryi</i> 41
B Breast yellow	
1 Yellow darker	<i>A. g. gouldiae</i> 39
2 Yellow paler	<i>A. g. isolata</i> 40

40

NECTARINIIDAE

and Bengal (Jalpaiguri dist.) reaches the base of the hills in the cold season. Affects deciduous forest, especially oak, and the lower coniferous zone.

Extralimital. Extends east to southwestern Szechuan. The species ranges east to Hupeh, Kwangsi and the Indochinese countries.

GENERAL HABITS. Similar to other sunbirds'. A very active and vivacious species, restlessly searching blossoms for nectar on bushes and shrubs as well as among parasitic plants up in lofty forest trees.

FOOD. Nectar, insects, spiders.

VOICE AND CALLS. Common notes rendered as a scissors-like *tzit-tzit*.

BREEDING. As in 1920.

MUSEUM DIAGNOSIS. Differs from *isolata* (1920) in being darker yellow on breast and rump. For identification of females see Key to the Species.

Juvenile, like female but tail not so graduated nor tips so whitish (CBT).

Postjuvénal moult complete. Adult plumage held till post-breeding moult; no eclipse plumage.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	52-58	20-25 (once 27)	15-18	60-86 mm
♀♀	48-52	20-22	14-15	35-47 mm
				(Baker, SA)

Weight 5 ♂♂ 6.5-8; 2 ♀♀ 4, 6 g (SA).

COLOURS OF BARE PARTS. Iris reddish brown to crimson. Bill dark brown, lower mandible paler. Legs and feet dark brown.

1920. Manipur Yellowbacked Sunbird. *Aethopyga gouldiae isolata* Baker

Aethopyga gouldiae isolata Baker, 1925, Bull. Brit. Orn. Cl. 46: 13 (Manipur)

Aethopyga gouldiae melittae Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 21 (Mt Victoria)

Aethopyga gouldiae trochiloides Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 21 (Blue Mountain, Lushai Hills)

Baker, FBI Nos. 1269 (part) and 1270, Vol. 3: 385, 386

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length ♀ c. 10 cm (4 in.); ♂ c. 15 cm (6 in.) including long tail.

FIELD CHARACTERS. As in 1919, q.v.

STATUS, DISTRIBUTION AND HABITAT. Uncommon resident, subject to seasonal movements. Assam south of the Brahmaputra, Nagaland, Manipur and the hills south to the Chittagong Hill Tracts, chiefly between 900 and 2400 m. Affects evergreen forest and deciduous scrub jungle.

GENERAL HABITS, FOOD AND VOICE. As in 1919.

BREEDING. Season, April through June. Nest, a pear-shaped structure of vegetable down, green moss and cobweb, suspended from the end of a twig rather low down on bushes or brambles. The edge of the entrance,

which is about two-thirds of the way up, is reinforced so as to form a firm rim. Eggs, generally 2, sometimes 3, white freckled with small blotches of pale reddish brown, slightly more numerous at the larger end. Average size of 10 eggs 14.6 × 11.2 mm (Baker). Building of nest and care of young by both sexes.

MUSEUM DIAGNOSIS. Differs from *gouldiae* (1919) in being a paler yellow on rump and breast, and in being slightly smaller. Female indistinguishable in colour.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	51-56	c. 20	c. 14	{ 62-69 mm — mm (Koelz, Baker)
♀♀	47-51			

Weight ♂♂ 6-7 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill blackish. Legs blackish brown, feet a little paler; soles dingy yellowish to hoary grey.

1921. Dabry's Sunbird. *Aethopyga gouldiae dabryi* (Verreaux)

Nectarinia Dabryi Verreaux, 1867, Rev. Mag. Zool. 19: 173, pl. 15 (Tu-tien-leou, Setchuan O.)

Baker, FBI No. 1271, Vol. 3: 387

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length ♀ c. 10 cm (4 in.); ♂ 15 cm (6 in.) including long tail.

FIELD CHARACTERS. As in 1919 but breast scarlet instead of yellow.

STATUS, DISTRIBUTION and HABITAT. Presumably a winter visitor from western China. Recorded in extreme eastern Nagaland (Ripley, 1953, JBNHS 61: 693), in Manipur (sight record, Hume, SF 11: 81), and in North Cachar (Baker, FBI 3: 388) between 1200 and 1800 m.

MIGRATION. In adjacent Burma this form has been recorded from January to March.

GENERAL HABITS, FOOD and VOICE. As in 1919.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Differs from both *gouldiae* (1919) and *isolata* (1920) in having a scarlet breast. Metallic colour of crown and throat more lilac or purple than blue.

MEASUREMENTS

	Wing	Tail
7 ♂♂	53-59	75-76 mm (Mayr)

COLOURS OF BARE PARTS. As in 1920.

AETHOPYGA NIPALENSIS (Hodgson)

Key to the Subspecies

	Page
A Back with only a trace of crimson-brown.....	<i>A. n. horsfieldi</i> 42
B Back with a broad crimson-brown band	
1 Bill from skull 23 mm or less.....	<i>A. n. nipalensis</i> 43
2 Bill from skull 24 mm or more.....	<i>A. n. koelzi</i> 44

1923. Nepal Yellowbacked Sunbird. *Aethopyga nipalensis nipalensis* (Hodgson)

Cinnyris Nipalensis Hodgson, 1836, Ind. Rev. 1 (7): 273

(Nepal, restricted to Chandragiri Pass, central Nepal, by Ripley, 1961, Synopsis: 588)

Aethopyga griseiceps Benthams, 1908, Rec. Ind. Mus. 2: 167 (Darjiling)

Baker, FBI No. 1274 (part), Vol. 3: 391

Plate 99, fig. 11

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length ♀ c. 10 cm (4 in.); ♂ c. 15 cm (6 in.) including long tail.

FIELD CHARACTERS. Male, adult. Above, crown and nape metallic blue-green, bordered on upper back and sides of neck by a crimson-brown or maroon band. Wings and middle of back olive-green. Rump bright yellow; tail metallic blue-green. Below, cheeks black, throat metallic blue-green. Rest of underparts bright yellow streaked with scarlet on breast.

Female olive-green, outer rectrices tipped with white.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. The central Himalayas from western Nepal to Darjeeling and Sikkim. Breeds between c. 1800 and 2700 m [not breeding above this altitude in central Nepal (Proud) but has been recorded as high as 3500 m in the Langtang Valley (Polunin)]. Recorded in winter between 300 and 2400 m in Nepal and as high as 3600 m in Sikkim. Affects heavy forest of oak, rhododendron, etc. (more so than *A. ignicauda*) and scrub jungle.

GENERAL HABITS. Those of the genus. In Nepal the four species *nipalensis*, *ignicauda*, *saturata* and *siparaja* may all be found together in winter, feeding on flowering *Leucosceptum*, *Caryopteris* and suchlike species 'but Gould's Sunbird is never found with them' (Proud).

FOOD. Mainly nectar.

VOICE and CALLS. Call-note, a sharp *dzit*. Song described as *ichiss* (high) ... *ichiss-iss-iss-iss* (low-rising-high) [Lister]. Song period in Nepal February to mid June (Proud).

BREEDING. Season, chiefly May and June. Nest, an oval purse of vegetable down and green moss suspended from the end of a twig within a couple of metres from the ground. Entrance near the top, about 25 mm in diameter. Eggs 3, white, spotless or sparingly spotted and mottled with dark brown. Average size of 3 eggs 15.7 × 10.9 mm (Osmaston); of 11 eggs 15.3 × 10.8 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *horsfieldi* in having a broader maroon band on upper back, and from *koelzi* in having a shorter bill.

Young, like adult female but tail not so markedly graduated and the pale tips not so pronounced. Young male has an orange wash on breast. Postjuvinal moult complete in October to January. No eclipse plumage (CBT).

For identification of female see Key to the Species.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	51-58	{ 20-23 } 20-22	c. 15	{ 58-70 mm 42-49 mm (BB)
♀♀	47-52			

Weight 2 ♂♂ 6.5, 8; 4 ♀♀ 5-6 g (GD, SA).

1922. Western Yellowbacked Sunbird. *Aethopyga nipalensis horsfieldi* (Blyth)

Cinnyris Horsfieldi [sic] Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 107, *nomen nudum*

Nectarinia Horsfieldi Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 975 (Himalayas = Mussooree)

Baker, FBI No. 1275, Vol. 3: 392

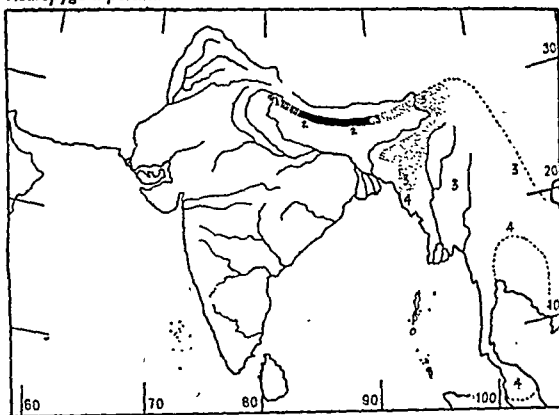
LOCAL NAMES. None recorded.

SIZE. Sparrow —; length ♀ c. 10 cm (4 in.); ♂ c. 15 cm (6 in.) including long tail.

FIELD CHARACTERS. As in 1923, q.v.

STATUS, DISTRIBUTION and HABITAT. Uncommon resident, subject to vertical movements. The western Himalayas from Mussooree to western

Aethopyga nipalensis



Distributional ranges

1 *horsfieldi* (1922). 2 *nipalensis* (1923). 3 *koelzi* (1924). 4 extralimital subspecies.

Nepal (where it intergrades with *nipalensis*), between 600 and at least 1800 m. Affects gardens and forest.

GENERAL HABITS, FOOD and VOICE. As in 1923.

BREEDING. Unrecorded, probably as in 1923.

MUSEUM DIAGNOSIS. Male, like *nipalensis* (1923) but back and sides of neck olive-yellow with only a trace of maroon along the margin of the metallic green of hindneck; hardly any trace of scarlet on breast.

MEASUREMENTS. As in 1923 but bill averaging 1 or 2 mm shorter.

COLOURS OF BARE PARTS. As in 1923.

COLOURS OF BARE PARTS. Iris reddish brown. Bill, legs and feet dark brown. Soles grey.

1924. Eastern Yellowbacked Sunbird. *Aethopyga nipalensis koelzi* Ripley

Aethopyga nipalensis koelzi Ripley, 1948, Proc. Biol. Soc. Washington 61: 106 (Dening-Dreyi trail, Mishmi Hills, NE. Asam)

Aethopyga nipalensis ripleyi Koelz, 1952, Jour. Zool. Soc. India 4: 43 (Mawryngkneng, Khasi Hills)

Baker, FBI No. 1274 (part), Vol. 3: 391

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length ♀ c. 10 cm (4 in.); ♂ c. 15 cm (6 in.) including long tail.

FIELD CHARACTERS. As in 1923, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Bhutan, Arunachal Pradesh, Meghalaya, Nagaland and Manipur south to the Chittagong Hill Tracts. In the Himalayas breeds between c. 1800 and 2800 m, rarely reaching the duars in winter. Affects dense forest, scrub jungle and gardens.

Extralimital. Extends to northwestern Yunnan and northern Vietnam. Other subspecies in the Indochinese countries.

GENERAL HABITS, FOOD and VOICE. As in 1923.

BREEDING. As in 1923.

MUSEUM DIAGNOSIS. Differs from *nipalensis* (1923) only in having a longer bill.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	53-57	{ 25-26 } 22 (1)	c. 15	{ 58-64 mm 41-46 mm (SDR, MD)
♀♀	50-52			

Weight ♂♂ 5.5-7.5 g (SDR); 4 ♀♀ 6.6-5.5 g (SA).
COLOURS OF BARE PARTS. As in 1923.

AETHOPYGA SATURATA (Hodgson)

Key to the Subspecies

Less richly coloured.....	<i>A. s. saturata</i>
More richly coloured.....	<i>A. s. assamensis</i>

1925. Himalayan Blackbreasted Sunbird. *Aethopyga saturata saturata* (Hodgson)

Cinnyris Saturata Hodgson, 1836, Ind. Rev. 1 (7): 273 (Nepal)

Baker, FBI No. 1272 (part), Vol. 3: 388
Plate 99, fig. 12

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length ♀ c. 10 cm (4 in.); ♂ c. 15 cm (6 in.) including elongated rectrices.

FIELD CHARACTERS. Male, adult. Above, crown and nape metallic purple. Back and sides of neck crimson-brown. Wings blackish brown.

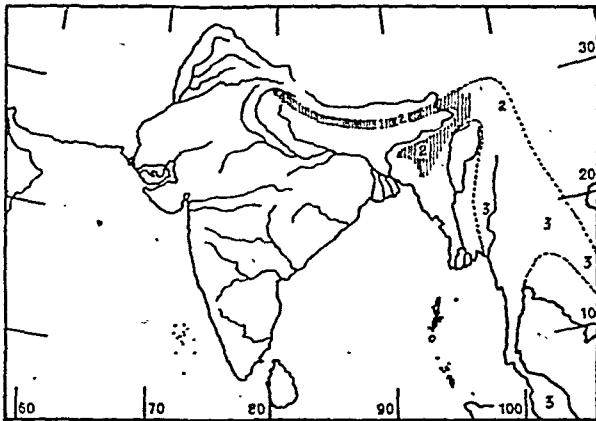
SUNBIRDS

45

A narrow yellow band on rump. Upper tail-coverts and upper surface of tail metallic purple, the two central rectrices elongated. *Below*, throat and breast dull blackish, a broad metallic purple malar streak. Rest of underparts greyish olive.

Female, a nondescript olive-green. See Key to the Species.

STATUS, DISTRIBUTION AND HABITAT. Fairly common resident, subject to vertical movements. The Himalayas from Mussoorie east to Bhutan, from c. 450 m in winter (in Bengal and Bhutan to the base of the hills and adjacent duars) up to c. 1800 m in summer (in Bhutan up to 2000 m).

Aethopyga saturata

Distributional ranges 1 *saturata* (1925), 2 *assamensis* (1926), 3 extralimital subspecies.

Withdraws from the higher levels 'for a couple of months in the coldest weather but is back and singing by the end of February' (Proud). Affects bushes in forest and outskirts of dense jungle, chiefly in the evergreen zone.

GENERAL HABITS. Those of the genus. Recorded visiting cherry blossoms in season; also cardamom flowers at ground level. Along with other sunbird species is an unfailing attendant on the scarlet 'cup and saucer' flowers of *Holmskjoldia*.

FOOD. Chiefly nectar.

VOICE AND CALLS. Undescribed. Song period in Nepal February to mid July (Proud).

BREEDING. As in 1926.

MUSEUM DIAGNOSIS. Differs from *assamensis* in being less richly coloured.

Young, like adult female but tail not so graduated and white tips not so distinct. Postjuvénal moult complete. No eclipse plumage (CBT). For identification of female see Key to the Species.

SUNBIRDS

47

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet dark brown.

AETHOPYGA SIPARAJA (Raffles)

Key to the Subspecies

	Page
A Breast streaked with yellow..... <i>A. s. vigorii</i>	49
B Breast plain scarlet	
1 Crown violet-purple..... <i>A. s. nicobarica</i>	50
2 Crown green	
a Paler..... <i>A. s. scheriae</i>	47
b Darker, more richly coloured..... <i>A. s. labacula</i>	49

1927. **Indian Yellowbacked Sunbird.** *Aethopyga siparaja scheriae* (Tickell)

Nectarinia scheriae Tickell, 1833, Jour. Asiat. Soc. Bengal 2: 577 (near Scheria in Borabhum)

Aethopyga siparaja mussoorieensis Baker, 1925, Bull. Brit. Orn. Cl. 46: 12 (Mussoorie)

Baker, FBI Nos. 1262 (part) and 1263, Vol. 3: 378, 380

Plate 99, fig. 13

LOCAL NAME. *Phulchūiya* (Dehra Dun).

SIZE. Sparrow —; length ♀ c. 10 cm (4 in.), ♂ c. 15 cm (6 in.) including elongated rectrices.

FIELD CHARACTERS. Male, adult. *Above*, crown metallic green. Sides of neck and back dark crimson. Rump bright yellow. Tail metallic green, the two central rectrices elongated. *Below*, chin, throat and breast scarlet with metallic purple malar streaks. Belly yellowish olive.

Female entirely olive, more yellowish below.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The Himalayan foothills from Kangra east to Sikkim thence south in the plains of eastern Bihar (Purnea), northern Bengal (Ingles, JBNHS 26: 996) and western Bangladesh (Rashid). Also occurs in the hills of the northeastern Peninsula but the few records are old and mostly undated: Allahabad, Mirzapur (U.P., Hume, SF 5: 122), Singhbhum (Ball, SF 7: 208), Scheria in Borabhum (type locality), Lohardaga (Ball, SF 2: 396), Bamra (Orissa, specimens 8 December — SA) and Balaghat (Madhya Pradesh, 1 April, D'Abreu, JBNHS 22: 393). In the Himalayas occurs up to c. 1200 m (Dharmasala, at this level from March to August only), in Nepal up to c. 1800 m in summer, 1400 m in winter. Affects gardens, orchards, groves, scrub, sal and pine forest.

GENERAL HABITS. Those of the genus. Usually found singly, foraging among loranthus clusters, blossoms of a wide range of trees and shrubs, and garden flowers, hopping about energetically, clinging sideways, upside down and in all manner of acrobatic positions among the branchlets and dashing from tree to tree. Large flowers (e.g. hibiscus and canna) are pierced at the base of the corolla for short-cut to the nectar. Often hovers in front of flowers like a hawk-moth to insert the suctorial tubular tongue

NECTARINIIDAE

46

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	53-58	20-25	14-17	63-81 mm
♀♀	47-49	20-22	14 (1)	32-37 mm
			(BB, SA, Stres., Rand & Fleming)	

Weight 4 ♂♂ 6-6.5 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill brownish black. Legs, feet and claws dark horny brown.

1926. **Assam Blackbreasted Sunbird.** *Aethopyga saturata assamensis* (McClelland)

Cinnyris Assamensis McClelland, 1839, Proc. Zool. Soc. London: 167 (Assam, restricted to neighbourhood of Sadiya by Deignan, 1948, Jour. Washington Acad. Sci. 38: 22)

Aethopyga saturata ariel Koelz, 1953, Jour. Zool. Soc. India 4: 154 (near Nokrek, Garo Hills)

Baker, FBI No. 1272 (part), Vol. 3: 388

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length ♀ c. 10 cm (4 in.), ♂ c. 15 cm (6 in.) including elongated rectrices.

FIELD CHARACTERS. As in 1925, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements. Arunachal Pradesh, Assam south of the Brahmaputra, Meghalaya and adjacent hills of Bangladesh, the Patkai Range, Nagaland and Manipur; from the foothills to c. 1800 m. In North Lakhimpur district 'a resident throughout the plains' (Stevens). Affects dense evergreen and deciduous forest, scrub, secondary growth and open pasture land with scattered bushes.

Extralimital. Northern Burma to western Yunnan. Other subspecies in the Indochinese countries.

GENERAL HABITS, FOOD AND VOICE. As in 1925.

BREEDING. Season, May to July. *Nest*, pear-shaped, made of dry grass, moss, fibre and cobweb, decorated outside with chips of dead wood and bamboo leaves, lined with vegetable down; entrance-hole two-thirds of the way up, with a porch projecting 2 or 3 cm over it, sometimes with only a bare suggestion of a porch; nest usually attached to thin branches of bushes or creepers within a couple of metres from the ground. *Eggs*, 2 or 3, white, marked with specks and spots and occasionally blotches of inky black with secondary ones of inky grey. Average size of 25 eggs 14.6 × 11.3 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *saturata* (1925) in being more richly coloured.

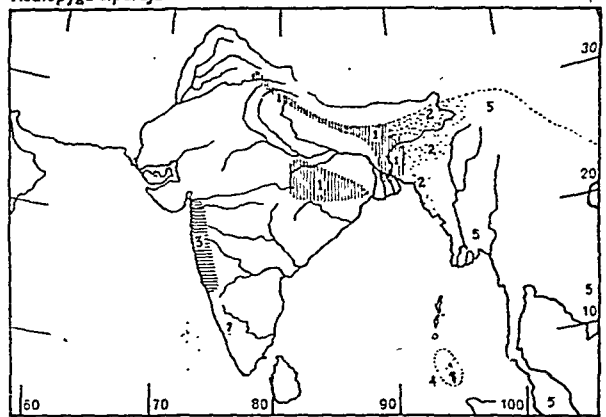
MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♂	51-55	20-21	c. 15	69-77 mm
♀♀	44-48	18-19	—	— mm
				(SDR, Koelz)

Weight ♂♀ 5-6 g (SDR).

NECTARINIIDAE

48

Aethopyga siparaja

Distributional ranges

1 *scheriae* (1927), 2 *labacula* (1928), 3 *vigorii* (1929), 4 *nicobarica* (1929a), 5 Extralimital subspecies.

for the sugary liquid. A predilection for bright crimson and scarlet coloured flowers has been consistently noted.

FOOD. Chiefly nectar; also insects and spiders.

VOICE AND CALLS. 'Call very like the noise of scissor blades opening and shutting' ('S.R.' in Whistler MS.). Song described as a chirping trill.

BREEDING. As in 1928. Brood-parasitized by Emerald Cuckoo (*Chalcites maculatus*, 586) — Baker, JBNHS 18: 278.

MUSEUM DIAGNOSIS. See Key to the Subspecies. For details of plumage, see Baker, loc. cit.

Young male, like female but chin and centre of throat scarlet. Young female, like adult female but greyer, not so yellow below. Postjuvénal moult complete. A complete postnuptial moult about November–December (Rand & Fleming). Some body moult noted in March (BB). No eclipse plumage (CBT).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	53-60	20-23	14-16	{ 62-76 mm 34-39 mm
♀♀	47-53	19-21		
				(BB, SA, Stres.)

Weight 1 ♂ (Nov.) 7.5 g (BB). 4 ♂♂ (March) 6.4-7.9 g (GD).

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible dark brown, black on basal third; lower mandible horny brown. Legs, feet and claws dark brown.

SUNBIRDS

49

1928. **Assam Yellowbacked Sunbird.** *Aethopyga siparaja labecula* (Horsfield)
Cinnyris labecula Horsfield, 1839 (1840), Proc. Zool. Soc. London: 167 (Assam)
Baker, FBI No. 1262 (part), Vol. 3: 378

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length ♀ c. 10 cm (4 in.), ♂ c. 15 cm (6 in.) including elongated rectrices.

FIELD CHARACTERS. As in 1927, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The eastern Himalayas in Bhutan and Arunachal Pradesh and south through Assam, Meghalaya, Nagaland, Manipur and Bangladesh (east of the range of *seheriae*) south to the Chittagong region. Breeds from the foothills up to c. 1800 m. More common in winter in the foothills and adjacent plains. Affects dense evergreen forest and open deciduous and scrub jungle.

Extralimital. The species extends east to Kwangtung, the Indochinese countries and the Philippines, and south to Celebes, Borneo, Sumatra and Java.

GENERAL HABITS, FOOD and VOICE. As in 1927.

BREEDING. Season, April to July. Nest, pear-shaped, generally with a porch over the entrance; made of vegetable down, rootlets, moss and scraps of grass and cobweb, more or less decorated on the outside with oddments. Eggs, 2 or 3, white or cream, marked with brown or reddish brown specks, especially at the large end; very variable; for further details see Baker, Nidification 3: 203. Average size of 31 eggs 15.1 × 11.4 mm.

MUSEUM DIAGNOSIS. Differs from *seheriae* in both sexes being darker and more richly coloured above and below.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1927. Tail of 1 ♂ 81 mm (SA). Weight ♂♂ 6.9; 1 ♀ 6 g (SDR).

1929. **Vigors's Yellowbacked Sunbird.** *Aethopyga siparaja vigorsii* (Sykes)
Cinnyris Vigorsii Sykes, 1832, Proc. Zool. Soc. London: 98 (Ghauts, Dikhun)
Baker, FBI No. 1265, Vol. 3: 381

LOCAL NAME. *Tenkili* (Malayalam).

SIZE. Sparrow — ; length ♀ c. 10 cm (4 in.), ♂ c. 15 cm (6 in.) including elongated rectrices.

FIELD CHARACTERS. As in 1927 but breast of male streaked with yellow.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The Western Ghats complex from the Narbada river (Salim Ali, JBNHS 52: 788) south to North Kanara. Possibly farther south to Kerala, though not yet authentically recorded thence, and also the Nilgiris [Whistler's MS., based on sight records 'near Ootacamund and lower down along the road, about 900 m elevation, before reaching Gudalur', first week of September (J. Berlioz in litt. to HW; cf. also *L'Oiseau*, 1940, 10: 315)]. Affects wooded, preferably foothills country in evergreen and moist-deciduous biotope.

SUNBIRDS

51

SIZE. Sparrow — ; length ♀ c. 10 cm (4 in.), ♂ c. 15 cm (6 in.) including elongated rectrices.

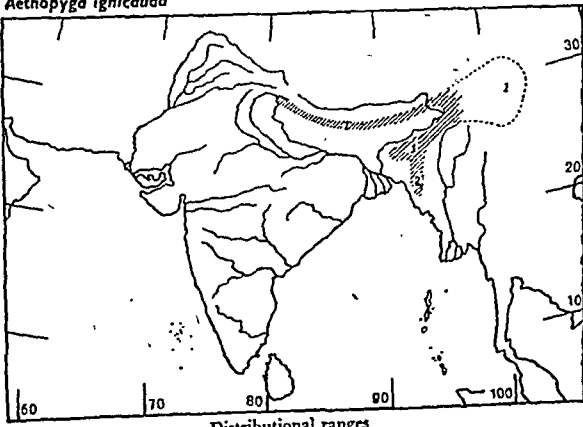
FIELD CHARACTERS. Male, adult. Above, crown metallic purple. Sides of crown from eye, nape, back, upper tail-coverts and tail scarlet. Rump yellow. Wings olive. Throat metallic purple. Rest of underparts yellow, the breast washed with orange.

Identity unmistakable from the elongated central pair of bright crimson tail-feathers.

Female olive, more yellow on rump and belly.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The Himalayas from Garhwal east through Arunachal Pradesh; thence south through Nagaland, Manipur, Assam in the Cachar hills, Meghalaya, and Bangladesh in Sylhet and Chittagong Hill Tracts (winter

Aethopyga ignicauda



Distributional ranges

1. *ignicauda* (1930), 2. *flavescens* (RE, Chin Hills). only?). Breeds between c. 3000 and 4000 m, at higher elevations than *A. nipalensis*; winters between c. 1200 and 2900 m. Affects open coniferous forest with dense growth of rhododendron and juniper, rhododendron and barberry bushes at or above timber-line.

Extralimital. Extends to western Szechuan and central Yunnan. Another subspecies in the Chin Hills.

GENERAL HABITS. Those of the genus. Very active while visiting flowering bushes for nectar, and aggressive towards food competitors.

FOOD. Chiefly nectar (of *Rhododendron arborum*, *R. campanulatum*, *Berberis*, *Elaeagnus*, *Leucosceptum*, etc.); also insects and spiders.

VOICE and CALLS. Song, a high-pitched, monotonous *dzidzi-dzidzidzidzi* continually repeated as the birds fly from bush to bush, pursuing each other (Desfaves). Song period in Nepal April to at least the end of June (Proud).

NECTARINIIDAE

50

GENERAL HABITS, FOOD and VOICE. As in 1927. Call a sharp, harsh but lively *chi-chwee* reminiscent of the Blacknaped Monarch Flycatcher's (*Monarcha azurea*, 1465).

BREEDING. Season, June to September (monsoon). Nest and eggs, as in 1928. Nests commonly suspended from bushes growing out of and overhanging steep roadside earth cuttings in hilly country.

MUSEUM DIAGNOSIS. Differs from *seheriae* in having the scarlet of breast streaked with yellow. For details of plumage see Baker, loc. cit. Some females have the chin, throat and breast dull orange-scarlet (SA, JBNHS 52: 788).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	61-65	23-27	15-16	50-58 mm
♀♀	54-57	21-24		35-38 mm (SA)

Weight 2 ♂♂ 7, 9; 2 ♀♀ 7, 8 g (SA).

COLOURS OF BARE PARTS. Iris red-brown to crimson. Bill blackish, dark brown below. Legs and feet dark brown to blackish.

1929a. **Nicobar Yellowbacked Sunbird.** *Aethopyga siparaja nicobarica* Hume
Aethopyga nicobarica Hume, 1873, Stray Feathers 1: 412 (Kondul and Meroe Islands, Nicobar Group)
Baker, FBI No. 1261, Vol. 3: 377

LOCAL NAMES. None recorded.

SIZE. Sparrow — ; length ♀ c. 10 cm (4 in.), ♂ c. 15 cm (6 in.) including elongated rectrices.

FIELD CHARACTERS. As in 1927, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Great and Little Nicobar, Kondal and Meroe islands. Affects open country, outskirts of forest and coconut groves.

GENERAL HABITS, FOOD and VOICE. As in 1927.

BREEDING. Little recorded. Probably as in 1928.

MUSEUM DIAGNOSIS. Differs from *labecula* in having the crown and tail violet-purple.

MEASUREMENTS

	Wing	Tail
♂♂	50-52	40-45 mm
♀♀	—	32-33 mm (MD)

COLOURS OF BARE PARTS. As in 1927.

1930. **Firetailed Yellowbacked Sunbird.** *Aethopyga ignicauda ignicauda* (Hodgson)
(Cinnyris) Ignicauda Hodgson, 1836, Ind. Rev. 1 (7): 273 (Nepal)
Baker, FBI No. 1266, Vol. 3: 383 Plate 99, fig. 16

LOCAL NAMES. None recorded.

NECTARINIIDAE

52

BREEDING. Season, April to June. Nest, an oval structure with a small entrance near the top; made of moss, rootlets, cobweb, papery bark, lined with vegetable down, fine grass and feathers; suspended from a branchlet of dwarf bamboo or other bush within a couple of metres from the ground. Eggs, 2 or 3, variable: pale violet-white covered with purplish speckles or brick-red with darker brick-red freckles (Himalayas), or white with tiny brown blotches forming a broad ring at the large end (Assam). Average size of 12 eggs 15.6 × 11.8 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species. Postnuptial moult to eclipse plumage complete, October to February; male becomes green like female but has the underparts brighter yellow, often showing some odd orange or reddish tinted feathers. Upper tail-coverts red. Tail longer than in female, outer webs red; central rectrices not projecting more than c. 15 mm beyond rest of tail; central rectrices apparently moulted last, an exceptional condition among passerine birds (cf. Stanford, J. K. & Mayr, E., *Ibis* 1941: 480). Prenuptial moult to breeding plumage from February to April; in this the central or all rectrices are renewed and the body plumage moulted, but apparently not the wings. Males in breeding plumage may be found in every month (C. B. Ticehurst, *Ibis* 1935: 197).

Young male, similar to female but has a patch of reddish feathers between throat and breast.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	55-60	21-24	c. 16	(summer) 109-157 mm
♀♀	52-56	21-22		(eclipse) c. 48 mm
				c. 40 mm (BB, SA, Stres., Rand & Fleming)

Weight 2 ♂♂ (winter) 7.5, 9 g (SDR).

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet blackish brown.

Genus ARACHNOTHERA Temminck

Arachnothera Temminck, 1826, Pl. Col. d'Ois. 65, text to pl. 388.
Type, by monotypy, *Nectarinia chrysogenys* Temminck

Bill long, about twice the length of head or longer, stout and strongly curved, with the culmen ridged between the nostrils.

Key to the Species

	Page
Plumage boldly streaked.....	<i>A. magna</i> 54
Plumage not streaked.....	<i>A. longirostris</i> 52

1931. **Little Spiderhunter.** *Arachnothera longirostris longirostris* (Latham)

Certhia longirostra Latham, 1790, Index Orn. 1: 299 (Bengal, restricted to Sylhet by Baker, JBNHS 28: 124)
Arachnothera longirostra vaneyri Koelz, 1939, Proc. Biol. Soc. Washington 52: 77 (Jagabed, Bombay Presidency)
Baker, FBI No. 1295, Vol. 3: 418

Plate 99, fig. 14

LOCAL NAME. *Tekilimalan* (Malayalam).

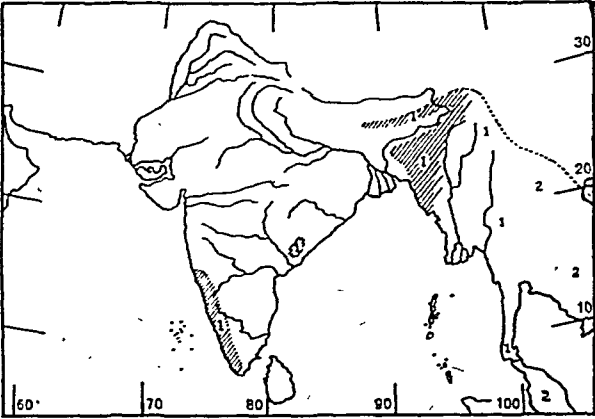
SUNBIRDS

53

SIZE. Sparrow —; length (including long bill) c. 14 cm (5 in.).
FIELD CHARACTERS. An olive and yellow bird reminiscent of a large female sunbird with very long and stout, curved bill. *Above*, olive; tail dark brown tipped with white. *Below*, throat and breast greyish white. Belly yellow with orange tufts on flanks. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. Range disjunct: (1) The Sahyadri or Western Ghats complex of southwestern India from North Kanara south through western Karnataka, Kerala and western Tamil Nadu, from the low country up to c. 2100 m. (2) Eastern Ghats (Lamasingi c. 820 m in Visakhapatnam dist., c. 18°N., 82°E. (K. Raju & J. P. Selvin, JBNHS 68: 454-5). (3) From extreme southeastern

Arachnothera longirostris



Disjunct distributional range

1 *longirostris* (1931), 2 extralimital subspecies.

Nepal (Fleming & Traylor, 1964), Darjeeling and Jalpaiguri districts (Ingis, JBNHS 26: 996), Bhutan and Arunachal foothills southwards in Meghalaya, Nagaland (?), Manipur and Bangladesh south to the Chittagong Hill Tracts; occurs mostly in the foothills up to c. 1500 m in Meghalaya, 1800 m in the Himalayas (scarce at these higher elevations); also found in adjacent plains (winter only?). Affects moist-deciduous and evergreen biotope: dense forest as well as glades and margins, secondary growth, heavy jungle along rivers, cardamom sholas, and wild and cultivated banana patches.

Extralimital. Extends through Burma to western Thailand south to the Isthmus of Kra; other subspecies in the Indochinese countries, Malay Peninsula, Indonesia and the Philippines.

GENERAL HABITS. Similar to those of sunbirds. Usually keeps singly or in pairs. Very fond of the nectar of wild banana blossoms, and is an

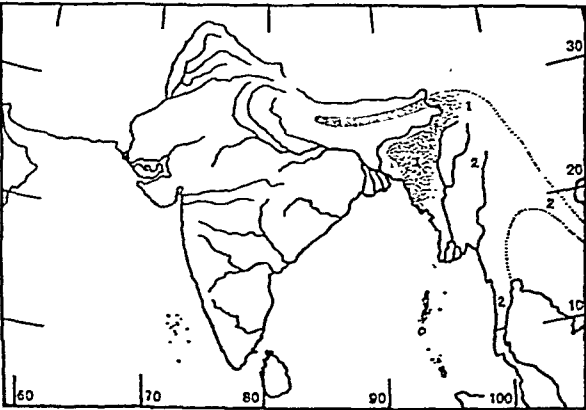
SUNBIRDS

55

long and stout, curved, black bill and yellow legs. *Above*, yellowish olive streaked with black. Tail tipped with buffish spots, with a blackish sub-terminal band. *Below*, very pale yellow with bold black shaft-streaks. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements, locally common. Bilaspur in the Sutlej Valley (Stoliczka, *Jour. Asiatic Soc. Bengal*, 1868) but since then not recorded west of central Nepal (Biswas, JBNHS 60: 189), east through Sikkim, Darjeeling and Jalpaiguri districts, Bhutan and Arunachal Pradesh, thence south through Nagaland, Manipur, Meghalaya, and the hills of Bangladesh to the Chittagong Hill Tracts.

Arachnothera magna



Distributional range

1 *magna* (1932), 2 extralimital subspecies.

Breeds between c. 600 and 1500 m, occasionally 2200 m, extending well into the plains in winter. Affects dense evergreen forest and abandoned cultivation clearings, especially where wild banana and plantain trees are found. Occasionally also hill-station gardens with flowering shrubs.

Extralimital. Extends to northern Burma and Yunnan. Other subspecies in the Indochinese countries.

GENERAL HABITS. Found singly or in pairs, often in mixed parties of babblers and warblers, usually quite high up in trees. Difficult to observe because of its swift flight and preference for canopy of lofty trees in evergreen forest. Almost inseparable from wild banana trees whose blossoms it largely helps to cross-pollinate. Movements rapid and rather jerky. Explores leaves from all angles for insects and often hovers while probing flowers for nectar or for taking spiders from their web. Flight surprisingly strong and rapid with fast wing-beats and slight undulations.

FOOD. Nectar, insects and spiders.

54

NECTARINIIDAE

important agent in their cross-pollination. May commonly be seen clinging upside down to the purple bracts probing deep into the flowers with its long bill. *Loranthus* clumps and a very large variety of flowers are also visited.

FOOD. Nectar, insects and spiders.

VOICE and CALLS. Call-note, a harsh *cheep* or *chee-chee* rather reminiscent of both Paradise Flycatcher and Ashy Swallow-Shrike but somewhat higher-pitched and more musical. Song, a metallic, monotonous *which-which-which* etc. repeated at the rate of twice a second or so, maybe for two minutes or more at a stretch.

BREEDING. Season, in Assam March to September, chiefly May to August; in southwestern India December to August. *Nest*, a compact cup c. 10 cm deep, made of skeleton leaves, soft grass and vegetable down, neatly felted together; attached by its rim like an inverted dome to the underside of a banana or similar broad leaf by means of cobwebs or threads of vegetable cotton passed through the leaf and neatly knotted on its upper surface. There is a semicircular entrance-hole on one side. *Eggs*, usually 2, occasionally 3, pinkish white to salmon-pink, sparsely stippled all over with reddish with a sharply defined ring around the large end. Average size of 100 eggs 18.4 × 13.1 mm (Baker). Building of nest and incubation by both sexes. Period, undetermined. Brood-parasitism by Hodgson's Hawk-Cuckoo (*Cuculus fugax*, 575) recorded (Baker, JBNHS 17: 369).

MUSEUM DIAGNOSIS. See Field Characters. Young similar to adult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	64-67	34-37	c. 15	{ 40-42 mm 36-38 mm (HW)
♀♀	59-60	32-33		

Weight 4 ♂♀ 11-15 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill horny brown, plumbeous at chin and on gony; mouth greyish pink with brown mottling. Legs, feet and claws bluish plumbeous. (In one immature female legs greyish blue, feet particoloured yellow and blue.)

1932. **Streaked Spiderhunter.** *Arachnothera magna magna* (Hodgson) (*Cinnyris*) *Magna* Hodgson, 1836, Ind. Rev. 1 (7): 272 (Nepal)

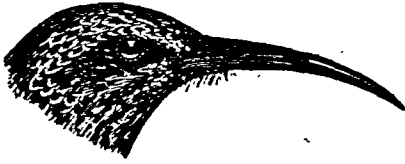
Baker, FBI No. 1293, Vol. 3: 414

Plate 99, fig. 15

LOCAL NAMES. *Dom-sirich-pho* (Lepcha); *Tdong-pichang* (Bhutea).

SIZE. Sparrow; length c. 17 cm (6½ in.) including long bill.

FIELD CHARACTERS. A boldly streaked yellowish olive bird with very



× c. 1

56

ZOSTEROPIDAE

VOICE and CALLS. A sharp, metallic chirruping *chirirink* or *chirik*, *chirik* uttered both when feeding and on the wing. A soft song beginning clearly like *rijritte rij* then gaining speed and becoming a rapid, monotonous song. A soft *ug-ug-ug* when angry and a *chee-chee-chee* (in captivity — R. Hoppe, *Peacock* 4, No. 2: 48).

BREEDING. Season, March to July. *Nest*, a neatly finished inverted dome of skeleton leaves firmly fastened together with cobweb, lined with fine grass stems or skeleton leaves; it is sewn by means of vegetable down and cobwebs to the underside of a broad leaf, usually a banana leaf (cf. also 1931). *Eggs*, normally 2, sometimes 3, brown or olive-brown with a darker zone at the large end; for details on colour variations see Baker, *Nidification* 3: 232. Average size of 100 eggs 22.7 × 15.9 mm (Baker). Building and incubation by both sexes. Often brood-parasitized by cuckoos (*Cuculus micropterus*, *C. sparterioides* and other species).

MUSEUM DIAGNOSIS. See Field Characters. Young, like adult but streaks less sharply defined. Postjuvinal moult of body-feathers.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	84-96	45-47	20-21	44-52 mm
♀♀	78-84	42-44	20-22	39-48 mm (MD, SA)

Weight 2 ♂♂ (breeding) 28, 30; 1 o? 25 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill blackish brown. Legs and feet chrome-yellow to orange-yellow.

Family ZOSTEROPIDAE: White-eyes

For description see Baker, E. C. Stuart, 1926, FBI 3: 357; Van Tyne, J. & Berger, A. J., 1959: 541; Moreau, R. E., 1964, article 'White-eye' in Thomson, A. L. (ed.), *A New Dictionary of Birds*, London and New York.

Genus ZOSTEROPS Vigors & Horsfield

Zosterops Vigors & Horsfield, 1827, Trans. Linn. Soc. London 15: 234.

Type, by monotypy, *Zosterops dorsalis* Vigors & Horsfield = *Sylvia lateralis* Latham. Bill slender and small, about half the length of the head; culmen curved, tomium smooth, nostrils covered with a large membrane. Tarsus long and fairly strong. Tongue protractile and furnished with two brushes of stiff, horny fibres.¹ Wing long, of ten primaries, the first (as.) very minute. Tail short and square.

Key to the Species

	Page
Upperparts olive; throat yellowish olive..... <i>Z. cyaneus</i>	61
Upperparts yellowish olive; throat yellow..... <i>Z. palpebrosa</i>	56

ZOSTEROPS PALPEBROSA (Temminck)

Cf. Stresemann, E., 1939, *Jour. Orn.* 87: 156-64; Ripley, S. D., 1950, JBNHS 49: 411; Mees, G. F., 1957, *Zool. Verhand. Rijksmus. Nat. Hist. Leiden*, No. 35: 22-63; Birwa, B., 1963, JBNHS 60: 190-1.

¹ For a detailed study see Moreau, R. E., Mary Perrins and J. Trevor Hughes, 1969, 'Tongues of the Zosteropidae (White-eyes)'. *Ardea* 57 (1/2): 29-47.

WHITE-EYES

Key to the Subspecies

A	Abdomen usually with a faint yellow streak on centre... <i>Z. p. salimalii</i>	Page
B	Abdomen usually without yellow streak on centre	59
1	More yellow above, tail averaging shorter..... <i>Z. p. palpebrosa</i>	57
2	Greener above	
a	Tail averaging longer..... <i>Z. p. nilgiriensis</i>	60
b	Tail averaging shorter..... <i>Z. p. nicobarica</i>	60

1933. Indian White-eye. *Zosterops palpebrosa palpebrosa* (Temminck)

Sylvia palpebrosa Temminck, 1824, Pl. Col. d'Ois. 49, pl. 293, fig. 3 (Bengale)
Zosterops egregia Madarász, 1911, Ann. Mus. Hist.-Nat. Natl. Hung. 9: 422, pl. 16 fig. I (Kandy, Ceylon)
Zosterops palpebrosa elwesi Baker, 1922, Ibis: 144 (Sikkim)
Zosterops palpebrosa cacharensis Baker, 1922, Ibis: 144 (Gunjong, N. Cachar)
Zosterops palpebrosa occidentis Ticehurst, 1927, Bull. Brit. Orn. Cl. 47: 88 (Simla)
Zosterops palpebrosa amabilis Koelz, 1950, Amer. Mus. Novit., No. 1452: 9 (Sasan, Junagarh, Kathiawar, India)
Baker, FBI Nos. 1247 (part), 1248, 1249 and 1250, Vol. 3: 358-61
Plate 99, fig. 1

LOCAL NAMES. *Bāboonā* (Hindi); *Motichūr* (Saugor, M.P.); *Daotisha-gopu-pi* (Cachari); *Vellai kanni* (Tamil, Madras); *Kannādi kūrūvi* (Tamil, Madurai); *Pū-kūrūvi* (Tamil, Ceylon); *Māl kuullā* (Sinhala).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Above, yellow-olive; a very distinct white eye-ring; lores and a patch under eye blackish. Below, throat and under tail-coverts bright yellow; breast greyish white, belly whitish. Sexes alike.



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STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to seasonal movements. All India south of the Himalayan foothills from Kashmir through Nepal, Sikkim, Bhutan and Arunachal Pradesh, excluding western Rajasthan and the ranges of *salimalii* and *nilgiriensis*, qq.v. South to central Karnataka on the western and to the Godavari river on the eastern side of the Peninsula, extending eastward to Nagaland and Manipur, Bangladesh east to the Chittagong region. Pakistan from the Himalayan foothills (Murree) south to Karachi, but excluding most of Sind. Sri Lanka, low country and hills up to c. 1200 m in the wet districts, and to c. 1800 m in the dry portions. Laccadive Islands. Breeds more commonly in the hills especially in central India and the more southern parts of its range, but also in the better-wooded portions of the plains. In the Himalayas commonly breeds up to c. 1500 m, locally 2100 m (Kangra, Nepal; observed as high as 3000 m in May — GD), the majority moving down to the plains in winter. In the Peninsula also spreads to the plains from where it may be absent in summer. Affects forests, groves, gardens, orchards; colonizes isolated wooded compounds far out in desert country; also recorded in mangroves (Karachi).

WHITE-EYES

59

a feeble, plaintive *cheer* or *prree-u* (slightly falling) constantly uttered as the bird moves about. Other notes rendered as *tzip-tzip* and *sifststst* (Lister).

BREEDING. Season, April to September, mainly June-July. Nest, a small, fragile, loosely built cup of fine grass, rootlets, moss, lichen, cobweb and vegetable down, lined with hair, slung hammock-wise in a horizontal fork in a tuft of leaves at the end of a branch between one and six metres above the ground. Eggs, 2 to 4, generally 3, pale blue, unmarked. Average size of 48 eggs 15.2 × 11.5 mm (Baker). Building of nest apparently by female only. Incubation by both sexes, period about 10-11 days. Care of young by both parents.

MUSEUM DIAGNOSIS. Differs from *nilgiriensis* in being yellower above, and from *salimalii* in having a slightly larger bill and usually lacking a yellow streak on the centre of abdomen. Postnuptial moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	50-57	11-14	15-16	34-41 mm
♀♀	50-55	11-14		35-39 mm
			(BB, Mees, HW, SA)	

Weight 9 ♂♂ 7.5-10.1; 5 ♀♀ 7.6-10 g (GD).

COLOURS OF BARE PARTS. Iris yellowish brown. Bill black, lower mandible grey at base. Legs and feet plumbeous grey to grey-brown.

1934. Andhra White-eye. *Zosterops palpebrosa salimalii* Whistler

Zosterops palpebrosa salimalii Whistler, 1933, Jour.

Bombay nat. Hist. Society 36: 811 (Farahabad, SE. Hyderabad)
Baker, FBI No. 1247 (part), Vol. 3: 358

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1933, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to seasonal movements. Andhra Pradesh from the Godavari river south in Tamil Nadu to about the Cauvery river. Chiefly confined to the hilly country. Habitat as in 1933.

GENERAL HABITS, FOOD AND VOICE. As in 1933.

BREEDING. As in 1933.

MUSEUM DIAGNOSIS. Differs from *palpebrosa* (1933) in being yellower above and having usually a faint yellow streak on centre of belly. Bill finer than in other races; this character not apparent from length measurement alone.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	53-57	11-12	14-16	37-40 mm
♀♀	51-55	11-12		35-39 mm
			(HW, SA)	

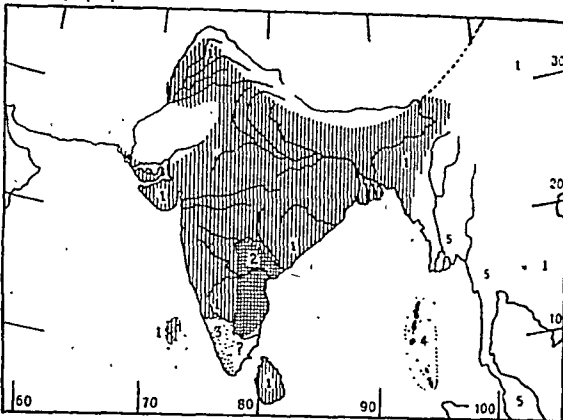
Weight 20 ♂♂ 6-11 (av. 8.6) g — SA.

COLOURS OF BARE PARTS. Iris hazel brown. Bill brownish slate, paler on lower mandible; mouth pink or yellowish pink. Legs and feet bluish grey; claws dusky.

58

ZOSTEROPIDAE

Zosterops palpebrosa



Distributional ranges

1 *palpebrosa* (1933). 2 *salimalii* (1934). 3 *nilgiriensis* (1935). 4 *nicobarica* (1936). 5 Extralimital subspecies.

Extralimital. Ranges east through northern Burma, southeastern Tibet, Szechuan, Yunnan and the Indochinese Peninsula (Mees, 1957). Other subspecies in Malaysia, the Sunda Islands and western Borneo.

GENERAL HABITS. Keeps in pairs or in parties comprising up to 50 birds or more, frequently in company with small babblers or other insectivorous species. Entirely arboreal, but comes down freely to bathe in garden runnels etc. Moves about from tree to tree keeping up a musical jingling or cheeping call and often clinging upside down to the sprigs while visiting foliage and blossoms in quest of food. Is one of our regular 'flower-birds' with specially adapted bill and tongue for nectar-eating, and largely responsible for cross-pollinating a wide variety of flowers.

FOOD. Insects, caterpillars, berries, buds, seeds and nectar. Almost invariably present on the flowers of *Bombax*, *Erythrina*, *Madhuca*, *Loranthus*, *Woodfordia*, etc. and of the introduced *Grevillea robusta* and various *Eucalyptus* spp. Partial to the exudation from the petioles of banyan leaves, and to ripe peepul figs. Reported to damage ripening orchard fruit, e.g. mangoes and guavas, by piercing holes for sucking the juice. Identified insect items include weevils (*Tanymecus hispidus* and *T. indicus*), ants (*Camponotus compressus*, *Phidole malinisi*?, *Polyrhinus simplex*) and small larvae (possibly Tineid) — Mason & Lefroy, 1912.

VOICE AND CALLS. Song, a tinkling jingle reminiscent of the Verditer Flycatcher's, beginning almost inaudibly, growing louder and soon fading out (SA). Song period in Nepal March to September (Proud). Gall-note,

60

ZOSTEROPIDAE

1935. Nilgiri White-eye. *Zosterops palpebrosa nilgiriensis* Ticehurst

Zosterops palpebrosa nilgiriensis Ticehurst, 1927, Bull. Brit. Orn. Cl. 47: 89 (Coonoor)

Zosterops palpebrosa palniensis Koelz, 1939, Proc. Biol. Soc. Washington 52: 76 (Kodaikanal, Palni Hills)

Baker, FBI No. 1247 (part), Vol. 1: 358

Plate 106, fig. 3

LOCAL NAMES. *Vellikanni* (Malayalam); *Kannādi kūrūvi* (Tamil).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1933, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to seasonal movements. The hills of southern Karnataka (Biligirirangan), Kerala (from Coorg to the Ashambu Hills) and western Tamil Nadu (Nilgiris, Palnis, etc.), from c. 350 m up to the summits. Affects evergreen sholas, cardamom plantations, scrub jungle, gardens and orchards.

GENERAL HABITS, FOOD AND VOICE. As in 1933.

BREEDING. Season, February to May. Nest and eggs, as in 1933. Clutch size usually 2.

MUSEUM DIAGNOSIS. Differs from *palpebrosa* (1933) and *salimalii* (1934) in having a longer tail, larger bill, and in being greener above.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	54-58	13-14	15-17	34-42 mm
♀♀	53-57	13-15		36-41 mm
			(Mees, HW)	

COLOURS OF BARE PARTS. Iris buffy hazel brown. Bill horny brown, grey at gape and chin. Legs and feet slaty grey; claws brown.

1936. Nicobar White-eye. *Zosterops palpebrosa nicobarica* Blyth

Zosterops nicobaricus Blyth, 1845, Jour. Asiat. Soc. Bengal 14: 563 (Nicobar Islands)

Baker, FBI No. 1251, Vol. 3: 362

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1933.

STATUS, DISTRIBUTION AND HABITAT. Common resident. Andaman and the northern Nicobar islands (not recorded from Great and Little Nicobar). Affects gardens and evergreen forest.

GENERAL HABITS, FOOD AND VOICE. As in 1933.

BREEDING. Season, February to July. Nest and eggs, as in 1933. Average size of 31 eggs 16.2 × 12.2 mm (Baker).

MUSEUM DIAGNOSIS. Differs from peninsular subspecies in being greener, less yellow, and in having a larger bill.

WHITE-EYES

61

MEASUREMENTS

	Wing	Bill (from feathers?)	Tarsus	Tail
♂♂	54-56	13-14	{ 15-16	34-36 mm
♀♀	52-56			32-35 mm (Mees)

COLOURS OF BARE PARTS. Iris bright red-brown or light reddish brown. Bill above dark horny or slaty brown. Legs and feet greenish grey or slaty green.

1937. Ceylon White-eye. *Zosterops ceylonensis* Holdsworth

Zosterops ceylonensis Holdsworth, 1872, Proc. Zool. Soc. London: 459, pl. 20, fig. 2 (Nuware Eliya)

Baker, FBI No. 1256, Vol. 3: 366

Plate 99, fig. 2

LOCAL NAMES. *Māl-kurullā* (Sinhala); *Pā-kūriri* (Tamil).

SIZE. Sparrow —; length c. 11 cm (4 in.).

FIELD CHARACTERS. Above, entirely olive with a conspicuous white 'eyering'. Below, throat and under tail-coverts yellow; belly greyish white. Sexes alike.

Distinguished from *palpebrosa* by slightly larger size, stronger bill, and by being darker olive, less yellow above. Voice stronger and deeper in tone. STATUS, DISTRIBUTION AND HABITAT. Common resident. Sri Lanka in the hills above c. 900 m, locally down to c. 450 m (in the southwest). Affects forests, tea plantations and gardens.

GENERAL HABITS. Keeps in pairs in the breeding season, otherwise in large scattered parties; appears to be more sociable than *palpebrosa* and to be more partial to bushes and undergrowth though it is found just as often in the foliage of large trees. Parties often include *palpebrosa* as well as many other small insectivorous species.

FOOD. Nectar, berries, insects, caterpillars.

VOICE AND CALLS. Call-note, a sparrow-like *cheep*. A twittering continually uttered while foraging; voice stronger and deeper in tone than that of *palpebrosa*. A jingling song, suggestive of shaking a bunch of keys repeatedly, eight or nine times (Henry).

BREEDING. Season, end of February to July with a peak in April and a renewed activity in August and September. Nest, a small deep cup suspended by the rim in a slender fork amongst the foliage of a tree or bush, generally between 2 and 4 metres above the ground; this species more often selects a lower site than *palpebrosa*. *Grevillea* shade-trees in tea plantations, and coffee bushes, are often chosen. Nest made of green moss, rootlets, fine grass and fibres, lined with rootlets. Eggs, 2 more often than 3, pale blue, without spots. Average size of 33 eggs 16.5 × 12 mm, rather longer and less broad than those of the co-existing smaller species. Building of nest and care of young by both sexes; incubation most probably also by both.

MUSEUM DIAGNOSIS. See Key to the Species and Field Characters. Postnuptial moult complete, August to October.

HOUSE AND ROCK SPARROWS

63

PASSER DOMESTICUS (Linnaeus)

Key to the Subspecies

	Page
A Darkest and largest; chestnut richer..... <i>P. d. parkini</i>	66
B Paler	
1 Bill averaging smaller..... <i>P. d. indicus</i>	63
2 Paler than (1), wing and bill averaging larger..... <i>P. d. bactrianus</i>	67

1938. Indian House Sparrow. *Passer domesticus indicus* Jardine & Selby

Passer indicus Jardine & Selby, 1835, Ill. Orn. 3, pl. 118 (India, restricted to Bangalore by Kinnear, 1925, Ibis: 751)

Pyrgita nigricollis Burton, 1838, Cat. Bds. Mus. Fort Pitt, Chatham: 23 (South India)

Passer confucius Bonaparte, 1853, Compt. Rend. Acad. Sci. Paris 37: 915 (China, error = Rangoon)

Passer enigmaticus Sarudny, 1903, Orn. Monatsb. 11: 130-31 (Hurmuk and Kamschar, Persian Baluchistan). Specimens based on intersexes vide Mayr, 1949, Ibis 91: 304-6.

Passer domesticus soror Ripley, 1946, Spolia Zeylanica 24: 241 (Nikawella State Farm, Rattota, Matale district, Ceylon)

Baker, FBI Nos. 1096 and 1097 (part), Vol. 3: 170, 172

Plate 100, fig. 2

LOCAL NAMES. *Ginjishki* (Baluchi); *Gura* (Nepali); *Gowiyā* (Hindi, Urdu); *Churi*, *Khas churi* (Hindi); *Chāklī* (Gujarati); *Charkalpe* (♂, Bhil); *Gārhied* (Chota Nagpur); *Choti chūrāi* (Bengali); *Chor chārīk*, *Chār sroee* (Assam); *Sendāng* (Manipur); *Kūriri*, *Nārāyānpākhi*, *Angnadi kūriri* (Malayalam); *Ur kūriri*, *Adakala kūriri* (Tamil); *Gē karulla* (Sinhala).

SIZE. Bulbul —; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male. Above, crown grey. Lores and round eye black. Sides of crown behind eye, sides of neck and upper back chestnut. Back rufous-chestnut with black streaks. Wing rufous with a white shoulder-patch. Rump grey-brown. Tail dark brown. Below, sides of throat white. Centre of throat and breast black. Rest of underparts greyish white. In winter the crown becomes grey-brown and the black of throat and breast fringed with whitish.



× c. 1

Female. Above, greyish brown streaked with fulvous and dark brown on back. A pale supercilium. Below, plain brownish white.

STATUS, DISTRIBUTION AND HABITAT. Very widespread and abundant resident; locally subject to vertical movements. The whole of India, Pakistan and Bangladesh [except for the range of *parkini* (Himalayas above c. 1500 m)]; Sri Lanka in all zones; introduced into the Andaman Islands (Port Blair, South Andaman). Breeds up to 3000 m (Baluchistan), 2000 m (Duala Dhar), 2100 m (Simla), 1500 m (Nepal), replaced above by *parkini* (1939);

PASSERINAE

62

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	53-60	15-16	16-19	{ 38-45 mm
♀♀	55-57			{ 38-41 mm (HW, Mees)

Weight 1 ♀ 12.6 g (SDR).

COLOURS OF BARE PARTS. Iris light brown. Bill blackish above, bluish grey below. Legs and feet plumbeous or dark greyish flesh.

Family PLOCEIDAE: Weaver Birds

For description see Baker, E. C. Stuart, 1926, FBI 3: 65-6; Van Tyne, J. & Berger, A. J., 1959: 551.

Subfamily PASSERINAE: House and Rock Sparrows

For description see Moreau, R. E., 1964, article 'Sparrow' in Thomson, A. L. (ed.), *A New Dictionary of Birds*, London and New York.

Genus PASSER Brisson

Passer Brisson, 1760, Orn. 1: 36, 3: 71.

Type, by subsequent designation, *Fringilla domestica* Linnaeus

Bill short and stout, culmen slightly curved. Both sexes exhibit a peculiar pattern ('double half hour-glass shaped rufous patch') on outer webs of primaries caused by varying width of outer webs.

Key to the Species

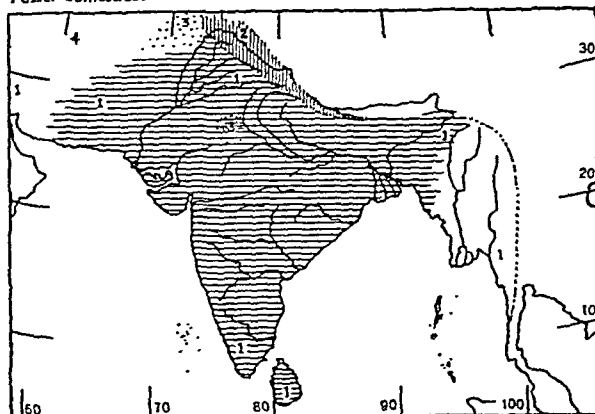
	Page
I Centre of throat black	
A Flanks streaked..... <i>P. hispaniolensis</i> ♂	68
B Flanks not streaked	
1 Crown grey	
a Black extending to breast..... <i>P. domesticus</i> ♂	63
b Black restricted to throat..... <i>P. pyrrhonotus</i> ♂	73
2 Crown not grey	
o A pale supercilium..... <i>P. moabiticus</i> ♂	77
o No supercilium	
i A dark patch on ear-coverts..... <i>P. montanus</i> ♂♀	69
ii No patch on ear-coverts..... <i>P. rutilans</i> ♂	75
II No black on throat	
C Underparts faintly streaked..... <i>P. hispaniolensis</i> ♀	68
D Underparts not streaked	
3 Underparts more or less yellow	
c Upperparts sandy brown, tertials and rectrices broadly edged with buff..... <i>P. moabiticus</i> ♀	77
d Upperparts darker brown, tertials and rectrices with only thin pale edges..... <i>P. rutilans</i> ♀	75
4 No yellow on underparts	
e Larger; wing usually over 70 mm..... <i>P. domesticus</i> ♀	63
f Smaller; wing usually under 70 mm..... <i>P. pyrrhonotus</i> ♀	73

PASSERINAE

64

in Sikkim up to c. 1300 m, replaced above by *P. montanus*; in the Nilgiris at all elevations but in the rest of southern India apparently absent or very local above c. 1000 m, even in populated areas. In the Cachar and Khasi

Passer domesticus



Distributional ranges

1 *indicus* (1938). 2 *parkini* (1939). 3 *bactrianus* (1939a). 4 *biblicus* (RE).

Hills and in the Chittagong region, absent from the hills. An unfailing commensal of man; affects cities and suburbs, villages, often even isolated homesteads, and human habitations of every description. In winter also cultivation and scrub jungle far from human dwellings.

Extralimital. Ranges from Arabia to Burma; introduced in South Africa, Zanzibar, Comoro and Mascarene islands. The species ranges from the Mediterranean region north to Lapland and east to Manchuria and the Amur region; introduced, and thriving, in most temperate parts of the world.

MIGRATION. A summer visitor (March to October) to higher elevations in Baluchistan and in the Himalayas.

HOUSE AND ROCK SPARROWS

65

GENERAL HABITS. Keeps in pairs when breeding, otherwise in noisy flocks. Usually found in or near human habitations, but in winter often collects in large flocks — sometimes mixed with migratory subspecies and of enormous 'pest' proportions — feeding in the countryside, in standing crops or in open scrub jungle. Generally gleans on the ground, hopping about stiffly, or plucks grain from the ear 'clinging to the panicles. Also feeds in fruiting trees or pilfers grain and seeds from dealers' shops in bazaars; occasionally catches termites and large insects on the wing. Birds nesting within houses frequently observed capturing moths and other insects coming to electric lights and feeding them to nestlings long after nightfall and until the lights are turned off. With increasing electrification in the country, this habit appears to be spreading; its impact on the local populations will need to be monitored. In the evenings large numbers collect to dust-bathe on roadsides and village squares etc., and roost in favourite trees to the accompaniment of a great deal of bickering and noise before settling down.

Display. A communal display has been described, consisting of three or four males courting a single female. The group suddenly bursts in from somewhere amidst noisy twitterings and drops down to the ground. The suitors prance and strut around the hen with puffed breast, drooping wings and cocked tail, she now and again making sudden feints at one or the other, sometimes plucking out a feather. See also Voice, below.

Food. Mostly grass- and weed-seeds and cereal grains. Also fruit- and flower-buds, tender shoots, kitchen scraps and insects. Nestlings are fed on soft-bodied insects, caterpillars, etc., this diet gradually replaced by a vegetarian one including flower-petals. Often does considerable damage to ripening cereal crops and in kitchen gardens and orchards, but largely compensates for this by the destruction of insect pests especially when rearing nest-young.

VOICE and CALLS. The all too familiar noisy chirruping. Breeding male has a loud monotonous song *cheer, cheer, cheer*, etc. uttered from a perch sometimes for fully ten minutes on end, as the bird fluffs out his plumage, arches his rump, droops his wings and struts arrogantly, twitching his slightly cocked tail (SA).

BREEDING. Season, chiefly March to June in the north continuing till September or October in central India; throughout the year in southern India. Nest, an untidy bulky collection (domed whenever possible) of straw, fibres, cotton strings or other rubbish, lined with feathers and placed in almost any kind of hole: hollows in buildings and masonry wells are most commonly used. Also holes in trees, earthbanks, and even cliffs (Quetta). Nests of swifts and swallows in occupied or deserted buildings often usurped and furnished to taste. Nesting has also been recorded in many other sites such as the angle behind a framed picture hung on a wall, the globes of lamps, inverted glass bell-jars in mosques, temples, etc. Will often attempt, with dogged persistence, to build in the most impossible places, especially within houses. The material drops down as soon as it is deposited on the site, and every evening a basketful of grass and rubbish may have to be swept off the floor below. But it takes the sparrow a long time to admit defeat! Occasionally builds a globular nest in the branches of trees, this.

HOUSE AND ROCK SPARROWS

67

MUSEUM DIAGNOSIS. Differs from *indicus* (1938) in being larger, with larger bill. Chestnut of male deeper, black of breast more extensive. Female darker, more smoky grey below.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	74-85	14-15	19-20	55-62 mm
♀♀	73-76	13-15		52-67 mm
				(BB, HW)

Weight 15 ♂♂ (Apr.-May, Kashmir) 24-30 (av. 26.5) g — SA.

COLOURS OF BARE PARTS. Iris brown to grey-brown. Bill: upper mandible pale brown, darker at tip; lower mandible fleshy, dusky at tip. Bill of male black from mid April. Legs and feet pale brown.

1939a. **Turkestan House Sparrow.** *Passer domesticus bactrianus* Zarudny & Kudashev¹

Passer domesticus bactrianus Zarudny & Kudashev, 1916, Nasha Okhota: 37 (Tashkent)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Bulbul — ; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1938, q.v.

STATUS, DISTRIBUTION and HABITAT. Winter visitor to Rajasthan (and presumably Pakistan).

Extralimital. Breeds from Russian Turkestan and northern Afghanistan west to the Caspian Sea.

MIGRATION. Inclusion in Indian list made possible by ringing data. Six examples recently ringed at a mixed roost in Rajasthan (Bharatpur, 27°14' N., 77°28' E.) in winter as 'parkini' were later recovered on their breeding grounds chiefly in the Tadzhik-SSR of Kazakhstan between 37°30' and 42°30' N., and 69°20' and c. 76° E., their subspecific identity confirmed as *bactrianus* by E. I. Gavrilov. Straight-line map distance between places of ringing and recovery c. 1500-2000 km (over the Karakorams).

GENERAL HABITS, FOOD and VOICE. As in 1938 and 1939. Keeps to the countryside often in vast mixed swarms with Spanish Sparrows (1940) ravaging cereal crops, and roosting communally in thorn thickets.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Differs from *parkini* in being paler. Wing averages longer than in *indicus* but shorter than in *parkini*.

Wing ♂♂ 75-81; ♀♀ 72-78 mm. Weight 46 ♂♂ 21-28; 36 ♀♀ 21-28 g (Paludan, Afghanistan).

COLOURS OF BARE PARTS. As in 1939.

¹ Some authors consider this subspecies synonymous with both *parkini* and *griseigularis*. However, *Passer [domesticus] griseigularis* Sharpe, 1888, Cat. Bds. Brit. Mus. 12: 313 (Kandahar) is currently considered unidentifiable as to subspecies.

66

PASSERINAE

being a very common occurrence in the Quetta Valley. Eggs, 3 to 6, usually 4, very pale greenish white blotched and spotted with brown and ashy grey. Average size of 120 eggs 20.6 × 14.9 mm (Baker). Building of nest by both sexes. Female does all the incubation but male may sometimes take a turn for a minute or two; incubation period 14 days. Care of young by both parents. Several successive broods are reared.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Postnuptial moult complete, no spring moult. Postjuvinal moult complete. Young males begin to breed soon after assuming adult plumage, even before their skulls are perfectly ossified (SA, JBNHS 36: 903).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	70-82	13-15	18-20	49-61 mm
♀♀	70-80	13-15	18-20	51-57 mm
				(SA, BB, HW)

Weight 3 ♂♂ 22-33; 2 ♀♀ 21, 21 g (BB).

COLOURS OF BARE PARTS. Iris brown. Bill: ♂ dark brown, black in breeding plumage; ♀ pale brown. Legs and feet brownish flesh.

1939. **Kashmir House Sparrow.** *Passer domesticus parkini* Whistler

Passer domesticus parkini Whistler, 1920, Bull. Brit. Orn. Cl. 41: 13 (Srinagar, Cashmere)
Baker, FBI No. 1098, Vol. 3: 173

LOCAL NAMES. None recorded.

SIZE. Bulbul — ; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1938, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements; also partial migrant. The Himalayas from Baltistan, Kashmir and Ladakh east to Sikkim, breeding mostly above c. 2000 m. [Population of Nepal Valley somewhat intermediate between *parkini* and *indicus* but closer to the former (BB).] In Ladakh breeds up to c. 4000 m, even 4500 m or wherever there is permanent cultivation. In winter moves to lower altitudes and to the plains as far south at least as Bahawalpur, Sind and Rajasthan. [Wintering population in the plains mixed with *bactrianus*, and subspecies often equivocal.] Affects human settlements and cultivation.

GENERAL HABITS, FOOD and VOICE. As in 1938. Keeps in large mixed flocks in winter feeding in cereal cultivation and causing considerable damage to the crops; roosting in enormous congregations among thorn thickets, swarm after swarm flying in at sunset.

BREEDING. Season, April to August in Kashmir, June to August in Ladakh. Nest, as in 1938, placed in holes in earth-cliffs in loose colonies; often high up in poplar trees (in this case bulky globular grass structures sometimes several in the same tree). Eggs, 3 to 7, normally 5 or 6, similar to those of *indicus*. Average size of 78 eggs 21.7 × 15.4 mm (Osmaston).

68

PASSERINAE

1940. **Spanish Sparrow.** *Passer hispaniolensis transcaspicus* Tschusi

Passer hispaniolensis transcaspicus Tschusi, 1902, Orn. Monatsb. 10: 96
(¹ Transcaucasia = Iolotan, Transcaspija)
Baker, FBI No. 1100, Vol. 3: 175
Plate 100, fig. 3

LOCAL NAMES. None recorded.

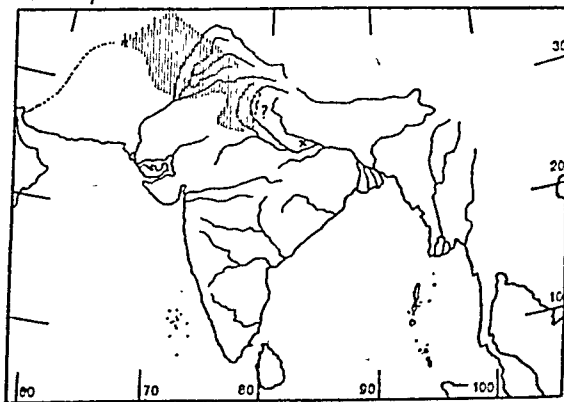
SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male. Above, crown and nape chestnut. Back black with whitish streaks. Wings pale brown. Below, cheeks white. Throat and breast black. Rest of underparts whitish streaked with dark brown on flanks. Chestnut crown and conspicuously streaked flanks distinguish the male from the House Sparrow; black of breast more extensive on sides.

Female has faint streaking on breast but not distinguishable from House Sparrow unless in the hand, and then not always with certainty.

STATUS, DISTRIBUTION and HABITAT. Winter visitor, locally abundant, and passage migrant. The plains of Punjab and Haryana from Kohat east to

Passer hispaniolensis



[] Main winter range of *transcaspicus* (1940). [X] Isolated record.

Ambala (an old record from Mirzapur, U.P.) south to northeastern Rajasthan (Bharatpur, Sambhar Lake) and Bahawalpur; rare in northern Baluchistan (Chaman, Murghab and Quetta); a straggler to Sind. Affects cultivation and semi-desert.

Extralimital. Breeds from Tien Shan and Tarim Basin west to the Caucasus and south to Afghanistan and Iran. Nominant subspecies in the Mediterranean countries.

HOUSE AND ROCK SPARROWS

69

MIGRATION. Passes through N.W.F.P. in very large flocks between August and November and from the middle of March to the middle of May. On passage often associated with *Sturnus roseus*. Rare transient in Gilgit. Six examples ringed in the winter quarters in Bharatpur (27°14'N., 77°32'E.) recovered on the breeding grounds in Kazakhstan between 42°31' and 46°49'N. and 70°31' and 79°33'E., and one bird vice versa. These data establish the provenance of at least a part of our wintering population and also that both this species and *P. d. bactrianus*, usually seen together in mixed flocks, derive from a common area in Russian Turkestan (cf. 1939a).

GENERAL HABITS. A very gregarious species usually seen in large foraging flocks and enormous roosting congregations (once estimated at a million birds or more in Bharatpur, March–April — SA); often in mixed company with migratory House Sparrows, chiefly *P. d. bactrianus* (1939a).

FOOD. Chiefly grain and seeds, also insects.

VOICE AND CALLS. Similar to those of the House Sparrow.

BREEDING. Extralimital. For details on breeding biology in Kazakhstan see Gavrilov, E. I., 1963, JBNHS 60: 301–17.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species. Bill rather hawfinch-like in profile, broad and flat-convex dorsally near forehead. Tarsus stouter than in *P. d. parkini* or *bactrianus*.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	73–87	c. 16	19–20	57–62 mm
♀♀	73–82	(one) 14		— mm

(Baker, SA, MD)

Weight. India: 100 ♂♂ (March–April) 20–28 (av. 24.9); 100 ♀♀ (March–April) 18–28 (av. 23.49) g. ♂♂ (Oct.) 29–33 g — SA. *Seistan*: ♂♂ (March–April) 23–31; ♀♀ (March–April) 27–31 g — Paludan. *Kazakhstan*: ♂♂ (April–Aug.) 28.5–29.3; ♀♀ (May–Aug.) 26.7–29.8 g — Gavrilov.

COLOURS OF BARE PARTS. Iris dark brown. Bill horny brown, yellowish below and at base (♂ black in summer). Legs and feet horny brown.

LONGEVITY. A first-year ♂ ringed Bharatpur, February 1962, recovered almost exactly 9 years later — February 1971 — in Pakistan (c. 33°N., 73°E.), presumably on northward passage and apparently perfectly hale and hearty.

PASSER MONTANUS (Linnaeus)

Key to the Subspecies

	Page
A Much paler..... <i>P. m. dilutus</i>	70
B Darker	
1 Larger on average; rump greyish brown..... <i>P. m. tibetanus</i>	72
2 Smaller	
a Paler; rump fawn-brown..... <i>P. m. malaccensis</i>	71
b Darkest; rump dark rich brown..... <i>P. m. hepaticus</i>	73

HOUSE AND ROCK SPARROWS

71

BREEDING. Season, April to August. Nest and eggs, as in 1942. Average size of 40 eggs 19.8 × 14.1 mm (Baker).

MUSEUM DIAGNOSIS. Differs from both *malaccensis* and *tibetanus* in being much paler:

MEASUREMENTS

Wing ♂♂ 78–83; tarsus 18–19; tail 50–55 mm (Baker).

COLOURS OF BARE PARTS. As in 1942.

1942. Malay Tree Sparrow. *Passer montanus malaccensis* Dubois

Passer malaccensis Dubois, 1885, Faune III. Vert. Belg., Ois. 1: 572 (Malacca)

Baker, FBI No. 1102, Vol. 3: 177

Plate 100, fig. 7

LOCAL NAMES. *Chhōti gowriyā* (Hindi); *Konchikā* (Assam); *Sendung* (Manipur).

SIZE. House Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Above, crown and nape chocolate-brown. Sides of head white with a black patch on ear-coverts. Rest of upperparts brown streaked with black on back. Below, chin and centre of throat black. Rest of underparts greyish white. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common resident. The lower Himalayas from western Nepal and probably Naini Tal¹ [where Whympere obtained nests and eggs at 2700 m (Baker, *Nidification* 3: 79)]; also C. Hudson, JBNHS 34: 825] east through Darjeeling, Sikkim and Bhutan; Assam, the Cachar, Khasi and Garo hills, and adjacent tracts of Bangladesh. Occurs up to c. 2000 m in Nepal, 2700 m in Sikkim (SA) and 1800 m in Bhutan, in the latter country intergrading with *tibetanus* at the higher levels. Affects villages and fields.

Extralimital. The Indochinese countries and Sunda Islands to Bali. Introduced in the Philippines, south Celebes, Lombok and Ambon. For range of the species see 1941.

GENERAL HABITS. Keeps in pairs in the breeding season, otherwise in flocks. Takes the place of the House Sparrow in villages and surrounding fields.

FOOD. Grain, seeds, insects and kitchen scraps.

VOICE AND CALLS. Chirping notes like House Sparrow's but more musical.

BREEDING. Season, March to August; two broods are reared. Nest, an untidy collection of straw, lined with feathers, placed under eaves, in the thatching of roofs or in holes in trees, walls or banks. Nesting in holes in walls of monasteries and dzongs in Bhutan side by side with *P. rutilans*. Eggs, 4 to 6, similar to those of the House Sparrow, with the same variations. Average size of 100 eggs 19.2 × 14.2 mm (Baker). Building of nest by both sexes. Incubation (by both?), period 13 days. Care of young by both parents.

MUSEUM DIAGNOSIS. Differs from *tibetanus* in being smaller, paler, and with a fawn-brown rump. Postnuptial and postjuvinal moults complete.

¹This record and other reports from the western Himalayas need confirmation, i.e. Chamba (Marshall, *Ibis* 1834: 419, listed without comment) and Sutlej Valley near Chini (Stoliczka, JASB 37, "only rarely seen").

70

PASSERINAE

1941. Afghan Tree Sparrow. *Passer montanus dilutus* Richmond

Passer montanus dilutus Richmond, 1896, Proc. U.S. Nat. Mus. (1895) 18: 575 (Kashgar, Eastern Turkestan)
Baker, FBI No. 1103, Vol. 3: 178

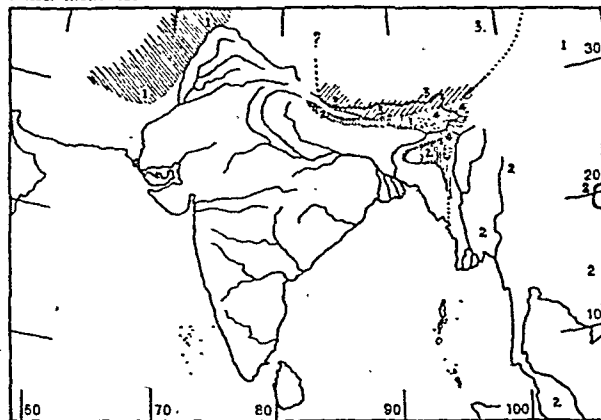
LOCAL NAMES. None recorded.

SIZE. House Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1942 but paler.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to seasonal movements. Pakistan in northern Baluchistan [Chaman and Quetta district south at least to Kalat (Ticehurst, JBNHS 31: 866) and Chagai (Christison, *Ibis* 1941: 538)] and N.W.F.P. north to Chitral, east possibly to Gilgit (Baker, *Nidification* 3: 80) and Murree hills (nest taken by Ratray *vide* Baker,

Passer montanus



Distributional ranges

- 1 *dilutus* (1941). 2 *malaccensis* (1942).
3 *tibetanus* (1943). 4 *hepaticus* (1944).

ibid. 3: 79, under *malaccensis*). Breeds between c. 450 and 2200 m. In winter reaches the Makran coast in small numbers. Population of Chaman and Quetta augmented by migrants. Affects human settlements (while the House Sparrow is here found mostly in the countryside).

Extralimital. Ranges from eastern Iran to Manchuria and China south to Szechuan and Kwangtung. The species ranges from the European Atlantic coast to the Sea of Okhotsk, Taiwan and the Sunda Islands. Has been introduced into Australia and North America (where, unlike *domesticus*, it has not spread).

GENERAL HABITS, FOOD AND VOICE. As in 1942.

72

PASSERINAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	67–76	11–14	15–19	52–57 mm
♀♀	66–74	(mostly 12–13)		50–56 mm

(BB, Rand & Fleming, SA)

Weight 2 ♂♂ 20.3, 20.5; 2 ♀♀ 20.5, 21.3 g (GD, BB). 1 ♂ (March) 20; 13 ♀♀ (March) 18–24 (av. 20.1) g — SA. May include some intergrades with *tibetanus*.

COLOURS OF BARE PARTS. Iris dark brown. Bill blackish in the breeding season, otherwise brown with yellowish on base and gape. Legs and feet fleshy brown.

1943. Tibetan Tree Sparrow. *Passer montanus tibetanus* Baker

Passer montanus tibetanus Baker, 1925, Bull. Brit. Orn. Cl. 45: 92

(Khumbajong, Tibet)

Passer montanus maximus Schäfer, 1938, Proc. Acad. Nat. Sci. Philadelphia 89: 385 (Jyekundo, southern Tsinhai)

Baker, FBI No. 1104, Vol. 3: 179

LOCAL NAME. *Kang-che* ('house bird', Tibetan).

SIZE. House Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1942, q.v.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to short seasonal movements. Tibet and the Tibetan facies of northern Nepal (Manangbhot, c. 3900 m — Lowndes, JBNHS 53: 34, as *malaccensis*), Sikkim, Bhutan and Arunachal. In Nepal its range is not contiguous with that of *malaccensis*, being separated by a humid forest zone; in eastern Nepal does not occur south of the passes (GD); in Bhutan intergrades with *malaccensis* between 1800 and 2700 m. In winter may descend the main valleys to c. 2800 m (Rand & Fleming, west-central Nepal). Affects villages and fields.

Extralimital. Ranges north to Tsinhai, Kansu and western Szechuan.

GENERAL HABITS. Collects in large flocks in autumn, roaming in barley fields, where they consume a considerable amount of grain. Generally keeps to the neighbourhood of houses and monasteries in winter, but may wander far afield in summer.

FOOD AND VOICE. As in 1942.

BREEDING. Season, April to July. Nest and eggs as in 1942. Clutch size 3 to 5. Average size of 19 eggs 20.7 × 14.7 mm (Ludlow), of 50 eggs 20.8 × 15.1 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *malaccensis* in being larger, darker, and with a greyish brown rump.

MEASUREMENTS

	Wing	Tarsus	Tail
♂♂	72–82	16–17	61–63 mm

(NBK, Baker)

COLOURS OF BARE PARTS. As in 1942.

HOUSE AND ROCK SPARROWS

73

1944. **Mishmi Tree Sparrow.** *Passer montanus hepaticus* Ripley*Passer montanus hepaticus* Ripley, 1948, Proc. Biol. Soc. Washington 61: 106

(Tezu, Mishmi Hills, NE. Assam)

Baker, FBI No. 1942 (part), Vol. 3: 177

LOCAL NAMES. None recorded.

SIZE. House Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1942, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. Arunachal foot-hills and plains of Lakhimpur and Dibrugarh south to Manipur. Affects villages and gardens.

GENERAL HABITS, FOOD and VOICE. As in 1942.

BREEDING. As in 1942.

MUSEUM DIAGNOSIS. Differs from *malaccensis* in being darker; head purplish brown, almost liver-coloured; back, rump and borders of wing-feathers dark rich brown, wing margins rather rufous; underparts with a distinct brownish wash. Differs from *tibetanus* by darker colour and smaller size.

MEASUREMENTS

Wing 68-71; tail 50-54 mm (SDR).

COLOURS OF BARE PARTS. As in 1942.

1945. **Sind Jungle Sparrow.** *Passer pyrrhonotus* Blyth*Passer pyrrhonotus* Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 946

(Buhawalpore, Scinde)

Baker, FBI No. 1099, Vol. 3: 174

Plate 100, fig. 5

LOCAL NAMES. None recorded.

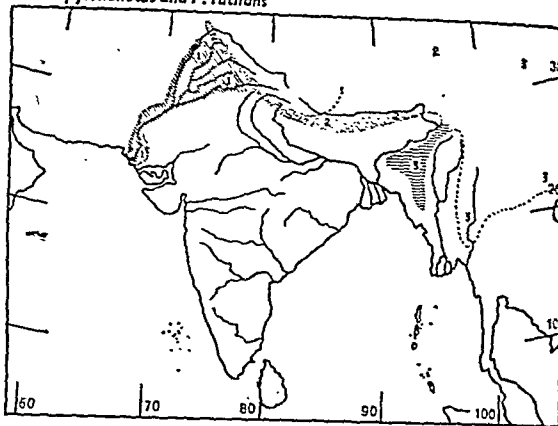
SIZE. House Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. Male, very similar to House Sparrow but smaller; black restricted to chin and throat, not extending to breast. Rest of underparts pale ashy.

Female, not distinguishable from House Sparrow.

STATUS, DISTRIBUTION and HABITAT. An endemic species. Resident, common but very locally distributed. The plains of the Indus from Nowshera (c. 34°N.), the Jhelum district, Gurdaspur, Ferozepore and Ludhiana (Whistler, JBNHS 20: 1151) south to Sadhani, Hyderabad (c. 25°N.) and the Nara canal in Sind. For details of recorded distribution up to 1925 see Whistler, *ibid.* 30: 413. Essentially a riverain sparrow: affects tamarisk and acacia jungle mixed with tall grass along rivers and around jheels and swamps; also *Capparis* and *Salsadora* bushes and jungle in semi-desert but in the neighbourhood of water.GENERAL HABITS. Usually seen in flocks of 5 to 20 birds, occasionally as part of immense foraging flocks of *Passer domesticus*. Co-exists with *P. domesticus* where human habitations lie near riverain forest and tamarisk jungle (Holmes & Wright, JBNHS 66: 27). 'Behaviour of flock reminiscent of Siskins or Redpolls, merely flying a few yards when approached, and then continuing their busy search for food' (Whistler, JBNHS 20: 1151). Feeds

PASSERINAE

Passer pyrrhonotus and *P. rutilans*

Distributional ranges

1 *P. pyrrhonotus* (1945).2 *P. r. cinnameus* (1946).3 *P. r. intensior* (1947).

on the flats along rivers; also in bushes and trees or on the flowering heads of tall grasses. Roosts in parties in thorn thickets, or tamarisk bushes standing in water.

FOOD. Chiefly grass and weed seeds (*Polygonum plebeja* particularized by T. R. Bell, MS. notes); also insects.

VOICE and CALLS. 'Voice very like House Sparrow's but much clearer and purer' (T. R. Bell). Song consists of the usual sparrow chirrups interspersed with a note, often repeated, resembling the call-note of the Pied Wagtail (A. J. Currie).

BREEDING. Season, end of February to September; apparently two broods are reared. Nest, an untidy globular mass of tamarisk twigs, grass and roots, with the entrance near the top, lined with feathers; usually placed in the tops of tamarisk trees or in dense thorny bushes or suspended from finer twigs at the end of long branches, from two to five metres above the ground. Has been observed to breed in old Baya nests (Jones, JBNHS 21: 1073). Nests in small loose colonies. Eggs, 3 or 4, similar to those of the House Sparrow. Average size of 100 eggs 17.8 × 13.1 mm (Baker). Building of nest and incubation by both sexes.

MUSEUM DIAGNOSIS. See Key to the Species. Pattern similar to that of the House Sparrow but band behind eye a redder chestnut; ear-coverts ashy grey; lower back tinged with chestnut. Black of throat narrower and does not spread out on breast. Outer webs of greater coverts and primary-coverts less rufous-chestnut. Female like a small House Sparrow but spot behind eye darker and ear-coverts more ashy. Postjuvénal moult complete.

HOUSE AND ROCK SPARROWS

75

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	67-70	11-12	16-17	49-55 mm
♀♀	63-65			48-49 mm
				(CBT, HW)

COLOURS OF BARE PARTS. Iris brown. Bill dark brown above, yellow brown below (♂ black in summer). Legs and feet brownish.

PASSER RUTILANS Temminck

Key to the Subspecies

Paler above and below; suffused with yellow in fresh plumage

..... *P. r. cinnameus*

Darker above and below; not much suffused with yellow....

..... *P. r. intensior*1946. **Himalayan Cinnamon Tree Sparrow.** *Passer rutilans cinnameus* (Gould)*Pyrgita cinnameus* Gould, 1835, Proc. Zool. Soc. London: 185

('apud montes Himalayenses', restricted to NW. Himalayas

by Ticehurst, 1927, JBNHS 32: 347)

Passer rutilans debilis Hartert, 1904, Vog. pal. Fauna 1: 162

(Sind-Tal in Kaschmir)

Passer rutilans schaeferi Stresemann, 1939, Orn. Monabb. 47: 176

(Süd-Tibet: Schigatse)

Baker, FBI No. 1106, Vol. 3: 181

Plate 100, fig. 6

LOCAL NAMES. *Lāl gowiyā* (Hindi); *Kang-che-go-ma* ('red-headed house bird', Tibetan); *Pichi* (Dalla).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male. Above, bright rufous-chestnut streaked with black on back. A broad and a narrow white wing-bar. Below, chin and centre of throat black, sides of throat pale yellow. Breast and flanks yellowish grey; centre of belly pale yellow.

Female. Above, brown streaked with dark brown on back. A conspicuous whitish supercilium and white wing-bars. Below, pale yellowish ashy.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. The Himalayas from Chitral and Kashmir (not recorded in Ladakh) east through Arunachal and southern Tibet. In the western Himalayas (Chitral to Simla) breeds between 1800 and 2400 m, in Kashmir up to 2700 m, in Kulu and Kangra down to 1200 m. In western and central Nepal (where apparently scarce) noted between 1800 and 2400 m and found breeding as low as 370 m (Fleming & Traylor, 1968). No records from the eastern half of Nepal. Status poorly known in Sikkim. In Bhutan breeds above 1800 m, and up to 4200 m in southeastern Tibet. Observed in winter between 500 and 1500 m in the western Himalayas, sometimes down in the

76

PASSERINAE

adjacent plains (Chandigarh), below c. 1000 m in Sikkim and in the plains of Jalpaiguri district (JBNHS 26: 995), in the Bhutan and Arunachal foot-hills and adjacent plains (Stevens, JBNHS 23: 264). Affects light forest of oak, rhododendron, alder, etc., terraced cultivation in the vicinity of hill villages and human habitations, taking the place of the House Sparrow where the latter does not occur. In winter also noted in grassland (Lakhimpur) and in barley fields.

Extralimital. Breeds in southern Tibet (where migratory, arriving in April) as far west as Goara, western Tibet (Stoliczka). The species ranges north to Kansu, Shensi, Korea and Sakhalin, east to Japan, Taiwan and Laos; also Kafiristan (eastern Afghanistan).

GENERAL HABITS. Usually keeps in flocks outside the breeding season. Gleans grain and grass seeds on the ground as well as plucks them from growing stalks. Is fond of perching in exposed situations such as the top branches of dead trees, telephone wires in hill-stations, etc.

FOOD. Chiefly grain and seeds; also berries and insects.

VOICE and CALLS. Call-note *chilp*... *chilp* similar to House Sparrow's but softer, more musical. Also *sree*... *sree* like an Indian Robin's notes (SA); Song *chee-cha-cha* repeated over and over (Smythies).BREEDING. Season, April to August, chiefly May and June. Double-brooded. Nest, a pad of dry grass, pine needles, etc. lined with hair and feathers, placed in holes in trees (up to 9 metres above the ground), in the thatching of huts and under the eaves of houses, often competing with and ousting tits from holes in walls of hill-station bungalows. In Bhutan nests freely in holes in outer walls of inhabited dzongs and monasteries side by side with *P. montanus*. In Tibet where trees are scarce, hollows in banks or old mud chortens, between stones in bridges or other similar situations are patronized. Eggs, usually 4, sometimes 5, generally more heavily marked than those of *P. domesticus*. Average size of 40 eggs 19.1 × 13.9 mm (BBO), of 60 eggs 18.9 × 13.9 mm (Baker). Building of nest and incubation by both sexes.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species.

Young male, like adult male but crown brown; chestnut of upperparts duller. Underparts greyish white, whiter on cheeks and belly; a dusky throat-patch. Young female, like adult female but paler above; underparts creamy white. Postjuvénal moult complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	68-82	12-14	17-21	46-56 mm
♀♀	60-78			46-53 mm
				(NDB, MD, SA)

Weight 1 ♂ (Sept.) 21 g (SDR). 1 ♂ (March) 21; 2 ♀♀ (March) 21; 21; 4 ♂♂ (Apr.-May) 17-19 g — SA.

COLOURS OF BARE PARTS. Iris brown or reddish brown. Bill black (♂), brown (winter ♂ and ♀); legs and feet fleshy brown, very pale brown or dark reddish brown.

HOUSE AND ROCK SPARROWS

77

1947. **Yunnan Cinnamon Tree Sparrow.** *Passer rutilans intensor* Rothschild*Passer rutilans intensor* Rothschild, 1922, Bull. Brit. Orn. Cl. 43: 11 (Mekong Valley)*Passer rutilans yunnanensis* La Touche, 1923, Bull. Brit. Orn. Cl. 43: 120 (Lotukow, S. Yunnan)*Passer rutilans lisarum* Stresemann, 1940, Mitt. Zool. Mus. Berlin 24: 172 (Mt Victoria)*Passer rutilans amietians* Koelz, 1952, Jour. Zool. Soc. India 4: 154 (Mawryngkneng, Khasi Hills)

Baker, FBI No. 1105 (part), Vol. 3: 180

LOCAL NAMES. *Inkurai* (Kacha Naga); *Sendang* (Manipur).

SIZE. House Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1946, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. Nagaland, Manipur and in the Cachar, Khasi and Mizo hills. Breeds from c. 1400 m upwards in Manipur, and down to the base of the hills. Affects forest, jungle, gardens and cultivation near villages.

Extralimital. Ranges east to Yunnan, northern Vietnam and Laos.

GENERAL HABITS, FOOD and VOICE. As in 1946.

BREEDING. As in 1946.

MUSEUM DIAGNOSIS. Differs from *cinnamomeus* in being darker; underparts greyer.

MEASUREMENTS. As in 1946.

Weight 1 ♂ 19.5 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill black, base of lower mandible yellowish brown. Legs and feet brown.

1947a. **Afghan Scrub Sparrow.** *Passer moabiticus yatii* Sharpe*Passer yatii* Sharpe, 1888, Cat. Bds. Brit. Mus. 12: 322 (Dedadi, Seistan, western Afghanistan)

Not in Baker, FBI

Plate 100, fig. 4

LOCAL NAMES. None recorded.

SIZE. House Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. Male. Above, crown and upper back grey. Rest of upperparts sandy brown streaked with dark brown on centre of back. A long, conspicuous whitish supercilium, buff behind eye. Ear-coverts grey. Shoulder black; a rufous-chestnut wing-patch with two buff bars. Rest of wing and tail blackish brown margined with buff. Below, chin and centre of throat black bordered by white malar streaks. A yellow patch on sides of throat. Breast and flanks very pale yellowish brown, belly pale yellow. In winter grey of crown tipped with sandy brown and black of throat tipped with white.

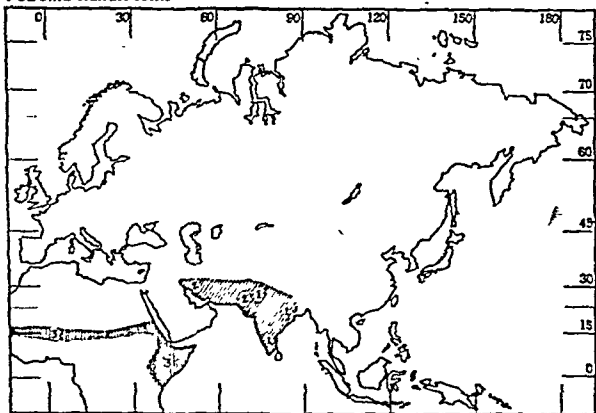
Female. Above, sandy brown streaked with darker brown on back. A whitish supercilium and two whitish wing-bars. Below, pale sandy brown with yellow throat-patch and streaked with pale yellow on belly. Female lacks rufous on wing and black on wing and throat.

HOUSE AND ROCK SPARROWS

79

FIELD CHARACTERS. As in 1949; q.v.

STATUS, DISTRIBUTION and HABITAT. Resident or short-range migrant, locally common. Pakistan and northwestern India from Kohat, Hazara, the Salt Range, Punjab and Haryana foothills up to c. 1200 m (summer visitor)

Petronia xanthocollis

Distributional ranges

1 *xanthocollis* (1949). 2 *transfuga* (1948). 3 African subspecies.

only in the preceding localities — March to October) south through central Rajasthan and Gujarat to Kutch, the plains of the Indus, and Baluchistan. Affects dry forest, scrub and cultivation; in Chagai also oases with date palms.

Extralimital. Ranges west to southern Iraq.

GENERAL HABITS, FOOD and VOICE. As in 1949.

BREEDING. Season, April to end of July. Nest and eggs, as in 1949. Average size of 26 eggs 18 × 12.6 mm (Baker).

MUSEUM DIAGNOSIS. Differs from the nominate race (1949) in being paler, more sandy, less earth-brown above.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	80-86	15-16	c. 15	47-53 mm (SA, MD)

Weight 2 ♂♂ (April) 18, 20 g (Paludan).

COLOURS OF BARE PARTS. As in 1949.

78

PASSERINAE

STATUS, DISTRIBUTION and HABITAT. Common winter visitor to central Chagai, northern Baluchistan (Christison, A. F. P., 1941; *Ibis*: 538). Affects scrub of *Prosopis*, *Rubus*, *Tamarix*, etc.

Extralimital. Breeds in eastern Iran (Seistan) and western Afghanistan. Range of species disjunct, nominate subspecies occurring in the lower Tigris delta and along the Jordan river.

GENERAL HABITS. Generally seen in small flocks, sometimes up to 50 individuals, occasionally in company with *P. domesticus* or *P. hispaniolensis*. Has been observed searching the leaves of bushes for insects.

FOOD. Seeds and insects.

VOICE and CALLS. Unrecorded.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	62-68	c. 12	c. 17	c. 50 mm
♀♀	62-64			c. 48 mm (Paludan, MD)

Weight 10 ♂♂ (March) 14-17; 6 ♀♀ (March) 14-17 g (Paludan).

COLOURS OF BARE PARTS. Unrecorded.

Genus *PETRONIA* Kaup*Petronia* Kaup, 1829, Skizz. Entwick. Nat. Syst.: 158.Type, by tautonymy, *Fringilla Petronia* Linnaeus*Cymnorhis* 'Hodgson' = Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 948.Type, by monotypy, *Fringilla xanthocollis* Burton, new name for *Fringilla flavirostris* Franklin

Bill broad at base, rather pointed. Wing long, almost reaching end of tail. Tail relatively rather short.

Key to the Species

	Page
Rectrices with white terminal spot.....	<i>P. petronia</i> 81
Rectrices without white.....	<i>P. xanthocollis</i> 78

PETRONIA XANTHOCOLLIS (Burton)

Key to the Subspecies

Darker; more grey-brown.....	<i>P. x. xanthocollis</i>
Paler; more sandy brown.....	<i>P. x. transfuga</i>

1948. **Sind Yellowthroated Sparrow.** *Petronia xanthocollis transfuga* (Hartert)*Cymnorhis flavirostris transfuga* Hartert, 1904, Vög. pal. Fauna 1: 145 (Bagu Kelat, Baluchistan)

Baker, FBI No. 1095, Vol. 3: 168

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 14 cm (5½ in.).

80

PASSERINAE

1949. **Indian Yellowthroated Sparrow.** *Petronia xanthocollis xanthocollis* (Burton)*Fringilla xanthocollis* Burton, 1838, Cat. Bds. Mus. Fort Pitt, Chatham: 23, new name for *Fringilla flavirostris* Franklin, 1831, *see F. flavirostris* Gmelin, 1789

(Ganges between Calcutta and Benares)

Baker, FBI No. 1094, Vol. 3: 166

Plate 100, fig. 9

LOCAL NAMES. *Rāji*, *Jāngli-chirāī* (Hindi); *Bān-chārāī* (Bengali); *Mahorai*, *Daideim* (Chota Nagpur); *Adari-pichike*, *Konde-pichike*, *Cheruka-pichike* (Telugu); *Marijatali* (Malayalam).

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Above, grey-brown, wings and tail darker, with a chestnut shoulder-patch and two whitish wing-bars (upper broader and more prominent). Below, pale grey-brown with a yellow throat-patch; chin and belly whitish. Tail slightly but distinctly forked. Sexes more or less alike; throat-patch in female much paler, and shoulder-patch rufous not chestnut.

STATUS, DISTRIBUTION and HABITAT. Common resident and marked local migrant.

The whole Indian Peninsula east of the range of *transfuga* (Kutch to Punjab, where intergrades are found) north to the foothills of Uttar Pradesh and Nepal, east to the eastern terai, Bihar and lower Bengal and south to Kanyakumari (Cape Comorin). A summer visitor in the Himalayan foothills, up to c. 750 m (Dehra Dun). In parts of central India (Mhow, Sehore, Gwalior, Betul) disappears during the rainy (post-breeding) season; common as a winter visitor appearing irregularly between September and November. Noted as mostly a winter visitor in Delhi, Tamil-Nadu and Coorg, and a local migrant in Karnataka, Kerala, the Deccan plateau, etc. Movements apparently governed by rain. In Kerala occurs mostly in the low country but locally up to c. 1000 m (Maraiyur); in the Nilgiris up to c. 1200 m. A rare vagrant to Sri Lanka (a flock met with in October — Legge). Affects open dry-deciduous forest and thorn jungle, groves, hedges and trees near villages and cultivation.

GENERAL HABITS. Collects in flocks after breeding, sometimes in considerable numbers ('100 +', SA), often mixed with House Sparrows or Blackheaded Buntings, roosting with them communally in thorn thickets and shrubbery. During the heat of the day flocks congregate in leafy trees and

HOUSE AND ROCK SPARROWS

81

spend the hours in noisy chattering. Flocks break up in February–March, re-forming after May–June. Feeds mostly on the ground.

FOOD. Grain (of rice and other cereals), seeds of grass and weeds, vegetable matter, lantana berries, ants, caterpillars, beetles and other insects. Among insect items specifically recorded in the stomach contents in an intensively cultivated area in Bihar are weevils (*Myliocerus discolor*, *Tanyecus hyssida*), scarab beetle (*Onthophagus spinifer*), ant (*Oecophylla smaragdina*) and Geometrid larvae (Mason & Lefroy, 1912). Also takes regularly the nectar of *Capparis*, *Salmaia*, *Erythrina*, *Bastia*, etc.; 'in quest of this the forehead becomes golden with adhering pollen and gives to the birds an unusually distinguished and intriguing appearance in the distance' (SA).

VOICE AND CALLS. Call-notes resemble those of the House Sparrow but are mellow in tone. Song, a pleasant but monotonous *chilp-chalp* uttered for long periods from a perch in vicinity of nest.

BREEDING. Season, end of February to end of May (dry season), later in the extreme north. Nest—often in a loose colony—a small pad of hair, feathers and grass placed in holes usually between one and six metres above the ground in a variety of situations: hollows and cracks in tree-trunks, old woodpecker or barbet holes, in roofs of bungalows, nest-boxes, disused street lamps, vent pipes; once under the roof of a church 15 metres high; and in disused (or dispossessed?) nest of *Hirundo daurica* (927). Site often given away by male who spends the greater part of the day sitting nearby, chattering loudly and monotonously. Eggs, 3 or 4, white generally tinted with brown or sometimes pale greenish, with smudges, smears, streaks and blotches varying from grey-brown to dark sooty brown. Average size of 100 eggs 19 × 13.9 mm (Baker). Female does all the building, the male merely accompanying her (but according to Gill, both birds assist). Incubation by female only; period undetermined. Care of young by both parents.

MUSEUM DIAGNOSIS. Differs from *transfuga* in being greyer brown, less sandy. Postnuptial moult complete; no spring moult. Postjuvinal moult complete.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	77–89	13–16	16–18	46–52 mm
♀♀	76–85			43–55 mm
				(HW, SA, Roonwal)

Weight 9 ♂♂ 15–20 (av. 18); 9 ♀♀ 14–20 (av. 18) g—SA. 5 ♂♂ (Feb.–April) 17–20; 1 ♀ (March) 18.5 g—GD, Roonwal.

COLOURS OF BARE PARTS. Iris brown. Bill: in female and non-breeding male, upper mandible pale brown, lower pinkish brown; in breeding male black. Legs and feet greyish brown or brownish flesh.

1950. Rock Sparrow. *Petronia petronia intermedia* Hartert

Petronia petronia intermedia Hartert, 1901, Novit. Zool. 8: 324

(Gilgit)

Baker, FBI No. 1109, Vol. 3: 184

Plate 100, fig. 8

LOCAL NAME. *Dnok-che* (Tibetan).

HOUSE AND ROCK SPARROWS

83

[1951. Pallas's Snow Finch. *Montifringilla nivalis alpicola* (Pallas)]

Passer alpicola Pallas, 1811, Zoogr. Rosso-Asiat. 2: 20 (Caucasus)

Plate 94, fig. 13

May occur in the Samed Koh but confirmation required. Whitehead's sight record in the Samed Koh is entered under *M. adamsi* (JBNHS 20: 790). *M. nivalis* is known to occur in Afghanistan only in the ranges of the Hindu Kush. The two species are not separable in the field. See Key to the Species.]

1952. Tibet Snow Finch. *Montifringilla adamsi adamsi* Adams

Montifringilla Adamsi Adams, 1859, Proc. Zool. Soc. London (1858),

p. 482, ex Moore ms. (Ladakh)

Baker, FBI No. 1111, Vol. 3: 187

Plate 94, fig. 12

LOCAL NAMES. *Richi-kye-shok*, *Abe je* (Tibetan).

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Above, grey-brown with darker streaks on back. Wing dark brown with large white patches on shoulder and tertials. Central rectrices dark brown, next white tipped with dark brown. Below, cream colour with a blackish throat-patch. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Fairly common resident, subject to vertical movements. Breeds in Ladakh, Spiti and Nepal (J. Martens, pers. com.) between 3600 and 4500 m., and in northern Sikkim at c. 4900 m. (Schäfer, in *Salim Ali Birds of Sikkim*: 365). Obtained in winter in Kulu and the upper Sutlej Valley. Affects high stony plateaux, boulder-strewn hillsides and scree fans, and neighbourhood of upland villages, etc.

Extralimital. Tibet north to Tsinghai and east to Szechuan.

GENERAL HABITS. Usually very wild; sometimes amazingly tame and fearless. Keeps in pairs in the breeding season, in small flocks thereafter, and in huge flocks up to 2000 or 3000 birds in winter. Feeds on the ground commonly on edges of melting snow patches, running like a lark, not hopping. Flight very undulating, more buoyant than in other snow finches.

Display. Every now and then, during the breeding season, the male (?) launches himself in the air from some hill slope and with wings upstretched like the letter V, white tail-feathers outspread like a fan, hovers for a while, and then gently descends to earth, uttering a short, plaintive little song (Ludlow, *Ibis* 1928: 67). Also displays on the ground, loosely waving extended wings and jerking outspread tail.

FOOD. Insects and seeds.

VOICE AND CALLS. Call-note a chaffinch-like *pink pink* and a soft mew (HW). Song monotonous but fairly distinctive, uttered from a rock or in display flight (see above).

BREEDING. Season, May to August, chiefly June and July. Nest, a collection of grass lined with wool, feathers, and hair (of yak, marmot, etc.) placed deep down in holes in cliffs or 'mané' walls, burrows of mouse-hares (*Ochotona*), or more frequently under a fair-sized rock. Eggs, 4, white. Average size of 21 eggs 22.9 × 16.9 mm (Osmaston). Incubation probably by both sexes. Care of young by both parents.

82

PASSERINAE

SIZE. House Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Above, pale brown streaked with darker brown. Sides of crown and a streak behind eye dark brown; a broad, pale supercilium. Tail tipped with white spots. Below, brownish white with darker streaks; a yellow patch on centre of throat. Sexes alike.



x c. 1

STATUS, DISTRIBUTION AND HABITAT. Winter visitor to Gilgit (common around c. 1500 m), N.W.F.P. (Attock, Kohat), south to Mianwali and Quetta (Baluchistan, straggler). Affects stony or rocky ground.

Extralimital. Breeds from Sinkiang west to the Caspian Sea and south to northern Afghanistan and Iran. The species extends from the Mediterranean countries to Transbaikalia and northern China.

MIGRATION. Occurs in winter quarters from the third week of November to the end of March (latest 2 April).

GENERAL HABITS. Gregarious in winter; usually met with in small flocks. Prefers stony desolate places and often feeds in stubble fields. Rather shy.

FOOD. Seeds; freshly sown wheat recorded.

VOICE AND CALLS. A harsh sparrow-like chirp.

BREEDING. Extralimital; in holes and fissures in rock scarps.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	98–104	c. 18	18–19	57–60 mm (Baker, MD)

Weight 5 ♂♂ 32–37; 4 ♀♀ 30–32 g (Paludan).

COLOURS OF BARE PARTS. Iris brown. Bill brown above, yellowish below. Legs and feet pale brownish flesh.

Genus *MONTIFRINGILLA* Brehm

Montifringilla Brehm, 1828, Isis, col. 1277.

Type, by subsequent designation (Gray, 1840), *Fringilla nivalis* Linnaeus

Wing longer than in *Petronia*. Bill longer, more slender. Tail square. Claws somewhat lengthened. Wings and tail with a large amount of white. Sexes alike.

Key to the Species

A	Throat black	Page
1	Greater wing-coverts largely white	
a	Lesser and median wing-coverts all white.....	<i>M. nivalis</i> 83
b	Lesser and median wing-coverts all brown or tipped with white.....	<i>M. adamsi</i> 83
2	Greater wing-coverts brown	
c	Forehead white with a black horn-like mark.....	<i>M. blanfordi</i> 85
d	Forehead wholly black.....	<i>M. davidiana</i> 86
B	Throat white	
3	Rump white.....	<i>M. taczanowskii</i> 84
4	Rump fulvous-brown.....	<i>M. ruficollis</i> 85

84

PASSERINAE

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species.

Young, marked as adult but chin and throat white, the feathers dusky at base. Mantle browner. Primary-coverts brown with only a little white at base. White parts of coverts and tail tinged rusty. Tertials edged rufous-brown. Postjuvinal moult complete.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	109–117	16–17	21–22	66–75 mm (HW, SA)
♀♀	106–113			

COLOURS OF BARE PARTS. Iris brown. Bill black (♂), horny brown, yellowish, at base, black at tip (♀). Legs and feet black.

1953. Mandelli's Snow Finch. *Montifringilla taczanowskii* (Przevalski)

Onychospiza Taczanowskii Przevalski, 1876, Mongol. Strana Tangut 2: 81, pl. 11

(Tetung and Kuku Nor Steppe)

Baker, FBI No. 1112, Vol. 3: 188

Plate 94, fig. 14

LOCAL NAME. *Go-pang* (Tibetan).

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Above. Forehead and supercilium whitish; lores black. Back ashy brown streaked with darker brown; rump white. Wings brown with broad ashy white outer edges and white wing-patch. Tail dark brown tipped white. Below, ashy white. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Recorded in northern Sikkim (September–October, Mandelli, SF 8: 503); a specimen from northern Sikkim (October) in Inglis's Collection (HW, MS.). Possibly also Ladakh (Ward, JBNHS 17: 458). Affects Tibetan steppe.

Extralimital. Tibet north to Tsinghai, west to Gartok on the Indus in western Tibet (Ludlow).

GENERAL HABITS. Occurs wherever the ground is riddled with holes of mouse-hare colonies (*Ochotona*) on the dry fringes of bogs etc., in whose burrows it roosts and breeds. Has a habit of bobbing and bowing when it alights.

Display flight. While the female remains on the ground the male rises steeply in the air for some 10 or 15 m on outspread fluttering wings, like a lark, then suddenly nose-dives perpendicularly with a loud swishing of the wings, alighting close to the female to resume his courtship on the ground. His body is held horizontal, neck stretched in front, throat puffed and head bowed low as he circles round her with outspread tail (Schäfer).

FOOD. Insects, probably also seeds.

VOICE AND CALLS. Call-note *duid duid*. Alarm, a nasal finch-like note (Schäfer).

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂♀	101–109	c. 14–15	c. 22	68–73 mm (Baker)

HOUSE AND ROCK SPARROWS

85

COLOURS OF BARE PARTS. Iris yellowish brown. Bill pale horn, tip darker. Legs and feet black.

1954. Rednecked Snow Finch. *Montifringilla ruficollis* Blanford

Montifringilla ruficollis Blanford, 1871, Proc. Asiat. Soc. Bengal: 227

(Lachen Valley, N. Sikkim)

Baker, FBI No. 1113, Vol. 3: 189

Plate 94, fig. 16.

LOCAL NAMES. *Abyi*, *Rib-che-kar-po* (Tibetan).

SIZE. Sparrow \pm ; length c. 15 cm (6 in.).

FIELD CHARACTERS. Above, forehead and supercilium dingy white. A dark band through eye. Back of crown, ear-coverts and sides of neck rufous. Back pale brown with darker streaks. Wings brown with a white shoulder-patch and largely white secondaries. Central rectrices dark brown, outer rectrices grey, all with a broad white subterminal band and dark brown tips. Below, throat white, sides of lower throat rufous. A dark malar streak. Rest of underparts creamy white. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Recorded in northern Sikkim in October and December at c. 4200-4800 m (Mandelli, Meinertzhagen). A sight record in October near Darjeeling (JBNHS 60: 689). Affects open gravel plains, grassy plateaux and banks of streams.

Extralimital. Tibet north to Tsinghai and Sinkiang.

GENERAL HABITS. Keeps in pairs in the breeding season, otherwise in small flocks, sometimes with other species. Lives in company with mouse-hares (*Ochotona*) feeding around the mouths of their burrows. Has a display flight rather similar to that of Mandelli's Snow Finch (1953).

FOOD. Seeds and insects.

VOICE and CALLS. Call-note *diuid* and a magpie-like alarm-note, softer than that of *M. adamsi* (Schäfer).

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	91-101	10-11	19-20	55-58 mm (Baker)

Bill from skull (one) 16 mm (MD)

COLOURS OF BARE PARTS. Iris orange-red. Bill dark bluish horny in winter, black in summer. Legs and feet black.

1955. Blanford's Snow Finch. *Montifringilla blanfordi blanfordi* Hume

Montifringilla blanfordi Hume, 1876, Stray Feathers 4: 487

(borders of Tibet to the north of native Sikkim)

Baker, FBI No. 1114, Vol. 3: 190

Plate 94, fig. 10

LOCAL NAME. *Abyi-po* (Tibetan).

SIZE. Sparrow \pm ; length c. 15 cm (6 in.).

WEAVER BIRDS, BAYAS

87

GENERAL HABITS, FOOD and VOICE. Unrecorded.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	84-85	c. 12	c. 17	c. 43 mm (Hartert)

COLOURS OF BARE PARTS. Unrecorded.

Subfamily PLOCEINAE: Weaver Birds, Bayas

For description see Moreau, R. E., 1964, Article 'Weaver'; Cain, A. J., 1964, article 'Weaver-Finch' in Thomson, A. L. (ed.), *A New Dictionary of Birds*, London and New York.

Genus PLOCEUS Cuvier

Ploceus Cuvier, 1816, Regne Anim. 1: 383.

Type, by subsequent designation, *Loxia philippina* Linnaeus

Bill thick, culmen curved, longer than depth at base. First primary (as.) large, about equal in length to tarsus. Tail short, slightly rounded, of twelve rectrices. Tarsus strong, claws rather long.

Key to the Species

Breeding Males

A	Crown yellow	Page
1	Breast yellow or fulvous, unstreaked	
a	Throat dark brown.....	<i>P. philippinus</i> 87
b	Throat yellow.....	<i>P. megarhynchos</i> 93
2	Breast blackish brown or brown with fulvous fringes.....	<i>P. benghalensis</i> 96
3	Breast fulvous streaked with black.....	<i>P. manyar</i> 98

Males in winter and Females

B	Crown brown	
4	Lower plumage pale fulvous	
c	Smaller; wing generally under 76 mm.....	<i>P. philippinus</i> 87
d	Larger; wing over 76 mm.....	<i>P. megarhynchos</i> 93
5	Breast black or fringed with fulvous.....	<i>P. benghalensis</i> 96
6	Breast fulvous streaked with black.....	<i>P. manyar</i> 98

PLOCEUS PHILIPPINUS (Linnaeus)

Key to the Subspecies

A	Breast fulvous.....	<i>P. p. burmanicus</i> 93
B	Breast yellow	
1	Darker and browner above.....	<i>P. p. tricoloratus</i> 92
2	Paler.....	<i>P. p. philippinus</i> 88

86

PASSERINAE

FIELD CHARACTERS. Above, forehead white with a black horn-like mark; lores and a line through eye black. A white supercilium. Ear-coverts white. Crown ashy white changing to rufous on nape and sides of neck. Rest of upperparts fulvous brown. Wing as in *ruficollis* but without white shoulder-patch. Central rectrices brown, outer grey at base, then white with subterminal brown band and fulvous tips. Below, throat black, sides of breast rufous. Rest of underparts creamy white. Sexes alike.

Distinguished from *ruficollis* by black markings on face, white ear-coverts, unstreaked upperparts, lack of white shoulder-patch, and black throat.

STATUS, DISTRIBUTION and HABITAT. Recorded in northern Sikkim in September, October and December at c. 4200 m (Mandelli, Meinertzhagen), and 'near Darjiling' (Cat. Bds. Brit. Mus. 12: 264). Presumably also northern Ladakh in the Karakoram Range (cf. Sillem, 1935: 462). Affects Tibetan steppe country and cultivation near villages.

Extralimital. Tibet from the northern Himalayan ranges north to Tsinghai, west to north of Karakoram Pass.

GENERAL HABITS. Keeps in pairs in the breeding season, in large flocks in winter. Associates with mouse-hares (*Ochotona*). In winter feeds with sparrows near houses.

FOOD. Seeds and insects.

VOICE and CALLS. A rapid, twittering song uttered during display flight. Other notes unrecorded.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	90-97	c. 10-11	c. 19-20	54-56 mm (Baker)

COLOURS OF BARE PARTS. Iris reddish brown. Bill blackish slaty. Legs and feet black.

1956. Pere David's Snow Finch. *Montifringilla davidiana potanini* (Sushkin)

Pyrgilauda davidiana potanini Sushkin, 1925, Proc. Boston Soc. Nat. Hist. 38: 20 (Khara-djamaty, basin of Kobdo)

Not in Baker, FBI

Plate 94, fig. 11

LOCAL NAMES. None recorded.

SIZE. Sparrow \pm ; length c. 15 cm (6 in.).

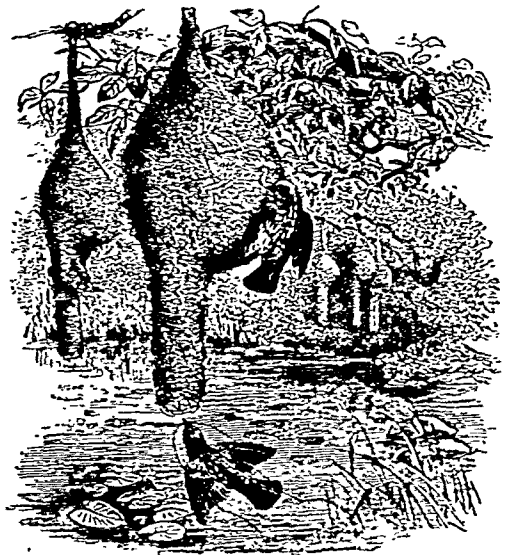
FIELD CHARACTERS. Above, forehead and lores black. Crown and back fulvous-brown with darker streaks on back. Wing brown with a white patch visible in flight. Tail dark brown with white subterminal band and black tips. Below, throat black. Rest of underparts fulvous-white. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Accidental. One record in northern Sikkim in March (Meinertzhagen, JBNHS 51: 273). Affects open desert country.

Extralimital. From northern Tibet to the Altai, Mongolia and western Manchuria.

88

PLOCEINAE

1957. Indian Baya. *Ploceus philippinus philippinus* (Linnaeus)

Loxia philippina Linnaeus, 1766, Syst. Nat., ed. 12, 1: 305 (Philippines, *error* = Ceylon)

Pl. (ocrus) baya Blyth, 1844, Jour. Asiat. Soc. Bengal 13: 945 (India)

Ploceus passerinus Reichenow, 1886, ex Hodgson, Zool. Jahrb. 1: 156 (Nepal), *see Ploceus passerinus* Gray, 1846, Cat. Bds. Mamm. Nepal: 105, synonym of *P. flavirostris* Swainson

Ploceus atrigula Sharpe, 1890, ex Hodgson, Cat. Bds. Brit. Mus. 13: 491 (Nepal)

Ploceus philippinus serripeteli Koelz, 1952, Jour. Zool. Soc. India 4: 43 (Ratnapur, Bhabanagar [*sic* = Bhavnagar], Saurashtra)

Baker, FBI No. 1008 (part), Vol. 3: 67

Plate 100, fig. 13

LOCAL NAMES. *Baya*, *Sa-chiri* (Hindi); *Bijra* (Hoashiarpur); *Saghdri* (Gujarat); *Seyem* (Chota Nagpur); *Babai* (Bengali); *Perrapa pitta* (Telugu); *Thengo-nakka* (Tamil); *Thukana-kirari*, *Manje-kirari* (Tamil in Ceylon); *Weda-kuralla*, *Tattch-kuralla*, *Goyen-kuralla* (Sinhala).

SIZE. Sparrow; length c. 15 cm (6 in.).

WEAVER BIRDS, BAYAS

89

FIELD CHARACTERS.



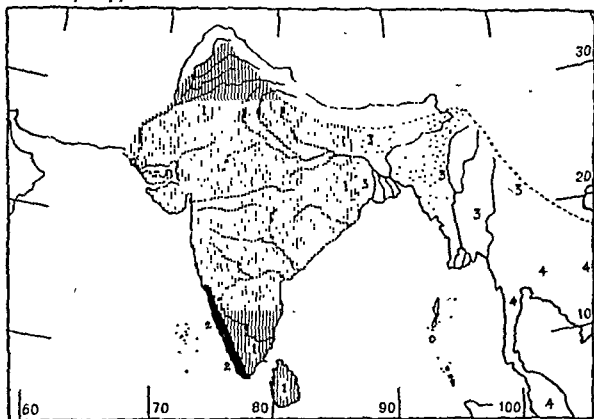
x c. 1

Male (breeding). Above, crown yellow. Rest of upperparts dark brown streaked with yellow on back. Below, throat and ear-coverts dark brown. Breast yellow. Rest of underparts cream-buff.

Female. Above, crown and back yellowish buff streaked with dark brown. Supercilium and sides of neck yellowish buff. Below, throat white, tinged with yellow. Breast yellowish buff with brown streaks on sides. Belly cream-buff.

Male (non-breeding). Similar to female but darker, more boldly streaked above; supercilium and breast very pale yellow rather than buff yellow.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to seasonal movements. Pakistan in Sind and Punjab east of the Jhelum river, and the whole of India (except for the range of *travancorensis*) east to eastern Bihar and Bengal (here intergrading with *burmanicus*); also Sri Lanka in all zones.

Ploceus philippinus

Distributional ranges

- 1 *philippinus* (1957). 2 *travancorensis* (1958).
3 *burmanicus* (1959). 4 extralimital subspecies.

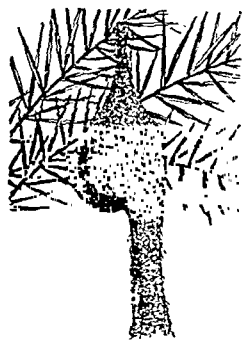
In the Himalayas up to c. 1200 m (Kangra), 1400 m (Nepal Valley). In Sri Lanka up to c. 900 m. Affects open cultivation, often near paddyfields, grassland and secondary scrub dotted with babool trees and date and palmyra palms.

MIGRATION. In the Himalayas most migrate to lower levels in winter. Noted as absent from the plains of Madhya Pradesh in the non-breeding

WEAVER BIRDS, BAYAS

91

Nests hung along telephone wires or from the palm-leaf thatching of tenanted village huts are not uncommon in some parts of the country. A colony usually contains nests in all stages of construction, from the initial attachment or 'wad' through the various half-finished 'bell' or 'helmet' stages up to complete retorts with long entrance-tubes. Old nest colonies sometimes constitute a minor fire hazard in the dry season. During a forest fire the suspensions get quickly burnt through. In a strong wind the burning nests are liable to get blown away hundreds of metres across cleared firelines etc., like incendiary balloons, and spread the conflagration to otherwise safe parts of the forest. Eggs, usually 3, less often 2 and rarely 4; white, unmarked. Average size of 100 eggs. 20.3 x 14.5 mm (Baker). Incubation by female alone; period 14 to 15 days. Feeding of chicks by female though male occasionally helps. Chicks fly in 15-17 days.



x c. 1/10

First-year females mate and breed successfully, while first-year males do not assume nuptial plumage or breed till their second year. They may build nests in their first year in sites segregated from those of the adults; often these nests are somewhat aberrant or amateurish in form. The builders sing and advertise, but the nests are never accepted by females although they may occasionally be visited and inspected by them.

Highlights of the unique breeding biology of the Baya may be summarized as follows: The male practises successive polygyny. He alone builds the nest; the female takes no part in the work except in scantily lining the egg chamber after she has accepted the nest. In the early stages of a nesting colony the females are completely absent. When some of the nests have reached the 'helmet' stage (half-built) a party of females visits the colony to prospect for suitable nests. The birds hop from one 'helmet' to another perching on the initial ring or 'chin strap', pulling a strip here and another there, obviously examining the structure critically. All the while they are engaged in the scrutiny the owner males flutter excitedly, clinging outside the nest giving their wing-beating displays and warding off competing males. Some nests are approved by females, others rejected. Those that fail to find tenants are often cut down by the builders themselves, and successful nests, even when containing eggs, often by disgruntled rivals. Once a nest is approved by her, the female softens to the owner's advances and permits, and even invites, copulation by the impetuous suitor. The act takes place on the chin strap and seals the pair bond as it were. The male thereafter hurries to complete the egg chamber and complete the nest for her occupation. As soon as she is settled on the eggs he commences to build a second nest close by. This passes through the same vicissitudes and a second female may be duly installed. The male may then proceed to build a third nest, and in rare cases maybe a fourth (once even a fifth observed). In this way a single male

90

PLOCEINAE

season; absent from Bahawalpur in winter. In northern Gujarat, Jodhpur and near Bombay it is common in the breeding season but scarce (apparently) in winter. Has straggled to Quetta in summer. Movements largely controlled by rain and the incidence of rice cultivation.

GENERAL HABITS. Highly gregarious, keeping in flocks the year round and breeding in colonies. Flocking instinct so strong that at the end of the breeding season in almost every large nest colony may be found incubated eggs or even a mummified brood of nestlings abandoned in the parents' hurry to leave the colony with the rest of the community. Gleans grass- and weed seeds on scanty grassland and fallows, and on dusty cart tracks, harvested fields, etc. hopping like sparrow. Also raids ripening crops of jowar, maize, rice and other cereals, often causing considerable damage. However, this largely mitigated by its destruction of vast quantities of insect pests especially during the period of nest feeding. Roosts in swarms in swampy reed-beds and sugarcane fields etc. in company with mynas, and other birds—in winter commonly with wagtails and swallows. During breeding season nest-building males indulge in noisy singing choruses and lively wing-beating displays, thus advertising the colonies to the females from afar.

FOOD. Chiefly grass- and weed seeds (Panicaceae), cereal grains (rice, jowar, bajra, etc.), insects [grasshoppers (Orthoptera), beetles (Coleoptera), moths (Heterocera)], caterpillars and spiders; flower-nectar (e.g. of *Salicaria*, *Erythrina*, *Capparis*, etc.) whenever available. Nestlings fed mainly on caterpillars, moths, grasshoppers, spiders and triturated tender paddy grains. (For further particulars of food and feeding habits see D. N. Mathew, 1971, Ph.D. thesis, Bombay University, in press.)

VOICE and CALLS. Alarm-notes, a sparrow-like *chit-chit-chit* varying in tempo and vehemence with the occasion. Song, in breeding season, a softer *chit chit chit* followed by a long-drawn wheezy whistle *chee-ee-ee* uttered in chorus by males working in a nest colony. A less intense version of the same also given in non-breeding season by a group of males resting in shrubbery during the midday heat. (For further details see SA and Crook in references cited below.)

BREEDING. Season, overall April to October depending mainly on the SW. and NE. monsoon rains. Building activities commence with the first monsoon showers and the peak nesting periods vary in different parts of the country; in Sri Lanka March-April and August-September. Often two broods reared. Nest, pensile, retort-shaped, with a long down-hanging entrance tube measuring between c. 40 and 65 cm in length (once 90 cm +). Composed of finely woven strips of leaves of rice, sugarcane or coarse grass (sometimes of date or coconut), unlined, or only occasionally so with a few feathers or scanty vegetable down. Blobs of mud almost invariably stuck inside the 'dome', presumably for strengthening the fabric but whose real purpose remains equivocal. Nests grouped in colonies of maybe from a half dozen to over 200 on a single tree—commonly a palm (date, palmyra, coconut or other) and trees such as sheesham (*Dalbergia*), babool (*Acacia*), kandi (*Prosopis*), karanj (*Pongamia*) and others. Nests suspended from pinnae of palm fronds or tips of plant branches usually over water—pool, tank, canal, or village well; frequently on plants growing from sides of old wells—thus often from below ground level and up to maybe over 30 metres above it.

92

PLOCEINAE

may have two or three, and sometimes four, wives and families all more or less concurrently. For fuller accounts of breeding biology, feeding habits and general behaviour see Ali, Sâlim, 1931, JBNHS 31: 247-64; 1957, *ibid.* 54: 491-502; Ali, Sâlim & Ambedkar, V. C., 1956, *ibid.* 53: 381-9; Ambedkar, V. C., 1958, *ibid.* 55: 100-106; 1964, *Some Indian Weaver Birds*, Bombay University; Crook, J. H., 1960, JBNHS 57: 1-44; 1963, *ibid.* 60: 1-48; Davis, T. A., 1966, *Indian Statistical Inst., Calcutta, Tech. Report No. Nat. 4/66*: 1-28; Phillips, W. W. A., 1948, *Ceylon Jour. Sci.* 23(3): 175-180; Mathew, D. N., 1971, Ph.D. thesis Bombay University, in press; Wood; Casey A., 1926, *The Auk* 43: 295-302.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies. Post-nuptial moult complete. A partial spring moult to breeding plumage.

MEASUREMENTS	Wing	Bill (from skull)	Tarsus	Tail
♂♂	70-77	17-20	19-22	{ 43-52 mm 41-51 mm (HW, SA, BR)
♀♀	66-74			

Weight 7 ♂♂ 21-28 (av. 24.3); 10 ♀♀ 18-25 (av. 21.3) g—SA.
COLOURS OF DARE PARTS. Iris brown. Bill in breeding male very dark horny, in others horny brown with yellow on base and underside of lower mandible. Legs and feet horny brown, paler in female; claws light horny.

MISCELLANEOUS. Bayas are popular with bird fanciers and with itinerant entertainers at country fairs etc. They readily learn to perform a variety of clever tricks such as retrieving a ring thrown into a well before it touches water, threading tiny beads with a needle, plucking and bringing back leaves from a chosen tree to their master, and picking up the correct numbered card from among several spread before them. Many of the tricks require much skill and seeming intelligence, and the birds quite obviously enjoy performing them.

1958. *Travancore Baya*. *Ploceus philippinus travancorensis* Whistler
Ploceus philippinus travancorensis Whistler, 1936, J. Bombay nat. Hist. Soc. 38: 564
(Kottayam, Travancore)
Baker, FBI No. 1003 (part), Vol. 3: 67

LOCAL NAME. *Attakkūri* (Malayalam).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1957, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to local movements. Southwestern India from about Goa (c. 16°N.) south through Kerala in the coastal low country, locally up to c. 1000 m. Affects open country in the neighbourhood of paddy cultivation.

GENERAL HABITS, FOOD and VOICE. As in 1957.

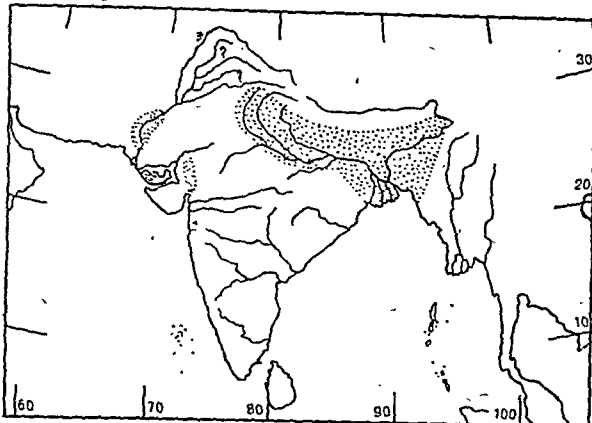
BREEDING. Season, mainly May to September during the SW. monsoon, but in some years when there is a good autumnal northeast monsoon a recrudescence of breeding activity takes place in October-November (Brett, JBNHS 50: 57). Season much prolonged in the coastal backwaters area of Kerala where breeding colonies have been found as early as February to April. Rice cultivation here is not wholly dependent on the monsoon and

Male (non-breeding), similar to female but with more blackish brown on breast.

Dark breast-band identifies the species. Females with buff breast distinguished from female Baya by brown and yellow pattern on sides of head.

STATUS, DISTRIBUTION and HABITAT. An endemic species. Resident, subject to local movements; common but locally and capriciously distributed. Pakistan and northern India from N.W.F.P. (Thal) east through Punjab, the Gangetic Plain, Bangladesh, Assam and Manipur; also Sind (Larkana, Hyderabad, Shikarpur), Kutch (vagrant), Gujarat (Deesa, Baroda and

Ploceus benghalensis



■ Distributional range

Kaira districts) and Bhandup near Bombay; one record from Bastar, south-eastern M.P. (SF 5: 418), and a winter record in the western Nepal terai (Rand & Fleming, 1957). Breeds in the duns of Uttar Pradesh and in Sikkim up to 1200 m (Baker, *Nidification* 3: 7), otherwise essentially a bird of the terai and plains. Affects reed swamps and grassy plains liable to monsoon flooding.

GENERAL HABITS. More or less as of Baya (1957) q.v. Keeps in flocks outside the breeding season.

FOOD. Seeds and insects.

VOICE and CALLS. Soft *chit-chit* calls given by birds flying into the colony. Song, a soft, barely audible *tsi tsi tsik tsik tsik* like the chirping of a cricket (or 'short, subdued squeaks as of an unrolled bicycle wheel'—SA) given during wing-beating display while male approaches female closely; also when sitting solitarily within his territory. Its function appears to be courtship rather than advertisement, although there may be some advertisement significance when the male sings by himself (Crook).

SIZE. Sparrow; length c. 15 cm (6 in.).

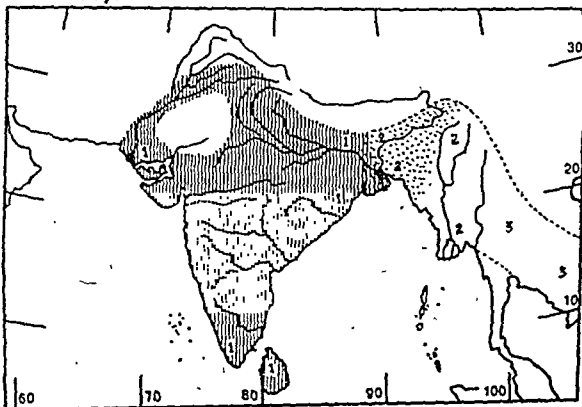
FIELD CHARACTERS. Male (breeding). Above, crown golden yellow. Sides of head dark brown. Rest of upperparts dark brown streaked with fulvous. Below, throat brown. Rest of underparts buff streaked with dark brown, especially on breast.

Female and non-breeding male. Above, dark brown with fulvous streaks. A conspicuous yellowish supercilium. Ear-coverts dark brown. A yellow patch on sides of neck. Below, throat and belly whitish. Breast and flanks buff streaked with dark brown. Confusingly like female *benghalensis*, but primrose yellow supercilium continued as a loop round brownish ear-coverts into a short collar on sides of neck usually diagnostic.

The boldly streaked breast identifies the species. Some lightly streaked non-breeding males very similar to the Baya but distinguished by yellow patch on sides of neck.

STATUS, DISTRIBUTION and HABITAT. Resident, widespread but locally distributed; common in suitable localities. Pakistan from Punjab and Sind east and south throughout the Indian Peninsula to Kerala and Sri Lanka,

Ploceus manyar



Distributional ranges

■ 1 *flavipectus* (1962).

■ 2 *peguensis* (1963).

■ 3 extralimital subspecies.

east to eastern Bihar and Bengal. Affects flat, swampy and rain-flooded land and riverbeds, especially bulrushes and reeds standing in water [while *P. benghalensis* tends to occupy grassland ('seat of thatching grass') and adjacent flooded ground].

GENERAL HABITS. Similar to those of the Baya. For details on behaviour, see Crook, J. H., JBNHS 60: 1-48.

FOOD. Grass- and weed-seeds and cereal grains (including rice), and insects.

BREEDING. Season, June to September, starting with the onset of the SW. monsoon. Nest, similar to Baya's (1957) but non-pensile, somewhat smaller, and with a shorter entrance-tube—seldom as long as 25 or 30 cm. Built in groups of twos and threes in a widely scattered colony among dense stands of grasses, especially moonj or kans (*Saccharum spontaneum*), bordering ponds,



× c. 1/10

canals, flooded ditches and borrow-pits, etc. in low-lying swampy country. Some of the growing stems are incorporated directly into the flat 'dome' or top of the structure and support it in position. At the 'helmet' stage of the construction a quantity of wet mud or cowdung (in one case human excreta—SA) is daubed thickly along the edge of the helmet—analogueous to the nape portion—into which bright-coloured scarlet or orange flowers or flower-petals (*Lantana*, *Legrostroemia*) are implanted. Observations suggest that this is part of the courtship rituals in the present species and *P. manyar* which may exercise a direct influence on the reactions of the visiting female. However, though frequent enough, this does not appear to be a universal habit.

A common form of display consists of the male alighting a few centimetres from the female on a more or less horizontal arching reed stem, bowing his head low so that his bluish bill points groundwards and his golden crown is presented at her, while he flaps his outspread wings deliberately but unhurriedly and moves closer. (For details on ecology, display, reproductive behaviour, etc., see Crook, J. H., JBNHS 60: 1-48; Ambedkar, V. C., *ibid.* 69: 268-82.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	69-75	c. 16	c. 21	38-45 mm
♀♀	65-72			(SA)

Weight 8 ♂♂ 18-22 (av. 20); 8 ♀♀ 18-21 (av. 19.5) g—SA.

COLOURS OF BARE PARTS. Iris light brown to bright hazel. Bill pearly white or pale bluish plumbeous. Legs and feet pale flesh or yellowish flesh.

PLOCEUS MANYAR (Horsfield)

Key to the Subspecies

Paler, less rufous above.....*P. m. flavipectus*

Darker, more rufous above.....*P. m. peguensis*

1962. Indian Streaked Weaver Bird. *Ploceus manyar flavipectus* Lesson

Ploceus flavipectus Lesson, 1831, *Traité d'Orn.*: 435 (Pondicherry)

Euplectes striatus Blyth, 1842, *Jour. Asiat. Soc. Bengal* 11: 873 (Sind)

Baker, FBI Nos. 1013, 1014, Vol. 3: 73, 74

Plate 100, fig. 12

LOCAL NAMES. *Titia bāyā* (U.P.); *Tit-bāyā* (Bengali); *Bāmāni bāyā* (Hindi in Deccan); *Attakkūri*, *Kiyatāta* (Malayalam); *Thūkanā kūri*, *Alenja kūri* (Tamil in Ceylon); *Wadu kurullā* (Sinhala).

VOICE and CALLS. Birds approaching the colony emit loud *chirt chirt chirt* calls continually. Displaying males call *tre tre cherr cherr* repeatedly when performing in unison with other males. Song, a soft continuous trill *see-ser-see-ser-see* (usually repeated about six times) culminating in a joyous long-drawn *o-cheeee* or *o-wheteez*. Given by males individually (not in chorus) while perched on dome of nest or nearby, with neck fully upstretched and without any wing-flapping. Of same pattern as the Baya's song but softer and more musical. A different song—a pleasant more spirited jingle *tili-tili-tili-tili*, *tili-tili-tili*... given when a female is sighted in the vicinity of his half-built nest. The working male flies excitedly from reed to reed (or over) his territory with slow deliberate (hovering) wing-flaps, legs dangling below, singing lustily in an obvious effort to entice her. If she flies off he gives chase for a few metres in the same hovering manner but soon loops back to his nest—the action reminiscent of a flycatcher's sortie after a gnat. He continues to sing upon regaining his perch to the accompaniment of vigorous wing-beating (SA).

BREEDING. Season, early July to September in the Peninsula; from February on in Kerala; February to April and June to October in Sri Lanka. Nest, a rather loosely woven structure of coarse grass strips like the Baya's, but smaller, rounder, comparatively roughly finished, and without the pensile suspension or the elongated entrance-tube (only occasionally up to 15 or 20 cm long). Attached directly to tips of several inwardly arching flags of bulrush (cat-tail) or coarse grass blades pulled in by the bird towards the 'wad' or point of suspension of the nest (something like the ribs of an open umbrella meeting at the centre) and worked into its dome and walls. Individual nests usually dispersed 2 or 3 metres apart over a wide area in small scattered colonies (c. clusters of 3 or 4 nests in *benghalensis*) among beds of



× c. 1/10

bulrushes (*Typha*) and sarpat grass (*Phragmites*) standing in water, the colonies often mixed with Blackthroated Weavers. Sometimes built at end of thin pliant branches of bushes and small trees overhanging streams or ponds. At the 'helmet' stage of the construction the interior of the nest (along the edge of the 'nape' portion, above the egg-chamber to be) is often plastered with blobs of wet mud or cowdung into which bright-coloured flowers (e.g. *Lantana*) or petals are commonly impressed; cf. Blackthroated Weaver (1961). Eggs, usually 3, sometimes 2 or 4, white. Average size of 50 eggs 20.3 × 14.3 mm (Baker). Incubation mainly by female, but male takes greater part in this chore than do others of the genus. Incubation period 14-17 days; care of young by both sexes; young fly in 17-18 days. As in the genus, male polygynous, but occasional monogyny has been observed, and also promiscuity in both sexes (SA). For other details on ecology, behaviour

AVADAVAT, MUNIAS

101

and breeding biology see Crook, J. H., JBNHS 60: 1-48; Ambedkar, V. G., *ibid.*, 69 (2): 268-82; Phillips, W. W. A., *Ceylon Jour. Sci.* 23: 178-80.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	66-72	c. 18	21-22	41-44 mm (Baker, HW)

COLOURS OF BARE PARTS. Iris brown. Bill brownish horn paler at commissures. Legs and feet brownish pink; claws dusky.

1963. **Burmese Streaked Weaver Bird.** *Ploceus manyar peguensis* Baker
Ploceus manyar peguensis Baker, 1925, *Bull. Brit. Orn. Cl.* 45: 58 (Pegu)
Baker, FBI No. 1015, Vol. 3: 75

LOCAL NAMES. *Telia baya*, *Tal chatā* (Bengali); *Bawoyi* (Rangpur),

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1962, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. Eastern Bihar and Bengal (where intergrading with *flaviceps*), east through Assam and Bangladesh. Affects reed swamps and tall grass.

Extralimital. Burma. Other subspecies in the Indochinese Peninsula, Java and Bali.

GENERAL HABITS, FOOD and VOICE. As in 1962.

BREEDING. Season, May to September. Nests, eggs and breeding biology as in 1962. Average size of 100 eggs 20.6 × 14.9 mm (Baker).

MUSEUM DIAGNOSIS. Differs from *flaviceps* (1962) in being darker, more richly coloured. Edges of feathers on upperparts more rufous. Below, more fulvous and more heavily streaked.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1962.

Subfamily ESTRILDINAE: Avadavat, Munias

For description see references under Ploceinae, p. 87.

Genus ESTRILDA Swainson

Estrilda Swainson, 1827, *Zool. Jour.* 3: 349.

Type, by original designation, *Lexia astrild* Linnaeus

Amandava Blyth, 1836, in White's *Nat. Hist. Selborne*: 44.

Type, by tautonymy, *Fringilla amandava* Linnaeus

Stictospiza Sharpe, 1890, *Cat. Bds. Brit. Mus.* 13: xii, 287.

Type, by monotypy, *Fringilla formosa* Latham

Bill moderate or short; culmen slightly curved. Wing moderately rounded. First primary (as.) minute, third and fourth longest.

Key to the Species

Upperparts olive.....*E. formosa*
Upperparts brown or red.....*E. amandava*

1964. **Red Munia or Avadavat.** *Estrilda amandava amandava* (Linnaeus)
Fringilla Amandava Linnaeus, 1758, *Syst. Nat.*, ed. 10, 1: 180 (eastern India, restricted to Calcutta, West Bengal, by Baker, 1921, JBNHS 27: 725. Whistler & Kinnear, 1933, JBNHS 36: 837, designate northern Gujarat, apparently unaware of the earlier restriction)

Baker, FBI No. 1036, Vol. 3: 96

Plate 98, fig. 9

LOCAL NAMES. *Lāl* or *Lāl mūnia* (Hindi, Bengali); *Torra-jinuweyi* (Telugu).

AVADAVAT, MUNIAS

103

FOOD. Chiefly grass seeds.

VOICE and CALLS. A series of high-pitched chirps uttered in flight (Fleming) and a 'husky squeak'. Song, a high-pitched but soft continuous twittering given by male from the tip of reed stalks; sometimes also in flight.

BREEDING. Season, in Assam mostly June to August, in northern India mostly July to October, in Pakistan mostly after the rains, September to December. Nests have also been found in May, January and February. Nest, a ball of grass with lateral entrance-hole — sometimes in the form of a short tube of flowering grasses. Lined with finer grass, floss from bulrush heads, etc. and occasionally a few feathers. Placed low down in a thorny bush often near ponds, streams and canals, occasionally in rushes standing in water. Eggs, 6 to 10, white. Average size of 100 eggs 14.4 × 11.2 mm (Baker). Building of nest by both sexes, the male often adding to the nest while the female is incubating.

MUSEUM DIAGNOSIS. See Field Characters. A complete moult to breeding plumage in May-July. Postjuvinal moult complete, about April.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	47-50	9-11	12-13	35-40 mm
♀ ♀	47-50			34-39 mm (HW, SA)

COLOURS OF BARE PARTS. Iris hazel brown or brownish orange. Bill blackish brown in very young birds, changing to reddish brown; in adults or nearly grown birds bright coral-red, blackish on culmen; mouth in immature bird pale yellow with tiny slate coloured spots. Legs and feet brownish flesh or pinkish flesh colour; claws brown.

Miscellaneous. The Avadavat is a favourite cage bird, widely exported. Its name is believed to be a corruption of Ahmedabad (now the capital of Gujarat State), whence more than 200 years ago examples were brought to the English factory in Surat (JBNHS 36: 837).

1965. **Green Munia.** *Estrilda formosa* (Latham)

Fringilla formosa Latham, 1790, *Index Orn.* 1: 441 (India)

Baker, FBI No. 1035, Vol. 3: 94

Plate 98, fig. 13

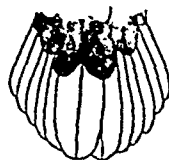
LOCAL NAMES. *Hāri lāl*, *Hāri mūnia* (Hindi); *Lili mūnia* (Gujarati).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Male. Above, olive-green. Tail blackish brown. Below, throat pale yellow; breast, centre of belly and under tail-coverts bright yellow. Flanks barred with olive-brown and white.

Female similar to male but browner above, duller and paler below, flanks with fewer and obsolete bars.

STATUS, DISTRIBUTION and HABITAT. An endemic species. Resident, very locally and unevenly distributed; on the whole rather scarce. Mainly central India from Mt Abu, Gwalior, Jhansi, Suraja south to Mahabaleswar, Utnur (Adilabad dist., Andhra)



Tail, × c. 1

102

ESTRILDINAE

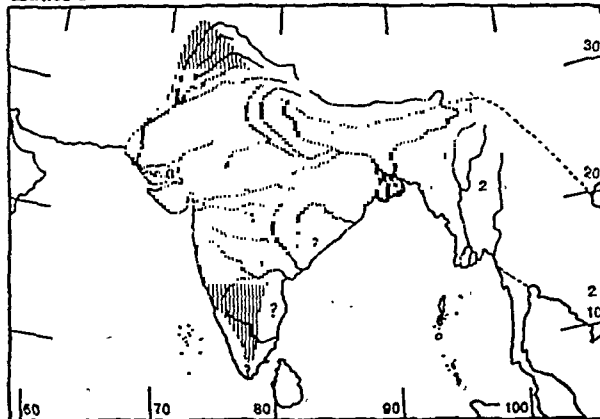
SIZE. Sparrow —; length c. 10 cm (3 in.).

FIELD CHARACTERS. Male (breeding). Above, brown to crimson. Wings dark brown with a few small white spots. Tail dark brown finely tipped with whitish. Below, crimson, flanks spotted with white; lower belly dark brown.

Female. Above, brown, a few white spots on wing. Lores black. Upper tail-coverts crimson spotted with white. Below, throat and breast greyish buff; belly saffron-yellow.

Male (non-breeding) like female but throat and breast greyer. Young male like female but belly buff.

STATUS, DISTRIBUTION and HABITAT. Resident, fairly common but locally distributed. Pakistan (Peshawar, Thal, Quetta, Karachi) eastwards throughout the Indian Peninsula, south to Madurai (Tamil Nadu) and east through Bangladesh and Assam. In Jammu and Garhwal (Dehra Dun) occurs only at the base of the hills. In Nepal found in the terai and duns (Fleming &

Estrilda amandava

Distributional ranges

1 *E. amandava* (1964). 2 Extralimital subspecies.

Traylor, 1968); in Assam up to c. 1200 m. In the hills of southern India up to 1800 m, locally to 2100 m. Has a preference for swampy grassland and sugarcane fields. Affects reeds and tall grass near marshes, jheels and canals, mixed grass and dwarf *Zizyphus* or tamarisk scrub near cultivation, etc.; in Assam also villages, gardens and cultivation.

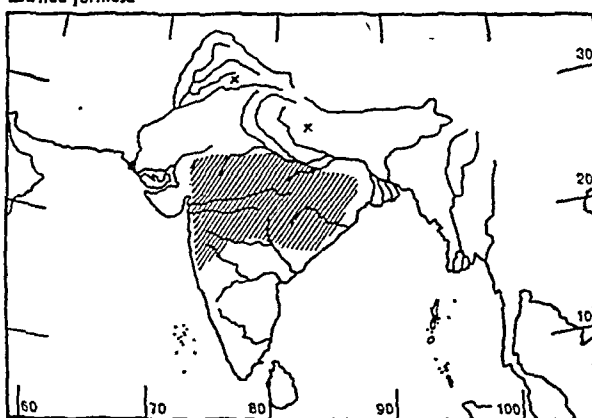
Extralimital. The species extends to Yunnan, the Indochinese countries, and the Lesser Sunda islands. Introduced in Sumatra, Singapore, Manila, Mauritius and Réunion islands.

GENERAL HABITS. Keeps in pairs or small flocks up to 30 birds, often with other munias, feeding on grass heads or on the ground and roosting communally in reed-beds and sugarcane fields.

104

ESTRILDINAE

and Vishakhapatnam Ghats. Also recorded from Lucknow (Reid, SF 10: 56) and Lahore (Currie, JBNHS 24: 566 and 594); specimens from

Estrilda formosa

1 Distributional range X Isolated pockets

'Bihar' (Hodgson) in the British Museum. Affects grass and low bushes, tall grassland, sugarcane fields, and boulder-strewn scrub jungle.

GENERAL HABITS. Feeds on the ground and flies up into grass and low bushes when disturbed. In the non-breeding season collects in closely knit flocks of up to 30 or 50 birds.

VOICE and CALLS. Keeps up a distinctive conversational *sweet sweet*... reminiscent of the squeaks of *Turdoides subrufus* (1259) only much feebler. Also feeble *cheeps* like Red Munia's (SA).

BREEDING. Season: breeding recorded in May and January. Nest, a large globular structure made exteriorly of coarse grass, lined with finer grass, and attached to sugarcane leaves. Breeds in small colonies. Eggs, 5 or 6, white. Average size of 16 eggs 17.2 × 11.9 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	46-51	10-11	13-15	34-39 mm
♀ ♀	46-50			35-39 mm (HW, SA)

COLOURS OF BARE PARTS. Iris brown. Bill red. Legs and feet slaty brown to fleshy brown.

Genus *Lonchura* Sykes

Lonchura Sykes, 1832, Proc. Zool. Soc. London: 94.

Type, by original designation, *Fringilla nisoria* Temminck = *Loxia punctulata* Linnaeus
Mania Hodgson, 1836, Asiat. Res. 19: 153..

Type, by original designation, *M. rubroniger* Hodgson = *Loxia atricapilla* Vieillot
Uroloncha Cabanis, 1851, Mus.-Hein. 1: 173, new name for *Lonchura* Sykes

Wing rather pointed. Tail short or moderate. Bill stout, swollen at base. Legs rather short, toes long.

Key to the Species

Page

- A Rump white
- 1 Throat brown *L. striata* 107
- 2 Throat buff *L. malabarica* 105
- B Rump not white
- 3 Crown black *L. malacca* 116
- 4 Crown brown
- a Centre of belly creamy white *L. punctulata* 113
- b Centre of belly spotted *L. kelaarti* 110

1966. Whitethroated Munia. *Lonchura malabarica malabarica* (Linnaeus)

Loxia malabarica Linnaeus, 1758, Syst. Nat., ed. 10, 1: 175 (India)
Baker, FBI No. 1030, Vol. 3: 89
Plate 98, fig. 17

LOCAL NAMES. *Pācāi mūnia* (Gujarati); *Chōrchārā, Chārgā, Chārakkā, Piddā* (Hindi); *Pidūri, Sar mūnia* (Bengali); *Jinucayi* (Telugu); *Vayalatta* (Malayalam); *Nellā-kūrūci* (Tamil in Ceylon); *Wee-kurullā* (Sinhala).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. A plain earthy brown thick-billed little bird with a pointed blackish tail, whitish underparts and a white rump. Above, brown. Rump white; wings and tail dark brown, the latter pointed. Below, creamy white; flanks brownish buff. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common and widespread resident. Pakistan from Chitral, Quetta and Karachi east and south throughout India to Bangladesh (Dacca); also Sri Lanka in the low-country Dry zone. In Chitral (where it is a summer visitor), in Punjab and at Mussooree occurs up to c. 1200 m; in Nepal only recorded from the eastern terai; in India restricted to the low country up to 600 m. Affects cultivation, grass-land, babool jungle, sparsely scrubbed country and light secondary jungle. Prefers drier country than other munias.

Extralimital. Ranges west to southern Arabia. Other subspecies in Africa south to Tanzania.

GENERAL HABITS. Those of the genus. Usually in flocks, up to 60 birds. Feeds on the ground, often by hedges and along cross-country cart tracks. Drinks by rapid 'sip and swallow' action at the rate of about two per second. Roosts in family parties of 5 or 6 huddled together in old nests.

size of 100 eggs 15.7 × 11.7 mm (Baker). Incubation probably by both sexes; both owners occupy the nest at night while incubating or brooding. Self-built as well as appropriated Baya nests are habitually used as dormitories when breeding is over.

MUSEUM DIAGNOSIS. See Field Characters. Young like adult but upper tail-coverts and rump mottled with brown; central rectrices not elongated.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	53-58	10-11	13-15	39-56 mm
♀♀	53-57			41-50 mm
				(HW, SA)

Weight 13 ♂ ♀ 10-14 (av. 12) g — SA.

COLORS OF BARE PARTS. Iris brownish black. Bill slaty blue or greyish black. Legs, feet and claws pale brownish or greyish pink.

Lonchura striata (Linnaeus)

Key to the Subspecies

Page

- A Abdomen streaked *L. s. acuticauda* 107
- B Abdomen not streaked
- 1 Upperparts distinctly streaked, breast without pale fringes *L. s. striata* 108
- 2 Upperparts unstreaked or very faintly so
- a Breast-feathers with pale fringes *L. s. semistriata* 110
- b Breast-feathers with only an indication of pale fringes *L. s. fumigata* 110

1967. Whitebacked Munia. *Lonchura striata acuticauda* (Hodgson)

M. (unia) acuticauda Hodgson, 1836, Asiat. Res. 19: 153 (Nepal)
Baker, FBI No. 1024, Vol. 3: 84

LOCAL NAMES. *Shākdri mūnia, Kūtis* (Hindi, Bengali); *Samprek-pho* (Lepcha); *Namprek* (Bhutanese); *Dao-muni* (Cachari).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1968 but belly greyish white, finely streaked.

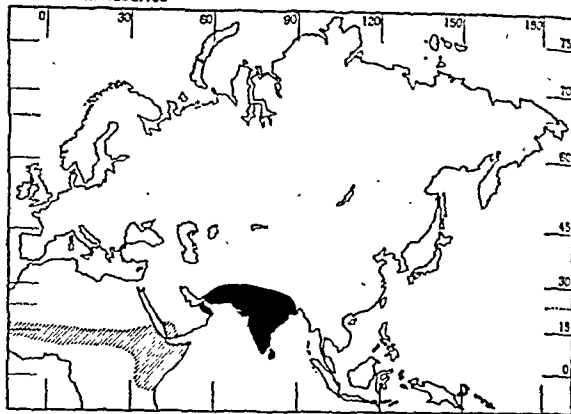
STATUS, DISTRIBUTION AND HABITAT. Resident, subject to seasonal movement; uncommon except in Assam where locally abundant. The Himalayan foothills from Garhwal east through Nepal, Sikkim, Darjeeling and Jalpaiguri districts, Bhutan, Arunachal Pradesh; Assam, Nagaland, Manipur and Bangladesh. From the base of the hills up to c. 1500 m, locally 1800 m (Sikkim); in Assam most numerous between 400 and 1000 m. A summer visitor to the Nepal Valley. Occurs to c. 1200 m in winter. Affects open country, light scrub-jungle and secondary growth.

Extralimital. Ranges east to Burma and northern Thailand. The species extends through the Indochinese countries and southern China to Taiwan, south to Sumatra.

GENERAL HABITS, FOOD AND VOICE. As in 1968.

BREEDING. Season, chiefly from mid May to end August, but eggs may be found in almost every month. Nest and eggs as in 1968. For details see *Nidification* 3: 19. Average size of 100 eggs 15.3 × 10.9 mm (Baker).

Lonchura malabarica



Distributional ranges

■ *malabarica* (1966).

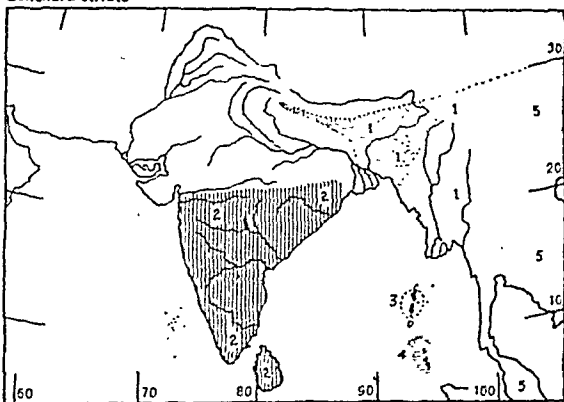
▨ Extralimital subspecies.

FOOD. Seeds of grasses such as *Pennisetum*, sorghum, *Saccharum*, sedges, etc.; also ants, beetles and other small insects. Occasionally flower-nectar (*Erythrina*) — SA.

VOICE AND CALLS. 'A twittering cheeping, a plaintive little whistle, a sharp chip and a triple chirp' (Nichols).

BREEDING. Season, chiefly July to December in Punjab, January to March in central India, September to November about Hyderabad, December to May in Kerala, December to March in Sri Lanka. Nest, an untidy ball of grass with a lateral entrance-hole distinctively fringed, like a short tube, with feathery flowering grasses. Similar to nest of Striated Munia but with fine twigs on the exterior; often lined with a variety of feathers (egret, parakeet, roller, etc.) and in cotton-growing areas with cotton wool filched from the fields. In one case many bits of newspaper were used on the outside. Nest placed in some thorny bush (*Zizyphus, Acacia, Capparis, Euphorbia*, etc.) usually about two or three metres above the ground. Nests have frequently been found within the pile of sticks forming the nest of a vulture or eagle, even an occupied one, and in the thatch of houses. Disused Baya nests are often appropriated; the birds may often be seen haunting Baya nest-colonies even while the legitimate owners are still in occupation, entering the hanging tubes as opportunity offers. Although the munias' eggs have never been found in occupied Baya nests, it has been suggested that this behaviour may show how parasitism originated among some of the African Ploceinae. On one occasion, however, munias' eggs were found in a House Sparrow's nest in addition to the sparrow's own. Eggs, 4 to 8, white; as many as 25 have been found in a single nest, the product of several females. Average

Lonchura striata



Distributional ranges

1 *acuticauda* (1967). 2 *striata* (1968). 3 *fumigata* (1969).

4 *semistriata* (1970). 5 Extralimital subspecies.

MUSEUM DIAGNOSIS. Differs from *striata* (1968) in having the belly finely streaked. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	49-55	c. 12	14-15	38-46 mm
♀♀	51-54			c. 40 mm
				(SA, BB)

Weight 1 ♂ 12 g (SDR).

COLORS OF BARE PARTS. Iris reddish brown. Bill: upper mandible black, lower bluish grey. Legs and feet dark grey.

1968. Southern Whitebacked Munia. *Lonchura striata striata* (Linnaeus)

Loxia striata Linnaeus, 1766, Syst. Nat., ed. 12, 1: 306
(Isle of Bourbon, error = Ceylon)

Lonchura striata striata Koelz, 1939, Proc. Biol. Soc. Washington 52: 73
(Jagalbéd, Bombay Presidency)
Baker, FBI No. 1021, Vol. 3: 83
Plate 98, fig. 19

LOCAL NAMES. *Attakkārāppān* (Malayalam); *Nellā kūrūci, Tinayar, Tisei-kūrūci* (Tamil in Ceylon); *Wee-kurullā* (Sinhala).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. A small brown-and-white finch with a heavy bluish conical bill and pointed tail. Above, forehead, wings and tail blackish brown.

AVADAVAT, MUNIAS

109



Tail, x c. 1

Back brown with very fine pale shaft-streaks; rump white. *Below*, throat and breast blackish brown; belly creamy white. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to local movements. The Indian Peninsula from southern Bihar (Manbhum), southern Madhya Pradesh (Seoni, Betul) and southeastern Gujarat (Surat Dangs—Sálim Ali, JBNHS 52: 794) south through Kerala and Tamil Nadu; in the low country and hills up to c. 900 m, in southern India sparingly up to 1800 m. Also Sri Lanka in the low country; the drier side of hills up to c. 1500 m. Affects

scrub and lightly wooded country about cultivation, deciduous jungle, cultivation and gardens.

GENERAL HABITS. Typical of the munias. Usually keeps in small flocks of 8 to 15 birds, when not breeding; sometimes of considerable size when they may do local damage to cereal crops. Gleans on the ground, often along roadsides and in paddy stubbles; or it methodically clammers up grass stems bending them down to the ground with its weight and plucks the seeds from the panicles. Roosts communally with Spotted Munias and weaver birds in lantana thickets, sugarcane fields, etc.

FOOD. Seeds of grass, bamboo, etc. Insects are fed to nestlings. Reported feeding on a green alga (*Spirogyra* sp.) (Pillai, JBNHS 65: 490).

VOICE and CALLS. A quiet twittering varying in pitch and modulation, given in groups. A plaintive peeping call.

BREEDING. *Season*, mostly during the rains, but nests may be found in almost every month: in Maharashtra chiefly March to November, most eggs being laid in August–September; in the south more ill-defined, July to December, but mainly after the monsoon. *Nest*, a small, roughly built ball of coarse, broad-leaved grass or bamboo leaves, lined with finer grass whose flowering heads project round the entrance-hole like a short tube; placed in a small tree, among the upper or outer twigs, between two and six metres above the ground, usually under 4 metres. *Eggs* 3 to 8, most often 5, white. Average size of 100 eggs 15.3 × 10.7 mm (Baker). Two females may lay in the same nest, and it is common to find two birds incubating together. Building by both sexes. Incubation by both sexes; period 13–14 days from laying of the last egg. Both parents feed the young, apparently largely by regurgitation. Excreta are not removed, thus the nest soon becomes foul. Both sexes use the nest for roosting from the time it is completed, and later the whole family may roost in it for some weeks.

MUSEUM DIAGNOSIS. Differs from *acuticauda* (1967) in having unstreaked, creamy white belly. Young, like adults but dark brown of throat with paler fringes, giving a scaly appearance.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	51–56	12–14	13–14	35–42 mm
♀♀	53–57			35–39 mm

(SA, HW, Koelz)

AVADAVAT, MUNIAS

111

1971, 1972. **Jerdon's Rufousbellied Munia.** *Lonchura kelaarti jerdoni* (Hume)

Munia Jerdoni Hume, 1873, *Nests and Eggs Indian Birds* 2: 448 (Wynaad)

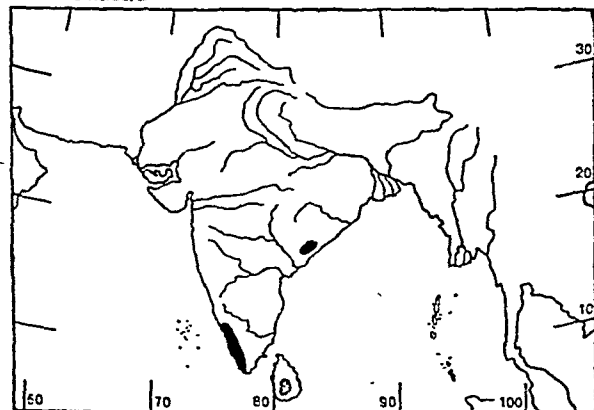
Uroloncha kelaarti cernayi Whistler & Kinnear, 1933, *Jour. Bombay nat. Hist. Soc.* 36: 835 (Sankrametta [Eastern Ghats])¹
Baker, FBI No. 1028, Vol. 3: 88
Plate 98, fig. 15

LOCAL NAME. *Tottakaran* (Malayalam).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. *Above*, forehead, wings and tail dark chocolate-brown. Back brown with pale shaft-streaks; rump dark chocolate-brown; upper tail-coverts fulvous. *Below*, cheeks, throat and breast blackish brown. Rest of underparts pinkish brown. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Fairly common resident, subject to local movements. Eastern Ghats in the Vishakhapatnam district (Andhra Pradesh). The hills of southwestern India from Coorg and southern Karnataka (Biligirirangans) south through Kerala and western Tamil Nadu

Lonchura kelaarti

Distributional ranges

Jerdoni (1971).

Kelaarti (1973).

to the Ashambu Hills. In the north possibly as far as Belgaum (SF 9: 415). Occurs from the foothills up to 2100 m. (A summer visitor at higher levels in the Nilgiris.) Affects scrub, grassland, fallow fields in forest clearings, neighbourhood of settlements and cultivation. Prefers higher and wetter country than *L. striata*; does not occur in the dry scrub zone.

¹ Described from three specimens of *jerdoni* in immature plumage.

110

ESTRILDINAE

Weight 10 ♂♀ 9.5–13 (av. 12.3) g—SA.

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible horny black, lower bluish grey; mouth pinkish grey. Legs, feet and claws slate or slaty brown.

1969. **Andaman Whitebacked Munia.** *Lonchura striata fumigata* (Walden)

Munia fumigata Walden, 1873, *Ann. Mag. Nat. Hist.* 12: 488 (South Andamans)

Baker, FBI No. 1022, Vol. 3: 83

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1968, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident on South and Middle Andamans. Affects open country, gardens and edges of forest.

GENERAL HABITS, FOOD and VOICE. As in 1968.

BREEDING. *Season*, February, June and July as recorded heretofore. *Nest* and eggs as in 1968.

MUSEUM DIAGNOSIS. Differs from *striata* (1968) in having no streaks on upper plumage and in having the throat paler with indications of pale edgings at the sides.

MEASUREMENTS

	Wing	Tarsus	Tail
♂♀	48–51	13–14	42–45 mm (Baker)

COLOURS OF BARE PARTS. As in 1968.

1970. **Nicobar Whitebacked Munia.** *Lonchura striata semistriata* (Hume)

Munia semistriata Hume, 1874, *Stray Feathers* 2: 257 (Nicobars)
Baker, FBI No. 1023, Vol. 3: 84

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1968, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident on Central Nicobars and Car Nicobar. Affects open grassland.

GENERAL HABITS, FOOD and VOICE. As in 1968.

BREEDING. Unrecorded.

MUSEUM DIAGNOSIS. Similar to *striata* (1968) but streaks on upperparts fainter and breast-feathers with pale edges. Pale-tipped feathers of breast similar to immature of Andaman race.

MEASUREMENTS

	Wing	Tarsus	Tail
♂♀	48–51	13–14	38–40 mm (Baker)

COLOURS OF BARE PARTS. As in 1968.

LONCHURA KELAARTI (Jerdon)

Key to the Subspecies

Rump spotted with white.....	<i>L. k. kelaarti</i>
Rump not spotted.....	<i>L. k. jerdoni</i>

112

ESTRILDINAE

GENERAL HABITS. Those of the genus. Frequently consorts in mixed flocks with *L. striata*.

FOOD. Mainly grass- and weed-seeds, and rice.

VOICE and CALLS. A high-pitched nasal squeak.

BREEDING. *Season*, April to August. *Nest*, indistinguishable from that of *L. striata* and built in similar situations; also placed in the eaves of thatched houses, or in recesses or large cavities in tree-trunks. *Eggs*, 6 to 8, white. Average size of 36 eggs 16 × 11.5 mm (Baker). Nests are apparently sometimes built for roosting purposes as groups of eight to ten birds have been flushed out of nests which showed no sign of having been used for breeding. For further details see 1973.

MUSEUM DIAGNOSIS. Adult summer plumage differs from *kelaarti* as follows: rump similar to back, upper tail-coverts less black, more approaching the colour of rump, the markings pinkish and nearly obsolete. Underparts below black gular patch pinkish buff with pale shaft-streaks, the markings confined to a small area on the vent; under tail-coverts with pinkish buff shaft-streaks.

Immature plumage differs from corresponding stage of *kelaarti* in that the chin and throat lack the black and white spangles and resemble the remainder of the lower plumage, which lacks the dark broken cross-barring of *kelaarti*.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	56–59	13–14	14–15	37–43 mm
♀♀	57–59			36–39 mm (HW, SA)

Weight 15 ♂♀ 9.5–17 (av. 14.1) g—SA.

COLOURS OF BARE PARTS. Iris brown. Bill dark horny brown, bluish at chin and base of lower mandible; mouth slate with pale yellow crescent and patches on palate. Legs and feet greenish plumbeous; claws horny brown.

1973. **Ceylon Hill Munia.** *Lonchura kelaarti kelaarti* (Jerdon)

M. (unia) kelaarti 'Blyth' = Jerdon ex Blyth MS., 1863, *Bds. India* 2: 356 (Ceylon)

Baker, FBI No. 1029, Vol. 3: 89
Plate 98, fig. 16

LOCAL NAMES. *Wee kūrillā* (Sinhala); *Nēlla kūrūci* (Tamil in Ceylon).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. *Above*, forehead, wings and tail blackish brown. Back brown with pale shaft-streaks. Rump dark brown with white spots. *Below*, throat and upper breast blackish brown. Sides of breast and neck pinkish fawn. Rest of underparts spangled white and dark brown. Sexes alike.

Young. *Above*, dark brown without shaft-streaks. *Below*, throat finely barred white and dark brown. Rest of underparts rufous brown spotted with buff.

STATUS, DISTRIBUTION and HABITAT. Common resident. Sri Lanka in the hills from c. 600 m to over 2100 m, occasionally down to c. 200 m in the Wet zone. Affects tea plantations, gardens, forest, and grass and lantana scrub.

GENERAL HABITS. Usually in pairs or small family parties, travelling about more than other munias, often flying at considerable heights. Often seen in company with *L. striata* or *L. punctulata*.

AVADAVAT, MUNIAS

113

FOOD. Grass- and weed-seeds and grain.

VOICE and CALLS. The call-note is the usual munia type of reedy chirp, but a funny little song of five notes is uttered at times 'audible only at short range' (Henry).

BREEDING. Season, starts in February as soon as the northeast monsoon slackens, reaches its peak in April and May; by June most young have flown. Nest-building recommences early in August after the winds and rains of the southwest monsoon have abated; peak of autumn breeding is in September. But nests have been found every month. Nest, a spherical or elliptical ball of green moss, maidenhair fern, fine grass or other material; often smaller, more compact and better finished than that of either the Spotted or the Whitebacked Munia. Placed in saplings, bushes, clumps of *Loranthus*, occasionally in large holes or recesses in trunks of dead or semi-decayed trees; generally between two and five metres above the ground, sometimes lower or as high as 18 metres. Eggs, 3 to 7, usually 5, white. Average size of 60 eggs 15.8 × 11.3 mm (Baker). Both birds build the nest, often one sits in the nest, receiving the materials and placing them in position while the other, generally the male, collects and brings them in with great rapidity. Building takes about six days. Incubation by both sexes; period 16 days from laying of last egg. Care of nestlings by both parents. Young leave nest between the 15th and 17th day after hatching; thereafter, the whole family return to the nest for several weeks to roost at night (Phillips, *Ceylon Jour. Sci.* 23: 184-6).

MUSEUM DIAGNOSIS. See Key to the Subspecies and Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	54-58	c. 14	c. 14	38-42 mm
♀♀	54-58			36-42 mm
				(SDR, HW)

Weight 1 ♂ 12 g (SDR).

COLOURS OF BARE PARTS. Adult. Iris dark brown. Bill: upper mandible black, lower dark grey, bluish grey or grey, silvery grey at base. Legs and feet dull plumbeous, dark grey or olivaceous slate. Young. Bill black; gape yellow. Legs and feet yellowish grey-brown.

LONGCHURA PUNCTULATA (Linnaeus)

Key to the Subspecies

- Under tail-coverts fulvous.....*L. p. punctulata*
Under tail-coverts almost white.....*L. p. subundulata*

1974. Indian Spotted Munia. *Longchura punctulata punctulata* (Linnaeus)

Loxia punctulata Linnaeus, 1758, Syst. Nat., ed. 10, 1: 173

(Asia = Calcutta)

M. (unia) Lineoventer Hodgson, 1836, Asiat. Res. 19: 154 (Nepal)

Baker, FBI No. 1031, Vol. 3: 91

Plate 98, fig. 14

LOCAL NAMES. *Tēliā mūniā*, *Senābāz* (Hindi); *Sinūāz* (Bihar Mirshikars); *Tiley mūniā* (Bengali); *Kakkara jinuwayi* (Telugu); *Chuttiāta* (Malayalam); *Nellu-kūrūci*, *Tūna-kūrūci* (Tamil in Ceylon); *Wes-kūrūllā* (Sinhala).

SIZE. Sparrow —; length c. 10 cm (4 in.).

AVADAVAT, MUNIAS

115

FOOD. Grass seeds, rice, lantana berries, etc.

VOICE and CALLS. Call-notes rendered as a petulant *kitty-kitty-kitty* and a short, rather husky whistle. Song, 'a remarkable performance: raising its head-feathers and standing very erect, it [the male] pours out its soul in ecstatic melody, with quivering throat and oscillating beak; but, to human ears at least, not a sound is audible!' (Henry).

BREEDING. Season, chiefly during the monsoon, May to September, beginning earlier in the south; odd nests may be found in any month. In the hills of Sri Lanka breeds in January-February until May with a peak period in March, and from July to December with a peak in October-November. In the Dry zone nesting very irregular: mostly April-May and again October to January. Several broods are reared (Phillips). Nest, globular, with a lateral entrance-hole; rather large for the size of the bird, made mostly of coarse grass and lined with finer grass and feathers. Generally placed in bushes or saplings between two and five metres above the ground; in certain areas commonly among the bases of palmyra (*Borassus*) fronds up to maybe 20 metres. Creepers growing on the trellis-work of verandas of upcountry bungalows is a favourite site. Eggs 4 to 10, usually 5 to 7 (in Sri Lanka normally 5), white. Average size of 100 eggs 16.4 × 11.6 mm (Baker). Building of nest by both sexes. Both birds incubate and roost in the nest at night; incubation period about 16 days. Care of young by both parents. For details of breeding see Phillips, 1948, *Ceylon Jour. Sci.* 23: 188-90.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies. In the cold weather most birds are in plain brown dress. Molt into speckled plumage commences about March. By July-August, when the breeding season is at its peak, the majority of adults have attained the chestnut and speckled phase. Postjuvinal molt complete.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	54-58	12-13	14-16	32-45 mm
♀♀	53-59			33-45 mm
				(BB, HW, SA, Koelz)

Weight 13 ♂♀ 12-15 (av. 13.6) g — SA. 3 ♂♂ (Sept.-Oct.) 14-14.3 g (GD, SDR).

COLOURS OF BARE PARTS. Adult. Iris orange-brown or reddish brown. Bill slaty-black; mouth slaty with prominent cream-coloured crescent on palate. Legs, feet and claws slaty. Immature. Iris brown. Bill horny brown, paler on lower mandible; gape pale yellow; mouth pale yellow with slate-coloured crescent on palate. Legs and feet bluish grey; claws dusky.

1975. Burmese Spotted Munia. *Longchura punctulata subundulata* (Godwin-Austen)

Munia subundulata Godwin-Austen, 1872, Proc. Zool. Soc. London: 48 (Munipur Valley)

Longchura punctulata catervaria Koelz, 1954, Contrib. Inst.

Regional Exploration, No. 1: 19 (Mawphlang, Khasi Hills)

Baker, FBI No. 1032, Vol. 3: 92

LOCAL NAME. *Shābz mūniā* (Bengali).

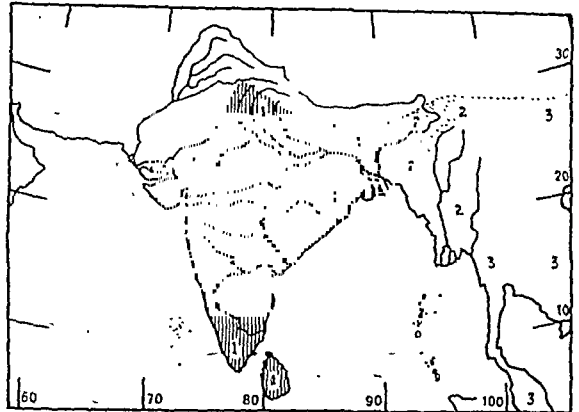
114

ESTRILDINAE

FIELD CHARACTERS. Adult (breeding). Above, chocolate-brown with faint pale shaft-streaks. Upper tail-coverts and tail tawny-olive (or golden fulvous); rump barred with white. Below, sides of head, neck and lower throat chestnut, chin and throat much darker. Breast and flanks speckled black and white; belly white. Sexes alike.

Adult (non-breeding). Plain brown above, fulvous below, unspotted.

STATUS, DISTRIBUTION and HABITAT. Common and widespread resident. The whole of India east of a line roughly Madhupur-Ludhiana-Sambar Lake-Mt Abu-southern Kathiawar (Gir, Dharmakumarsinhji, *Birds of Saurashtra*), eastwards along the lower Himalayas to Bhutan and Bangladesh (where intergrading with *subundulata*), and south to Kanyakumari and Sri

Longchura punctulata

Distributional ranges

1 *punctulata* (1974).

2 *subundulata* (1975).

3 Extralimital subspecies.

Lanka. In the Himalayas occurs generally up to c. 1800 m, occasionally higher (2400 m in Simla, 2300 m in Bhutan); common all year in Nepal Valley. In southern India does not usually ascend the hills (Sālim Ali, JBNHS 38: 508) but in the Nilgiris occurs up to c. 2100 m from June to October, leaving the higher levels in the cold weather. In Sri Lanka occurs up to c. 1500 m. Affects open country with scrub and trees, bush-clad hill-sides, secondary jungle with patches of grassland, gardens and cultivation.

GENERAL HABITS. Those of the genus. In the non-breeding season usually in flocks, sometimes up to 100 birds or more. Feeds on the ground or the stems of rice or grass; when disturbed flies up into trees or bushes uttering feeble twittering chirrups. The flocks fly in loose undulating ripples. Large congregations roost in lantana thickets, sugarcane fields, etc. in company with other munias and weaver birds.

116

ESTRILDINAE

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1974, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident. Assam and Bangladesh (intergrading with *punctulata* in western Bhutan) in the plains and hills up to c. 1800 m. Habitat as in 1974.

Extralimital. Burma. The species extends through southern China to Taiwan, the Philippines, Celebes and Sunda Islands. Introduced in Australia, Mauritius, Réunion, Seychelles, and Kauai (Hawaii).

GENERAL HABITS, FOOD and VOICE. As in 1974.

BREEDING. Season, chiefly May to September. Nest and eggs, as in 1974.

MUSEUM DIAGNOSIS. Like *punctulata* (1974) but rump more olive-grey, less barred; upper tail-coverts not so bright, more olive. Upperparts browner, not so rufous. White on underparts less pure so that scalloping is less well defined. Under tail-coverts often more mottled.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1974.

Weight 1 ♂, 2 ♀♀ 12-13 g (SDR). 1 ♂ (Nov.) 14 g — SA.

LONGCHURA MALACCA (Linnaeus)

Key to the Subspecies

	Page
A Upper belly and sides white..... <i>L. m. malacca</i>	118
B Upper belly and sides chestnut	
1 Upper tail-coverts golden yellow..... <i>L. m. atricapilla</i>	117
2 Upper tail-coverts maroon..... <i>L. m. rubroniger</i>	116

1976. Nepal Blackheaded Munia. *Longchura malacca rubroniger* (Hodgson)

M. (unia) Rubroniger Hodgson, 1836, Asiat. Res. 19: 153 (Nepal)

Baker, FBI No. 1020 (part), Vol. 3: 81

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. As in 1977, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, locally distributed. The Himalayan duns and terai, and plains of Uttar Pradesh and Bihar from about Jagadhri (c. 30°N, 77°E., Ambala dist.) east to eastern Nepal, south to Lucknow and Patna. In Nepal up to the Kathmandu Valley. Affects cultivation, tall grass and swampy ground.

GENERAL HABITS, FOOD and VOICE. As in 1978.

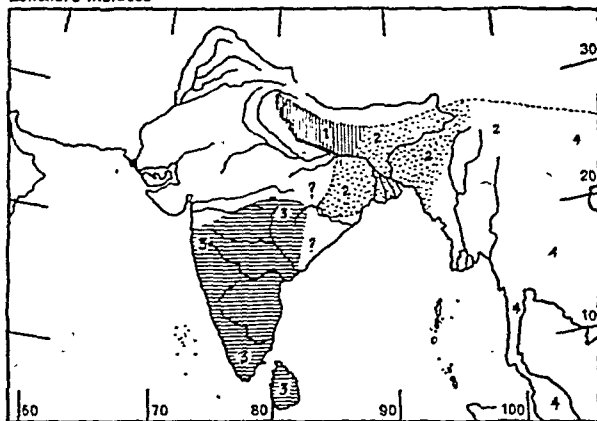
BREEDING. Season, July to September. Nest and eggs, undescribed; doubtless as in 1978.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Differs from *atricapilla* (1977) in having the upper tail-coverts and edges of rectrices rich maroon, differing little on the rump, whereas in *atricapilla* these feathers are golden yellow to orange; rectrices deep reddish brown; upperparts slightly paler. Does not differ from *atricapilla* in wing-length or colour of underparts. (Cf. Parkes, K. C., 1958, Proc. U.S. Nat. Mus. 108: 279-93.)

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1977.

AVADAVAT, MUNIAS

117

Lonchura malacca

Distributional ranges

- 1 *rubroniger* (1976). 2 *atricapilla* (1977).
3 *malacca* (1978). 4 Extralimital subspecies.

1977. Eastern Blackheaded Munia. *Lonchura malacca atricapilla* (Vieillot)

Loxia atricapilla Vieillot, 1807, Hist. nat. ois. chanteurs: 84, pl. 53
(‘Les Grandes-Indes’, restricted to Lower Bengal by Robinson & Kloss, 1924, Jour. Nat. Hist. Soc. Siam 5: 362)
Baker, FBI No. 1020 (part), Vol. 3: 81
Plate 98, fig. 11

LOCAL NAMES. *Nakalnür* (Bengali); *Ushuk* (Manipur).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Above, head black; rest of upperparts rufous-chestnut, rump darker chestnut. Below, throat and breast black. Upper belly and sides chestnut; centre of belly and under tail-coverts black. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Resident, locally common. Assam, Manipur and Bangladesh west to eastern Nepal, intergrading here with *rubroniger* (cf. Fleming & Traylor, 1964: 551 and 1968: 188), eastern and southern Bihar (Lohardaga — Ball, SF 7: 222) and northern Orissa (Sambalpur — Hume collection). Affects cultivation, swamps and grass fields.

Extralimital. Extends to northwestern Yunnan. The species ranges east through southern China to Taiwan and the Philippines, and south through Indonesia.

GENERAL HABITS, FOOD and VOICE. As in 1978.

BREEDING. Season, May to November, mostly June to September. Nest and eggs, as in 1978. Average size of 60 eggs 16.3 × 11.5 mm (Baker).

AVADAVAT, MUNIAS

119

GENERAL HABITS. Essentially a marshland-haunting munia and a frequent associate of *Ploceus manyar* in the breeding season in south India. ‘As soon as the weavers arrive and start breeding, one or two pairs of munias take to haunting each group of nests, hopping about among their larger relatives and even settling on the nests themselves. As the weavers increase in numbers so do the munias. However they do not associate with the weavers while feeding’ (Betts). In the non-breeding season keeps in flocks of up to 100 or more individuals, sometimes in company with the Spotted Munia. Feeds on the ground, flying in undulating ripples up into tree-tops when disturbed, soon descending again in twos and threes to resume feeding.

FOOD. Grass seeds and rice.

VOICE and CALLS. Flight-call a triple chirp; another note is ‘a mild plaintive little ink’ (Nichols).

BREEDING. Season, chiefly in the rains, June to September; in south India nests may be found until December and in March, April and May. In Sri Lanka, season ill-defined; in the hills mostly May and August, in the low country almost any month. Nest, a large loose ball of coarse grass or cat’s-tail leaves lined with fine grass; flowering grass-heads project in a short trumpet-like tube all round the lateral entrance. Generally built in reeds or cat’s-tails, standing in water, bushes in marshy areas, or sugarcane, within a couple of metres of the ground or water, usually rather low down. Breeds in small colonies, often with the Streaked Weaver Bird, though nests are usually scattered over a wider area (Betts). Eggs, 5 or sometimes 6, white. Average size of 50 eggs 16.3 × 11.5 mm (Baker). Building, incubation and care of young by both parents.

MUSEUM DIAGNOSIS. See Key to the Subspecies. Young has the lower parts pale buff and rest of plumage rufous-brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	55–59	13–14	c. 16	32–39 mm
♀♀	53–56			31–36 mm (HW)

Weight 13 ♂♀ 10–15 (av. 13.3) g — SA.

COLOURS OF BARE PARTS. Iris brown. Bill pale bluish grey, dusky on culmen; mouth cream-colour with slaty crescent and blotches. Legs and feet slate; claws horny brown.

Genus *PADDA* Reichenbach

Padda Reichenbach, 1850, Av. Syst. Nat., pl. 76, fig. 6.

Type, by monotypy, *Loxia erythrura* Linnaeus

Bill large, both mandibles slightly convex. Legs strong. Wing rather pointed. First primary (as.) minute. Tail rounded.

1978a. Java Sparrow. *Padda erythrura* (Linnaeus)

Loxia erythrura Linnaeus, 1758, Syst. Nat., ed. 10, 1: 173 (Java)

Not in Baker, FBI

Plate 98, fig. 18

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

118

ESTRILDINAE

MUSEUM DIAGNOSIS. Differs from *rubroniger* (1976), in having the upper tail-coverts and rump golden yellow to orange, and from *malacca* (1978) in having the upper belly and flanks chestnut (p. white).

MEASUREMENTS

Wing ♂♀ 53–59 mm (Baker).

COLOURS OF BARE PARTS. Iris dark brown. Bill pale bluish plumbeous. Legs and feet darker plumbeous.

1978. Southern Blackheaded Munia. *Lonchura malacca malacca* (Linnaeus)

Loxia malacca Linnaeus, 1766, Syst. Nat., ed. 12, 1: 302

(‘China, Java and Malacca’ errors = Belgium, restricted by Baker, 1926, Fauna Brit. India 3: 78)

Munia malacca orientalis Baker, 1925, Bull. Brit. Orn. Cl. 45: 58 (Madras)

Lonchura ferruginosa bakeri Delacour, 1943, Zoologica (New York) 28: 84. New name for *Munia malacca orientalis* Baker, 1925, preoccupied by *Lonchura malabarica orientalis* (Lorenz & Hellmayr), 1901; also by *Loxia orientalis* Forster, 1795 = *Lonchura p. punctulata* (Linnaeus)

Baker, FBI Nos. 1017 and 1018, Vol. 3: 78, 79

Plate 98, fig. 12

LOCAL NAMES. *Nakalnür*, *Tilia münia*, *Sing-báz*, *Pora münia*, *Nukroul* (Hindi); *Nalla jinacayi* (Telugu); *Attachemban* (Malayalam); *Thinai kūrūri* (Tamil, Madurai); *Nellukūrūri* (Tamil, Ceylon); *Wee-kūrūllā* (Sinhala).

SIZE. Sparrow —; length c. 10 cm (4 in.).

FIELD CHARACTERS. Above, head black. Rest of upperparts rufous-chestnut, rump darker. Below, throat, breast, centre of belly, under tail-coverts and thighs black. Rest of underparts white. Sexes alike.



× c. 1



Tail, × c. 1

STATUS, DISTRIBUTION and HABITAT. Resident; locally common, with some monsoon-dependent local movements. The Indian Peninsula from Raipur¹, Pachmarhi and Bombay (JBNHS 62: 559–60) south to Kanyakumari and Sri Lanka, in the plains and lower hills up to c. 2100 m (southern India) or 1800 m (Sri Lanka). Affects marshland, reed-beds, grass fields and neighbourhood of flooded paddy cultivation in forest clearings.

¹ No intergrades seem to be known between this subspecies and *atricapilla* which occurs as far south as Sambalpur (c. 21°30'N.) some 250 km east of Raipur (see map p. 117). Further investigation in this area would be desirable. Orniston's 1906 record at Port Blair (JBNHS 17: 160) presumably refers to escapes or introduced birds. No subsequent record from the Andamans.

FRINGILLINAE

120

FIELD CHARACTERS. An unmistakable large-billed grey bird with black crown and white cheeks. Above, crown black, sides of head white; back ashy grey; tail black. Below, upper throat black; breast ashy; belly vinaceous; under tail-coverts white. Massive pink bill. Sexes alike.

Young. Above, mouse-grey, wings and tail darker. Below, buffish, greyer on breast.

STATUS, DISTRIBUTION and HABITAT. Introduced; resident. A colony established in Colombo before 1870, still surviving (Phillips, 1966). Also found around Calcutta where a colony was recorded in 1931 (Law, S. C., 1932, JBNHS 35: 683–5). ‘Appears to be acclimatized near Madras’ (Wait, 1931). Affects paddyfields, gardens and reed-beds. Uncommon and very local. Apparently not spreading significantly.

Extralimital. Java and Bali. A favourite cage-bird introduced or escaped in many areas.

GENERAL HABITS. ‘Very recently I had under observation a colony of these munias whose favourite resort is a shrubby situation composed of two or three trees embracing each other and overhanging the paddy stacks put up in the compound of some villagers. Their feeding ground in the early morning is the surrounding paddy-fields, where flocks of considerable size will feed on fallen paddy. They feed here till about 8 o'clock when they retire to their cover and roost, returning towards afternoon’ (Law, 1932).

FOOD. Rice and other seeds.

VOICE and CALLS. Utters constant chirrups.

BREEDING. Not described in our territory. In Java nests under roofs of buildings or high up in trees or palms. Eggs white.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	66–69	17–18	18–19	46–47 mm (Law)

COLOURS OF BARE PARTS. Male, adult: Iris reddish; orbital skin pink. Bill wine-red at base, pinkish white at tip. Legs and feet pinkish flesh. Young male: Iris brownish grey; orbital skin greyish pink. Bill fleshy pink washed with dusky. Legs and feet greyish flesh.

Family FRINGILLIDAE: Finches

For description see Van Tyne, A. J. & Berger, A. J., 1959: 552; Thomson, A. L. (ed.), 1964, *A New Dictionary of Birds*, London and New York (article ‘Fringillidae’).

Subfamily FRINGILLINAE: Chaffinches

Cf. Tordoff, H. B., 1954. Misc. Pub. Mus. Zool. Michigan, No. 81: 7–39 (Anatomical study of finches).

Mayr, E., Andrew, R. J., & Hinde, R. A., 1956. Jour. f. Orn. 97: 258–73 (Position of *Fringilla* and *Carduelinae* in Fringillidae).

For description see Vaurie, Charles, 1964: article ‘Finch’ in Thomson, A. L. (ed.), *A New Dictionary of Birds*, London and New York.

Genus FRINGILLA Linnaeus

Fringilla Linnaeus, 1758, Syst. Nat., ed. 10, 1: 179. Type, by tautonymy, '*Fringilla*' = *Fringilla coelebs* Linnaeus

Bill long and straight, fairly stout. Tail slightly forked. Wings long, second and third primaries (as.) longest.

Key to the Species

Rump greenish..... *F. coelebs*
Rump white..... *F. montifringilla*

1979. Chaffinch. *Fringilla coelebs coelebs* Linnaeus

Fringilla coelebs Linnaeus, 1758, Syst. Nat., ed. 10, 1: 179

(Europa = Sweden)

Baker, FBI No. 1092, Vol. 3: 163

Plate 101, fig. 1

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male. Above, forehead black; crown and nape blue-grey. Back brown; rump greenish. Tail blackish with white outer rectrices. Two broad white wing-bars. Below, pinkish brown. Male in winter is duller above, grey of crown obscured by brown margins to the feathers. Female. Above, brown. Two broad white wing-bars. Sides of head to breast pale brown grading to whitish on belly.

Easily distinguished from Brambling (1980), in somewhat similar winter plumage, by greenish rump (v. white).

STATUS, DISTRIBUTION AND HABITAT. Occasional winter visitor in extreme northwestern Pakistan from November to March: Kohat (Whitehead, *Ibis* 1909: 231 and JBNHS 18: 190) and Gilgit, 1500 m (Mountfort, 1971, *Ibis*: 109). Also observed in adjacent parts of Afghanistan (JBNHS 42: 439). Affects orchards.

Extralimital. Ranges from western Siberia (c. 85°E.) to western Europe with subspecies in Atlantic and Mediterranean islands, northwestern Africa, northern Iran and Transcaisia. Partly migratory.

GENERAL HABITS. In winter usually seen in flocks, sometimes in company with other finches or buntings. Feeds on the ground in the vicinity of trees. FOOD. In winter chiefly seeds.

VOICE AND CALLS. Call-note often uttered in flight, *yup*.

MUSEUM DIAGNOSIS. See Field Characters. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
7 ♂♂	87-92	13-14	17-19	63-68 mm (Witherby)

COLOURS OF BARE PARTS. Iris hazel. Bill fleshy brown or fleshy grey to slaty blue. Legs and feet fleshy brown, pale horny brown to brown (Baker).

GOLDFINCHES AND ALLIES

123

1981. Hawfinch. *Coccothraustes coccothraustes humii* Sharpe

Coccothraustes humii Sharpe, 1886, Proc. Zool. Soc. London: 97

(Attock, NW. Punjab)

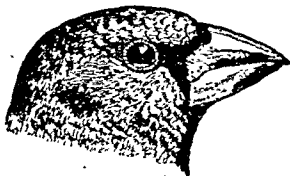
Baker, FBI No. 1038, Vol. 3: 100

Plate 103, fig. 8

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 18 cm (7 in.).

FIELD CHARACTERS. Above, head and back tawny brown, with a broad ashy collar on hindneck. Loes and a narrow band at base of bill black. Wings black with a large white shoulder-patch and a concealed white patch



× c. 1

showing in flight. Tips of secondaries purple-black with a peculiar sinuous shape. Upper tail-coverts fulvous buff. Tail blackish with wide white terminal band. Below, throat black with narrow white surrounding line. Breast and flanks tawny brown, paler than back; centre of belly white. Sexes more or less alike; female's head more ashy.

STATUS, DISTRIBUTION AND HABITAT. Uncommon and local winter visitor in irregular numbers.¹ Pakistan in N.W.F.P. (Chitral, Kohat) east to Abbottabad, Rawalpindi, Jhelum Salt Range, Domel (Kashmir, A. E. Ward; specimen in U.S. Nat. Mus.) and south to northern Baluchistan (Fort Sandeman, Quetta), mostly in the foothills. Affects groves, orchards, gardens and wooded hills.

Extralimital. Breeds in eastern Kazakhstan, Kirghizistan, Tadzhikistan and western Afghanistan (Peters's Check-list). The species ranges west to Morocco and the British Isles, and east to the Ussuri region and Japan.

MIGRATION. Arrives in winter quarters in October-December, remains till the middle of April. Some birds recorded as late as 5 May in Kohat, c. 2700 m (Whitehead, *Ibis* 1909: 227) and in the second week of May in Chitral (Fulton, JBNHS 16: 52).

GENERAL HABITS. Usually seen in small scattered flocks of three to six individuals but sometimes up to 30 birds. Remains in flocks till the end of May. An erratic species. Feeds on the ground.

FOOD. Berries, seed, kernels of fruit stones. VOICE AND CALLS. A rather prolonged *zitt* or a shrill *tee* uttered in flight. Another note is rendered as *pit-zee* (Jones).

BREEDING. Extralimital. Season, June and July in Turkestan. Nest, placed in trees, 2-6 metres above ground.

¹ There are no breeding records nor any observations later than May.

122

CARDUELINAE

1980. Brambling. *Fringilla montifringilla* Linnaeus
Fringilla Montifringilla Linnaeus, 1758, Syst. Nat., ed. 10, 1: 179

(Europa = Sweden)

Baker, FBI No. 1093, Vol. 3: 164

Plate 101, fig. 2

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (winter). Above, mottled rufous brown and black, with conspicuous white rump. Rufous wing-bars. Below, throat and breast rufous; flanks rufous with dark spots; belly white. Male in summer has distinctive black head and back.



× c. 1

Female. Above, mottled dark brown with white rump and some rufous and white on wings. Below, like male but duller.

Both sexes easily identified by white rump.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor and passage migrant, fairly common locally: northern Baluchistan, N.W.F.P., Gilgit and Kashmir, straggling as far east as Simla and Mussooree (JBNHS 32: 727); from November to March or April. Affects gardens and orchards.

Extralimital. Breeds in northern Eurasia from Scandinavia to Kamchatka, south to central Russia, the Altai and Transbaicalia. In winter south to the Mediterranean, Iran, Turkestan, Yunnan, Fukien and Taiwan.

GENERAL HABITS. In winter usually keeps in large flocks, often in company with other finches and buntings. Feeds on the ground in the vicinity of trees. Flight undulating.

FOOD. In winter mostly seeds.

VOICE AND CALLS. Common call-note, a long (c. 1/2 second) wheezy, rather metallic whistle *sweetee*, or *beez* (reminiscent of goldfinch's) repeated monotonously at 3 to 5 seconds' intervals, in flight or from perch (SA).

MUSEUM DIAGNOSIS. See Field Characters. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)	Tarsus	Tail
♂ ♀	89-94	12-13	18-19	63-66 mm (Baker)

Bill from skull c. 16 mm

COLOURS OF BARE PARTS. Iris hazel. Bill light grey, dusky at tip (winter), black (summer). Legs and feet fleshy brown.

Subfamily CARDUELINAE: Goldfinches and Allies

For description see Vaurie, G., 1964. Article 'Finch' in Thomson, A. L. (ed.), *A New Dictionary of Birds*, London and New York.

Genus COCCOTHAUSTES Brisson

Coccothraustes Brisson, 1760, Orn. 1: 86.

Type, by subsequent designation and tautonymy, *Lavia coccothraustes* Linnaeus. Bill massive, conical, culmen nearly straight, tomium of upper mandible curved near gape. Nostrils partly concealed by hairy feathers. Tail short and square. Wing pointed, innermost primaries and outer secondaries with sinuous square tips. Tarsus short and strong.

124

CARDUELINAE

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	101-106	22-24	20-22	60-65 mm
♀ ♀	100-105			60-63 mm (HW)

Weight 1 ♂ (July) 49 g (Paludan).

COLOURS OF BARE PARTS. Iris dirty white. Bill pale bluish flesh. Legs flesh.

Genus MYCERODAS Cabanis

Mycerobas Cabanis, 1847, Archiv f. Naturg. 13 (1): 350.

Type, by subsequent designation (Gray, 1855), *Coccothraustes melanozanthos* Hodgson

Perisospiza Oberholser, 1900, Proc. U.S. Nat. Mus. 22: 227.

Type, by original designation, *Coccothraustes icteroides* Vigors

Bill massive, upper mandible toothed near gape. Inner primaries and outer secondaries rounded at tip.

Key to the Species

		Page
A	A white patch on wing	
1	Throat black	
a	Rump yellowish olive..... <i>M. tanniers</i> ♂	127
b	Rump black..... <i>M. melanozanthos</i> ♂	130
2	Throat not black	
c	Throat grey..... <i>M. tanniers</i> ♀	127
d	Throat yellow..... <i>M. melanozanthos</i> ♀	130
B	No patch on wing	
3	Throat black	
c	Thigh feathers dark brown..... <i>M. icteroides</i> ♂	124
f	Thigh feathers yellow..... <i>M. affinis</i> ♂	126
4	Throat grey	
g	Belly yellowish green..... <i>M. affinis</i> ♀	126
h	Belly buff..... <i>M. icteroides</i> ♀	124

1982. Black-and-Yellow Grosbeak. *Mycerobas icteroides* (Vigors)

Coccothraustes icteroides Vigors, 1831, Proc. Zool. Soc. London: 8

(Himalayan Mountains = Simla-Almora area)

Baker, FBI No. 1039, Vol. 3: 102

Plate 103, fig. 9

LOCAL NAME. *Wjet tont* (Kashmir, all grosbeaks).

SIZE. Myna; length c. 22 cm (8 1/2 in.).

FIELD CHARACTERS. A large black-and-yellow massive-billed finch. Male. Above, head, wings and tail dull black. Broad collar, centre of back and rump lemon-yellow. Below, sides of head and throat, and thighs, dull black. Rest of underparts lemon-yellow.

Colour pattern of male almost identical with that of *M. affinis*, but thigh dull black r. yellow. Yellow is paler and black duller, but differences not appreciable in the field. Better identified by voice, q.v.

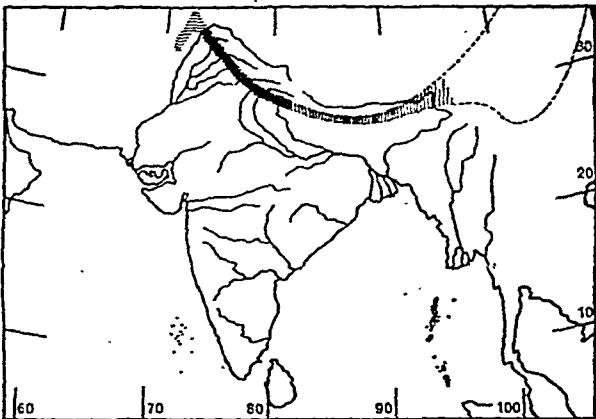
GOLDFINCHES AND ALLIES

125

Female. Above, grey with buff rump and blackish wings and tail. Below, throat and breast grey-brown; belly buff.
Female quite different from that of *affinis* and easily recognized by buff rump and belly.

STATUS, DISTRIBUTION and HABITAT. Fairly common resident, subject to vertical movements. The western Himalayas from N.W.F.P. (Safed Koh and Chitral) east to central Nepal (Gandak-Kosi watershed, Proud, JBNHS 51: 667). Breeds mostly between c. 1800 and 3000 m, up to 3300 m

Mycerobas icteroides and *M. affinis*



Distributional ranges

▨ *M. icteroides* (1982). ■ *M. affinis* (1983).
▤ Range overlap.

in the Safed Koh and to 3500 m in Astor. Commonly occurs down to c. 1500 m in winter, occasionally as low as c. 750 m; may be seen at these low levels until June after cold spells. Affects pine, silver fir and deodar forest; in winter also oak woods.

Extralimital. Northeastern Afghanistan.

GENERAL HABITS. Found in pairs or small scattered flocks. Usually frequents the tops of high trees but freely descends to feed in low undergrowth or on the ground, where it progresses in hops like a sparrow. Has been observed collecting to roost in dense bushes.

FOOD. Berries and small fruits taken in shrubs or undergrowth, pine and crab-apple seeds, fresh pine shoots. Insects, particularly in breeding season; once observed eating a 'fair-sized slug'.

VOICE and CALLS. A conversational *chuck* uttered by both sexes while feeding. Normal call (male only?) a high-pitched rapid *pir-riu, pir-riu, pir-riu* . . . , reminiscent of a railway guard's whistle (the kind with a pea in

GOLDFINCHES AND ALLIES

127

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements, locally common. The Himalayas from Hazara east to Bhutan and Arunachal Pradesh. Breeds in a higher zone than *M. icteroides*, from c. 2700 m, mostly above 3000 m, up to tree-line (c. 3600 m in Garhwal, 3900 m in Nepal, 4000 m in Sikkim, Bhutan and southeastern Tibet), wandering above tree-line to c. 4200 m after the breeding season and occasionally descending in winter to c. 1800 m. Affects forests of oak, rhododendron or mixed conifer and broad-leaved trees, occasionally wandering into dwarf rhododendron and juniper scrub above tree-line.

Extralimital. Extends to northern Yunnan, Szechuan and southern Kansu.

GENERAL HABITS. Keeps in pairs or small flocks according to season. Frequents the tops of high trees, freely descending to the ground for feeding purposes.

FOOD. Seeds, kernels, fruits, insects, caterpillars (once a snail).

VOICE and CALLS. Song, a fine loud musical whistle of five to seven notes, the first six falling into two series of three ascending notes each, the seventh note pitched much lower: *ti-di-li-ti-di-li-um*, emphasis on first and fourth syllables; also rendered as *hi-diddle-diddle-the-fiddle*. Alarm, a double note somewhat resembling the striking together of two stones, and might be written as *kurr* (A. E. Osmaston). A loud creaky song lasting about 30 seconds, punctuated by musical bulbul-like notes, and constantly repeated, has also been described (Sálim Ali, 1962).

BREEDING. Season, on circumstantial evidence, May and June. Nest and eggs unknown.

MUSEUM DIAGNOSIS. Male distinguished from *M. icteroides* by its yellow thighs (v. dark brown); black parts are deeper black with a slight purple gloss; yellow parts are more orange and the hind-collar ochraceous yellow.

Young male like adult male but yellow of upperparts duller and paler, that of underparts dingy oil-yellow. Black of crown duller. Sides of head, chin and throat blackish with faint brown centres and fringes.

Young female like adult female but hind neck and mantle a little duller. Rump suffused with yellow. Throat buffy white in centre. Rest of underparts dull greyish olive tinged with yellow.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
2 ♂♂	123, 126	27	26	83 mm
2 ♀♀	121, 132	27	26	87 mm
			(MD, Stevens)	

Weight 3 ♂♂ (May) 69-72; 1 ♀ (May) 83 g (GD).

COLOURS OF BARE PARTS. Female, winter: Iris brown. Bill greenish blue. Legs and feet fleshy.

MYCEROBAS CARNIPES (Hodgson)

Key to the Subspecies

Darker *M. c. carripes*.
Paler *M. c. speculariger*

CARDUELINAE

126

it), given in short, somewhat subdued blasts (SA); syllabified by Magrath as *twenty-two* or *keeky-too*. Song of male, a rich, clear and pleasing *prrr-trooet-t-trooet* (SA).

BREEDING. Season, April to July, chiefly May and June; a female collected in September had an incubation patch and a well-developed egg in ovary. Nest, a rather large cup of fine twigs, grass, moss and lichen, lined with fine grass and rootlets. Placed between 3 and 18 metres above the ground, generally close to the trunk of a conifer. Eggs, 2 or 3, greenish white (Magrath) or pale grey sometimes tinged with green, with deep purple-black spots, scrolls and lines with secondary markings of very fine pale brown and lavender-grey lines and specks; markings usually confined to large end where forming a broad ring. Average size of 40 eggs 28.3 × 19.9 mm (Baker). Building by both sexes; other details unrecorded.

MUSEUM DIAGNOSIS. See Field Characters.

Young female like adult female but upperparts more brownish. Rump brighter buff. Throat and breast ashy mottled with brownish. Rest of underparts paler.

Young male differs from young female in having the rump pale yellow. Post-juvénal moult of body, lesser median and ? greater coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	126-136	c. 29	c. 25	88-97 mm
♀♀	122-128	c. 27	c. 23	
		(Wing and tail, Baker; bill and tarsus, MD)		

COLOURS OF BARE PARTS. Iris dark brown. Bill green in summer (Abbott), wax-yellow in winter. Legs and feet pale flesh or brownish flesh.

1983. Allied Grosbeak. *Mycerobas affinis* (Blyth)

Hesperiphona affinis Blyth, 1855, Jour. Asiat. Soc. Bengal 24: 179
(Alpine Punjab, restricted to Hazara by Whistler, 1925, JBNHS 30: 700)
Baker, FBI No. 1040, Vol. 3: 103
Plate 103, fig. 10

LOCAL NAME. *Wyet toni* (Kashmir).

SIZE. Myna; length c. 22 cm (8½ in.).

FIELD CHARACTERS. A large black-and-yellow, massive-billed finch.

Male. Above, head, wings and tail deep black. An ochraceous yellow hind-collar. Centre of back and rump yellow. Below, throat black, rest of underparts yellow.

Colour pattern almost identical with that of *M. icteroides* q.v., but thighs yellow v. dull black. Better identified by voice.

Female. Above, head dark grey. Rest of upperparts olive-green, more yellowish on collar and rump. Wings and tail blackish. Below, throat grey. Rest of underparts yellowish olive.

Rather similar to *M. carripes* female but lacking white wing-patch and with the grey restricted to throat. For differences from female *M. icteroides* see 1982, under Field Characters.

CARDUELINAE

128

1984. Persian Whitewinged Grosbeak. *Mycerobas carripes speculariger* (Brandt)

Coccothraustes speculariger Brandt, 1841, Bull. Acad. Imp. Sci.
St. Petersb. 9, col. 11 (N. Persia)
Baker, FBI No. 1041 (part), Vol. 3: 104

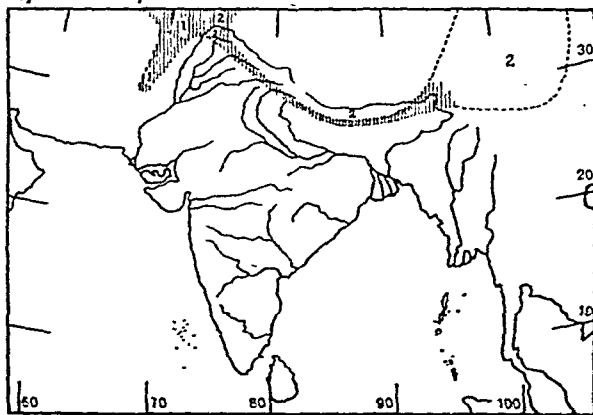
LOCAL NAMES. None recorded.

SIZE. Myna; length c. 22 cm (8½ in.).

FIELD CHARACTERS. As in 1985, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements, locally common. Pakistan from Kalat north to the Safed Koh. Breeds

Mycerobas carripes



▨ Distributional ranges 1 *speculariger* (1984), 2 *carripes* (1985).

between c. 2400 and 3600 m, descending to lower levels in winter. Affects juniper forest.

Extralimital. Afghanistan and the mountains of northwestern Iran and Transcaspi.

GENERAL HABITS, FOOD and VOICE. As in 1985.

BREEDING. Season, June, July and presumably later. Nest and eggs, as in 1985.

MUSEUM DIAGNOSIS. Differs from *carripes* (1985) in being paler and smaller: male less black above, more slaty; female paler above and below.

GOLDFINCHES AND ALLIES

129

MEASUREMENTS

Wing ♂♂ 114-120 mm (Vaurie); ♀♀ 116-123 mm (CBT).
COLOURS OF BARE PARTS. As in 1985.

1985. Himalayan Whitewinged Grosbeak. *Mycerobas carpinus carpinus* (Hodgson)

Coc. (cothraustes) Carpinus Hodgson, 1836, *Asiat. Res.* 19: 151 (Nepal)
Baker, *FBI No.* 1041 (part), Vol. 3: 104
Plate 103, fig. 13

LOCAL NAMES. *Wyet tont* (Kashmir); *Devi dar* (Lahul).

SIZE. Myna; length c. 22 cm (8½ in.).

FIELD CHARACTERS. A large, dark finch with massive bill, and white wing-patches particularly conspicuous in flight.

Male. *Above*, black with a white wing-patch, yellowish olive rump and a few spots of same colour on secondaries. *Below*, throat and breast black; belly wax-yellow.

Distinguished from *M. melanozanthos* (1986) by yellowish olive rump (v. blackish) and much more extensive black on underparts.

Female. *Above*, head and back grey. Rump wax-yellow. Wing grey-brown with a white patch, yellowish bar, and pale yellow and whitish pattern on secondaries. *Below*, sides of head, throat and breast grey lightly mottled with buff. Flanks and lower belly wax-yellow.

Female distinguished from those of *affinis* and *icterioides* by white wing-patch.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The Himalayas from Gilgit and Hazara east to Arunachal Pradesh. Breeds between 3000 and 3600 m in western Himalayas and up to 4200 m from Garhwal eastwards. Affects dwarf juniper forest above timber-line, and mixed juniper and fir near timber-line; at lower elevations mixed fir, rhododendron, juniper, or fir forest with bamboo undergrowth, or pine woods, especially in the west. Descends to c. 2700 m in winter, sometimes down to 1500 m, but does not entirely leave the higher levels and has been recorded as high as 4200 m in that season.

Extralimital. Ranges west to Turkestan (Tarbagatai and Tien Shan) and east to southeastern Tibet, northern Yunnan, Szechuan, southern Kansu and Tsinghai.

GENERAL HABITS. As a rule less shy than other grosbeaks. Keeps in pairs or small flocks according to season. Very noisy while feeding, the characteristic cracking sound of stones of juniper and other fruits being audible 20 or 30 metres away. If alarmed will sit silent and motionless in the foliage; if hunted out the party will scatter in all directions with clumsy whirring, dipping flight as of a woodpecker, the individuals continuing their rasping alarm-note till reunited.

FOOD. Juniper seeds apparently the staple food: 'The bird thrusts its beak into the meat and with the sharp edge of the "jaws", simultaneously assisted by the very peculiar spoonlike tongue, very quickly cleans the stone from meat and shell which fall on the ground' (Dolgushin *et al.*, 1968). Also other seeds, kernels and berries (strawberries and seeds of *Rumex* among others have been noted). Young fed on juniper seeds and insects.

VOICE AND CALLS. 'Frequently seen perched in some prominent position uttering its familiar notes *wil-ye-go-ame* or *croak-et-et*' (Whitehead), the first

GOLDFINCHES AND ALLIES

131

SIZE. Myna; length c. 22 cm (8½ in.).

FIELD CHARACTERS. A large black-and-yellow finch with massive bill and prominent white spots on closed wings.



× c. 1

Male. *Above*, entirely blackish with whitish spots on secondaries and a white wing-patch (concealed when wing folded). *Below*, throat and upper breast blackish. Rest of underparts deep yellow.

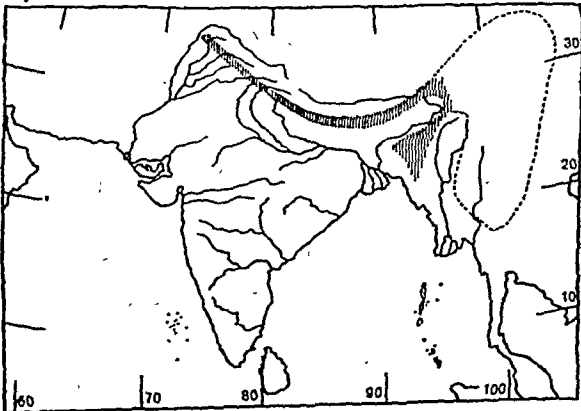
Distinguished from *M. carpinus* by blackish rump (v. yellowish olive), less extensive black below and much brighter yellow belly.

Female. *Above*, like male but

crown, nape and back streaked with yellow; yellow streaks forming a distinct supercilium. *Below*, yellow boldly streaked with blackish, this character easily identifying female.

STATUS, DISTRIBUTION AND HABITAT. Rather uncommon resident, subject to vertical movements. The Himalayas from the Indus Valley east through Arunachal Pradesh, thence south through the Patkai Range, Nagaland, north Cachar and Mizo Hills (Koelz, loc. cit.), Khasi Hills. (Baker) and

Mycerobas melanozanthos



Distributional range

Manipur (Hume). Altitudinal distribution imperfectly known. Recorded nesting at c. 2400 m in the western Himalayas and in summer between 3000 and 3600 m in Bhutan. On Mt Victoria between 2000-2500 m. In

130

CARDUELINAE

rendition apparently the song (seldom heard), the second a call-note; song also described as *dja-dji-dji-dju* (MD).

BREEDING. Season, June to August in the western Himalayas; in eastern Nepal females not in breeding condition until August (GD). Prolonged nesting period apparently due to different local climatic conditions (Dolgushin *et al.*). Nest, a deep cup of twigs, weed-stems and occasionally some moss or dry leaves with an inner layer of juniper bark fibre. Placed in junipers within a couple of metres from the ground or in spruce or other trees, sometimes as high as 20 metres. Eggs, normally 3, sometimes 2, pale greenish grey spotted and scrawled with purple-black and with pale purple markings. Average size of ten eggs 27 × 19.1 mm (Baker). Building of nest by female alone, male only accompanies her. Incubation by both sexes, chiefly by female; period 15 or 16 days. Care of young by both parents; nestling period about 20 days. For further details on biology (including moult) in Kazakhstan see Dolgushin, I. A. *et al.*, 1968, *JBNHS* 65: 105-10.

MUSEUM DIAGNOSIS. See Field Characters. For distinction from *speculigerus* see 1984, Museum Diagnosis. Complete postnuptial moult August to October.

Young. *Above*, olive-brown with subterminal tiny pale markings and darker tips; rump as in adult. Wing-coverts dark brown, lesser and median with greenish yellow tips, greater with greenish yellow tips to outer webs. *Below*, ashy brown with pale shaft lines.

Immature male (first-year) similar to old female; may occasionally breed in this dress. Adult plumage assumed after first year, in July-October.

MEASUREMENTS

Wing ♂♂ (Himalayas)		115-126 mm (Vaurie)		♀♀ (") 116-123 mm (CBT)	
♂♂ (Sikkim)		103-123 mm (Meinertzhagen)			
		Bill	Tarsus	Tail	
		(from skull)			
1 ♂	30	27-28	92-96 mm		
1 ♀	28				

(Bill MD, rest Baker)

Weight 5 ♂♂ (June-Aug.) 56: 1-62 g; 4 ♀♀ (June-Aug.) 54: 7-59.2 g (Nepal, GD). 1 ♂ (Sept.) 66 g (Bhutan, SDR).

COLOURS OF BARE PARTS. Iris brown. Bill brownish horn, livid flesh at basal half of lower mandible. Legs and feet pale flesh-brown (HW). Bill dark horn-brown blackening at tip; lower mandible pale at base (Abbott).

1986. Spottedwinged Grosbeak. *Mycerobas melanozanthos* (Hodgson)

Coc. (cothraustes) *Melanozanthos* Hodgson, 1836, *Asiat. Res.* 19: 150 (Nepal)

Mycerobas melanozanthos ossifragus Koelz, 1954, *Contrib. Inst. Regional Exploration*, No. 1: 19 (Kohima, Naga Hills)

Mycerobas melanozanthos pangbui Koelz, 1954, *Contrib. Inst. Regional Exploration*, No. 1: 20 (Sangau, Lushai Hills)
Baker, *FBI No.* 1042-Vol. 3: 105

Plate 103, fig. 11

LOCAL NAMES. *Wyet-tont* (Kashmir); *Maltam-pho* (Lepcha).

¹ Of the Tien Shan population called *M. c. nurezbacheri* Schalow.

132

CARDUELINAE

winter descends to c. 1200 m, occasionally 900 m in the west, and down to 600 m in the Bhutan foothills. Affects mixed conifer and broad-leaved forest.

Extralimital. Extends to southeastern Tibet, Szechuan, Burma (Mt Victoria, Myitkyina dist., southern Shan States), Yunnan and northern Thailand.

GENERAL HABITS. Keeps in pairs or flocks according to season; flocks usually small but sometimes up to c. 50 birds, or more. Frequents and often feeds in the tops of tall trees. When disturbed usually flies high in the air. Becomes quite noisy after the breeding season when it collects in large flocks. A feeding congregation keeps up a running chorus of a peculiar cackling reminiscent of the cacophony of *Garrulus leucolophus* (1283). This, augmented by the sound of cracking cherry stones and the constant patter of discarded shells on the dry litter under the tree, usually announces the presence of the birds a long way off. Also feeds on the ground.

FOOD. Kernels of wild cherry (*Prunus*), *Myrica*, etc.; berries of *Viburnum*.

VOICE AND CALLS. A variety of calls, the most familiar being a rattling note rendered as *krrrr* or *chüräräk*, somewhat similar to the distant call of a magpie, usually uttered in flight but also during feeding — likened in the distance also to the shaking of an ordinary match-box containing only a few matches! Also some mellow and somewhat oriole-like whistles *tyop-tio* or *tyo-tyo* and a variety of parrot-like notes; a remarkably human note like the exclamation *ah* pronounced with an ascending inflection (Magrath).

BREEDING. Season, May to July. Nest, a cup of twigs, grass and moss lined with rootlets and maidenhair stems, placed in trees about four metres or higher above the ground. Eggs, 2 or 3, pale green marked with streaks and blotches, similar to eggs of *M. icteroides* but markings decidedly more reddish brown. Measurements, 2 eggs 30 × 20.6 mm (Baker), 3 eggs 26.6 × 20.5 mm (Skinner, *JBNHS* 18: 907).

MUSEUM DIAGNOSIS. See Field Characters; for details of plumages Whistler, *JBNHS* 29: 152-3. A complete prenuptial moult ending about April (Biswas, 1963, *JBNHS* 60: 200) [no spring moult according to HW who recorded a specimen moulting remiges in November]. First-winter plumage like adult female's but yellow replaced by creamy white.

MEASUREMENTS

	Wing	Bill	Tarsus	Tail
		(from skull)		
♂♂	122-135	24-32	22-25	71-83 mm
♀♀	119-135	28-31	22-24	73-77 mm

(HW, SA)

Depth of bill at base 3 ♂♂ 21-22 mm (SA)

Weight 1 ♂ (March) 74 g (SA). 1 ♀ (Sept.) 50 g (SDR).

COLOURS OF BARE PARTS. Iris dark brown, orbital skin plumbeous. Bill bluish grey culmen, tip, and commissures blackish grey; mouth blackish slate. Legs and feet dull bluish slate; claws dusky.

GOLDFINCHES AND ALLIES

133

Genus *CARDUELIS* Brisson*Carduelis* Brisson, 1760, Orn. 1: 36, 3: 53.Type, by tautonymy, '*Carduelis*' = *Fringilla carduelis* Linnaeus*Spinus* Koch, 1816, Syst. Baier. Zool.: 232.Type, by tautonymy, *Fringilla spinus* Linnaeus*Hyphantis* Cabanis, 1851, Mus. Hein. 1: 161.Type, by monotypy, *Carduelis spinoides* Vigors*Chrysomitris* Boie, 1828, Isis, col. 322.Type, by monotypy, *Fringilla spinus* Linnaeus

Bill almost wedge-shaped, short and thick or pointed and thinner, always thick at base. Nostrils round, covered with plumelets. Wing long and rather pointed, first primary (as.) minute. Tail slightly forked. Tarsus short and strong.

Key to the Species

A No yellow patch on wing.....	<i>C. thibetana</i>	139
B A large yellow patch on wing		
1 Forehead red	<i>C. carduelis</i>	133
2 Forehead yellow	<i>C. spinoides</i>	136

CARDUELIS CARDUELLIS (Linnaeus)

Key to the Subspecies

A Crown black	<i>C. c. major</i>	133
B No black on crown		
1 Paler	<i>C. c. subulata</i>	134
2 Darker	<i>C. c. caniceps</i>	135

1987. **Siberian Goldfinch.** *Carduelis carduelis major* Taczanowski

Carduelis major Taczanowski, 1879, Proc. Zool. Soc. London: 672 (Turkistan)
Baker, FBI No. 1080, Vol. 3: 149

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1989 but hindcrown and band reaching sides of neck black.

STATUS, DISTRIBUTION and HABITAT. Rare winter vagrant. A specimen collected at Quetta in February in a flock of grey-headed birds (Meinertzhagen, *Ibis* 1920: 138).

EXTRALIMITAL. Breeds in western Siberia from the Urals to the Yenisey and western Altai, south to Semipalatinsk. In winter normally reaches Turkmenia and Turkistan.

GENERAL HABITS, FOOD and VOICE. As in 1989.

MUSEUM DIAGNOSIS. Distinguished from *caniceps* chiefly by black hindcrown, extending in a band to sides of neck; also by somewhat larger size and heavier bill. For details of plumage see Baker, loc. cit.

MEASUREMENTS

Wing ♂♂ 85-89 mm; ♀♀ 77-85 mm (Dementiev)

COLOURS OF BARE PARTS. Iris brown. Bill pinkish horn with dark tip. Legs and feet pale horn brown.

GOLDFINCHES AND ALLIES

135

1989. **Greyheaded Goldfinch.** *Carduelis carduelis caniceps* Vigors

Carduelis caniceps Vigors, 1831, Proc. Zool. Soc. London: 23
(Himalayan Mountains = Simla-Almora area)

Baker, FBI No. 1081, Vol. 3: 150

Plate 101, fig. 10

LOCAL NAMES. *Shaira* or *Schura* (Kashmir).

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Above, forehead crimson; lores black. Crown and back pale grey-brown; rump white. Wings black with a large, conspicuous bright yellow patch. Tail black and white. Below, chin and area around bill crimson bordered with whitish buff. Breast pale grey-brown; belly whitish. Sexes nearly alike.



x c. 1

In flight, a yellowish band across wings, bordered with brown in front and behind, conspicuous white rump and white-and-black tail diagnostic.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Pakistan in northern Baluchistan (Williams, JBNHS 33: 605; Christison, JBNHS 43: 482), N.W.F.P. north to Chitral, thence east through Gilgit, Baltistan, Ladakh, Hazara, Kashmir and along the Himalayas to central Nepal (Lowndes, 1955, JBNHS 53: 34; Fleming & Traylor, 1968). Breeds from c. 2400 m up to 3900 m. Occasionally breeds as low as c. 1500 m (Rawalpindi, Thandiani, Vale of Kashmir, Quetta Valley). Near Mussooree, according to Osmaston (JBNHS 31: 995), 'begins nesting towards the end of May between 1500 and 2100 m. After rearing the first brood at this comparatively low altitude, they leave early in July for higher altitudes and have second nests at from 2800 to 3300 m'. Affects orchards near upland villages, bare stony hillsides, open pine and fir forest, fields and scrub and willows, juniper or other scrub above timber-line. Withdraws from the upper levels in winter and descends to the valleys and foothills, occasionally into the adjacent plains (Ambala, Rawalpindi).

EXTRALIMITAL. The species ranges from Central Asia west to the British Isles, the Mediterranean countries and the Azores.

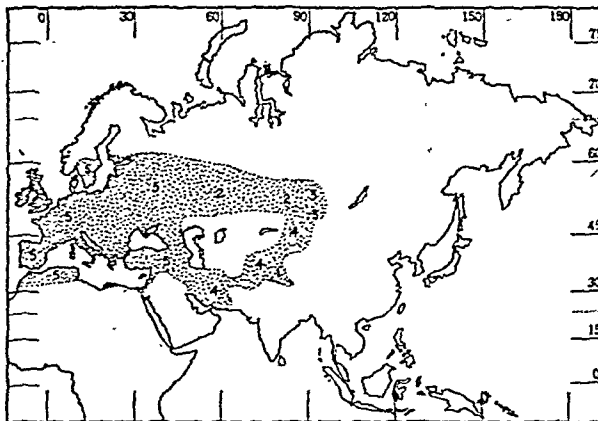
GENERAL HABITS. Keeps in pairs when breeding but small flocks may also be seen throughout the breeding season; in winter usually in larger flocks. Feeds on the ground hopping about, or from flower heads — fluttering and clinging to them and plucking the seeds. Flight slightly undulating, typically sparrow-like.

FOOD. Flower seeds, especially of thistles (*Cirsium* spp.); of sunflower (*Helianthus*) and zinnia in hill-station gardens. Also seeds of the chenar tree (*Platanus orientalis*) in Kashmir in January-February.VOICE and CALLS. Call-note a characteristic *deedlit* or *chirik*. Song, a liquid twittering reminiscent of a canary's; in spring often delivered by several birds in chorus from in among trees.

BREEDING. Season varies according to altitude: April to July at lower elevations, July and August in the high country. See also observation by Osmaston (above) under Status etc. Nest, a neat cup of dry grass, moss,

134

CARDUELINAE

Carduelis carduelis

Distributional ranges: 1 *caniceps* (1989), 2 *subulata* (1988), 3 *major* (1987), 4 *parepensis* (RE), 5 other extralimital subspecies.

1988. **Central Asian Goldfinch.** *Carduelis carduelis subulata* (Gloger)*Fringilla subulata* Gloger, 1833, Abändern Vög.: 153 (Yenisei)

Baker, FBI No. 1082, Vol. 3: 151

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As in 1989, q.v.

STATUS, DISTRIBUTION and HABITAT. Rare winter vagrant. Two specimens collected by Meinertzhagen near Quetta in December and March (CBT, JBNHS 31: 864).

EXTRALIMITAL. Breeds in south-central Siberia from the Yenisey to southern Altai. In winter south to Turkistan.

GENERAL HABITS, FOOD and VOICE. As in 1989.

MUSEUM DIAGNOSIS. Differs from *caniceps* (1989) in being distinctly paler both above and below. Rump more widely white; flanks whiter, less grey.

MEASUREMENTS

Wing ♂♂ 81-85; ♀♀ 80-81 mm

Weight 4 ♂♂ 19-22.2; 2 ♀♀ 20, 20 g (Dementiev).

COLOURS OF BARE PARTS. As in 1987 and 1989.

136

CARDUELINAE

lichen or other material, lined with vegetable down and a few hairs. Placed on branches of pine, fir, fruit trees, willows or junipers, generally between two and nine metres above the ground, sometimes as high as 20 metres; usually towards the end of a branch. Eggs, 4 or 5, pale blue with fine blotches of dark brown and rusty red mostly at the larger end; nearly white unmarked eggs are occasionally found. Average size of 38 eggs 18 × 13.2 mm (Osmaston), of 60 eggs 18.5 × 13.2 mm (Baker). Incubation by female, fed on nest by male. Feeding of young by both parents, by regurgitation. See also Bates, 1960, JBNHS 57: 339-47 for further details.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

Female differs from male only in the smaller extent of crimson about base of bill.

Young, without crimson or black on the face. Upperparts, sides of head, throat and breast pale grey-brown with faint darker tips on the rump mixed with buffy white; upper tail-coverts white with rusty tips and more or less dark central streaks. Underparts whitish sullied with brown on the flanks; lesser, median and greater coverts black with pale buffy brownish tips, heavy on last, faint elsewhere; oval spots on tertials and tips to central tail dull buffy white. Postjuvinal moult of body, lesser, median and greater coverts. First-year birds distinguished by buffy white (v. white) oval spots on tertials.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	79-87	16-17	14-15	48-51 mm (HW)

COLOURS OF BARE PARTS. Iris brown. Bill flesh-white, usually tipped with horn-brown. Legs and feet flesh-brown.

CARDUELIS SPINOIDES Vigors

Key to the Subspecies

A Head black, no supercilium.....	<i>C. s. tayleri</i>	138
B A yellow supercilium		
1 Check separated from malar streak by yellow area.....	<i>C. s. spinoides</i>	136
2 Check not separated from malar streak.....	<i>C. s. heinrichi</i>	139

1990. **Himalayan Greenfinch.** *Carduelis spinoides spinoides* Vigors

Carduelis spinoides Vigors, 1831, Proc. Zool. Soc. London: 44 (Himalayas = Simla)
Baker, FBI No. 1089 (part), Vol. 3: 160

Plate 101, fig. 6

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Male. Above, crown, ear-coverts, a malar streak and back blackish brown. Forehead, supercilium and sides of neck yellow forming an indistinct collar below the nape. Rump yellow. Wings dark brown with a large yellow patch; inner secondaries edged with white. Tail dark brown; basal half of outer rectrices yellow. Below, yellow.

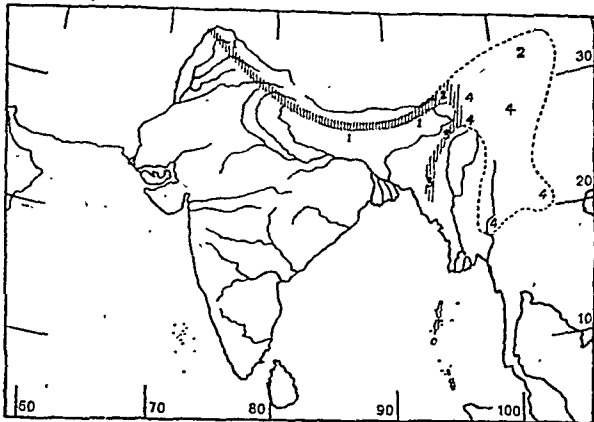
Female like male but duller, more washed with green above.

GOLDFINCHES AND ALLIES

137

Immature birds heavily streaked.

STATUS, DISTRIBUTION AND HABITAT. Mostly a summer (breeding) visitor to the Himalayas from Hazara and Murree east to Arunachal Pradesh. In Kashmir breeds commonly between 2000 and 2400 m, occasionally up to 3300 m. From Kulu to Simla breeds between 1800 and 2700 m, possibly as low as 1100 m (Kangra) or 1200 m (Simla). In western and central Nepal from 1800 to 3700 m, while in eastern Nepal breeds between 2800 and up to

Carduelis spinoides

Distributional ranges 1 *spincides* (1990), 2 *taylori* (1991), 3 *heinrichi* (1992), 4 extralimital subspecies.

4400 m in scrub above timber-line (Diesselhorst). In Sikkim breeds between 2100 and 3000 m, locally up to 3800 m. In Bhutan very common between 1800 and 3100 m. In winter occurs mostly in the foothills below c. 1300 m in the west, 1500 m in Nepal, and in adjacent plains; in Sikkim observed up to 2700 m in winter (Sálim Ali). Affects cultivation, open slopes and edges of forest, and open pine or deodar forest; freely enters hill-station gardens and compounds. In eastern Nepal also recorded in open forest at timber-line and in pure scrub growth above it (Diesselhorst).

MIGRATION. Generally arrives on breeding grounds in June, staying till the end of October. May be seen in winter quarters from October to the end of May.

GENERAL HABITS. Keeps in pairs or parties according to season, in winter collecting in flocks of 10 to 20 birds or more. Feeds much more in bushes and trees than on the ground, and often feeds on flowerheads in the manner of a goldfinch. Display said to be similar to that of the European Greenfinch, *Carduelis chloris*, namely a song-flight in which 'the male circles round with peculiar erratic bat-like flight with slowly flapping wings' (Witherby).

GOLDFINCHES AND ALLIES

139

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. Southeastern Tibet and adjacent parts of Arunachal Pradesh. Affects cultivation, open fields, meadows and edges of forest near cultivation at c. 2800–3100 m.

Extralimital. Extends to Szechuan. Other subspecies in northern Burma, Yunnan and Vietnam.

GENERAL HABITS, FOOD AND VOICE. As in 1990.

MUSEUM DIAGNOSIS. Distinguished from both *spinoides* and *heinrichi* in having the whole head nearly black, the back very dark olive and the underparts darker, more olive; belly dirty greyish white.

MEASUREMENTS

Wing ♂♂ 79–83 mm; ♀♀ 78–80 mm (NBK)

COLOURS OF BARE PARTS. Unrecorded.

1992. **Mt Victoria Greenfinch.** *Carduelis spinoides heinrichi* Stresemann
Carduelis spinoides heinrichi Stresemann, 1940, Mitt. Zool. Mus. Berlin 24: 153, 170 (Mt Victoria)

Baker, FBI No. 1089 (part), Vol. 3: 160

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As in 1990, q.v.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements; apparently uncommon. The hills of Nagaland (Baker, JBNHS 9: 143), Manipur (Ripley, JBNHS 50: 512; Hume, SF 11: 28) and adjacent hills of Burma south to Mt Victoria at c. 2300–2400 m in summer, descending to at least 1400 m in winter. Affects trees in clearings and neighbourhood of cultivation.

GENERAL HABITS, FOOD AND VOICE. As in 1990.

BREEDING. Season, about June (by gonadal evidence). Nest and eggs undescribed, probably as in 1990.

MUSEUM DIAGNOSIS. Differs from *taylori* chiefly in having a yellow supercilium and from *spinoides* in being much darker, the crown and cheeks black, the latter not separated from malar streak by a yellow area.

MEASUREMENTS

Wing ♂♂ 72–77; ♀♀ 70–74 mm (SDR, Stres.)

Weight 1 ♂ 16; 2 subadult ♂♂ 15, 15.5; 3 ♀♀ 15, 15, 15 g (SDR).

COLOURS OF BARE PARTS. As in 1990.

1993. **Tibetan Siskin.** *Carduelis thibetana* (Hume)

Chrysomitris thibetana Hume, 1872, Ibis: 107 (borders of Sikkim and Tibet)
Baker, FBI No. 1091, Vol. 3: 162

Plate 101, fig. 4

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. A small yellow-green and brownish finch with a small, pointed bill and slightly forked tail.

138

CARDUELINAE

FOOD. Seeds of many kinds, including wild hemp, sunflower, *Calliopsis*, millet, buckwheat, rice, etc. Also berries and insects.

VOICE AND CALLS. Call-note described as similar to that of European Greenfinch, a characteristic, far-carrying *beez*. Also 'a long-drawn *weeeeeee* dropping at the end, strongly reminiscent of Iora' (Smythies). Song, resembling Goldfinch's, uttered from the tops of trees or in the song-flight (above). Some soft, twittering call-notes uttered in flight. (Observers' descriptions as 'call-notes' and 'song' rather ambiguous.)

BREEDING. Season, quite late, beginning towards the end of June or early July, lasting till October at higher altitudes, with a peak in August. Nest, a compact, neat cup of grass stalks and rootlets and moss, lined with fine rootlets, hair and a few feathers; well concealed on the upper surface of a horizontal branch, generally towards the extremity, preferably in deodars (*Cedrus*) or pines, from 2 to 20 metres above ground level, average about 9 metres. Eggs, 3 to 5, normally 4, slightly greenish white usually with an irregular ring of minute blackish brown spots round the large end and a few similar specks scattered here and there. Average size of 80 eggs 18.7 × 13.7 mm (Baker). Building of nest by female only, accompanied by male. Incubation by female only, fed on nest by male; period about 13 days. Care of young by both parents. See Dodsworth, JBNHS 21: 1074–80 for further details.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies. Sexes can be distinguished by wing-coverts: in the male, the lesser and median coverts are completely yellow, in the female dark brown.

Young similar to female. For details of plumages see Whistler, Ibis 1940: 151–3. Adult bird has one complete moult a year, in May and June. Juvenal plumage retained throughout winter and moulted into adult plumage in complete prenuptial moult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	76–81	14–16	14–16	{ 43–51 mm 46–50 mm
♀♀	72–80			

(BB, Stres., SA)

Weight 2 ♂♂ (Aug.) 18.5, 20.8; 1 o? (Aug.) 18.7 g — GD. 1 ♂, 1 ♀ (May) 19, 18.5 g — BB. 6 ♂♂ (Oct.–Dec.) 17–20; 5 ♀♀ (Oct.–Dec.) 16–18.5 g — SA, BB.

COLOURS OF BARE PARTS. Iris brown to dark brown. Bill: upper mandible brownish flesh, darker on base and tip; lower mandible fleshy with dusky tip. Legs and feet brownish flesh to pale horny.

1991. **Tibetan Greenfinch.** *Carduelis spinoides taylori* (Kinnear)

Hypocanthus spinoides taylori Kinnear, 1939, Ibis: 752

(Lilung, Tsangpo Valley, SE. Tibet)

Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. As in 1990 but whole head nearly black.

140

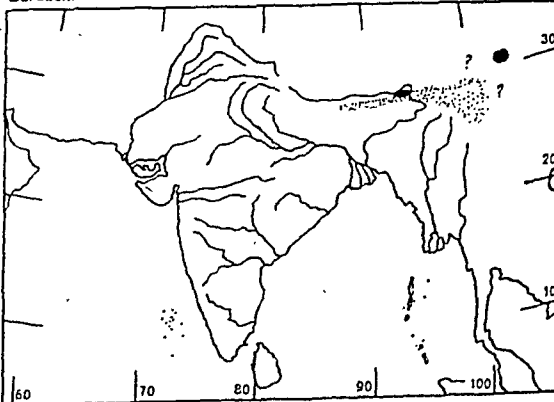
CARDUELINAE

Male. Above, olive-yellow, mantle faintly streaked with dark brown, rump brighter yellow. An ill-defined supercilium and collar bright yellow. A yellow wing-bar. Tail-feathers dark brown edged with yellow. Below, deep yellow washed with olive on sides of neck and flanks.

Female, like male but duller and streaked with dark brown above and below excepting throat and upper breast.

Immature, like female but more heavily streaked and with abdomen whitish.

STATUS, DISTRIBUTION AND HABITAT. Mostly a winter visitor to the eastern Himalayas, from central Nepal (Proud, JBNHS 51: 737, 53: 66; Rand & Fleming, Fieldiana 41: 202) east through Sikkim (Sálim Ali, 1962; Meinertzhagen, 1927), Bhutan (SA) and Arunachal Pradesh between 1000 and 3000 m

Carduelis thibetana

■ Known breeding or summer records. --- Known winter range.

(in Burma as low as 600 m). Presumably breeds in northern Arunachal as birds have been recorded in summer in Tibet near or on the border (Lusha La) between long. 93° and 94°E. (Ludlow, Ibis 1914: 356); possibly breeds farther west (loc. cit.: 357). Observed in summer between 2800 and 3000 m in hemlock (*Tsuga*), birch and mixed fir and birch forest near tree-limit. In winter, known to frequent alders and *Tsuga*.

Extralimital. Breeds in southeastern Tibet, and western Szechuan. Winters to northern Burma and northern Yunnan.

MIGRATION. Recorded in winter quarters from 20 December to 8 March.

GENERAL HABITS. Found in pairs in the breeding season (May–June) otherwise in flocks of 10 to 50, sometimes up to several hundred birds ('literally swarms' — Proud). Feeds largely among the tops of alders, birch, etc.; also on the ground under conifers, sometimes in thick undergrowth.

GOLDFINCHES AND ALLIES

141

FOOD. Seeds of alders (*Alnus*), birch (*Betula*) and conifers.

VOICE and CALLS. When in flocks in trees 'keeps up a continual hard tremulous twittering, at times quite deafening — sounding in the distance like starlings going to roost. Never silent for a minute'. Song, heard in March, 'a mere variation of the twittering with many trills added' (Proud). When taking wing, utters a series of finch-like notes (Ludlow).

BREEDING. Season, birds have been observed keeping paired in May and June. Nest and eggs unknown. Cf. Ludlow & Kinnear, *Ibis* 1944: 357.

MUSEUM DIAGNOSIS. See Field Characters.

First-year male and female like adult but paler yellow on underparts; flanks more streaked. Greater coverts and tertials yellowish white instead of olive-green.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	68-72	11-14	14-15	40-43 mm
♀♀	64-70	12-13	(one ♀ 12) (SA, Rand & Fleming)	42-45 mm

Weight 5 ♂♂ (Nov.) 10-11; 1 ♀ (Nov.) 11 g — SA.

COLOURS OF BARE PARTS. Iris brown. Bill pinkish grey. Legs and feet fleshy grey.

Genus *ACANTHIS* Borkhausen

Acanthis Borkhausen, 1797, *Deutsche Fauna* 1: 248. Type, by subsequent designation (Stejneger, 1884), *Fringilla Linaria* Linnaeus

Bill short, straight and pointed. Wing long.

Key to the Species

Throat streaked *A. cannabina*
Throat unstreaked *A. flavirostris*

1994. Eastern Linnet. *Acanthis cannabina bella* (Brehm)

Fringilla bella Brehm, 1845, *Isis*, col. 348 (Beyrouth)

Linota fringillirostris Bonaparte & Schlegel, 1850, *Monogr. Loxiens*: 45, pl. 49 (Kashmir)

Baker, FBI No. 1084, Vol. 3: 154

Plate 101, fig. 8

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. Male. Above, forehead pinkish red. Nape and sides of neck grey, crown streaked with dark brown. Back and wing-coverts brown, rump paler. Tail black and white. Below, throat whitish with brown streaks. Breast pinkish red. Flanks rufous-brown. Centre of belly white.

Female, similar to male but without red; breast fulvous white streaked with dark brown.

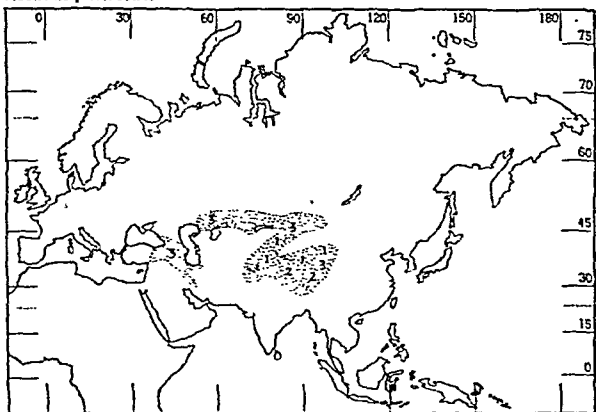
STATUS, DISTRIBUTION and HABITAT. Uncommon and irregular winter visitor to Pakistan in Gilgit,



x c. 1

GOLDFINCHES AND ALLIES

143

Acanthis flavirostris

Distributional ranges 1 *montanella* (1995), 2 *rufostriata* (1996), 3 extralimital subspecies.

Extralimital. Extends north to the Pamirs and east along the Kun Lun to the Nan Shan.

GENERAL HABITS, FOOD and VOICE. As in 1996.

BREEDING. As in 1996.

MUSEUM DIAGNOSIS. Differs from *rufostriata* in being paler, greyish sandy, with the streaks more diffused or less sharply marked. Bill thinner.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 1996.

1996. Tibetan Twite. *Acanthis flavirostris rufostriata* (Walton)

Linota rufostriata Walton, 1905, *Bull. Brit. Orn. Cl.* 15: 95

(Khamba Jong, Tibet)

Acanthis flavirostris ladacensis R. & A. Meinertzhagen, 1926, *Bull. Brit. Orn. Cl.* 46: 96 (Leh)

Baker, FBI No. 1087, Vol. 3: 157

Plate 101, fig. 9

LOCAL NAMES. *Pé-ché* [= mustard bird], *Deng-deng-ma* (Tibetan); *Pegem-bejé* (Gyangtse).

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. A small brown finch with pink rump and distinctly forked tail.

Male. Above, fulvous brown streaked with dark brown. Two buffish wing-bars. Rump pale pink. Tail dark brown with white outer edge. Below,

142

CARDUELINAE

Baltistan, Rawalpindi and Jhelum districts, Salt Range and northern Baluchistan (Quetta dist.). Affects open country, cultivation, and stony slopes at base of hills; in Baltistan up to 2400 m.

Extralimital. Breeds from northern Afghanistan north to the Altai and west to Turkey and the Caucasus. The species extends to Morocco, the Canary Islands, the British Isles and southern Scandinavia.

MIGRATION. Recorded in winter quarters from October to early April.

GENERAL HABITS. A rather shy but sprightly bird usually met with in small flocks of 4 or 5 individuals. Often settles on tops of trees and bushes. Feeds on the ground, or from flowerheads.

FOOD. Seeds; particularly fond of wild hemp (*Cannabis* sp.).

VOICE and CALLS. A twittering note continually uttered in flight. A lively musical song may be heard in February–March.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	76-84	c. 13	c. 16	87-90 mm
♀♀	72-83			(Dementiev, Baker, MD)

Weight 2 ♂♂ 18.9, 20.4 g (Dementiev).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible pale horn brown, lower pale plumbeous, yellowish at gonys. Legs and feet dark brownish flesh.

ACANTHIS FLAVIROSTRIS (Linnaeus)

Key to the Subspecies

Paler; more sandy above, more buffy white below *A. f. montanella*
Darker; more rufescent above, more fulvous below *A. f. rufostriata*

1995. *Stoliczka's Twite*. *Acanthis flavirostris montanella* (Hume)

Linota montanella Hume, 1873, *Lahore to Yarkand*: 261, pl. 26

(Arpalak River, Yarkand)

Acanthis flavirostris balistanicus R. & A. Meinertzhagen, 1926, *Bull. Brit. Orn. Cl.* 46: 97 (Sanpur, near Skardu)

Baker, FBI No. 1086, Vol. 3: 157

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 13 cm (5 in.).

FIELD CHARACTERS. As in 1996, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements. Northern Pakistan in Chitral (Fulton, *JBNHS* 16: 53), Gilgit (Ludlow, *Ibis* 1933: 664) and Baltistan (Meinertzhagen, *Ibis* 1927: 378 and 379). Breeds mostly between 3600 and 4200 m, occasionally lower, descending in winter to c. 1500 m in Gilgit. Affects stony and grassy slopes.

Birds collected in August can hardly be migrants as many birds nest until September and the species does not seem to wander far from its breeding grounds. This does not exclude the possibility that birds from the Pamirs may occur in winter within our limits. We follow Ludlow (loc. cit.) and Hellmayr (1929, *Field Mus. Nat. Hist. Zool.* 17: 45) in considering these populations as *montanella*, the apparent variations probably being evidence of intergradation with *rufostriata*.

144

CARDUELINAE

fulvous brown, breast and flanks streaked with dark brown. Belly cream-buff.

Female, similar to male but no pink on rump.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Ladakh, Spiti and east along southern Tibet (Sálim Ali, *JBNHS* 46: 300; Kinnear, *Ibis* 1922: 520), north-central Nepal (in June — Deshayes, *Ibis* 1965: 400) and northern Sikkim (at least in winter). Breeds between 3600 and 4800 m, seldom down to 3400 m; optimum zone 4000–4500 m. Does not seem to descend much in winter, the lowest records being about 3000 m. Affects screes and stony hillides with Tibetan furze (*Coragana*) usually in arid country, or boulder-strewn alpine meadows; also cultivation and *Hippophae* scrub, especially in winter.

Extralimital. Southern Tibet east to Rong Chakar (Ludlow). The species has a discontinuous range in central Asia, the Middle East, Scandinavia and the British Isles.

GENERAL HABITS. Keeps in pairs or small flocks according to season, often collecting in large flocks in winter. Feeds on the ground, running among stones like *Calandrella* larks; also in low bushes or on thistle-heads.

FOOD. Seeds.

VOICE and CALLS. Call-note uttered in flight, a double *twit-twit* (SA) or a triple *dje-dje-dje* (MD). Song undescribed.

BREEDING. Season, May to end of August. Nest, a compact cup of dry grass thickly lined with wool or hair, placed low down in furze bushes etc. usually within 60 cm from the ground, sometimes up to 2 or 3 metres in dwarf willows, or on the ground among sedges. Eggs, 3 to 5, very pale blue marked with pink to reddish brown spots, chiefly in a zone at the large end. Average size of 46 eggs 18 × 13.2 mm (Osmaston), of 30 eggs 18 × 13 mm (Ludlow). Considerably variable in shape, some eggs being very dumpy, others very elongate: maximum 20 × 13.4 and 19 × 13.5 mm, minimum 16.5 × 12 mm (Ludlow).

MUSEUM DIAGNOSIS. Differs from *montanella* (1995) in being darker, more heavily streaked, in having a richer, redder tone on upperparts, and in being more buff to clay colour rather than buffy white on underparts. Bill thicker.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	77-85	c. 11	c. 19	55-64 mm
♀♀	73-81			(Vaurie, RM, MD)

COLOURS OF BARE PARTS. Iris brown. Bill horny white to pale fleshy with pink tinge. Legs and feet dark brown or blackish brown.

Genus *GALLACANTHIS* Bonaparte

Callacanthis Bonaparte, 1850, *Consp. Gen. Av.* 1: 507. Type, by monotypy, *Cerdulus Burtai* Gould

Bill like that of *Cerdulus* but much stouter and both wide and deep at base. Wings long. Sexes not alike.

Cf. Deshayes, M., 1969, *L'Oiseau* 39: 21-7 for affinities.

GOLDFINCHES AND ALLIES

145

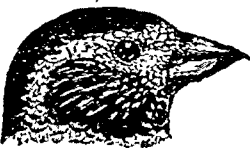
1997. Redbrowed Finch. *Callacanthis burtoni* (Gould)

Carduelis Burtoni Gould, 1838, Proc. Zool. Soc. London (1837): 90
(Himalaya = Srinagar)
Baker, FBI No. 1083, Vol. 3: 152
Plate 103, fig. 3

LOCAL NAMES. None recorded.

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Male. Above, forehead, supercilium and round eye crimson; crown black; back brown. Wings black spotted with white; tail black, outer rectrices and tip white. Below, chin and throat pinkish red; sides of throat and cheeks black. Rest of underparts fulvous brown washed with pinkish red.



x c. 1

The white-spotted wings and wide crimson or yellow ring round the eye identify both sexes respectively.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, locally common (very local east of Kumaon). The Himalayas from Safed Koh (Whitehead, *Ibis* 1909: 230) and Chitral (Fulton, JBNHS 16: 53) east through Hazara, Kashmir, Himachal Pradesh, Uttar Pradesh, Nepal (Proud, JBNHS 58: 804, only record) and Sikkim (Stevens, JBNHS 30: 371, only record). Breeds between 2400 and 3000 m (Safed Koh, Chitral), 2400 m to tree-line in Kashmir, optimum zone 2700-3000 m. In winter (November to April) occurs down to c. 1800 m, occasionally 800 m; Sikkim record in winter at c. 3000 m. Affects fairly open forest of fir, pine or deodar, occasionally birch.

GENERAL HABITS. Usually a remarkably tame and confiding species. Keeps in pairs in the breeding season, otherwise in small flocks of 6 to 12, occasionally up to 30 individuals. Feeds mostly on the ground, hopping about in undergrowth, flying up into nearby bushes and trees when disturbed, uttering soft *teus*. Descends in ones and twos to resume feeding immediately the disturbance has passed.

Display. Male vibrates his drooping wings like a sparrow, uttering a little trill. Display also said to remind one of a Goldfinch's.

FOOD. Seeds (of deodar, mountain ash, etc.).

VOICE AND CALLS. Ordinary call-note, a loud and clear whistle, higher in tone but not unlike ordinary call of bullfinch (BBO), 'pweee' often followed by notes like *puwu*, *puwewu* or *chipewu* (su like the French), all plaintive and melodious (Magrath) — usually given from high up on a bare branch. Alarm-note, a double *uh-eh* or *twee-yeh*, the second note a half-tone higher. Song described as 'not unlike the *til-til-til* notes of the Goldfinch but with more volume' (Jones, MS.).

BREEDING. Season, May to July. Nest, a rather massive cup of moss, lichen, grass stalks, twigs, fern stems or pine needles, thickly lined with goat-

CARDUELINAE

146

cattle- or even human hair and some feathers; placed in conifers from 3 to 21 metres above the ground. One site has been described as a semi-open forest interspersed with small meadows. Eggs, apparently 3, greenish blue, sparingly spotted with blackish brown or black at the large end. Average size of 3 eggs 24.3 × 16.4 mm. Building by both sexes; part of the material appears to be collected on trees; the birds do not fly directly to the nest but alight some distance below it and work their way up. Male seen feeding sitting female by regurgitation. For notes on breeding see Waters, H. P. E., JBNHS 46: 721; Bates & Lowther, 1952: 163-5.

MUSEUM DIAGNOSIS. See Field Characters.

Young. Head uniform brown without coloured supercilium (for details of plumage see Richmond, 1894, Proc. U.S. Nat. Mus. 17: 461).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	96-104	c. 18	c. 19	{ 63-65 mm
♀♀	97-100			{ c. 61 mm

(MD, Hartert, Vaurie)

COLOURS OF BARE PARTS. Iris hazel. Bill dull yellow, with dark tip. Legs and feet brownish flesh.

Genus *SERINUS* Koch

Serinus Koch, 1816, Syst. Baier. Zool.: 228, pl. 6A, fig. 50. Type, by monotypy, *Serinus hortulanus* Koch = *Fringilla serinus* Linnaeus

Metoponia Bonaparte, 1853, Compt. Rend. Acad. Sci. Paris 37: 917, 918. Type, by monotypy, *Passer pusillus* Pallas

Bill small but thick, culmen curved. Wing long; tail forked.

1998. Goldfronted Finch. *Serinus pusillus* (Pallas)

Passer pusillus Pallas, 1811, Zoogr. Rosso-Asiat. 2: 28, pl. 43, fig. 1 (Caucasus)
Baker, FBI No. 1088, Vol. 3: 158
Plate 101, fig. 3

LOCAL NAMES. *Tiok* (ad.), *Taer* (juv.) [Kashmir].

SIZE. Sparrow —; length c. 12 cm (5 in.).

FIELD CHARACTERS. A small dark finch with blackish head and glittering scarlet forehead. Above, forehead scarlet-orange; crown dark brown; nape grey. Back yellowish buff streaked with dark brown; lower rump yellow. Shoulder and edge of wing yellow with two white bars. Tail dark brown with whitish edges. Below, throat, sides of head and upper breast sooty brown, the feathers broadly fringed with grey. Belly and flanks pale yellow with dark brown streaks. Sexes alike.

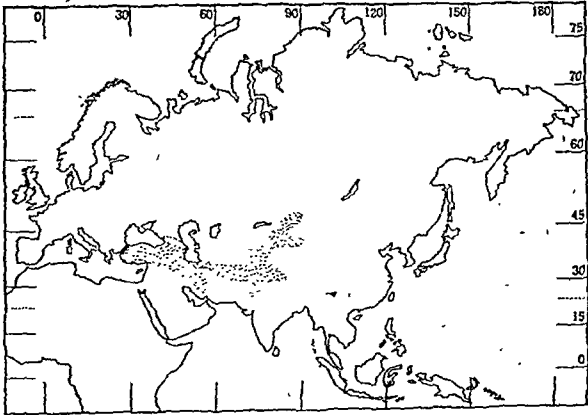


x c. 1

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. Pakistan from northern Baluchistan north to Chitral, thence east through Gilgit, Baltistan, Ladakh, northern Kashmir, Lahul, Spiti and Garhwal. Breeds between 2400 and 3000 m (Baluchistan) and between

GOLDFINCHES AND ALLIES

147

Serinus pusillus

Distributional range

3000 and 4000 m in the Himalayas, locally down to 2400 m or up to 4300 m (Ladakh, Spiti, Garhwal). In summer frequents dwarf junipers at and above timber-line, shingle scree and rocky hillsides with stunted bushes, birches and willows near cultivation. Winters (November to March) between 3300 and 1500 m, occasionally down to c. 750 m (Sind), seldom lower (Sukkur in Sind). In this season affects open hillsides and stony ground with bushes and coarse herbage.

Extralimital. Southern Tibet (Sálim Ali, JBNHS 46: 300; Lavkumar, *ibid.* 53: 325), north in Turkestan to the Tarbagatai and west to Turkey.

GENERAL HABITS. Keeps in restless flocks in the non-breeding season — small flocks in autumn, large ones in winter — ever on the move. Feeds mostly on the ground; also from low bushes and weeds often springing up 30 cm or so and fluttering against the flowerheads to pluck the seeds. When disturbed the flock flies up to the bare tops of nearby trees or bushes, all the birds alighting simultaneously in a distinctive way. They are avid drinkers and may be seen drinking and bathing at all times of day at any available water.

FOOD. Seeds of thistles (*Carduus*), *Artemisia*, *Plectranthus*, *Sisymbrium*, and other weeds and grass; mulberries.

VOICE AND CALLS. A constant, feeble but sharp *tree, tree* rapidly repeated twice and a musical *chiririri* (SA). Song described as a soft, pleasant, rippling twitter — a more sustained version of the call-note (HW).

BREEDING. Season, June to August, mainly in the last two months. Nest, a cup of grass, strips of bark and rootlets thickly lined with wool, hair or vegetable down, plastered externally with spider-web; placed in rose bushes, junipers or briars between one and six metres above the ground; one nest

CARDUELINAE

148

observed in a cleft in a cliff two metres above the ground. Eggs, 4 or 5, pale bluish green marked with rusty red and dark brown, occasionally unspotted. Average size of 85 eggs 16.7 × 12.6 mm (Osmaston).

MUSEUM DIAGNOSIS. See Field Characters.

Young. Upperparts, lesser and median coverts light rufous brown streaked with dark brown. Tertiaries and greater coverts black with broad pale rufous brown tips and edges. Rest of wing and tail as in adult. Sides of head, chin and throat plain rufous brown. Rest of underparts light rufous brown with dark streaks on breast and flanks. Postjuvénal moult of body-feathers, lesser, median and greater coverts, tertiaries and central rectrices.

First-year male and female like adult but whole crown and sides of head brown. Chin and upper throat dull yellowish white or rufous white. Tertiaries margined with fulvous white. Prenuptial moult of head, chin and throat, thus acquiring the red forecrown and blackish parts of the adult.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	74-80	9-10	c. 15	{ 48-57 mm
♀♀	71-75			{ 52-54 mm

(HW, Vaurie)

Weight 4 ♂♂ 10.5-12.7; 1 ♀ 10.5 g (Dementiev).

COLOURS OF BARE PARTS. Iris brown. Bill blackish. Legs and feet black.

Genus *LEUCOSTICTE* Swainson

Leucosticte Swainson, 1832, in Swainson & Richardson, Fauna Boreali-Americana, Bds. 2: 265. Type, by monotypy, *Linaria (Leucosticte) tephrocotis* Swainson

Fringilanda [sic], corrected to *Fringilanda* Hodgson, 1836, Asiat. Res. 19: 158. Type, by monotypy, *F. (Fringilanda) nemoricola* Hodgson

Bill sparrow-like but slender and more pointed. Nostrils covered with bristles. Wing long. Tail forked.

Key to the Species

	Page
Some pink on rump.....	<i>L. brendii</i> 131
No pink on rump.....	<i>L. nemoricola</i> 115

LEUCOSTICTE NEMORICOLA (Hodgson)

Key to the Subspecies

Axillaries pale ashy.....	<i>L. n. altaica</i>
Axillaries pale yellow.....	<i>L. n. nemoricola</i>

1999. Western Plaincoloured Mountain Finch. *Leucosticte n. altaica* (Eversmann)

Fringilla altaica Eversmann, 1848, Bull. Soc. Imp. Nat. Moscou 21: 22
(Uimon, Altai)

Baker, FBI No. 1116, Vol. 3: 192

LOCAL NAME. *Kib-cht* (= 'hill bird', Tibetan).

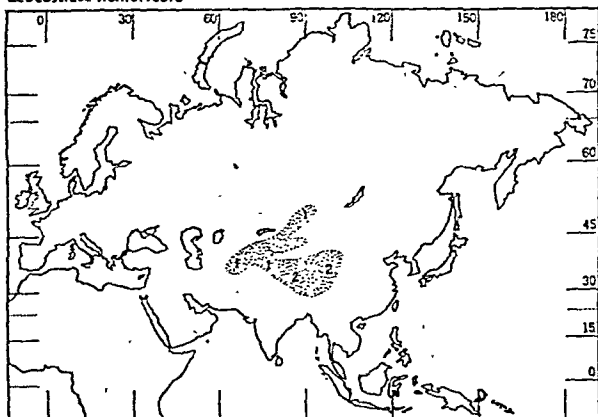
SIZE. Sparrow; length c. 15 cm (6 in.).

GOLDFINCHES AND ALLIES

149

FIELD CHARACTERS. Resembles a dark slim female House Sparrow, with a somewhat finer bill and distinctly forked tail. Above, brown streaked with darker brown. An indistinct pale supercilium. Wings dark brown with a buff bar and buff edges to tertials. Rump grey, upper tail-coverts with broad white tips. Tail dark brown. Below, pale grey-brown, sides of breast and flanks streaked with dark brown. Sexes alike.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to erratic vertical movements. The western Himalayas from Chitral east through Gilgit, Ladakh and Kashmir to Kumaon. Breeds above timber-line (c. 3300 m in Kashmir), mostly above 3600 m and up to 4200 m (Chitral) or 4800 m

Leucosticte nemoricola

■ Distributional ranges 1 *altaica* (1999), 2 *nemoricola* (2000).

Ladakh, Spiti). Affects screes and stony grassy slopes in desolate country. Descends in winter (October to early April) to c. 1500 m, occasionally 1000 m (Kangra) but does not entirely leave the higher levels. In this season frequents cultivation about villages, terraced fields and open hillsides but apparently shuns the more sunny sides of hills.

Extralimital. Western Tibet and northern Afghanistan north to the Altai and the Sayans.

GENERAL HABITS. A highly gregarious species congregating in huge flocks, of 200 or more birds, in winter; keeping in smaller flocks even in summer. Feeds on the ground among stones and boulders, often on the edges of melting snow, flying up into bare tree-tops when disturbed. Behaviour when feeding very reminiscent of sparrow, this likeness enhanced by sparrow-like dress. Immature birds apparently descend lower in winter than adults, which remain at higher altitudes.

GOLDFINCHES AND ALLIES

151

wide area, alighting on the ground in a dense mass from time to time and taking off again almost immediately to resume the wheeling, without apparent cause.

Display. Male displays in a peculiar manner with tail erect, not fanned, wings hanging and dragged on the ground, head held high with the bill pressed on the chin, and thus running here and there behind the female (Schäfer).

FOOD. Chiefly seeds.

VOICE AND CALLS. A sharp twitter sounding like *rick pi titt* or *dui dip dip dip* (Schäfer).

BREEDING. As in 1999.

MUSEUM DIAGNOSIS. Like *altaica* but upperparts a little deeper rufous and underparts a little darker. Tips to median and greater coverts white. Axillaries pale yellow (v. ashy white).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	94-105	12-15	20-21	65-72 mm
♀♀	90-108			64-69 mm

(SA, Stres., NBK)

Weight 10 ♂♂ (July-Aug.) 19.8-25.5; 9 ♀♀ (July-Aug.) 20-25.6; 5 juv (Aug.) 16.6-24.4 g (GD).

COLOURS OF RARE PARTS. As in 1999.

LEUCOSTICTE BRANDTI Bonaparte

Key to the Subspecies

A	Some pink on wing-coverts	Page
1	Paler	<i>L. b. brandti</i> 151
2	Darker, more heavily streaked	<i>L. b. pamirensis</i> 152
B	No pink on wing-coverts	
3	Paler	<i>L. b. pallidior</i> 154
4	Darker	<i>L. b. haematopygia</i> 153

2001. Brandt's Mountain Finch. *Leucosticte brandti brandti* Bonaparte

Leucosticte brandti Bonaparte, 1850, *Consp. Gen. Avium* 1: 537 (Siberia, *error* = Turkistan, restricted to Zailiisk Ala Tau by Vaurie, 1959, *Bds. Pal. Fauna* 2: 621 Baker, FBI No. 1117 (part), Vol. 3: 193

LOCAL NAMES. None recorded.

SIZE. Sparrow +; length c. 18 cm (7 in.).

FIELD CHARACTERS. As in 2003, q.v.

STATUS, DISTRIBUTION AND HABITAT. Straggler to Gilgit (*Ibis* 1881: 88). **Extralimital.** Breeds in Turkistan from western Tien Shan to western Sinkiang.

GENERAL HABITS, FOOD AND VOICE. As in 2003.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

150

CARDUELINAE

Display. Male extends wings to their full length and waves them about by way of courting (HW).

FOOD. Chiefly small seeds; also insects.

VOICE AND CALLS. A soft, lively sparrow-like twitter. A shrill song of one or two monotonous notes frequently repeated from the top of some rock or stone (Brooks).

BREEDING. *Season*, July and August. *Nest*, a shallow cup of dry grass lined with wool and hair placed under a rock or a large flat stone, or inside a burrow 15 cm or so from the entrance, on steep slopes. Marmot burrows frequently used, bird and mammal living peacefully together. Nest also placed in holes in stone walls or heaps of stones; occasionally on a sheltered ledge of rock. *Eggs*, 3 or 4, white. Average size of 25 eggs 20.5 × 15.1 mm (Baker).

MUSEUM DIAGNOSIS. For distinction from *nemoricola* see 2000 under Museum Diagnosis.

Young, like adult but whole crown uniform warmer rufous; upperparts with warmer rufous margins. Underparts uniform pale rufous. Postjuvénal moult of body-feathers, lesser, median and greater coverts.

MEASUREMENTS

Wing ♂♂ 93-100; ♀♀ 90-95 mm (Paludan): rest as in 2000.

Weight 3 ♂♂ (June-July) 20-21; 3 ♀♀ (June-July) 19-21 g (Paludan).

COLOURS OF RARE PARTS. Iris orange-brown (adult male), light brown (female and immature). Bill dark brown, lower mandible paler (yellowish) at base. Legs and feet dark brown; soles (with wart-like pads below joints of toes) primrose yellow.

2000. Eastern Plaincoloured Mountain Finch. *Leucosticte nemoricola nemoricola* (Hodgson)

F. (ringilauda) Nemoricola Hodgson, 1836, *Asiat. Res.* 19: 158 (Nepal)

Baker, FBI No. 1115, Vol. 3: 191

Plate 94, fig. 15

LOCAL NAME. *Kib-che* (= 'hill bird', Tibetan).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 1999, q.v.

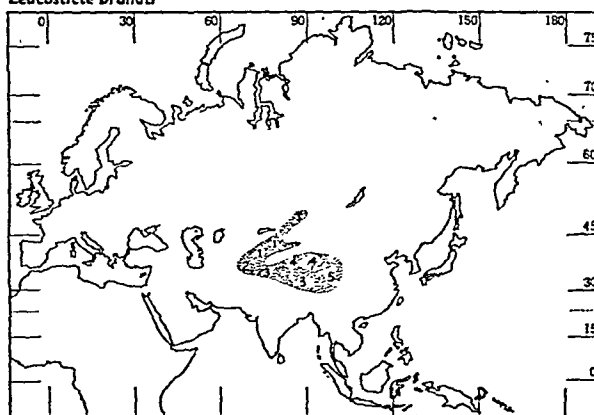
STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements: Nepal, Sikkim, Bhutan, Arunachal Pradesh (?). Breeds between c. 4200 and 5300 m, winters between 1500 and 4500 m, mostly above 2000 m. Affects alpine meadows, boulder fields, screes, moraines and dwarf scrub well above tree-line; also cultivation and villages. In winter also frequents open forest slopes and fallow fields.

Extralimital. S. Tibet, N. Yunnan north and east to Kansu, Szechuan and Shensi.

GENERAL HABITS. As in 1999. Usually very wild and restless in winter, the birds flying around incessantly in scattered undulating rabbles over a

152

CARDUELINAE

Leucosticte brandti

■ Distributional ranges 1 *brandti* (2001), 2 *pamirensis* (2002), 3 *haematopygia* (2003), 4 *pallidior* (2005), 5 extralimital subspecies.

MEASUREMENTS

Wing ♂♂ 112-119; ♀♀ 103-116 mm (Dementiev).

COLOURS OF RARE PARTS. As in 2003.

2002. Pamirs Mountain Finch. *Leucosticte brandti pamirensis* Severtzov

Leucosticte pamirensis Severtzov, 1883, *Ibis*: 58
(Pamir, restricted to Tien Shan by Hartert, 1910)
Baker, FBI No. 1117 (part), Vol. 3: 193

LOCAL NAMES. None recorded.

SIZE. Sparrow +; length c. 18 cm (7 in.).

FIELD CHARACTERS. As in 2003, q.v.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor to Gilgit and surrounding region.

Extralimital. Northern Afghanistan to south-central Kirghizistan.

GENERAL HABITS, FOOD AND VOICE. As in 2003.

MUSEUM DIAGNOSIS. Paler than *haematopygia* and like it has pink margins to rump, but also has narrow pink edges to lesser coverts. Darker than *brandti* and more heavily streaked on mantle.

MEASUREMENTS

Wing ♂♂ 111-121 mm (Dementiev).

COLOURS OF RARE PARTS. As in 2003.

GOLDFINCHES AND ALLIES

153

- 2003, 2004. **Himalayan Mountain Finch.** *Leucosticte brandti haematopygia* (Gould)
Montifringilla haematopygia Gould, 1853, Proc. Zool. Soc. London (1851): 115 (Tibet, restricted to Tso Moriri Lake, Ladakh, by Kinnear, 1922, Ibis: 519)
Leucosticte brandti audreyana Stressemann, 1939, Orn. Monatsb. 47: 177
 (Sikkim: Yabuk at Zemu Glacier)¹
 Baker, FBI No. 1118 (part), Vol. 3: 194
 Plate 94, fig. 17

LOCAL NAMES. None recorded.

SIZE. Sparrow +; length c. 18 cm (7 in.).

FIELD CHARACTERS. A dark-coloured finch with rosy rump and forked tail. Above, forehead, 'face' and crown dark brown. Rest of upperparts paler brown scalloped with sandy, with a large whitish patch on wing and pale shoulders; rump rosy pink. Outer edge of tail white. Below, drab grey. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. From Chitral (Fulton, JBNHS 16: 55) east along the Karakoram and northern Himalayas through Baltistan, Ladakh, Lahul, Spiti, Nepal (Biswas, JBNHS 60: 194; Diesselhorst, 1968) and Sikkim (Sálim Ali, 1962). Breeds above c. 4200 m, locally down to c. 3900 m (Chitral, Spiti), and up to 5400 m, generally in a higher zone than *L. nemoricola*. In winter some birds descend to the valleys at c. 3000 m in the west, 3600 m in Sikkim. Most birds apparently remain at very high altitudes even in winter. Affects desolate stony hillsides, scree fans, moraines and alpine meadows.

Extralimital. Adjacent parts of southern Tibet (Sillem, Ludlow, Sálim Ali, Lavkumar).

GENERAL HABITS. Keeps in pairs or flocks up to 50 birds in summer, in larger flocks in winter. Flies in compact flocks capable of remarkable aerial evolutions, now circling above cliffs in undecided flight, now plunging towards the ground at tremendous speed only to rise again and wheel about while noisily uttering their loud calls (Schäfer). Fond of feeding along the edge of melting snow, on shingle banks of streams or on lake shores, running along the waterline like stints, picking seeds etc. washed up by ripples.

Display. Male wheels and stoops at female and alights on rocks by her side where he stands with outstretched quivering wings like young bird begging for food. Also displays with his tail held high and wings raised at a steep angle, uttering a melodic pink, pink (Schäfer).

FOOD. Seeds (*Artemisia* etc.) and vegetable matter (young shoots of *Sedum*) have been recorded. Also some insects.

VOICE and CALLS. Alarm-note, a harsh, distinctive *churr* rather reminiscent of the note of a grosbeak or stonechat (HW). Loud call-notes given in flight *tuill*, *tuill*, etc. (Schäfer). Song undescribed.

BREEDING. Season, June to August. Nest, a rough cup of grass lined with hair or feathers, placed in a hole under a boulder or in heap of stones. Eggs, 3 or 4, white. Average size of 6 eggs 22.1 × 16.1 mm (Baker).

MUSEUM DIAGNOSIS. No rosy edges on upper wing-coverts but broad ones on rump.

¹ Cf. Peters's *Check-list* 14: 259.

GOLDFINCHES AND ALLIES

155

2006. **Trumpeter Bullfinch.** *Rhodopechys githaginea crassirostris* (Blyth)
Carpodacus crassirostris Blyth, 1847, Jour. Asiat. Soc. Bengal 16: 476 (Afghanistan)
 Baker, FBI No. 1072, Vol. 3: 141
 Plate 101, fig. 13

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).



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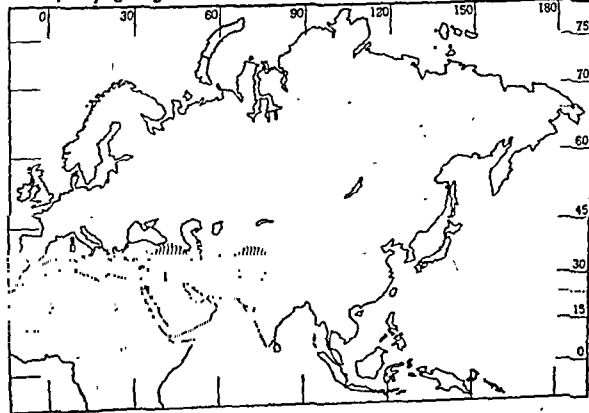
FIELD CHARACTERS. A pale pinkish brown finch with a heavy orange bill.

Male. Above, crown ashy; back greyish brown washed with pink. Wings and lower rump pink; tail dark brown with pale margins. Below, pale greyish pink.

Female similar to male but without pink tinge in winter and only a faint pink flush below in summer.

STATUS, DISTRIBUTION and HABITAT. Uncommon and local resident, subject to seasonal movements. Pakistan in Baluchistan, Sind and N.W.F.P. north to Chitral. Breeding distribution little known; summer records from

Rhodopechys githaginea



▨ Distributional ranges 1 *crassirostris* (2006), 2 extralimital subspecies.

Thal, Saraman, Kalat, Hab Valley, Pishin Valley, Quetta and Chitral. Apparently found mostly in the foothills but in Chitral recorded as high as 3000 m (Fulton) and said to be 'not so common as *mongolica*' (Perreau). More widespread in winter when fairly common in the low hills of Sind and reaching the Makran Coast, Rajasthan (Jaisalmer, Jodhpur), the Salt Range and Punjab (Gurgaon). Affects bare hills and stony semi-desert. Plumage perfectly oblitterative in its accustomed habitat.

154

CARDUELINAE

Young. Crown, sides of head and neck greyish brown. Rest of upperparts like adult but paler, fringes of feathers more tawny. No pink on rump. Underparts like adult but with a slight tawny wash.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	112-122	13-14	20-22	{ 73-82 mm 69-75 mm (HW, Stres.)
♀♀	106-117	14-15		

Weight 5 ♂♂ (July-Aug.) 26.4-28.9; 5 ♀♀ (July-Aug.) 26-28.3 g (GD).

COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet black (summer); bill brown in winter.

2005. **Kun Lun Mountain Finch.** *Leucosticte brandti pallidior* Bianchi
L. (Leucosticte) haematopygia pallidior Bianchi, 1909, Ann. Mus. Pétersb. 13: 38, 45, 55
 (Karasai, Nan Shan)
 Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow +; length c. 18 cm (7 in.).

FIELD CHARACTERS. As in 2003, q.v.

STATUS, DISTRIBUTION and HABITAT. Straggler to Sikkim, one record in March (Meinertzhagen, JBNHS 51: 273). Habitat as in 2003.

Extralimital. Tibet from the northern Karakoram region (Ludlow, Ibis 1933: 669; Sillem, 1935, p. 463) east along the Kun Lun to the Nan Shan.

GENERAL HABITS, FOOD and VOICE. As in 2003.

MUSEUM DIAGNOSIS. Like *haematopygia* (2003) with pink lacking on wing but present on rump but paler.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 2003.

Genus RHODOPECHYS Cabanis

- Rhodopechys* Cabanis, 1851, Mus. Hein. 1: 157. Type, by original designation, *Fringilla sanguinea* Gould
Bucanetes Cabanis, 1851, Mus. Hein. 1: 164. Type, by monotypy, *Fringilla githaginea* Lichtenstein
Rhodospiza Sharpe, 1888, Cat. Bds. Brit. Mus. 12: 282. Type, by monotypy, *Fringilla obsoleta* Lichtenstein
 Bill stout, strong and rather short. Nostrils covered with short bristles. Wing long.

Key to the Species

	Page
A Crown black..... <i>R. sanguinea</i>	159
B Crown not black	
1 Crown ashy..... <i>R. githaginea</i>	155
2 Crown brownish	
a Outer edges of primaries whitish..... <i>R. obsoleta</i>	158
b Outer edges of primaries pink..... <i>R. mongolica</i>	156

156

CARDUELINAE

Extralimital. Extends north to Uzbekistan and west to Israel and central Arabia. Other subspecies in North Africa to Sudan, southern Sahara and Morocco; Canary Islands.

GENERAL HABITS. Keeps in pairs or small flocks according to season. Feeds on the ground, perches on rocks or stones. Avoids perching on bushes. Flight rapid, slightly undulating.

FOOD. Mainly seeds.

VOICE and CALLS. An incessant twittering when in flocks in winter. Call-note rendered as *stand at ease* (Cumming). Song described as a jerky, prolonged tremulous twitter interspersed with bell-like chirping or croaking notes (Dementiev).

BREEDING. Little known. Season, April to June. Nest, a framework of sticks and twigs lined with wool and hair placed in holes in rocks or walls of ruined buildings. Eggs, 4, very pale to deep blue with a few dark spots or a well-defined ring of reddish freckles at the large end. Average size of 14 eggs 18.4 × 14.7 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. Bill short and very tumid with lower mandible as much curved as upper. Wings long, reaching beyond middle of tail.

Young. Whole upperparts light brown, a little paler on rump and some darker indistinct streaks on mantle. Wings and tail as in adult female but edges and tips of lesser, median and greater coverts yellowish tawny. Centre of breast, belly, vent and under tail-coverts white. Rest as in adult female but suffused with light tawny on sides of body. Postjuvinal moult of body-feathers and apparently all wing-coverts except primary (HW).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	88-93	12-13	c. 19	51-55 mm (CBT, Baker)
♀♀	83-89			

Weight 1 ♂ juv. (July) 19 g (Fahudan).

COLOURS OF BARE PARTS. Iris brown. Bill of male: scarlet or orange (breeding), dull orange-yellow (winter); female dull yellow. Legs and feet brownish flesh.

2007. **Mongolian Desert Finch.** *Rhodopechys mongolica* (Swinhoe)
Carpodacus mongolicus Swinhoe, 1870, Proc. Zool. Soc. London: 447 (Nankow Fan)
 Baker, FBI No. 1073, Vol. 3: 142
 Plate 101, fig. 14

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

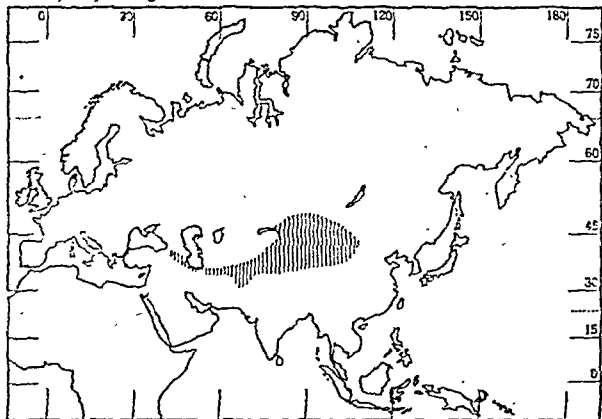
FIELD CHARACTERS. Above, sandy brown with a faint pink tinge on supercilium, wing and lower rump. Tail dark brown with whitish outer edge. Below, greyish brown more or less tinged with pink on chin, throat, breast and flanks; centre of belly whitish. Sexes practically alike, female differing only in having less pink in plumage.

Both sexes rather similar to female *R. githaginea*. Bill of male brownish yellow, not becoming orange or scarlet in summer.

GOLDFINCHES AND ALLIES

157

STATUS, DISTRIBUTION and HABITAT. Fairly common winter visitor (October to May) to Ladakh, Gilgit, Baltistan, Chitral and Quetta, between c. 1500 and 3000 m. Presumably breeds at higher elevations but no actual records. Summer data: Chitral 3000 m in July; Gilgit 2700 and 3000 m in July. *Rhodopechys mongolica*



Distributional range

June; Astor 3300 m in June; Ladakh 3000 m in August; Leh, a juvenile obtained in September; birds observed in Ladakh from 3000 to 3900 m in May but still in flocks. Affects dry stony or rocky slopes and steep ravines.

Extralimital. Extends west to Transcaucasia, north to the Altai and east to Chihli in western China.

GENERAL HABITS. In winter usually seen in flocks of 20 to 30 birds. Very twitter-like in habits, crowding together on bushes or on the ground and keeping up a constant twittering while (Ludlow). Feeds on the ground. Flocks flight regularly morning and evening to drink at desert springs.

FOOD. Seeds of grass etc.

VOICE and CALLS. A constant twittering while in flocks rendered as *tyuk-tyuk* etc. A pleasant song (Dementiev). Call-notes given as *dju-vud* alternating with *djudjuu* (Paludan).

BREEDING. Not recorded within our limits. *Season*, apparently June to August. *Nest*, placed in little hollows on steep ground or under stones.

MUSEUM DIAGNOSIS. Distinguished from *githagina* in being browner above with less or no pink tinge; feathers of crown and back with dark centres, base of crown-feathers brown not ashy. Bill less heavy and swollen. For other differences see Vaurie, 1949, *Amer. Mus. Novit.*, No. 1424: 34.

Young, like adult but upperparts paler sandy brown. Wing-coverts with pale sandy margins. Underparts without pink, sides of body and breast suffused with tawny.

GOLDFINCHES AND ALLIES

159

and foothills up to c. 1400 m. Known to breed only in the Quetta district, elsewhere recorded in winter only. Occurs on breeding ground from March to September though small numbers may also be seen in winter. Affects orchards, fallow fields, weed-overgrown patches, etc.

Extralimital. Ranges west to Israel, north to the Ala Tau and east to central Mongolia, Inner Mongolia and northern Tsinghai.

GENERAL HABITS. Keeps in pairs or small flocks up to 20 or so according to season. Feeds mostly on the ground; perches freely on bushes, trees and telegraph and railing wires.

FOOD. Chiefly seeds and flower buds.

VOICE and CALLS. Call-note *pruii-pruii*; also described as a cheery *pink?*, *pink?*, *pink?*. Song, a little melody comprising repetitions of the call-note, nasal and grating trills and rolls, reminiscent of the Goldfinch, the Linnet and especially the Greenfinch (Erard & Etchecopar, 1970). Song period begins in early March.

BREEDING. *Season*, April (sometimes as early as the first week of March) to July; double-brooded. *Nest*, a compact cup of twigs, sticks and grass well lined with wool, hair or feathers, placed in trees, vines, rose bushes, fruit trees, between one and five metres above the ground. *Eggs*, 5 or 6, sometimes 4 or 7, very pale blue-green to nearly white, marked at the large end with brownish black dots and scrolls, sometimes very sparsely. Average size of 100 eggs 18.9 × 14.2 mm (Baker); of 50 eggs 19.2 × 14.4 mm (Williams). Building of nest by female, accompanied by singing male. A case of brood parasitism by *Cuculus canorus* recorded.

MUSEUM DIAGNOSIS. See Field Characters.

Young. Whole upperparts, sides of head, lesser and median wing-coverts pale sandy brown. Greater coverts brown with pale sandy outer edges and tips. Tertiaries brown washed with pale sandy on both webs; rest of wing and tail as adult. Below, dirty white tinged with sandy brown. Postjuvinal moult of body-feathers, tertiaries and all coverts except primary series (HW).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	86-92	13-14	16-18	56-65 mm
♀♀	81-87			54-61 mm

Weight 1 ♂ (July) 25; 1 ♀ (July, laying) 26 g (Paludan).

COLOURS OF BARE PARTS. Iris brown. Bill blackish brown (male breeding) or yellowish brown to brown (non-breeding and female). Legs and feet brownish flesh.

2009. Crimsonwinged Desert Finch. *Rhodopechys sanguinea sanguinea* (Gould)

Fringilla sanguinea Gould, 1838 (1837), *Proc. Zool. Soc. London*: 127 (Erzernum) (Cf. Deshayes, M., 1969, *L'Oiseau* 39: 21-7 for affinities)

Baker, FBI No. 1075, Vol. 3: 143

Plate 101, fig. 12

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 18 cm (7 in.).

FIELD CHARACTERS. A brown finch with pink wings and large yellowish bill. Male. Above, crown blackish. Area around eye crimson; a broad buff supercilium. A tawny collar on upper back and sides of neck. Back rufous-

158

CARDUELINAE

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	84-96	c. 12	c. 17	51-58 mm
♀♀	84-91			51-52 mm

(Dementiev, MD, Vaurie)

Weight 16 ♂♂ 18-24; 10 ♀♀ 19-23 g (Paludan).

COLOURS OF BARE PARTS. Iris brown. Bill dull yellow, brownish above. Legs and feet yellowish flesh, pale brown; orange in a male and a female in September (Abbott).

2008. Lichtenstein's Desert Finch. *Rhodopechys obsoleta* (Lichtenstein)
Fringilla obsoleta Lichtenstein, 1823, in Eversmann, *Reise von Oren. n. Buchara*: 132 (Buchara)

Baker, FBI No. 1074, Vol. 3: 143

Plate 101, fig. 11

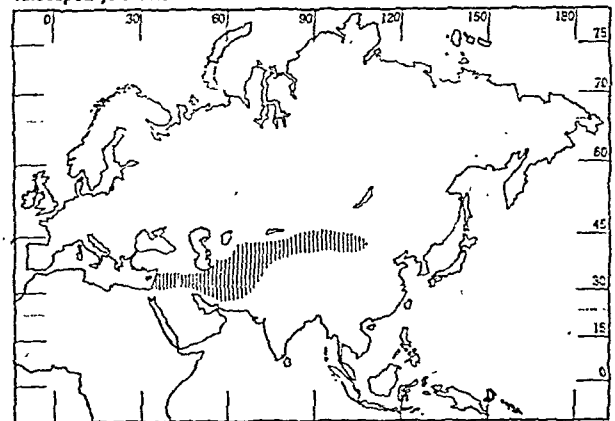
LOCAL NAME. *Kābūl gūlābi* (Lahore, Rawalpindi).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. A pale sandy brown finch with pink wings. Above, pale brown; lores or 'mask' black. Wings dark brown with a large pink patch, white outer edge and tips, and buff edges to tertiaries. Tail dark brown with whitish outer edge and tips. Below, throat and breast fulvous brown. Belly white. Sexes nearly alike but female without black mask. Male has a black bill in the breeding season.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to local movements; locally common. Pakistan from northern Baluchistan to Chitral, in the plains

Rhodopechys obsoleta



Distributional range

160

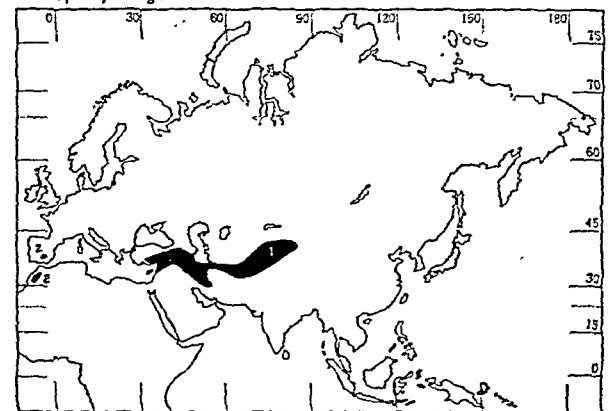
CARDUELINAE

brown streaked with darker brown; lower rump pink. Wings largely pink with dark brown tip and a narrow white band at tip of secondaries. Tail dark brown with white outer edge. Below, ear-coverts and throat tawny brown with a few dark brown spots on the latter. Breast and flanks tawny brown streaked with dark brown and a pale band across breast. Centre of belly pinkish white.

Female, similar to male but practically no black on crown and without pink on rump. Pink colour much reduced on wings, and other colours paler.

STATUS, DISTRIBUTION and HABITAT. Status unknown. Two records: Chitral, c. 3000 m apparently in July (Fulton, JBNHS 16: 53) and Ladakh,

Rhodopechys sanguinea



Distributional ranges: *sanguinea* (2009), *aliena* (RE).

c. 3600 m on 27 April (Meinertzhagen, *Ibis* 1927: 381). Affects semi-desert, rocky and scrubby hillsides.

Extralimital. Semi-desert mountain ranges from Turkestan to Turkey and Lebanon. An isolated population (*aliena*) in the Atlas Mts. Recently recorded in southern Spain.

GENERAL HABITS. Keeps in small flocks of 3-5 birds outside the breeding season. The birds from Ladakh (above) were in company with a flock of *R. mongolica* feeding in stubbles near a village.

FOOD. Mostly seeds.

VOICE and CALLS. Call-note uttered in flight *chilip*. A quiet grating song *tkarili...tkurilikip*, reminiscent of the notes of a sparrow, given from

GOLDFINCHES AND ALLIES

161

bushes or tussocks (Lehmann & Mertens, *Oologists' Rec.* 43: 1-16).

BREEDING. Season, May to July. Nest, placed in hollows under a stone or plant on steep slopes. For details see *The Oologists' Record* 43: 1-16, 1969, and *Der Falke* 13: 48-53, 1966.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	105-111	c. 17	c. 19	52-63 mm
♀♀	97-103			53-63 mm

(MD, Vaurie, Paludan)

Weight 2 ♂♂ (June) 34, 44; 2 ♀♀ (June) 32, 33 g (Paludan).

COLOURS OF BARE PARTS. Iris dark brown. Bill dull yellow, dusky at tip. Legs and feet dark brown; soles yellowish.

Genus *CARPODACUS* Kaup

Carpodacus Kaup, 1829, Skizz. Entw. Gesch. Eur. Thierw.: 161. Type,

by subsequent designation, *Fringilla rosea* Pallas

Procarduelis Blyth, 1843, Jour. Asiat. Soc. Bengal 12: 985. Type,

by monotypy, *Carduelis nipalensis* Hodgson

Propasser Hodgson, 1844, in Gray's Zool. Misc.: 84. Type,

by monotypy, *Fringilla rodopepla* Vigors

Pyrrhospiza 'Hodgson' = Blyth, 1844, or 1845, Jour. Asiat. Soc. Bengal 13: 953.

Type, by monotypy, *P. punicea* 'Hodgson' = Blyth

Bill shorter than head, conical, thick at base. Culmen curved or nearly straight. Wing rather long, first three primaries (as.) longest. Tail slightly forked. Male with some red in plumage, female brown and streaked.

Key to the Species

	Males	Page
I	Some pink or red in plumage	
A	Some white or pink on tertials	
1	Belly white..... <i>C. trifasciatus</i>	183
2	Belly pink or red	
a	Back dark crimson..... <i>C. vinaceus</i>	172
b	Back brown with pink streaks..... <i>C. rhodopeplus</i>	175
B	No white on tertials	
3	Size large, wing over 100 mm	
c	Plumage scarlet, belly grey-brown..... <i>C. puniceus</i>	187
d	Plumage rosy red, lower belly pink or whitish	
i	Back pale brown, indistinctly streaked; white on outer rectrices covering most of outer web..... <i>C. rubicilla</i>	183
ii	Back grey-brown heavily streaked with dark brown; white on outer web of outer rectrices very narrow..... <i>C. rubicilloides</i>	185
4	Size smaller, wing under 100 mm	
e	End of supercilium white..... <i>C. thura</i>	176
f	No white at end of supercilium	
iii	A distinct, wide, dark crimson band across breast..... <i>C. nipalensis</i>	167
iv	No band across breast	
a'	Under tail-coverts creamy white..... <i>C. erythrurus</i>	162

11

GOLDFINCHES AND ALLIES

163

2010. **Turkestan Rosefinch.** *Carpodacus erythrurus ferghanensis* (Kozlova)

E. (rythrina) e. (rythrina) ferghanensis Kozlova, 1939, Bull. Soc. Nat. Moscou 48: 63

(Shah-dara, Tadzhik S.S.R.)

Baker, FBI No. 1068, Vol. 3: 136

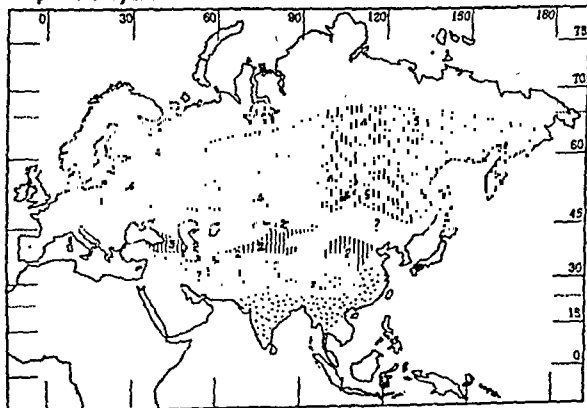
LOCAL NAMES. *Gūlāb tsār* (Kashmir, all rosefinches); *Tūtī*, *Lāl tūtī* (Hindi).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male, adult. Above, crown crimson with a paler, more rosy eye-stripe. A darker stripe behind eye; sides of neck and nape crimson-brown. Back and wings crimson and brown. Rump dark crimson. Below, cheeks pink; chin, throat and breast crimson becoming paler on flanks and belly; whitish buff on vent.

Female. A sparrow-like bird, olive-brown above with two pale wing-bars. Below, throat whitish with brown streaks; breast heavily streaked with brown; belly whitish.

STATUS, DISTRIBUTION AND HABITAT. Common summer (breeding) visitor. The hills of Pakistan from northern Baluchistan (Christison, JBNHS 43: 481).

Carpodacus erythrurus

Distributional range of the species

■ Breeding

■ Winter

1 *ferghanensis* (2010), 2 *roseatus* (2011), 3 *kubanensis* (2012),

4 *erythrurus* (2013), 5 *grebnitzkii* (RE).

to Chitral and east along the Himalayas through Gilgit, Ladakh, Kashmir, Lahul and Spiti. Breeds between c. 2700 and 3600 m: in Baluchistan down to c. 2300 m, in the Safed Koh to 2000 m, in Ladakh and Spiti up to 3900 m; recorded in Ladakh (Khardong) at c. 4200 m in July. Affects willow groves and tamarisks along river beds, patches of bushes on the edge of cultivation,

162

CARDUELINAE

b'	Under tail-coverts brown with broad whitish edges.....	Page
c'	Under tail-coverts pink..... <i>C. rubescens</i>	169
o	Underparts with dark shaft-streaks..... <i>C. edwardsii</i>	181
oo	Underparts plain pink	
a'	Larger, wing over 80 mm..... <i>C. rhodochlamys</i>	173
b'	Smaller, wing under 80 mm	
o'	Crown dull crimson with dark shaft-streaks..... <i>C. rhodochlamys</i>	171
o'	Crown with broad, dark brown streaks..... <i>C. pulcherrimus</i>	179

Females

II	No pink or red in plumage	
C	Size large, wing over 95 mm	
5	Lower rump yellowish olive..... <i>C. puniceus</i>	187
6	No yellow on rump	
a	Upperparts pale sandy brown with darker streaks..... <i>C. rubicilla</i>	183
b	Upperparts grey-brown with dark brown streaks..... <i>C. rubicilloides</i>	185
D	Size smaller, wing under 95 mm	
7	Breast ochraceous yellow..... <i>C. trifasciatus</i>	183
8	Lower rump ochraceous yellow..... <i>C. thura</i>	176
9	No yellow in plumage	
c	Underparts not streaked	
i	Belly grey; edges of under tail-coverts whitish..... <i>C. rubescens</i>	169
ii	Belly tawny brown; edges of under tail-coverts buff..... <i>C. nipalensis</i>	167
d	Underparts streaked	
iii	Underparts tawny-olive, finely streaked	
a'	Wing under 75 mm..... <i>C. vinaceus</i>	172
b'	Wing over 75 mm..... <i>C. edwardsii</i>	181
iv	Underparts buff to whitish, heavily streaked	
c'	Belly whitish, unstreaked..... <i>C. erythrurus</i>	162
d'	Belly more or less streaked	
o'	Supercilium streaked, indistinct; underparts whitish buff	
a'	Bill from skull over 16 mm..... <i>C. rhodochlamys</i>	173
b'	Bill from skull under 16 mm..... <i>C. pulcherrimus</i>	179
o'	Supercilium unstreaked, prominent; underparts fulvous buff	
c'	Wing over 78 mm..... <i>C. rhodopeplus</i>	175
d'	Wing under 76 mm..... <i>C. rhodochlamys</i>	171

CARPODACUS ERYTHRINUS (Pallas)

Key to the Subspecies

(Summer plumage)

A	Palest; general tone rosy	
1	Less rosy; pigment less extensive below..... <i>C. e. erythrurus</i>	166
2	More rosy; pigment reaching farther down below..... <i>C. e. kubanensis</i>	166
B	Darker; general tone scarlet..... <i>C. e. ferghanensis</i>	163
C	Darkest; general tone deep carmine or purplish; female more heavily streaked..... <i>C. e. roseatus</i>	164

164

CARDUELINAE

orchards, scattered scrub on stony plains, and slopes with junipers, briar and rose bushes or other thorny scrub. Winters from c. 1500 m down to the foothills and in the plains of Pakistan south to Sind (rare) and northwestern India south to Londa [Koelz, JBNHS 43: 33 (recorded as *kubanensis* but said to be similar to specimens from the western Himalayas)]. Recorded on passage as high as 5000 metres. Habitat in winter as in 2011.

Extralimital. Ranges north to the Tarbagatai and west to northern Iran.

MIGRATION. Recorded on summer grounds from May to September.

GENERAL HABITS AND FOOD. As in 2011.

VOICE AND CALLS. A short cheery song of five to eight notes like *tree-tree-tweet* or *ti-deu-di-deu*; each individual has its own combination of notes which is invariable, often shared by other birds of its immediate vicinity, but differing considerably in other localities. These various songs do not differ however in character and are always recognizable as belonging to this species (Osmanston). Call-note, a canary-like, interrogative *tree-ee?* or *too-ee?*.

BREEDING. Season, June to September. Nest, a cup of grass lined with rootlets, juniper bark fibre and a few hairs, placed in low bushes of *Lonicera*, briar, rose or willow within a couple of metres from the ground. Eggs, usually 4, sometimes 3, rarely 5, deep blue sparsely blotched with dark brown and black chiefly at the large end, occasionally spotless or with minute specks. Average size of 200 eggs 20.8 × 14.9 mm (Osmanston). Feeding of young by both parents, by regurgitation.

MUSEUM DIAGNOSIS. Male differs from that of *erythrurus* (2013) in being brighter, more scarlet; female darker and more heavily streaked.

Young, like female but edges of feathers on upperparts more ochraceous, giving a more streaked appearance. Wing-bars yellowish white. Streaks on underparts heavier. Postjuvenile moult includes body-feathers and all coverts except primary. Many males breed in brown plumage. Whether all males moult into brown plumage at this moult or whether some moult to red dress is uncertain (HW).

Complete postnuptial moult performed mostly after arrival in the plain in September-October. No prenuptial moult.

MEASUREMENTS

Wing ♂♂ 78-87 mm; ♀♀ 78-84 mm (Dementiev).

Weight 13 ♂♂ (June-July) 20-22; 5 ♀♀ (June) 21-26 g (Paludan).

COLOURS OF BARE PARTS. As in 2011.

2011. **Indian Rosefinch.** *Carpodacus erythrurus roseatus* (Blyth)

Pyrrhula roseata 'Tickell' = Blyth, 1842, Jour. Asiat. Soc. Bengal 11: 461

('sold ... in Calcutta')

Baker, FBI No. 1069, Vol. 3: 137

Plate 102, fig. 3

LOCAL NAMES. *Tūtī*, *Lāl tūtī*, *Sūkhār tūtī* (Hindi); *Gūlābī tūtī*, *Lāl tūtī* (Bengali); *Amonga tūtī* (Nepal); *Chhōid tūtī* (Sylhet); *Tedru-pichilla*, *Tedru-jinawari* (Telugu); *Rosakkūruzi* (Malayalam); *Phalín-pha* (Lepcha); *Dō-di-ma-ro* (Tibetan); *Dejajariaba* (Chachi); *Ingrui* (Naga).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 2010, q.v.

GOLDFINCHES AND ALLIES

165

STATUS, DISTRIBUTION and HABITAT. Common summer (breeding) visitor to the Himalayas from Garhwal east through Nepal, Sikkim, Bhutan (?) and Arunachal Pradesh (?). Breeds at c. 3900–4000 m in Garhwal, 2700–4200 m in western Nepal (Lowndes), 3700–4000 m in eastern Nepal (Diesselhorst). Affects willows along streams (Garhwal), rock and scrub, sometimes open coniferous forest (western Nepal), bush-covered slopes with isolated birches and firs (eastern Nepal). Winters from c. 1500 m down to the foothills into Assam, Bangladesh and most of the Indian Peninsula.¹ In winter affects openly wooded country, cultivation, scrub and bushes; in southern India up to the highest summits.

Extralimital. Southeastern Tibet and western China, wintering south to the Indochinese countries.

MIGRATION. Arrives in winter quarters in mid September (northern India), October (Maharashtra), November or even December (Kerala). On passage in September, April and May at medium elevations in Nepal, Sikkim, Bhutan and Arunachal Pradesh. Arrives very late on high breeding grounds, e.g. in eastern Nepal where not observed before August (GD).

GENERAL HABITS. Keeps in pairs or in flocks according to season. In the Peninsula often large flocks in company with Blackheaded Buntings. A rather confiding species in the breeding season.

FOOD. Mostly seeds (of weeds, millet, wheat, linseed, vetch, *Polygonum*, bamboo, etc.), flower buds, fruits and berries (mulberry, raspberries, wild cherries, banyan and pipal figs, *Lantana*, *Maesa*, *Trema*). Also nectar of *Erythrina*, *Salmalia*, *Butea*, *Woodfordia* and other blossoms, the forehead- and throat-feathers of the birds often becoming thickly coated with pollen in the quest. Insects recorded once.

VOICE and CALLS. As in 2010.

BREEDING. Season, June to August, mostly July. Nest and eggs, as in 2010. Average size of 100 eggs 20.8 × 14.5 mm (Baker).

MUSEUM DIAGNOSIS. The darkest race. Male deep carmine or purplish in breeding dress attained as the result of wearing off of the paler feather-edges of the postnuptial moult. Female heavily streaked and very dark.

MEASUREMENTS (of winter specimens from the Peninsula, thus including *erythrurus* and possibly the two other subspecies)

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	83–90	13–15	18–20	54–61 mm
♀♀	80–85			51–60 mm (HW, SA)

Weight 2 ♂♂ (Sept.) 24, 24; 1 ♀ (Sept.) 24 g (SDR); 8 ♂♂ (June–Sept.) 21–28; 2 ♀♀ (Sept.) 23–9, 25–3 g (GD); 7 ♂♂ (winter) 22–30 (av. 24.3); 5 ♀♀ (winter) 21–26 (av. 23.6) g—SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible horny, lower silvery grey. Legs and feet dark horny brown; soles dirty white.

¹ Previous to 1939, most winter records from the Peninsula were given as *rustatus* but many presumably pertained to *erythrurus* and/or *ferghensis* or *kubensis* since winter specimens are not identifiable as to the subspecies. Cf. Whistler, *Ibis* 1939: 158–9, Vaurie, *Amer. Mus. Novit.*, No. 1424: 43 and Fleming & Traylor, *Feldiana* 35: 485.

GOLDFINCHES AND ALLIES

167

COLOURS OF BARE PARTS. Iris brown to dark brown. Bill: upper mandible horny or brownish horny, darker on culmen; lower mandible pale horny, darker at tip, greyish on base. Legs and feet horny brown; claws horny.

CARPODACUS NIPALENSIS (Hodgson)

Key to the Subspecies

Males

Paler, less rich in tint.....*C. n. kangrae*
Darker.....*C. n. nipalensis*

2014. Garhwal Dark Rosefinch. *Carpodacus nipalensis kangrae* (Whistler)

Procarduelis nipalensis kangrae Whistler, 1939, Bull. Brit. Orn. Cl. 60: 16

(Dharmasala, Kangra Dist., NW. Himalayas)

Baker, FBI No. 1076 (part), Vol. 3: 146

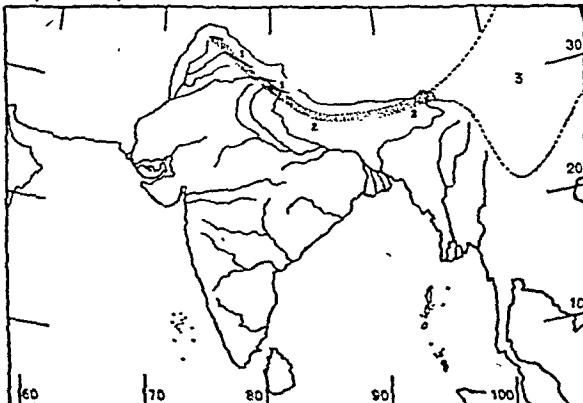
LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 2013, q.v.

STATUS, DISTRIBUTION and HABITAT. Altitudinal migrant, uncommon. The western Himalayas in Kashmir (Sind Valley, Kishtwar), Dharmasala, Kangra, Garhwal and Kumaon. Affects open forests of oak and rhododendron, bushes and stony pastures near timber-line generally between 3000 and

Carpodacus nipalensis



Distributional ranges

1. kangrae (2014). 2. nipalensis (2015). 3. intensior (RE).

166

CARDUELINAE

2012. Caucasus Rosefinch. *Carpodacus erythrurus kubensis* Laubmann

Carpodacus erythrurus kubensis Laubmann, 1915, Verh. Orn. Ges. Bayern 12: 93
(Kuban dist., Caucasus)

Baker, FBI No. 1068 (part), Vol. 3: 136

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 2010, q.v.

STATUS, DISTRIBUTION and HABITAT. A wintering form identified from Nepal (Ripley, JBNHS 49: 412), probably occurring in mixed wintering flocks of rosefinches in India.

Extralimital. Western Iran to the Caucasus and Turkey.

GENERAL HABITS, FOOD and VOICE. As in 2011.

MUSEUM DIAGNOSIS. Similar to *erythrurus* (2013) but somewhat more rosy throughout in males, the pigment usually reaching farther down below and on flanks. A poorly differentiated race (Vaurie). Cf. also Ticehurst, JBNHS 32: 345; Whistler, JBNHS 36: 837.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 2010.

2013. Common Rosefinch or Scarlet Grosbeak. *Carpodacus erythrurus erythrurus* (Pallas)

Lexia erythrura Pallas, 1770, Nov. Comm. Acad. Sci. St. Petersburg. 14: 587, pl. 23, fig. 1
(Volga, south Russia)

Baker, FBI No. 1067, Vol. 3: 135

LOCAL NAMES. *Tūti*, *Lāl tūti* (Hindi).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 2010, q.v.

STATUS, DISTRIBUTION and HABITAT. Winter visitor to the Indian Peninsula and the western Himalayan foothills east to Nepal. Cf. Whistler, *Ibis* 1939: 158–9 and JBNHS 41: 101; Ripley, 1950, JBNHS 49: 412; Rand & Fleming, 1957, *Feldiana* 41: 203; Biswas, 1963, JBNHS 60: 194; also footnote to *C. e. roseus* above (p. 165). Affects cultivation, scrub jungle and open forest, in the Himalayas generally up to c. 1500 m, occasionally 2400 m (Nepal).

Extralimital. From the Baltic Sea to central Siberia, another subspecies ranging thence east to the Sea of Okhotsk.

MIGRATION. 'Vast numbers pour through northwestern India to winter in the Peninsula' (HW). Also recorded on passage in northern Baluchistan. Autumn passage begins in August, lasts through September–October; spring passage in April–May. A bird ringed on 18.iii.1969 near Bharatpur, 27°14'N., 77°28'E. (Rajasthan) was recovered on 16.vi.1969 in the Ulyanovsk region of U.S.S.R. at 53°50'N., 46°21'E.

GENERAL HABITS, FOOD and VOICE. As in 2011.

MUSEUM DIAGNOSIS. The palest race, general colour rosy.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	81–90	14–15	c. 19	56–61 mm
♀♀	78–90			54–59 mm (BB, Rand & Fleming, MD)

168

CARDUELINAE

3600 m, in Garhwal above 3600 m. Obtained in winter at c. 1800 m (Naini Tal), 1500 and 1200 m (lower Dharmasala) after heavy snow-falls.

GENERAL HABITS, FOOD and VOICE. As in 2015.

BREEDING. Little known. The only nest found was said to have been taken in ringal bamboo jungle at c. 4200 m in the second week of August. The three eggs were white, blotched and spotted with rich red-brown with secondary markings of pinkish lavender. They measured: 22.9 × 15.1, 22.2 × 15.3 and 22.3 × 15.3 mm (cf. Baker, *Nidification* 3: 60).

MUSEUM DIAGNOSIS. Like *nipalensis* but upperparts browner, less rich in tint. However see Vaurie, *Amer. Mus. Novit.*, No. 1424: 45.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 2015.

2015. Nepal Dark Rosefinch. *Carpodacus nipalensis nipalensis* (Hodgson)

C. (arduelis) nipalensis Hodgson, 1836, Asiat. Res. 19: 157

(Nepal, central and northern regions)

Baker, FBI No. 1076 (part), Vol. 3: 146

Plate 102, fig. 2

LOCAL NAME. Ka-biya (Lepcha).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male. Above, forehead, forecrown and supercilium vinaceous crimson. A wide band through eye and rest of upperparts dark brown washed with crimson. Below, throat vinaceous pink; a wide maroon band across breast. Flanks dark crimson-brown, belly vinaceous pink; under tail-coverts edged with pale pink.

Distinguished from *C. erythrurus* and *C. rubescens* by absence of red on rump; from all other rosefinches by the darker, maroon band across breast.

Female. Above, dark olive-brown with darker streaks on back and two tawny olive wing-bars. Below, plain olive-brown.

Female distinguished from all rosefinches except *C. rubescens* by unstreaked olive-brown underparts. The very similar *rubescens* ♀ is greyer on belly, has whitish under tail-coverts and some crimson or olive on lower rump.

STATUS, DISTRIBUTION and HABITAT. Fairly common altitudinal migrant. The Himalayas from western Nepal east through Sikkim, Bhutan and Arunachal Pradesh (Ludlow, *Ibis* 1944: 354). Occurs in summer between 3000 and 3600 m in western and central Nepal, 3900–4000 m in eastern Nepal, 3400–4200 m in Sikkim, 3000–4200 m in Bhutan and 3600–4400 m in Arunachal. Winters mostly between c. 2700 and 1800 m, occasionally down to 1400 m (Nepal, Sikkim). In summer affects rhododendron and silver fir forest, grassy slopes with stunted bushes and weeds, rocks and boulders well above the forest zone. In winter affects forest clearings, bushes and cultivation.

Extralimital. Southeastern Tibet. The species extends to Szechuan.

GENERAL HABITS. Keeps in pairs or small flocks. Feeds in bushes or on the ground. Often perches on tops of trees or boulders.

GOLDFINCHES AND ALLIES

169

FOOD. Chiefly seeds and berries. Also nectar of rhododendrons (throat and forehead often coated with pollen).

VOICE and CALLS. A rather wailing, plaintive double whistle, very characteristic (Proud). A single repeated *chaar* and a sparrow-like twitter (Fleming).

BREEDING. Season, apparently about July–August. Nest and eggs unknown.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies. For distinction from *C. rubescens* female, see 2016 under Museum Diagnosis.

Young hardly distinguishable from female in autumn; dark parts of feathers on mantle more spots than streaks; indistinct dark subterminal bars to crown- and rump-feathers.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	81–95	13–16	20–23	53–66 mm
♀♀	74–90			56–58 mm

(SA, NBK, Rand & Fleming, BB)

Weight 2 ♀♀ (June–July) 22.7, 23.5 g (GD); 4 ♂♂ (Feb.–Mar.) 22–23; 1 ♀ (Feb.) 20 g — SA.

COLOURS OF BARE PARTS. Iris brown. Bill horny brown, paler on lower mandible. Legs, feet and claws horny brown.

2016. **Blanford's Rosefinch.** *Carpodacus rubescens* (Blanford)

Procarduelis rubescens Blanford, 1872 (1871), Proc. Zool. Soc. London: 694, pl. 74 (Sikkim).

Procarduelis rubescens saturator Rothschild, 1922, Bull. Brit. Orn. Cl. 43: 12 (Schwelli-Salween Divide, Yunnan)

Baker, FBI No. 1078, Vol. 3: 148

Plate 102, fig. 1

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male. *Above*, crimson-brown, brighter crimson on head and rump. A double crimson wing-bar. *Below*, rosy red, grey on vent; under tail-coverts edged with white.

Very similar to *C. erythrurus* but lacks contrasting supercilium and dark eye-stripe; throat dull reddish brown; lower belly grey. For distinction from *C. nipalensis* see 2015.

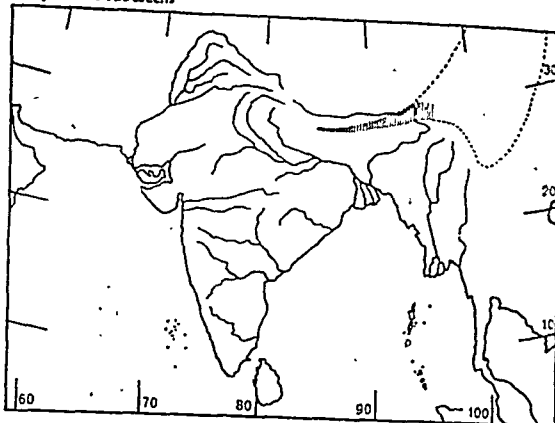
Female. *Above*, olive-brown, with a varying amount of crimson or olive on rump. Two faint wing-bars. *Below*, throat and breast olive-brown; belly grey; under tail-coverts edged with white.

Differs from all female rosefinches (except *C. nipalensis* 2015 q.v.) by unstreaked underparts.

STATUS, DISTRIBUTION and HABITAT. Scarce resident, subject to vertical movements. The Himalayas from central Nepal (Polunin, JBNHS 52: 893) east through Sikkim, Bhutan and Arunachal Pradesh (plentiful both north and south of the main range — Ludlow, *Ibis* 1944: 354). Recorded in

170

CARDUELINAE

Carpodacus rubescens

Distributional range

summer at c. 2700 m in Nepal, 3800 m in Sikkim, 3100–3300 m in Bhutan, 3100–3600 m in Arunachal and southeastern Tibet. Affects conifer or mixed conifer and birch forest. Observed in winter between 1300 and 1300 m in Sikkim, in outskirts of conifer plantation and at c. 2500 m in southeastern Tibet.

Extralimital. Extends to northern Yunnan and southwestern Kansu (Cheng, 1958).

GENERAL HABITS. Keeps in pairs in the breeding season, in flocks up to 30 individuals in winter. Feeds chiefly on the ground.

FOOD. Unrecorded.

VOICE and CALLS. A peculiar persistent clacking note which attracts attention (Ludlow).

BREEDING. Unknown. Season, apparently very early [young just out of nest and adults in breeding condition obtained in mid April (Ludlow)].

MUSEUM DIAGNOSIS. See Field Characters.

Young, like female but without red on rump; throat and breast darker.

Female distinguished from *C. nipalensis* by unstreaked olive-brown back, greyer belly, and in having the rump washed with crimson or olive.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	80–85	13–15	17–18	49–55 mm
♀♀	76–81			49–52 mm

(SA, NBK, Stevens, MD)

COLOURS OF BARE PARTS. Iris dark brown. Bill pale horny brown. Lower mandible paler and yellowish. Legs and feet light brown.

GOLDFINCHES AND ALLIES

171

2017. **Pinkbrowed Rosefinch.** *Carpodacus rhodochrous* (Vigors)

Fringilla rodochroa [sic] Vigors, 1831, Proc. Zool. Soc. London: 23 (Himalayan Mountains = Simla–Almora area)

Baker, FBI No. 1062, Vol. 3: 129

Plate 102, fig. 4

LOCAL NAMES. *Gulāb tūtī*, *Gulāb chiryā* (Nepal).

SIZE. Sparrow; length c. 15 cm (6 in.).

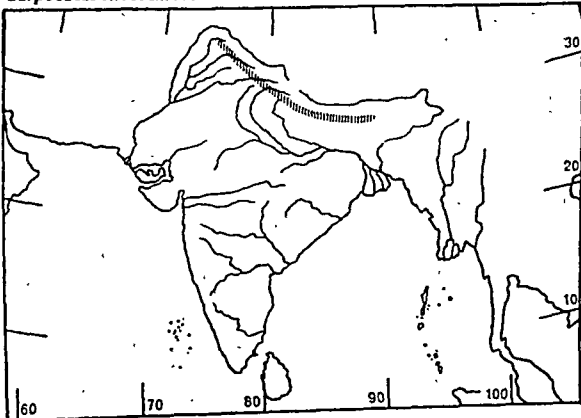
FIELD CHARACTERS. A smaller edition of the Redmantled Rosefinch (2018) sex for sex.

Male. *Above*, crown and band behind eye crimson-brown. Forehead and supercilium rose-pink. Back streaked with dark brown. Rump rose-pink. A pale wing-bar. *Below*, entirely rose-pink.

Very similar to *C. pulcherrimus* which has the crown streaked with dark brown.

Female. *Above*, olive-brown streaked with dark brown. A conspicuous pale supercilium. *Below*, ochraceous buff streaked with dark brown.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements; common in the west, scarcer in Nepal and Sikkim. The Himalayas from western Kashmir east through Kulu, Lahul, Spiti, Garhwal, Nepal,

Carpodacus rhodochrous

Distributional range

Darjeeling and Sikkim. Breeds between 2800 and 3600 m in the west, 3000 to 4200 m in Nepal. Affects open fir and birch forest, willow bushes and dwarf junipers. Winters generally between 1200 and 2400 m, up to 3000 m in Nepal and Sikkim, and down occasionally to 900 m (Nepal) or 600 m in (Rawalpindi, in 'appreciable numbers' — Waite, JBNHS 59: 963). In this

172

CARDUELINAE

season (November to April) affects scrub jungle, open hillsides, grassy slopes and gardens. In Garhwal freely enters upland villages, almost replacing the House Sparrow.

Extralimital. Adjacent parts of Tibet (Sálim Ali, JBNHS 46: 300).

GENERAL HABITS. Keeps in pairs or small flocks according to season. Feeds chiefly on the ground with accentor-like movements.

FOOD. Seeds and berries.

VOICE and CALLS. Call-note, 'a canary-like sweet' (Jones). A sweet lilting song, very characteristic (Proud).

BREEDING. Season, July to September. Nest, a solid cup of twigs, grass, moss and papery birch bark, lined with finer grass and hair, placed in low bushes of juniper, willow, *Lonicera*, etc. or in small firs, generally between 60 and 120 cm above the ground. Eggs, 4 or 5 (Whymper), 5 or 6 (Osmaston), deep greenish blue scantily spotted at the broad end with black spots, occasionally unmarked. Average size of 100 eggs 18.8 × 14.2 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	71–75	c. 13	c. 19	55–62 mm
♀♀	67–71			

(Baker, MD, Vaurie)

Weight 8 ♂♂ (Apr–May) 17–20; 9 ♀♀ 16–18 g — SA. 1 ♂ 19.3; 1 ♀ 18.5 g (GD).

COLOURS OF BARE PARTS. Iris dark brown or reddish brown. Bill dark brown. Legs and feet light brown (in one ♀ fleshy).

2017a. **Vinaceous Rosefinch.** *Carpodacus vinaceus vinaceus* Verreaux

Carpodacus vinaceus Verreaux, 1871, Nouv. Arch. Mus. Hist. Nat. 6 (1870), bull.: 39 (mountains of Chinese Tibet)

Baker, FBI No. 1066, Vol. 3: 133

Plate 102, fig. 7

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 13 cm (5 in.).

FIELD CHARACTERS. Male. *Above*, deep crimson, brighter on crown, more rosy on rump. A conspicuous pink supercilium. Wings dark brown with two white spots on tertials. Tail dark brown. *Below*, deep crimson, brighter on belly.

White spots on wing identify the male.

Female. *Above*, olive-brown with indistinct darker streaks and three buff spots on tertials. *Below*, ochraceous olive-brown with indistinct darker streaks.

Similar in coloration to *C. edwardii* female but smaller, less distinctly streaked. Buff spots on wing also identify female.

STATUS, DISTRIBUTION and HABITAT. Accidental? A pair observed at Naini Tal, c. 2500 m, on 9 February 1925 (Meinertzhagen, *Ibis* 1927: 331); one red male collected and several birds seen in November 1970 at Thakola, eastern Dhaulagiri, Nepal, c. 3000 m; a laying female collected in

GOLDFINCHES AND ALLIES

173

Kali Gandak Valley, 3200 m, on 3 July 1973 (Jochen Martens, pers. comm.). Affects dense bushes and clearings in bamboo forest.
Extralimital. Mountains of western China and northwestern Burma. Another subspecies in Taiwan.
GENERAL HABITS. Keeps in pairs or small flocks, frequenting bushes.
FOOD. Unrecorded.
VOICE AND CALLS. A bunting-like *zieh* (Schäfer).
BREEDING. See above.
MUSEUM DIAGNOSIS. See Field Characters.
MEASUREMENTS

	Wing	Tarsus	Tail
♂ ♀	69-71	c. 20	c. 58 mm (Baker)

Bill from skull c. 14 mm
COLOURS OF BARE PARTS. Iris brown. Bill brown, paler at base and on lower mandible. Legs and feet brown.

2018. **Redmantled Rosefinch.** *Carpodacus rhodochlamys grandis* Blyth
Carpodacus grandis Blyth, 1849, Jour. Asiat. Soc. Bengal 18: 810
(Range beyond Simla)
Carpodacus rhodochlamys bendi Koelz, 1949, Auk 66: 209
(Burchao Pass, Bend-i-Turkestan Range, western Afghanistan)
Baker, FBI No. 1061, Vol. 3: 128
Plate 102, fig. 13

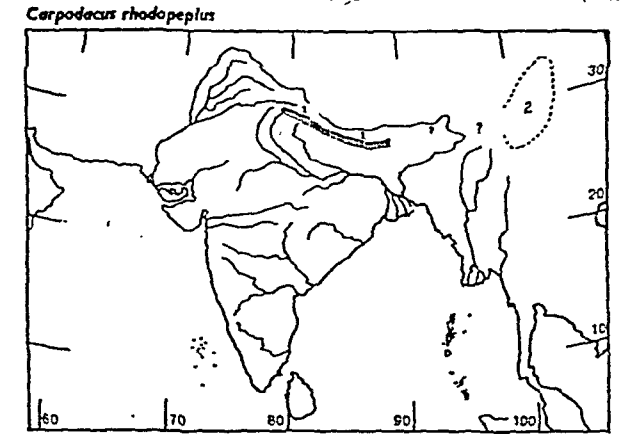
LOCAL NAMES. None recorded.
SIZE. Bulbul ±; length c. 18 cm (7 in.).
FIELD CHARACTERS. Male. *Above*, crown and band behind eye reddish brown. A broad pale pink supercilium. Back pale brown with a pinkish tinge and dark brown streaks. Rump pink. Wings and tail rosy brown. *Below*, throat and sides of head pale pink like supercilium. Rest of underparts rosy red.
Differs from *C. rhodochrous* only by larger size. Male also breeds in brown female-like plumage.
Female. *Above*, ashy brown with darker streaks and a pale supercilium. *Below*, whitish, boldly streaked with dark brown.
The large bill is a good field mark in both sexes.
STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, locally common. Pakistan from northern Baluchistan (Ziarat) north to Chitral, thence east through Gilgit, Astor, Baltistan, Ladakh (not recorded in Kashmir proper), Lahul, Spiti, Garhwal and Kumaon (specimen in Brit. Mus.). Breeds between 2700 and 3300 m (Baluchistan, N.W.F.P.), up to 3700 m (Gilgit, Baltistan) and between 3400 and 3800 m in Ladakh and Lahul. Affects juniper, briar rose bushes and other shrubs in dry biotope. In winter (end of October to April) moves down to the foothills (Quetta Valley, Kohat, Salt Range, Campbellpur and Rawalpindi); in Dharmasala, Kangra and Simla recorded in winter between 2200 and 2600 m. In this season affects bushes, wild olive-trees, patches of thorny scrub, gardens and cultivated spots.

GOLDFINCHES AND ALLIES

175

2019. **Spottedwinged Rosefinch.** *Carpodacus rhodopeplus rhodopeplus* (Vigors)
Fringilla rodopepla [sic] Vigors, 1831, Proc. Zool. Soc. London: 23
(Himalayan Mountains, restricted to Simla-Almora area)
Baker, FBI No. 1063, Vol. 3: 130
Plate 102, fig. 8

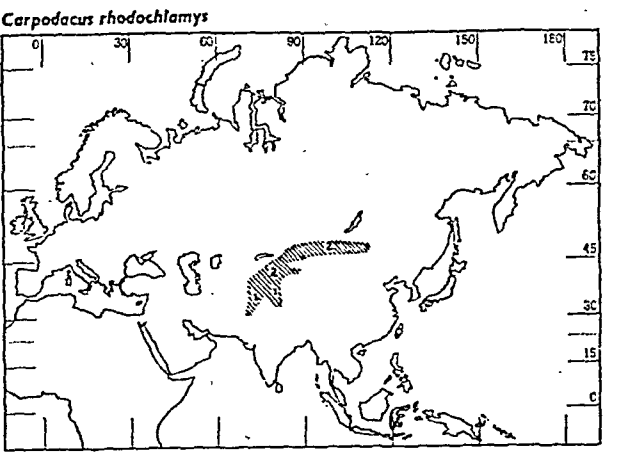
LOCAL NAMES. None recorded.
SIZE. Sparrow; length c. 15 cm (6 in.).
FIELD CHARACTERS. Male. *Above*, crown and band behind eye dark crimson-brown. A shiny, pale pink supercilium. Back crimson-brown with dark brown streaks and pale pink stripes on sides and lower back. Rump pink. Two pinkish buff wing-bars; tertials marked with pinkish white. *Below*, sides of head and throat pale pink. Rest of underparts rosy red.
The pink stripes on back and conspicuous rosy white wing-bars identify the male.
Female. *Above*, ochraceous-brown streaked with dark brown. A conspicuous whitish supercilium. Two pale buffy wing-bars; tertials marked with whitish. *Below*, ochraceous-buff streaked with dark brown.
Pale markings on tertials identify the female (in worn plumage these markings almost disappear). In the distance could be mistaken for a bunting.
STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements. On the whole a scarce bird and distribution little known. The Himalayas from the hills north of Chakrata and Mussooree (specimens in Brit. Mus.) east through Kumaon (Whymper in Baker's *Nidification* 3: 50),



Distributional ranges 1 *rhodopeplus* (2019), 2 *retersed* (RE).
Record not beyond doubt; whereabouts of specimens unknown.

CARDUELINAE

174



Distributional ranges 1 *grandis* (2018), 2 *extralimital* subspecies.

Extralimital. Northern Afghanistan. The species ranges north to the Altai and Mongolia.
GENERAL HABITS. Keeps in pairs in the breeding season, singly or in small parties in winter. Feeds mostly on the ground, also on low bushes. In common with other rosefinches has a habit of raising feathers of crown, then looking as if crested.
FOOD. Seeds, hips of roses, etc.
VOICE AND CALLS. Call-note a curious, plaintive rather wheezy *kwee* or *squee*. Song undescribed.
BREEDING. Little known. Season, May to July. Nest, cup-shaped, made of grass and bark, lined with fine fibres and a few hairs, placed in low bushes. Eggs, normally 4, pale blue with a few evenly distributed brown spots (Meinertzhagen, *Ibis* 1920: 139; Osmaston, JBNHS 34: 129).
MUSEUM DIAGNOSIS. See Field Characters and Key to the Species.
Young (immature) of both sexes identical with adult female.

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	90-96			69-74 mm
♀ ♀	88-92	18-20	20-22	65-70 mm (HW, Vaurie)

Weight 4 ♂♂ (May-July) 31-36; 3 ♀♀ (May-July) 31-35 g — (Paludan).
COLOURS OF BARE PARTS. Iris brown. Bill brown above, pale horn below. Legs and feet brownish flesh.

CARDUELINAE

176

Nepal (Polunin, JBNHS 52: 893; Proud, JBNHS 51: 667, 'very common at 3000-3300 m in May'; Rand & Fleming, *Fieldiana* 41: 206; Diesselhorst, 1968: 387), Sikkim (Mandelli's specimen). Not recorded from Bhutan, Arunachal Pradesh or southeastern Tibet. Breeding zone not known. Non-breeding birds recorded in May at 3000 to 3300 m in central and eastern Nepal. In winter recorded between 2100 and 3000 m; in this season affects grassy hillsides with bushes.

Extralimital. Another subspecies in Szechuan and northern Yunnan.
GENERAL HABITS. Feeds mostly on the ground. Often perches on top of bushes.
FOOD. Seeds.
VOICE AND CALLS. A sweet, far-carrying canary-like chirp (Proud).
BREEDING. Not authentically recorded. See Baker, *Nidification* 3: 50 for possible record.
MUSEUM DIAGNOSIS. See Field Characters.

	Wing	Tarsus	Tail
♂ ♀	82-90	c. 23	67-74 mm (Baker)

Bill from skull 14-15 mm
Weight 1 ♂ (May) 23 g (GD).
COLOURS OF BARE PARTS. Iris brown. Bill horn-brown. Legs and feet pale horn.

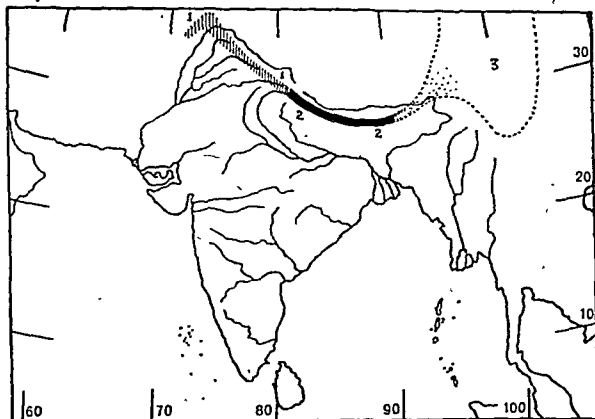
CARPODACUS THURA Bonaparte
Key to the Subspecies

	Page
A Palest throughout in both sexes.....	<i>C. t. blythi</i> 176
B Darkest; throat and breast of female brownish.....	<i>C. t. thura</i> 177
C Paler than B; female without brownish on throat and breast.....	<i>C. t. femineus</i> 178

2020. **Kashmir Whitebrowed Rosefinch.** *Carpodacus thura blythi* (Biddulph)
Prospasser blythi Biddulph, 1882, *Ibis*: 283, pl. 9
(Gilgit, 'close to the Indus')
Baker, FBI No. 1056, Vol. 3: 124
Plate 102, fig. 8

LOCAL NAMES. None recorded.
SIZE. Sparrow +; length c. 17 cm (6½ in.).
FIELD CHARACTERS. As in 2021, q.v.
STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The western Himalayas from N.W.F.P. (Safed Koh and Chitral) east through Gilgit, Kagan Valley, northern Kashmir, Chamba, Lahul (*Amer. Mus. Novit.*, No. 1424: 49) and Garhwal. Breeds mostly between 3000 and 3600 m, in Garhwal to 3900 m (in the Liddar Valley, Kashmir, obtained at 4200 m in August). Affects dwarf juniper and other scrub near and above timber-line. Very few winter data: Simla 2400 m and Kashmir 2100 and 1800 m, in forest on the more open hillsides.

Carpodacus thura



Distributional ranges

1 *blythi* (2020). 2 *thura* (2021). 3 *femininus* (2022).

GENERAL HABITS AND FOOD. As in 2021.

VOICE AND CALLS. A rather loud harsh whistle repeated from 6 to 8 times, somewhat reminiscent of the call of the White-faced Nuthatch (BBO). Rendered as *puit puit* . . . and likened somewhat to screech of Roseringed Parakeet 'especially when a party flies overhead and calls together' (Whitehead). A soft conversational *wid wid* while feeding in company (Jones).

BREEDING. Season, June (Whitehead, *Ibis* 1909: 228), mostly end of July and August. Nest, a large cup of fine grass and moss, lined with hair or fur, placed in low bushes or creeping juniper. Eggs, 3 or 4, greenish blue sparingly spotted at the large end with black. Average size of 16 eggs 22.1 × 16.1 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. Similar to *thura* (2021) but both sexes distinctly paler throughout. Female less brownish on throat and breast.

MEASUREMENTS AND COLOURS OF BARE PARTS. As in 2021.

2021. **Sikkim Whitebrowed Rosefinch.** *Carpodacus thura thura* Bonaparte & Schlegel

Carpodacus thura Bonaparte & Schlegel, 1850, Monogr. Loxiens: 21, pl. 23 (Himalayas = Sikkim)
Baker, FBI No. 1055, Vol. 3: 123
Plate 102, fig. 10

LOCAL NAMES. None recorded.

SIZE. Sparrow +; length c. 17 cm (6½ in.).

12

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. Southeastern Tibet and northern Arunachal Pradesh. Altitudinal distribution and habitat as in 2021.

EXTRALIMITAL. Extends east to northern Yunnan and western Szechuan. The species ranges north to Kansu and Ningsia.

GENERAL HABITS, FOOD AND VOICE. As in 2021.

BREEDING. Probably as in 2021.

MUSEUM DIAGNOSIS. Male and female paler than *thura* (2021) though rosy parts in males sometimes slightly deeper in shade. Female very distinct, paler throughout but more heavily streaked, particularly on throat and breast which moreover lacks the brown of female *thura*.

MEASUREMENTS

	Wing	Tail
♂♂	83-88	75-78 mm
♀♀	82-85	73-76 mm
		(NBK)

COLOURS OF BARE PARTS. As in 2021.

CARPODACUS PULCHERRIMUS (Moore)

Key to the Subspecies

Darker; male more vinaceous. *C. p. pulcherrimus*
Paler; male less vinaceous. *C. p. walloni*

2023. **Himalayan Beautiful Rosefinch.** *Carpodacus pulcherrimus pulcherrimus* (Moore)

Propasser pulcherrimus Moore, 1855, Proc. Zool. Soc. London: 216 (Nepal)
Baker, FBI No. 1059, Vol. 3: 126
Plate 102, fig. 5

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male. Above, crown and back ashy brown with dark brown streaks. Stripe behind eye dark brown. A broad supercilium and rump rosy pink. Two indistinct pinkish wing-bars. Below, entirely vinaceous pink or rosy.

Very similar to *C. rhodochrous* but crown streaked with brown. Female. Above, streaked buff and dark brown. A pale, supercilium. Below, buffish streaked with dark brown.

Male often breeds in the brown female-like plumage. STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The Himalayas from Garhwal east to Bhutan. Breeds between c. 3600 and 4500 m, optimum zone 3800-4200 m. Affects rhododendron and other bushes on steep hillsides near and above timber-line in fairly dry biotope, and in northern and eastern Nepal, terraced cultivation and neighbouring bushes in high valleys. Winters between at least 3600 m down to c. 2100, on open scrub-covered hillsides.

¹ Specimens collected in Chitral by Fulton (JBNHS 16: 52), in BNHS collection, proved to be *C. rhodochrous*.—(S. H. Prater in *epist.* to H. Whistler).

FIELD CHARACTERS. Male. Above, crown and back brown streaked with blackish. Forehead pinkish white. Supercilium pink ending in white. Lores crimson. Stripe behind eye dark brown. Rump rosy pink. Wing brown with a pink bar and a finer white bar. Tail brown. Below, rosy pink, the throat paler and streaked with silky white.

The glistening pink and white forehead, white end to broad pink supercilium, and double wing-bar identify the male.

Female. Above, brown streaked with darker brown. Broad supercilium whitish. A fine whitish wing-bar. Rump golden yellow. Below, buffish streaked with dark brown, darker (pale rufous) on throat.

Males often breed in the brown female-like plumage.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The Himalayas from western Nepal east to Bhutan. Breeds mostly between 3800 and 4200 m. A characteristic bird of the tree-line in light fir, juniper and rhododendron forest or in dwarf rhododendron above timber-line. Winters from at least 3900 m down to c. 2400 m, seldom lower (1900 m, Sikkim). In this season affects open hillsides with barberry or other scrub.

GENERAL HABITS. Usually met with in small loose flocks comprising up to 20 or so individuals. Feeds on the ground, walking and hopping, near or under bushes, sometimes in company with *Mycerobas carnipes* or other species.

FOOD. Berries (*Rubus* etc.), grass- and weed-seeds, vegetable matter, grit. VOICE AND CALLS. A continual loud and rapid piping uttered while feeding on the ground in small parties, rendered as *pupupipipipi* (Desfayes). Song, a linnets-like twitter (Schäfer), seldom heard.

BREEDING. As in 2020. Season, July-August.

MUSEUM DIAGNOSIS. See Key to the Subspecies.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	81-87	c. 14	c. 25	{ c. 75 mm c. 65 mm
♀♀	80-83			

(SA, Rand & Fleming, Stevens)

Weight 14 ♂♂ (June-Sept.) 24-35.6; 8 ♀♀ (June-Sept.) 30-36 g (GD, SDR).

COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet dark brown.

2022. **Yunnan Whitebrowed Rosefinch.** *Carpodacus thura femininus* Rippon

Carpodacus femininus Rippon; 1906, Bull. Brit. Orn. Cl. 19: 31
(Yangtze River, W. Yunnan)

Carpodacus thura chormensis Kinnear, 1940, Bull. Brit. Orn. Cl. 60: 56
(Kiympu Le La between Chayul and Charme, 13,000 feet)

Propasser thura chayulensis Kinnear, 1944, in Ludlow, F. & Kinnear, N. B., *Ibis* 86: 351
(Kiympu)

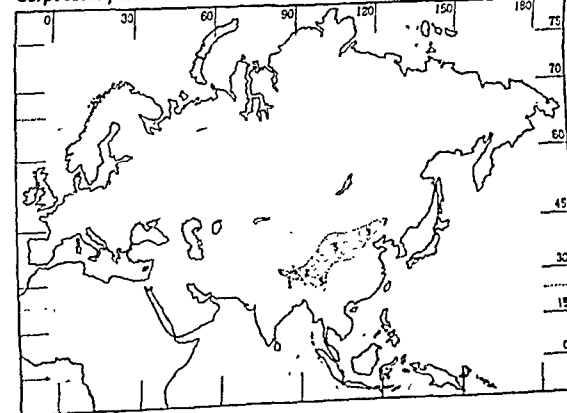
Baker, FBI No. 1057, Vol. 3: 125 (= 'dubius')

LOCAL NAMES. None recorded.

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in 2021, q.v.

Carpodacus pulcherrimus



Distributional ranges 1 *pulcherrimus* (2023). 2 *walloni* (2024). 3 extralimital subspecies.

EXTRALIMITAL. Adjacent parts of Tibet.

GENERAL HABITS. Usually met with in small parties, feeding on the ground. Easily overlooked owing to its habit of remaining quite still if disturbed. Takes shelter from snow under ledges of rock or beneath eaves of rest-houses. Raises a distinct crest when excited.

FOOD. Seeds and vegetable matter.

VOICE AND CALLS. Call-note, a sparrow-like *cheet-cheet* (A. E. Osmaston). 'Harsh bleating notes' (Smythies). Song undescribed, apparently seldom uttered (cf. Diesselhorst, 1968: 391).

BREEDING. Season, July to September. Nest, a cup of grass, roots and fibres lined with hair or wool, placed about 30 cm above the ground in low shrubs. Eggs, generally 4, sometimes 5, deep blue-green scantily but boldly spotted with black, rarely unspotted. Average size of 100 eggs 19.5 × 14.6 mm (Baker). Incubation apparently by female only.

MUSEUM DIAGNOSIS. See Field Characters. For distinction from *walloni* see 2024.

MUSEUM DIAGNOSIS.

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	74-81	c. 13	c. 20	62-64 mm
♀♀	74-78			

(Rand & Fleming, Sires, NBK, MD)

Weight 13 ♂♂ (June-Aug.) 17.5-20.1; 5 ♀♀ (June-Aug.) 17.4-19.2 g (GD).

COLOURS OF BARE PARTS. Iris brown. Bill dark horny brown, lower mandible paler. Legs and feet pale fleshy brown.

GOLDFINCHES AND ALLIES

181

2024. **Tibet Beautiful Rosefinch.** *Carpodacus pulcherrimus waltoni* (Sharpe)

Propasser waltoni Sharpe, 1905, Bull. Brit. Orn. Cl. 15: 95
(Gyantse, S. Tibet)

Baker, FBI No. 1060 (part), Vol. 3: 127

LOCAL NAME. *Do-di* (Tibetan).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 2023, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Arunachal Pradesh between 3600 and 4500 m, descending to c. 2800 m in winter. Affects rhododendron and other scrub on steep hillsides near or above timber-line in summer, semi-dry hillsides covered with *Quercus illex* in winter.

Extralimital. Southeastern Tibet. The species ranges north to central Mongolia.

GENERAL HABITS, FOOD and VOICE. As in 2023.

BREEDING. As in 2023. Average size of 19 eggs 19 × 14 mm (Ludlow).

MUSEUM DIAGNOSIS. Both sexes paler than in *pulcherrimus*. In males the rosy of underparts is purer and brighter, less vinaceous. Also somewhat larger in size.

MEASUREMENTS

Wing ♂ 76–82 mm (NBK, Stres.)

COLOURS OF BARE PARTS. As in 2023.

2025. **Sikkim Large Rosefinch.** *Carpodacus edwardsii rubicunda* (Greenway)

Propasser saturatus Blanford, 1872, Jour. Asiat. Soc. Bengal 41: 168, pl. 8 (Sikkim)
neq Linota saturata Blyth, 1842, a synonym of *Carpodacus nipalensis* Hodgson

Erythrura edwardsii rubicunda Greenway, 1933, Bull. Mus. Comp. Zool. Harvard 74: 163
(Su-Wa-Tong, Tibet, Salween-Irrawaddy Divide)

Carduelis edwardsii tongluensis Wolters, 1953, Bonn. Zool. Beitr. 3: 279, new name for
Carpodacus edwardsii saturatus Blanford, preoccupied
Baker, FBI No. 1064, Vol. 3: 131

Plate 102, fig. 6

LOCAL NAMES. None recorded.

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Male. Above, crown and band through eye dull crimson-brown. Forehead and supercilium pink. Back and rump brown washed with crimson, the former broadly streaked with dark brown. A double pinkish wing-bar. Below, throat pale rosy, breast and sides dark rosy, all with fine blackish streaks; centre of belly pink.

The absence of pink on rump identifies the male.

Female. Above, fulvous-brown streaked with dark brown. A conspicuous buff supercilium and a double wing-bar. Below, tawny olive, darker on breast, brighter on lower vent, finely streaked with brown.

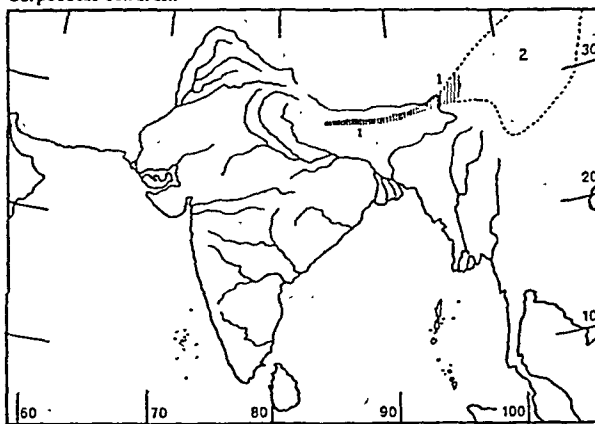
More finely streaked below than most female rosefinches.

STATUS, DISTRIBUTION and HABITAT. Rather uncommon resident, subject to vertical movements. The Himalayas from western Nepal (in winter—

182

CARDUELINAE

Rand & Fleming, *Fieldiana* 41: 206 east through Sikkim, Darjeeling, Bhutan and Arunachal Pradesh (Ludlow, *Ibis* 1944: 352). Breeding zone apparently between c. 3400 and 3900 m, in rhododendron and silver fir forest. Winters

Carpodacus edwardsii

Distributional ranges. 1 *rubicunda* (2025), 2 *edwardsii* (RE).

between c. 3700 and 2000 m, rarely 1000 m (western Nepal). In this season frequents rather open forest of rhododendron or birch, and open mountain-sides with ringal bamboo, rose bushes, barberry and other scrub.

Extralimital. Extends east to northern Yunnan and southwestern Szechuan, the nominate subspecies ranging north to Kansu.

GENERAL HABITS. Keeps in pairs or small parties of three or four individuals, rarely more. Feeds on the ground or in low bushes. Seldom flies high into trees. Keeps quite still in cover when disturbed.

FOOD. Mainly seeds (of grass, crab-apples, rice, etc.).

VOICE and CALLS. Undescribed.

BREEDING. Not well authenticated. Altitudes of 14 and 15,000 ft (4200–4500 m) given in *Nidification* 3: 51 seem somewhat too high for the species. See also remark by Ludlow in *Ibis* 1937: 473.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	79–85	14–16	22–25	61–67 mm
♀♀	77–82			59–66 mm
				(SA, BB, HW, NBK)

Weight 1 ♀ (Nov.) 26.5 g — SA.

COLOURS OF BARE PARTS. Iris dark brown or dark orange-brown. Bill horny brown. Legs, feet and claws horny brown.

GOLDFINCHES AND ALLIES

183

2026. **Threebanded Rosefinch.** *Carpodacus trifasciatus* Verreaux

Carpodacus trifasciatus Verreaux, 1871, Nouv. Arch. Mus. Paris 6, Bull.: 39
(Mountains of Chinese Tibet, restricted to Paohing, eastern Sikang, by Vaurie, 1959, Bds. Pal. Fn.: 637)

Not in Baker, FBI

Plate 102, fig. 9

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 17 cm (7 in.).

FIELD CHARACTERS. Male. Above, crown crimson. Forehead and sides of head streaked with silvery white; ear-coverts dark brown. Back crimson streaked with grey. Wings brown with two pink bars and a large white patch on scapulars and tertials. Tail blackish. Below, throat and sides of neck streaked with white. Breast and flanks vinous red, belly white.

Female. Above, dark grey, back streaked with dark brown and olive-yellow; rump olive-yellow. Wings dark brown with two yellow bars and a large white patch on tertials. Below, throat buffish grey; breast ochre-yellow; lower flanks grey with dark streaks; centre of belly buffish.

Wing-pattern identifies both sexes.

STATUS, DISTRIBUTION and HABITAT. Winter visitor to southeastern Tibet [and Arunachal Pradesh (?) along the Tsangpo, between 2000 and 3000 metres, locally very common. Affects orchards and hedges in cultivated fields.

Extralimital. Breeds in western China from northern Yunnan to southwestern Kansu, in light conifer forest.

GENERAL HABITS. Little described. Feeds on trees and bushes. Rather confiding.

FOOD. Crab-apples and cotoneaster berries.

VOICE and CALLS. Unrecorded. A very silent bird in winter.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. See Field Characters. First-winter male like adult male but red parts replaced by orange-yellow.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
4 ♂♂	82–88	15–16	21–22	72–74 mm
1 ♀	82	15	21	71 mm
				(MD)

COLOURS OF BARE PARTS. Iris brown. Bill, legs and feet brown.

2027. **Great Rosefinch.** *Carpodacus rubicilla severtzovi* Sharpe

Carpodacus severtzovi Sharpe, 1886, Proc. Zool. Soc. London: 354
(Turkistan and Yarkand = Toghraus near Shadulla, Karakoram)

Erythrura rubicilla eblis Koelz, 1939, Proc. Biol. Soc. Washington 52: 74
(Puga, Rupshu, Kashmir)

Carpodacus rubicilla niethammeri Kevé, 1943, Anz. Akad. Wiss. Wien 80: 17
(Spiti to the Pamirs)

Baker, FBI No. 1071, Vol. 3: 139

Plate 102, fig. 15

LOCAL NAME. *Awel-Isk-si* (Tibetan).

184

CARDUELINAE

SIZE. Bulbul +; length c. 19 cm (7½ in.).

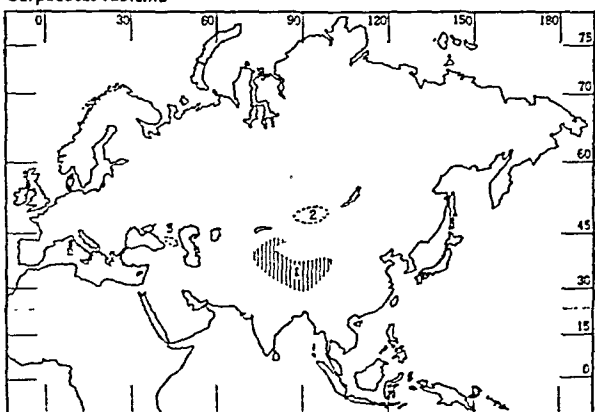
FIELD CHARACTERS. Male. Above, forehead and crown bright red spotted with white. Back pale brown lightly washed with pink, indistinctly streaked; rump pink. Wings and tail dark brown, outer rectrices narrowly edged with white. Below, throat rosy red spotted with white, fading to pink on belly and flanks, the white spotting becoming less distinct.

Female. Above, pale brown streaked with darker brown. Below, whitish with brown streaks.

Male often breeds in brown plumage similar to female's.

Very similar (sex for sex) to *C. rubicilloides* but much paler especially on back which is less heavily streaked. *C. puniceus* which occurs on the same ground is scarlet rather than rosy red, has a wide brown post-ocular stripe and brown lower flanks.

STATUS, DISTRIBUTION and HABITAT. Fairly common resident but locally distributed and parochial, subject to vertical movements. The northern Himalayas from Chitral (Fulton, JBNHS 16: 53) east through Gilgit, Hunza, Ladakh, Lahul, Spiti, Nepal (Diesselhorst, 1968) and Sikkim (*Birds of Sikkim*, p. 376). Breeds between c. 3900 and 4800 m, in eastern Nepal

Carpodacus rubicilla

Distributional ranges. 1 *severtzovi* (2027), 2 *kobensis* (RE), 3 *rubicilla* (RE).

around 5000 m. Recorded in June and July at c. 3300 m in Ladakh. Winter data scanty: recorded as high as 4500 m (Tibet), at 2600 m (Hunza), and exceptionally at 1500 m (Gilgit and Sikkim) after cold spells. Affects boulder-strewn ground at the foot of mountains, often near villages and fields (western Himalayas) and the highest part of the alpine zone with boulders and sparse vegetation, in the same biotope as *C. puniceus* (eastern

GOLDFINCHES AND ALLIES

185

Nepal); also frequents *Caragana* scrub, at least in the non-breeding season, but prefers more desolate rocky country than that frequented by *C. rubicilloides*.

Extralimital. The Tien Shan region in Russian and Chinese Turkestan. Other subspecies in the Caucasus and the Russian and Mongolian Altai. For details see Vaurie, 1959: 643.

GENERAL HABITS. Keeps in pairs or small flocks according to season; sometimes in company with *C. rubicilloides* but more often seen in desolate rocky country devoid of vegetation. Feeds mostly on the ground; in the non-breeding season also on bushes. In flight silhouette very like Horned Lark (*Eremophila*).

FOOD. Chiefly berries and seeds (*Caragana*, green peas, cereals, etc.) and some insects.

VOICE AND CALLS. A loud distinctive call-note (HW) reminiscent of that of *C. rubicilloides* (2028), q.v. Song undescribed.

BREEDING. Not satisfactorily described. *Season*, July and August. *Nest*, known with certainty to be placed in crevices of rock or under stones (Diesselhorst). Nests in bushes described by Dresser (*Ibis* 1904: 109) possibly belonged to *C. rubicilloides* as suggested by his own description of the bird. Other records of breeding in bushes in Tibet (Baker, *Nidification* 3: 56) require confirmation. Cf. also Hume, *Nests and Eggs* 2: 154: nest on the ground in furze bush; eggs greenish with some dark brown spots.

MUSEUM DIAGNOSIS. See Field Characters. Postnuptial moult complete, in August-September.

Young, like adult female but streaks everywhere less defined and sparser. Breast and belly dirty cream colour without streaks; under tail-coverts same colour with dark shafts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	116-123	18-20	22-23	86-91 mm
♀♀	111-121	19-20		83-92 mm
(HW, Koelz, NBK)				

Weight 1 ♂ (Aug.) 43.2; 3 juv. 39.5-41.7 g (GD).

COLOURS OF BARE PARTS. Iris brown. Bill horny grey. Legs and feet deep chocolate-brown or black.

2028. Eastern Great Rosefinch. *Carpodacus rubicilloides lucifer*
R. & A. Meinertzhagen

Carpodacus rubicilloides lucifer R. & A. Meinertzhagen, 1926, Bull. Brit. Orn. Cl. 46: 83 (Chusha, southern Tibet)

Carpodacus rubicilloides lapersonnei R. & A. Meinertzhagen, 1926, Bull. Brit. Orn. Cl. 46: 83 (Shushal, eastern Ladakh)
Baker, FBI No. 1070 (part), Vol. 3: 138
Plate 102, fig. 12

LOCAL NAME. *Awal-lu-si* (Tibet).

SIZE. Bulbul ±; length c. 19 cm (7½ in.).

GOLDFINCHES AND ALLIES

187

VOICE AND CALLS. Call-note, a loud *twink* like the Chaffinch's. Song rendered as *tsee-soo-soo-soo* or *tsee-tsee-soo-soo-soo-soo*, the first note higher (Osmaston).

BREEDING. *Season*, June and July. *Nest*, a large massive cup of sticks and twigs followed by a layer of roots and grass, lined with hair or wool, placed in willow trees and furze (*Caragana*) bushes, etc. usually within c. 3 metres from the ground, sometimes up to 4.5 m. *Eggs*, 4 or 5, occasionally 3, similar in colour and markings to those of *C. pulcherrimus*, a deep blue sparingly marked with a few black spots. Average size of 90 eggs 24.1 × 17.6 mm (Osmaston), of 30 eggs 23.6 × 16.7 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	105-115	c. 18	24-25	84-92 mm
♀♀	97-108			
(Ludlow, NBK, MD)				

COLOURS OF BARE PARTS. Iris dark brown. Bill horny brown, culmen darker, base yellowish. Legs and feet dark brown.

CARPODACUS PUNICEUS (Blyth)

Key to the Subspecies

	Page
A Palest; less heavily streaked..... <i>C. p. kilianensis</i>	187
B Darker; more heavily streaked..... <i>C. p. humii</i>	188
C Darkest; most heavily streaked..... <i>C. p. puniceus</i>	189

2029. Kun Lun Redbreasted Rosefinch. *Carpodacus puniceus kilianensis*
Vaurie

Carpodacus puniceus kilianensis Vaurie, 1956, Amer. Mus. Novit., No. 1786: 20 (north side of the Kilian Pass at 15,000 ft, western Kun Lun, Sinkiang)
Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Bulbul ±; length c. 20 cm (8 in.).

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements. Extreme northeastern Ladakh, near Sumdo at c. 3600 m. Habitat as in 2030.

Extralimital. Kirghizstan, Tadzhikistan and southwestern Sinkiang.

GENERAL HABITS, FOOD AND VOICE. As in 2030.

MUSEUM DIAGNOSIS. Paler than *humii* (2030), less heavily streaked and smaller. For details of plumages see Vaurie, loc. cit.

MEASUREMENTS

	Wing	Bill (from feathers)
♂♂	119-122	12-13 mm (Vaurie)

COLOURS OF BARE PARTS. As in 2031.

186

CARDUELINAE

FIELD CHARACTERS. Male. *Above*, forehead, crown and sides of head carmine-red spotted with white. Rest of upperparts grey-brown washed with pink, streaked with darker brown; rump pink. *Below*, carmine-red spotted with white on throat and breast.

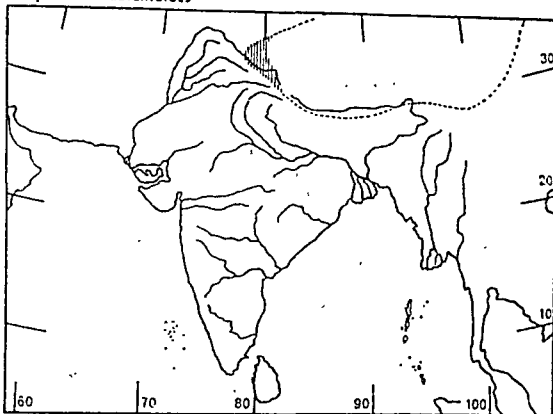
Very similar to *C. rubicilla* (2027) and not reliably distinguishable in the field, but darker, with back distinctly streaked with dark brown. White outer edge of tail very narrow, inconspicuous and often worn off. For distinction from *C. puniceus* see 2027.

Female. *Above*, grey-brown streaked with dark brown. *Below*, buffish with dark brown streaks.

Similar to female *rubicilla* but much darker brown, not sandy brown, above. *C. puniceus* female is practically alike but has an olive-yellow rump.

STATUS, DISTRIBUTION AND HABITAT. Fairly common resident, subject to vertical movements. A bird of the Tibetan plateau and northern Himalayas

Carpodacus rubicilloides



■ Distributional range of *lucifer* (2028).

from Ladakh east to Bhutan. Breeds between c. 3700 and 4800 m, descending in winter to c. 2800 m (Nepal) or 2200 m (southeastern Tibet); in Sikkim observed at 4800 m. Affects *Caragana*, willow and *Hippophae* scrub in arid country.

Extralimital. The Tibetan plateau east to southeastern Szechuan. Another subspecies from central eastern Szechuan to Tsinghai and Kansu.

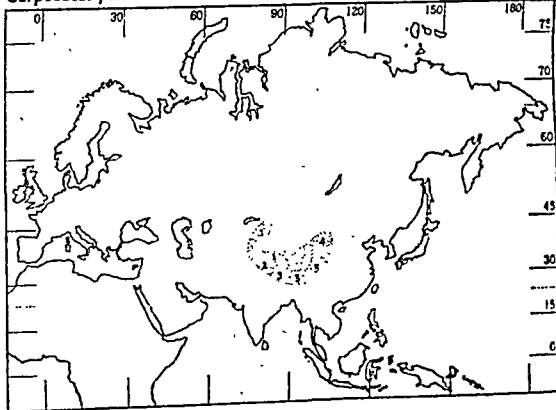
GENERAL HABITS. Little recorded; apparently much as in *C. rubicilla* but prefers a less desolate type of country. Large numbers (hundreds) observed roosting in willow groves (Ladakh — Meinertzhagen).

FOOD. Chiefly seeds.

188

CARDUELINAE

Carpodacus puniceus



■ Distributional ranges. 1 *kilianensis* (2029). 2 *humii* (2030). 3 *puniceus* (2031). 4 extralimital subspecies.

2030. Western Redbreasted Rosefinch. *Carpodacus puniceus humii*
(Sharpe)

Pyrrhospiza humii Sharpe, 1888, Cat. Bds. Brit. Mus. 12: 433
(Kotegarh; restricted by Vaurie, 1956, Amer. Mus. Novit., No. 1786: 18)
Baker, FBI No. 1054, Vol. 3: 121

LOCAL NAMES. None recorded.

SIZE. Bulbul ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. Male. *Above*, forehead and supercilium bright scarlet. Crown and back grey-brown streaked with darker brown. A brown post-ocular stripe. Rump rosy red. Wings and tail brown. *Below*, throat and breast scarlet mottled with white. Rest of underparts grey-brown.

Distinguished from both *C. rubicilla* and *C. rubicilloides* by scarlet-red, less distinctly spotted with white, broad brown stripe behind eye, and grey-brown lower belly.

Female. *Above*, grey-brown streaked with dark brown. Lower rump olive-yellow. *Below*, cream-buff boldly streaked with dark brown.

Many males breed in brown female-like plumage. Very similar to female *rubicilloides*, distinguished only by yellowish lower rump.



× 1

GOLDFINCHES AND ALLIES

189

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. As in many other rosefinches, red males appear to be in a minority everywhere. The western Himalayas from Gilgit and Kagan Valley east through Baltistan, Ladakh south of the Karakoram, Kashmir (Osmaston, JBNHS 29: 499), Chamba, Kulu, Lahul, Spiti, Garhwal and Kumaon. Breeds well above tree-line between 3900 and 5100 m, mostly above 4200 m. Descends in winter to tree-line, seldom down to 2700 or 2400 m (Kangra, Simla); exceptionally to 1500 m (Gilgit) after cold spells. Affects steep rugged mountainsides, often sharing its typical high-elevation habitat with *Grandala* and *Lerua*.

GENERAL HABITS. Usually met with in small parties of 3 or 4 individuals, feeding among boulders on steep hillsides frequently amongst melting snow. Has a remarkable habit of keeping under cover behind rocks with just its head exposed to keep an eye on the intruder. Occasionally visits high camping grounds in search of food.

FOOD. Chiefly seeds. In summer also buds and the petals of various flowers.

VOICE and CALLS. A metallic sparrow-like chirp uttered on the wing (Matthews), loud and distinctive. 'Call, a cheery bulbul-like *are you quite ready*; male sings short snatches of a soft erratic warbling song' (Whitehead).

BREEDING. Little known. *Season*, July and August. *Nest*, a cup of coarse grass lined with hair, placed on a ledge of a cliff; perhaps also on the ground in Tibetan furze (Stoliczka, JASB 37: 60; may be *C. rubicilla*, cf. Hume, *Nests and Eggs* 2: 154), or in stunted thorn bushes and juniper (Ward in Baker, *Nidification* 3: 43). *Eggs*, deep blue very faintly tinged with green and with a few black spots at the larger end (Ward's eggs). Average size of 7 eggs 24.6 × 17 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies.

Young, like female and first-winter male but streaking rather less definite. No greenish yellow on rump. Postjuvenile moult of body-feathers, lesser and median coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	111-120	18-20	24-26	76-88 mm
1 ♀	113	20	25	81 mm

(HW, Vaurie)

COLOURS OF BARE PARTS. As in 2031.

2031. Eastern Redbreasted Rosefinch. *Carpodacus puniceus puniceus* (Blyth)

P.(yrhospiza) punicea 'Hodgson' = Blyth, 1845 (1844), Jour. Asiat. Soc. Bengal 13: 953 (Himalaya = Nepal ride Sharpe, 1888, Cat. Bds. Brit. Mus. 12: 433) Baker, FBI No. 1053, Vol. 3: 120

Plate 102, fig. 16

LOCAL NAMES. None recorded.

SIZE. Bulbul ±; length c. 20 cm (8 in.).

FIELD CHARACTERS. As in 2030, q.v.

GOLDFINCHES AND ALLIES

191

STATUS, DISTRIBUTION and HABITAT. Imperfectly known. A very erratic species. The Himalayas from Lahul and Kulu east through Arunachal

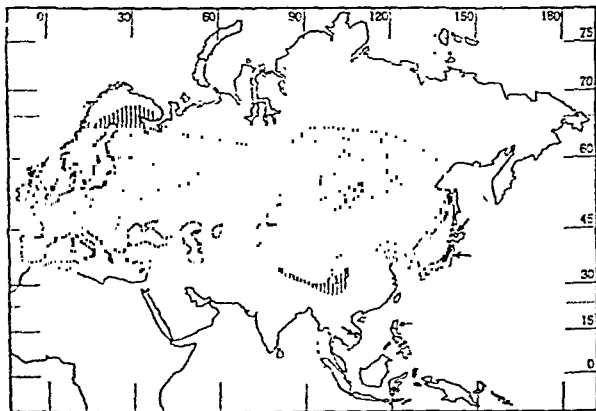
Loxia curvirostra

Fig. 19 Distributional range of the species 1 himalayensis (2032).

Extralimital subspecies not numbered

Pradesh. Data scanty. Recorded between 2700 and 4000 m at all seasons exceptionally descending to 1500 m in winter (Sikkim). Affects conifer forest.

Extralimital. The mountains of western China north to Kansu and Tsinghai. Nominat subspecies extends from eastern Siberia to Scandinavia and Spain. Numerous subspecies in Algeria, Mediterranean islands, Turkestan, Vietnam, Philippines, Manchuria, Japan, North and Central America.

GENERAL HABITS. Usually seen in small restless flocks. Frequents the tops of conifers to extract seeds from the cones with its specially adapted bill, clinging to them in all positions in the quest. Also reported to cut cones off and hold them with one foot against its perch while attacking them. Bill also used like a parakeet's for clambering on the cones. Descends to the ground for grit.

FOOD. Seeds of conifers (fir, spruce, larch, pine). Pips of apples also recorded.

VOICE and CALLS. Series of 3 to 5 *kíp-kíp-kíp-kíp* uttered in flight and when feeding.

BREEDING. Little known for this subspecies. Presumably breeds any month of the year as other subspecies do, depending on fructification of conifers; thus its presence in the winter months in a locality does not necessarily mean it is a winter visitor only. Specimens 'in breeding condition' or with considerably enlarged reproductive organs have been obtained in March (Sikkim) and in May, June and October (southeastern Tibet). A single nest has been found (cf. Baker, *Nidification* 3: 41), no date given. The

190

CARDUELINAE

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Nepal, Sikkim, Bhutan and Arunachal Pradesh (Ludlow, *Ibis* 1944: 350). Breeds between c. 4200 and 5200 m, in eastern Nepal mainly above c. 4900 m. Noted in winter between 4800 and 2700 m. Affects steep rocky and boulder-strewn slopes in the alpine zone.

Extralimital. Southern Tibet. The species extends to Szechuan, Kansu and Tsinghai.

GENERAL HABITS, FOOD and VOICE. As in 2030.

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Differs from *hamii* in being darker, more heavily streaked and smaller.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	106-120	17-19	23-24	72-85 mm
♀♀	106-111			70-82 mm

(NBK, Stres.)

Weight 11 ♂♂ (July-Aug.) 42.8-51.2; 5 ♀♀ (July-Aug.) 43-50 g (GD).

COLOURS OF BARE PARTS. Iris brown. Bill horny to dark brown. Legs and feet brown with a fleshy tinge.

Genus *LOXIA* Linnaeus

Loxia Linnaeus, 1758, Syst. Nat., ed. 10, 1: 171. Type, by subsequent designation, *Loxia curvirostra* Linnaeus

Tips of mandibles crossing each other. Nostrils covered by dense plumulets. Wing very long reaching, when folded, to tip of tail.

2032. Crossbill. *Loxia curvirostra himalayensis* Blyth

L.(loxia) himalayensis 'Hodgson' = Blyth, 1845 (1844), Jour. Asiat. Soc. Bengal 13: 952 (Nepal)

Baker, FBI No. 1050, Vol. 3: 115

Plate 102, fig. 17

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).



× c. 1

FIELD CHARACTERS. Distinguished by unique structure of bill with tips of the mandibles crossing each other.

Male. Above, crown orange-red marked with brown. Band through eye dark brown. Back mottled brown and orange-red. Rump bright orange. Below, orange-red.

Female. Above, streaked dark brown with an olive-yellow wash. Rump yellow. Below, greyish more or less washed with olive-yellow especially on breast.

Young, buffish, heavily streaked with dark brown above and below. Rest of underparts dull grey-brown washed with yellowish, especially on breast.

192

CARDUELINAE

five eggs measure 22.7 × 16.6 to 24 × 17 mm. Colour: pale grey-green with a few specks of black sparsely scattered about the larger end, forming a very indefinite ring.

MUSEUM DIAGNOSIS. See Field Characters.

Nestling has a normal finch bill, the peculiar curving of the tips of the mandibles commencing about time of fledging.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	77-91	18-20	15-17	50-56 mm
♀♀	80-88			

(Ludlow, NBK, Mayr, BB)

Weight 1 ♂ (Nov.) 26.5; 1 ♀ (Nov.) 25.5 g — SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet brown.

Genus *PROPYRRHULA* Hodgson

Propyrrhula Hodgson, 1844, in Gray's Zool. Misc.: 85.

Type, by subsequent designation, *Corythus subhimachalus* Hodgson

Bill similar to that of *Haematospiza*, upper mandible flattened. Plumage of male like that of *Carpodacus*, plumage of female like that of *Haematospiza*.

2033. Redheaded Rosefinch. *Propyrrhula subhimachala* (Hodgson)

Corythus? subhimachalus Hodgson, 1836, Asiat. Res. 19: 152

(Nepal; northern region; in winter found in the central region)

Propyrrhula subhimachala interior Rothschild, 1922, Bull. Brit. Orn. Cl. 43: 12

(Lichiang Range, Yunnan)

Baker, FBI No. 1052, Vol. 3: 119

Plate 102, fig. 14

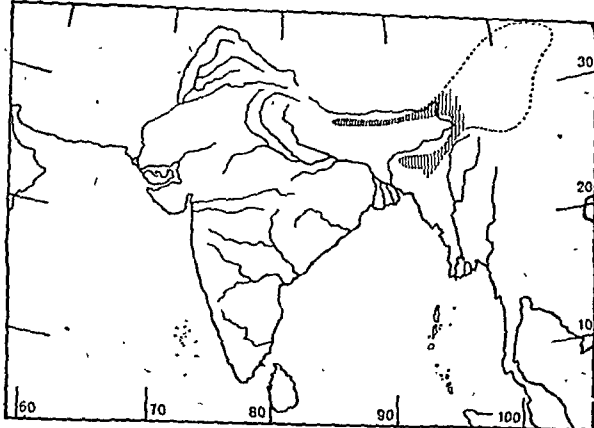
LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 20 cm (8 in.).

FIELD CHARACTERS. Male. Above, forehead and supercilium crimson. Crown, nape, sides of neck, and back brown washed with dull crimson. Shoulder and wing-bar reddish. Rump crimson. Below, throat and breast crimson with whitish spots. Rest of underparts grey.

Female. Above, forehead and supercilium orange-yellow. Crown and back scalloped brown and olive. Nape and sides of neck olive. Rump yellowish olive. Below, throat and breast yellow with dark mottling. Rest of underparts grey.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements, rather uncommon. The Himalayas from central Nepal east through Sikkim, Bhutan and Arunachal Pradesh, thence (winter only?) south in the eastern ranges to the Cachar and Khasi Hills and Manipur. Occurs in summer between c. 3500 and 4200 m, in winter between c. 1800 m (rarely) and at least 3600 m. Affects thick rhododendron, juniper and willow scrub near timber-line, and light forest with dense bush undergrowth.

Proprhula subhimachala

Distributional range

Extralimital. Extends to northern Yunnan and southwestern Szechuan.

GENERAL HABITS. A quiet bird, rather confiding but easily overlooked. Forages in low berry-laden bushes. Collects in small flocks in winter.

FOOD. Seeds (of pine etc.), berries (of *Viburnum*, *Berberis* and others), crab-apples and vegetable matter (probably buds).

VOICE AND CALLS. A sparrow-like chirruping note but quite melodious (Meinertzhagen). Subdued warbling notes something like a canary, *terp*, *terp*, *tee* (Fleming).

BREEDING. Unknown.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	92-110	13-18	21-25	74-83 mm
♀♀	91-97			74-79 mm

(NBK, Rand & Fleming, SDR, MD, SA)

Weight 3 ♂♂ (Feb.) 44-48; 3 ♀♀ (Feb.) 44-50 g — SA, BB. 3 ♂♂ (July-Aug.) 42-54-48; 1 ♀ (Aug.) 48-8 g (GD).

COLOURS OF BARE PARTS. Iris hazel brown. Bill: upper mandible blackish, lower pale-horny darker at tip. Legs and feet brownish horny.

Genus HAEMATOSPIZA Blyth

Haematospiza Blyth, 1845 (1844), Jour. Asiat. Soc. Bengal 13: 950.

Type, by monotypy, *H. boetonensis* Blyth = *Corythus Sipahi* Hodgson

Wing long, reaching beyond the middle of the tail which is rather short. Bill like that of *Proprhula* but larger. Plumage of male scarlet, of female olive and brown, scalloped. Closely allied to *Proprhula* and *Pinicola*.

13

Bhutan foothills and the Sikkim and Jalpaiguri duars, c. 600 m. Affects open forest of pine and other conifers; in winter also oak forest.

Extralimital. Ranges east to northern Yunnan.

GENERAL HABITS. Keeps singly or in scattered flocks of up to 25 birds or more often in mixed parties of small birds. Feeds in low berry-laden bushes as well as high up in trees. Also searches for insects under moss covering the branches. Flight finch-like, strong and dipping, with rapid wing-beats.

FOOD. Seeds, berries, flower buds and other vegetable matter, and some insects.

VOICE AND CALLS. A pleasant *too-tee* reminiscent of the Large Cuckoo-Shrike (*Coracina*), but rather softer and higher pitched (SA); a rather creaky *kwee-i-u* not unlike the notes of a canary (Lister).

BREEDING. Little known. Season, in the Khasi Hills May and June. Nest, a bulky cup of twigs and coarse roots, lined with finer rootlets, a little hair, wool or dried moss; placed in forks in pine trees between c. 7 and 12 metres above ground level. Eggs, not well authenticated, blue with small red-brown blotches forming a ring or cap at the large end. Four eggs vary in size from 22.1 × 17.3 and 23.2 × 17 to 25.4 × 18 mm (cf. Baker, *Nidification* 3: 41-2).

MUSEUM DIAGNOSIS. See Field Characters. Body-feathers white at base (except on lower back and lower belly) in both sexes. First-year male like female.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	98-108	16-20	19-22	63-70 mm
♀♀	95-102	mostly 18-19		60-66 mm

(SA, BB, Stevens)

Weight 2 oo? (Sept.-Oct.) 38, 38 g (SDR). 1 ♂ (March) 42.5; 2 ♀♀ (March, Oct.) 39, 40 g — SA.

COLOURS OF BARE PARTS. Iris brown or hazel brown. Bill ♂ brownish yellow or brownish flesh, with a pale crimson flush when fresh; ♀ without flush. Legs, feet and claws horny brown.

MISCELLANEOUS. Fat of scarlet males noted by SA to be the same colour as feathers; only somewhat less brilliant.

Genus PYRRHOPLECTES Hodgson

Pyrrhoptes Hodgson, 1844, in Gray, Zool. Misc.: 85. Type, by monotypy,

Pyrrhula ? *Epauletta* Hodgson

Bill reminiscent of *Pyrrhula* but less swollen, flatter than that of *Corpodacus* with which it generally corresponds. Second primary (as.) much shorter than third. Inner webs of tertials white.

2035. Goldheaded Black Finch. *Pyrrhoptes epauletta* (Hodgson)

Pyrrhula ? *Epauletta* Hodgson, 1836, Asiat. Res. 19: 156

(Northern and central regions, Nepal)

Baker, FBI No. 1049, Vol. 3: 114

Plate 103, fig. 12

LOCAL NAME. Lho-sampreh-pho (Lepcha).

SIZE. Sparrow; length c. 15 cm (6 in.).

2034. Scarlet Finch. *Haematospiza sipahi* (Hodgson)

C. (orythus) Sipahi Hodgson, 1836, Asiat. Res. 19: 151 (Nepal)

Baker, FBI No. 1051, Vol. 5: 117

Plate 103, fig. 2

LOCAL NAMES. Phanying-pho-biu (Lepcha); Labbia-mapho (Bhutia).

SIZE. Bulbul ±; length c. 18 cm (7½ in.).



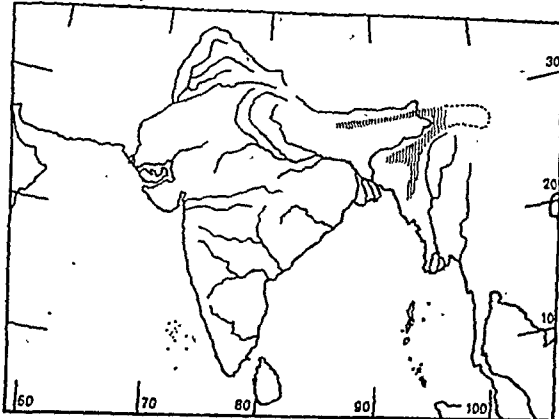
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FIELD CHARACTERS. Male. Brilliant scarlet overall with brown wings and tail and a darker line through eye. Bill yellow.

Female. Above, dark brown scalloped with yellowish olive. Rump bright yellow. Below, dark brown scalloped with olive on throat and with greyish on breast.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, rather uncommon. The Himalayas from central Nepal (Biswas, JBNHS 60: 199;

Fleming & Traylor, *Fieldiana* 53: 190) east through Darjeeling, Sikkim, Bhutan and Arunachal Pradesh, thence south in the eastern ranges to

Haematospiza sipahi

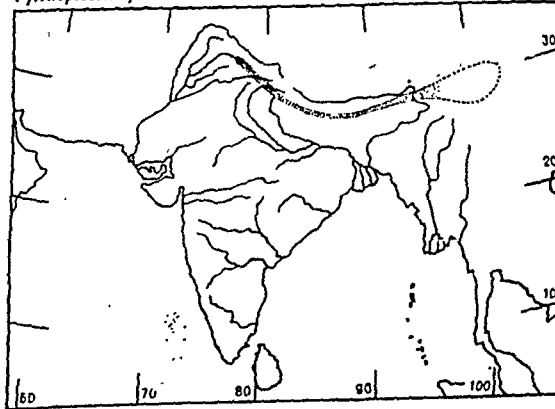
Distributional range

Cachar, Khasi Hills and Mt Victoria. Breeding zone imperfectly known. Recorded at 2300-2400 m in summer in Bhutan, and in May in the Nepal duns. In the Khasi Hills breeds between c. 1600 and 2000 m; on Mt Victoria at 2500-3000 m in May. Most records of the bird are in the non-breeding season when it has been observed from 2400 m down to the

FIELD CHARACTERS. Male. Above, crown orange-yellow. Rest of upperparts dull black with white on inner web of tertials showing as a distinctive white line on wing. Below, dull black, centre of belly and axillaries ochraceous.

Female. Crown grey tinged with yellow; rest of upperparts brown. White line on wing as in male. Below, paler brown, axillaries ochraceous buff.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, fairly common. The Himalayas from Simla (Cat. Bds. Brit. Mus. 12: 386-7) east through Nepal (Biswas, JBNHS 60: 198; Fleming & Traylor, *Fieldiana* 35: 485), Darjeeling, Sikkim, Bhutan and Arunachal Pradesh

Pyrrhoptes epauletta

Distributional range

(Ludlow, *Ibis* 1944: 348). Occurs in summer between c. 2800 and 3900 m, in winter (October to April) between 1400 and 3600 m. Affects rhododendron and ringal bamboo undergrowth in summer, most plentiful in the rhododendron zone. In winter frequents low scrub, dense thickets and bushes in forest.

Extralimital. Ranges east to northern Yunnan and southwestern Szechuan.

GENERAL HABITS. In winter keeps in small flocks of three to six birds, sometimes in company with rosefinches. Feeds on bushes or on the ground. Like bullfinches, keeps very still and unobtrusive when feeding on bushes.

FOOD. Chiefly seeds and berries; also some insects.

VOICE AND CALLS. Call-note a high-pitched *peu peu*, very distinctive (Smythies); also described as a squeaky whistle not unlike that of the

GOLDFINCHES AND ALLIES

197

Bullfinch, *Pyrrhula pyrrhula* (Meinertzhagen). Song (?), a low musical pipe (Ludlow).

BREEDING. Unknown.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	75-80	12-15	19-20	54-62 mm
♀♀	74-77	c. 12		53-56 mm (BB, SA)

Weight 2 ♂♂ (Feb.) 19, 19 g (SA). 1 ♀ (March) 19 g (BB).

COLOURS OF BARE PARTS. Iris brown. Bill horny brown, darker on culmen. Legs and feet brown.

Genus *PYRRHULA* Brisson

Pyrrhula Brisson, 1760, Orn. 1: 36, 3: 308. Type, by tautonymy, '*pyrrhula*'

Brisson = *Lexia Pyrrhula* Linnaeus

Bill short, very swollen. Rump white.

Key to the Species

	Page
A Central pair of rectrices less than 10 mm shorter than outermost.....	
..... <i>P. orientalis</i>	202
B Central pair of rectrices more than 10 mm shorter than outermost	
1 Feathers round base of bill velvety black	
a Crown grey..... <i>P. erythraea</i>	199
b Crown greenish to red..... <i>P. erythrocephala</i>	201
2 Feathers round base of bill brown..... <i>P. nipalensis</i>	197

PYRRHULA NIPALENSIS Hodgson

Key to the Subspecies

Paler; crown less scaly.....	<i>P. n. nipalensis</i>
Darker; crown more scaly.....	<i>P. n. ricketti</i>

2036. **Nepal Brown Bullfinch.** *Pyrrhula nipalensis nipalensis* Hodgson

P. (pyrrhula) Nipalensis Hodgson, 1836, Asiat. Res. 19: 155

(Northern and central regions, Nepal)

Baker, FBI No. 1047, Vol. 3: 112

Plate 103, fig. 4

LOCAL NAMES. None recorded.

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Male. Above. A dark brown band round base of bill. Crown scaly ashy brown. Back, wing-coverts and sides of neck brown. A white spot under eye. Rump purplish black, lower part with a narrow white band. Wings and tail glossy purplish black with velvety black tips to the feathers, a white spot at tip of primary coverts and a very thin crimson streak on innermost tertials. Below, throat, breast and flanks pale brown, centre of abdomen white.

Female, similar to male but streak on tertials yellow.

GOLDFINCHES AND ALLIES

199

Weight 1 ♀ (Sept.) 24 g—SDR. 1 ♂ (Nov.) 27.5 g—SA. 3 ♂♂ (Jan.) 26-29; 1 ♂ (April) 23 g—BB.

COLOURS OF BARE PARTS. Bill greenish horn with black tip. Legs and feet fleshy brown.

2037. **Chinese Brown Bullfinch.** *Pyrrhula nipalensis ricketti* La Touche

Pyrrhula ricketti La Touche, 1905, Bull. Brit. Orn. Cl. 16: 21

(Mountains of northwest Fokien, south-east China)

Pyrrhula victoriana Rippon, 1906, Bull. Brit. Orn. Cl. 17: 47

(Mt Victoria, S. Chin Hills)

Baker, FBI No. 1048, Vol. 3: 113

LOCAL NAMES. None recorded.

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. As in 2036, q.v.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements. Arunachal Pradesh (where intergrading with *nipalensis*) [Ludlow, *Ibis* 1944: 208], Nagaland, Manipur. For altitudinal distribution and habitat see 2036.

Extralimital. Southeastern Tibet, southwestern Szechuan, northern Burma, Chin Hills, Yunnan, northern Vietnam (Tonkin) and Fukien. Other subspecies in Malaya and Taiwan.

GENERAL HABITS and FOOD. As in 2036.

VOICE and CALLS. A twittering song quite unlike that of the European Bullfinch and even unlike that of any other finch (Heinrich).

BREEDING. Unknown.

MUSEUM DIAGNOSIS. Similar to *nipalensis* (2036) but crown distinctly darker and more scaly; white spot below eye obsolete or smaller and much duller white; general coloration darker.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 2036.

2038. **Beavan's Bullfinch.** *Pyrrhula erythraea erythraea* Blyth

Pyrrhula erythraea Blyth, 1862, *Ibis*: 389 (Sikkim)

Baker, FBI No. 1045, Vol. 3: 111

Plate 103, fig. 7

LOCAL NAME. *Kebya* (Lepcha).

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Male. Above, area round base of bill, lores and round eye black; forecrown and spot below eye white. Crown and back grey; rump white. A black shoulder-patch and a paler grey wing-patch; rest of wing and tail glossy purple-black. Below, chin black; throat grey; breast, upper belly and flanks orange-red to red; lower belly ashy; under tail-coverts white.

Female. Above, like male but back brown. Below, wholly brown, under tail-coverts white.

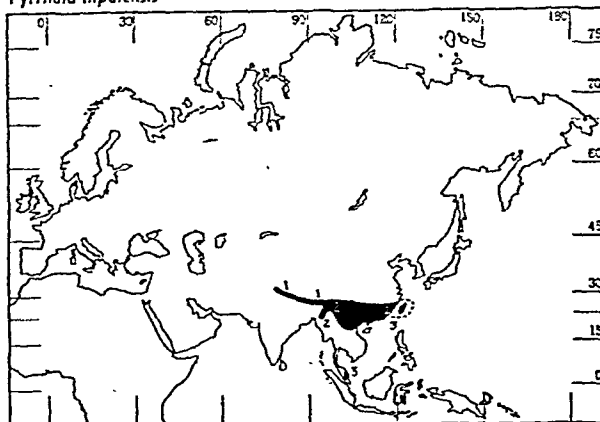
White forecrown distinguishes female from *P. nipalensis*.

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements, locally common. Darjeeling, Sikkim, Bhutan and Arunachal Pradesh

198

CARDUELINAE

STATUS, DISTRIBUTION and HABITAT. Resident, subject to vertical movements, fairly common locally. The Himalayas from Dharmasala (c. 76° 30' E.) east to Arunachal Pradesh. Occurs in summer between c. 2100 and 3000 m,

Pyrrhula nipalensis

Distributional ranges 1 *nipalensis* (2036), 2 *ricketti* (2037), 3 extralimital subspecies.

locally down to 1800 m (Bhutan), exceptionally up to 3900 m in Sikkim (Schäfer in Salim Ali, 1962). Descends to c. 1500 m in winter. Affects dense fir, oak and rhododendron forest.

GENERAL HABITS. Keeps in pairs or small flocks of six to twelve birds according to season. Arboreal; forages rather high up in trees. Flight swift and direct.

FOOD. Presumably as in other bullfinches, q.v. Nectar of rhododendron flowers, and berries recorded (SA).

VOICE and CALLS. Call-note, a mellow *pearl-lee*, more melodious than that of Redheaded Bullfinch. A continuous soft whistling twitter while feeding (Proud). For description of song see 2037.

BREEDING. Unknown (records not well authenticated, cf. Baker, *Nidification* 3: 40).

MUSEUM DIAGNOSIS. See Field Characters and Key to the Subspecies.

Young, like female but head not scaly. Upper tail-coverts not glossy, and tipped with brown. Back, throat and breast more tawny.

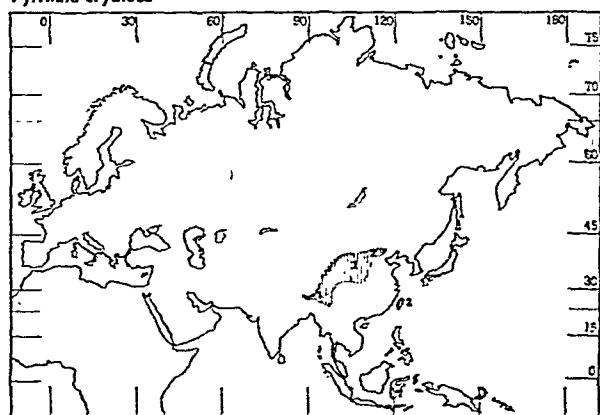
MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	83-90	11-14	c. 17	70-80 mm
♀♀	80-87	c. 12		c. 70 mm (BB, SA, Rand & Fleming)

200

CARDUELINAE

(Ludlow, *Ibis* 1944: 205). Occurs in summer between c. 2500 and 3800 m, in winter between c. 2000 and at least 3200 m, occasionally down to c. 1700 m (Darjeeling, SF 2: 455). Affects conifer and rhododendron forest, also willow and buckthorn thickets.

Pyrrhula erythraea

Distributional ranges. 1 *erythraea* (2038), 2 extralimital subspecies.

Extralimital. Extends east to Yunnan, north to Kansu and Shensi; other subspecies to Hupeh and in Taiwan.

GENERAL HABITS. Similar to other bullfinches. Keeps in pairs or small flocks according to season. Feeds among bushes or on the ground.

FOOD. Seeds, buds (of willow, buckthorn, juniper, etc.), insects and pupae. Nectar of rhododendron flowers (SA).

VOICE and CALLS. 'A triple whistle' (Stanford). Other notes undescribed.

BREEDING. Little known. One nest described as 'the usual frail bullfinch type about twelve feet [3.6 m] from the ground on top of a young pine tree. It contained young birds about a week old' on 19 July (Ludlow).

MUSEUM DIAGNOSIS. See Field Characters.

Young, much as female but crown suffused with olive. Greater coverts with comparatively narrow ashy white tips. Postjuvinal moult of body-feathers and all coverts except primary series.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	80-86	11-13	16-18	67-73 mm
♀♀	80-85			66-74 mm (NBK, Mayr, MD, SA)

Weight 1 ♂ imm. (Feb.) 18; 1 ♀ (Feb.) 20 g—SA.

COLOURS OF BARE PARTS. Iris brown to dark brown. Bill black (♂); dark brown (♀). Legs and feet fleshy brown to horny brown.

2039. **Redheaded Bullfinch.** *Pyrrhula erythrocephala* Vigors

Pyrrhula erythrocephala Vigors, 1832, Proc. Zool. Soc. London: 174

(Himalayan Mountains = Sin'la-Almora area)

Baker, FBI No. 1044, Vol. 3: 110

Plate 103, fig. 6

LOCAL NAME. *Kobyu* (Lepcha).

SIZE. Sparrow +; length c. 17 cm (6½ in.).

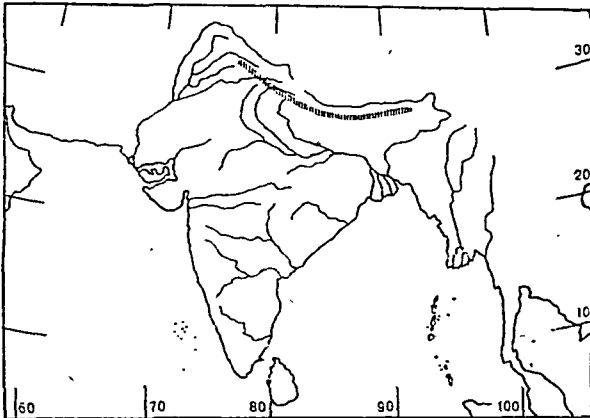
FIELD CHARACTERS. Male. Above, area around base of bill and eye black. Crown red; back grey; rump white. Wings glossy purplish black with a large ashy patch. Tail (noticeably forked) glossy purplish black. Below, chin black; throat, breast and flanks dull rusty red. Lower belly ashy; under tail-coverts white.

Female, like male but crown yellowish olive. Back and underparts brown.

STATUS, DISTRIBUTION AND HABITAT. Resident, subject to vertical movements, fairly common.

The Himalayas from Kashmir (rare) east at least to eastern Bhutan (Ludlow, *Ibis* 1944: 206). Breeds between c. 2400 and 3300 m in the western part of its range, 2700–3600 m (Garhwal), 3400–4200 m (central and eastern Nepal),

Pyrrhula erythrocephala



Distributional range

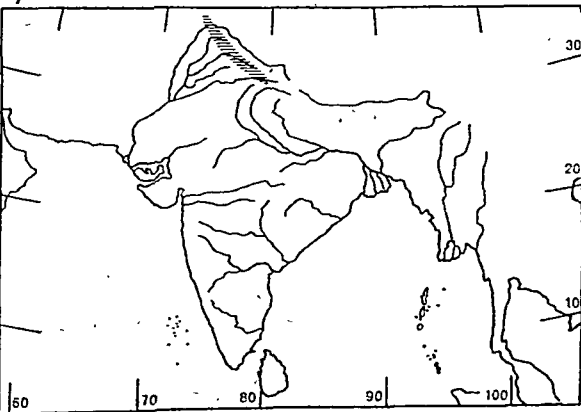
GOLDFINCHES AND ALLIES

with an olive tinge; rump white. Wings black with a whitish buff patch. Tail black, slightly forked. Below, ochraceous orange-yellow (or saffron yellow).

Female, like male but crown, nape and ear-coverts grey. Back and breast yellowish brown. Belly dull yellow.

STATUS, DISTRIBUTION AND HABITAT. Common resident, subject to vertical movements. The western Himalayas from Chitral, Astor, Gilgit and Murree east through Kashmir (very common) to Simla. Breeds between c. 2700 and

Pyrrhula aurantiaca



Distributional range

3300 m (timber-line), in open fir, birch and mixed forest.¹ Descends in winter to c. 1600 m.

GENERAL HABITS. Keeps in pairs or in small flocks comprising up to ten birds or so. A quiet and unobtrusive species. Feeds in bushes or on the ground.

FOOD. Seeds, berries and buds (of willow, cherry, etc.).

VOICE AND CALLS. Call-note, a soft, clear low-pitched *tew* which first betrays their presence in a locality. Song, very distinctive: commencing with a loud melodious *tew* followed by a rapidly repeated metallic trisyllabic note like *tyätlinkä-tlinkä* (Magrath).

BREEDING. Season, June to August. Nest, a cup of fine twigs and rootlets, lined with moss, rootlets and a few hairs, placed in saplings or in the lower branches of large trees. Eggs, 3 or 4, white blotched with dark reddish brown mostly at the large end. Average size of 13 eggs 21.3 × 15 mm (Baker). Building of nest by female, accompanied by male.

¹ Nests said to have been found on the Kolahoi Mtn., Kashmir, 'between 12,000 and 13,000 feet' (Ward, JBNHS 18: 462); these altitudes are much too high as they seem to be well above timber-line beyond which this bullfinch is not known to occur. The nests had been obtained by native collectors. Cf. also JBNHS 21: 1307.

3300–3900 m (Sikkim) and 2700–3800 m (Bhutan). Descends in winter regularly to c. 1500 m; occasionally 1200 m (Chamba) or 1000 m (Sikkim); in Nepal not recorded below 2100 m. Does not entirely leave the higher zone: has been recorded in December as high as 3900 m (Nepal, Sikkim). A bird of the deciduous forest, especially birch; also found in willow and rhododendron forest. In winter frequents mostly rhododendron either in pure stands or in oak or conifer forest; also willows along banks of streams.

Extralimital. Adjacent parts of southeastern Tibet.

GENERAL HABITS. Usually seen in small flocks of five to seven birds, feeding mostly among bushes, sometimes on the ground.

FOOD. Chiefly seeds (of birch, *Rumex*, etc.). Also leaf buds, willow catkins, and various berries [blackberries (*Rubus*), strawberries]. Nectar of flowers, e.g. rhododendron.

VOICE AND CALLS. Call-note a soft plaintive whistle *phew-phew*, indistinguishable from that of the European bullfinch (various observers). Also a faint, mellow call (song?) *cher-peri* (Fleming).

BREEDING. Season, mainly August. Nest, a cup of twigs, beard-moss (*Usnea*) lined with roots, placed in small trees three metres or so above ground level. Eggs, 3 or 4, dull grey-white faintly tinged with green, marked with brown or red-brown specks and small blotches with secondary similar marks of dark grey and pale lavender; markings distributed as a ring round the large end and sparsely scattered over rest of surface. Average size of 13 eggs 20.8 × 14.7 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters.

Young. Above, pale rufous-brown, brighter on crown, tinged grey on back. Lesser and median coverts grey tipped with rufous; greater coverts black tipped with rufous-grey. Below, belly greyish; under tail-coverts white; rest of underparts warm brown. Rest of wing and tail as in adult. Postjuvinal moult of body-feathers, lesser, median and greater coverts.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	72–81	10–13	17–20	60–70 mm 63–67 mm
♀♀	76–80			

(Rand & Fleming, Stres., SA)

Weight 8 ♂♂ (March) 18–22; 5 ♀♀ (March) 19–20 g — SA. 6 ♂♂ (July–Sept.) 19.5–22.5; 6 ♀♀ (July–Sept.) 18–21; 1 ♀ (laying) 27.6 g — GD.

COLOURS OF BARE PARTS. Iris brown. Bill black. Legs and feet light brown.

2040. **Orange Bullfinch.** *Pyrrhula aurantiaca* Gould

Pyrrhula aurantiaca Gould, 1858 (1857), Proc. Zool. Soc. London: 222

(Western Himalayas, restricted to Kashmir by Baker, 1926, FBI 3: 109)

Baker, FBI No. 1043, Vol. 3: 109

Plate 103, fig. 5

LOCAL NAME. *Sama sonatier* (Kashmir).

SIZE. Sparrow ±; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Male. Above, forehead, lores and area round base of bill and eye black. Crown and back ochraceous orange-yellow, back

MUSEUM DIAGNOSIS. See Field Characters.

Young, like female but crown and forehead duller tawny brown, sides of head paler tawny. Lesser wing-coverts tipped olive. Chin dusky; rest of underparts as in female but centre of belly and under tail-coverts creamy white.

MEASUREMENTS

	Wing	Tarsus	Tail
♂♀	80–83	c. 18	57–58 mm (Baker)

Bill from skull 13 mm

Weight 5 ♂♂ (Apr.–May) 17–21; 6 ♀♀ (Apr.–May) 18–22 g — SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill black. Legs and feet dark brown to fleshy brown.

Family EMBERIZIDAE: Buntings

For description see Vaurie, Charles, 1964, article 'Bunting' in Thomson, A. L. (ed.), *A New Dictionary of Birds*, London and New York.

Key to the Genera

	Page
No crest.....	<i>Emberiza</i> 204
A well-developed crest.....	<i>Melophus</i> 232

Genus EMBERIZA Linnaeus

Emberiza Linnaeus, 1758, Syst. Nat., ed. 10, 1: 176. Type, by subsequent designation, *Emberiza Citrinella* Linnaeus

Bill conical, sharply pointed; culmen straight or nearly so. Edges of mandibles not in contact throughout their length, but showing a gap about midway between gape and tip.

Key to the Species

	Page
A Tail only slightly shorter than wing	
a A large white patch on the outermost tail-feathers	
a' Sides of body streaked or differing in colour from abdomen	
a'' No trace of yellow on lower plumage	
a''' Chin and throat black	<i>E. schoeniclus</i> ♂ 230
a''' Breast white.....	<i>E. stercoraria</i> ♂ 216
b' Breast chestnut.....	<i>E. leucostictus</i> ♂ 206
b' Chin and throat chestnut.....	
c' Chin and throat white or pale fulvous, with or without streaks	
c' Ear-coverts chestnut	
a'' A chestnut pectoral band.....	<i>E. fucata</i> 225
b' No pectoral band.....	<i>E. fucilla</i> 228
d' Ear-coverts fulvous or brown	
c' Rump, tail-coverts and back concolorous.....	
a'' <i>E. schoeniclus</i> ♀ 230	
d' Rump chestnut contrasting with back	
a'' ♀ 206	
b' Lower plumage largely yellow	
d' Crown chestnut, or brown broadly streaked.....	<i>E. aureola</i> 213
c' Crown green, with obsolete shaft-streaks.....	<i>E. spodocephala</i> 208
f' Crown yellow, or yellow mixed with green.....	<i>E. citrinella</i>

BUNTINGS

205

Page

b	Sides of body unstreaked and concolorous with abdomen	
c	Throat and breast bluish grey..... <i>E. cia</i>	221
d	Throat and breast rufous..... <i>E. buchanani</i>	219
e	Throat and breast yellow..... <i>E. hortulana</i>	219
b	No distinct patches of white on outermost tail-feathers	
c	Sides of body unstreaked	
f	No streaks whatever on lower plumage	
g	Crown black..... <i>E. melanocephala</i> ♂	207
e	Crown golden..... <i>E. bruniceps</i> ♂	209
h	Crown streaked with brown	
i	Wing over 90 mm..... <i>E. melanocephala</i> ♀	207
g	Wing under 90 mm..... <i>E. bruniceps</i> ♀	209
g	Throat and foreneck streaked..... <i>E. striolata</i>	229
d	Sides of body streaked..... <i>E. rufila</i>	211
B	Tail decidedly longer than wing..... <i>E. calandra</i>	205

2041. Corn Bunting. *Emberiza calandra* Linnaeus*Emberiza Calandra* Linnaeus; 1758, Syst. Nat., ed. 10, 1: 176 (Sweden)*Emberiza calandra buturlini* Johansen, 1907, Orn. Jahrb.: 202

(Kastek, Semirechia)

Baker, FBI No. 1137, Vol. 3: 218

Plate 104, fig. i

LOCAL NAMES. None recorded.

SIZE. Bulbul; length c. 18 cm (7 in.).

FIELD CHARACTERS. Reminiscent of female House Sparrow, but larger and dumper. *Above*, greyish brown streaked with dark brown. *Below*, sides of neck and throat cream coloured becoming greyish white on belly, streaked with dark brown, more heavily so on breast. Sexes alike.

STATUS, DISTRIBUTION and HABITAT. Winter vagrant, recorded once in Jhang district, Pakistan, in November and December (Whistler, JBNHS 25: 742). Affects waste ground and arable land.

EXTRALIMITAL. Ranges from Turkestan and Afghanistan to the British Isles and Morocco.

GENERAL HABITS. In small flocks in winter, hopping and feeding on ground, perching on bushes, telegraph wires, etc. Undulating sparrow-like flight.

FOOD. Seeds, rice grains, etc. and insects.

VOICE and CALLS. Call-note a distinctive *tit*.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters and Key to the Species; for details of plumages (and bionomics), Withersby, 1938, 1: 112.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	89-101	12-15	24-27	67-76 mm (Withersby)

BUNTINGS

207

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	88-96	12-14	c. 20 (Baker; bill by MD)	78-82 mm

Weight 1 ♀ (March) 27 g — Paludan. 4 ♂ ♀ (April) 27-29 g — SA.

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible dark horny brown, lower plumbeous (Abbott), bluish horny or yellowish horny (Hume). Legs and feet brownish flesh.

2043. Blackheaded Bunting. *Emberiza melanocephala* Scopoli*Emberiza melanocephala* Scopoli, 1769, Annus I, Hist. Nat.: 142 (Carniola)

Baker, FBI No. 1133, Vol. 3: 213

Plate 104, fig. 12

LOCAL NAMES. *Gāndām* (Hindi); *Zārdan drūshk* (Baluchi); *Booree* (Sindhi = 'deaf', as no amount of shouting will scare them from the crops!).

SIZE. Sparrow +; length c. 18 cm (7 in.).

FIELD CHARACTERS. Male. *Above*, crown and sides of head black; back and rump rufous. A whitish double wing-bar. *Below*, lemon-yellow, sides of breast rufous.

Female. *Above*, fulvous-brown with dark streaks. *Below*, buffish white with traces of yellow; sides pale brown, under tail-coverts yellow. Difficult to distinguish from ♀ *bruniceps* unless in the hand. See Museum Diagnosis.

STATUS, DISTRIBUTION and HABITAT. Abundant winter visitor to western and central India in Rajasthan, Gujarat, Madhya Pradesh (east to Saugor, once to Lohardaga in Bihar), Maharashtra (east to Nagpur and Nander) and Karnataka (south to Hiriyur). Recorded on migration in Punjab, Kangra, Gilgit, Peshawar and in large numbers in Sind and Baluchistan. Once in Kathmandu Valley, Nepal (Fleming, JBNHS 68: 834). Affects cereal cultivation.

EXTRALIMITAL. Breeds in Iran, the Middle-East, Caucasus, southern Russia and the Balkans.

MIGRATION. Found in winter quarters from September to early April. Autumn passage August-September (earliest 2 August); spring passage March-April. In spring males tend to migrate in almost pure flocks passing through earlier, the females apparently passing through later and quicker and thus tending to escape notice. Direction of migration northwest-southeast; a bird ringed in Kutch (c. 23°N., 69°E.) on 26.ix.1959 was recovered on 26.v.1961 in Krasnodar dist. (c. 45°N., 40°E. — USSR) c. 3700 km NW. Another ringed in Kathiawar (c. 22°N., 71°E.) on 22.ix.1964 was recovered on 16.v.1965 in Cyprus (c. 35°N., 34°E.) c. 4500 km in the same general trend.

The extreme known distance between the breeding grounds and the winter quarters of this bunting, *ride* Stresemann (1944, Orn. Monatsb. 52: 85-92), is c. 7000 km. A ringed bird has been ascertained to have flown

EMBERIZIDAE

206

Bill from skull c. 17 mm (MD).

Weight 1 ♀ (Nov.) 1½ oz. (39 g) — HW.

COLOURS OF BARE PARTS. Iris dark brown. Bill yellow, dark horn on culmen. Legs and feet straw-yellow.

2042. Pine Bunting. *Emberiza leucocephala leucocephala* S. G. Gmelin¹*Emberiza leucocephala* S. G. Gmelin, 1771, Nov. Comm. Sci. Petropol. 15: 480, pl. 23, fig. 3 (Astrakhan)

Baker, FBI No. 1123, Vol. 3: 202

Plate 110, fig. 3

LOCAL NAMES. None recorded.

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Male. *Above*, centre of crown white; forehead and sides of crown blackish; a broad chestnut supercilium; cheeks white. Back rufous-brown streaked with dark brown; rump rufous. Two pale wing-bars. Tail dark brown with white outer rectrices. *Below*, chin and upper throat chestnut; lower throat white, this colour extending as a narrow collar to sides of neck. Breast and flanks rufous, lightly streaked; centre of belly whitish.

In winter centre of crown ashy instead of white, and chestnut parts largely with white margins to the feathers.

Female, lacks chestnut on face. *Above*, crown and sides of head brown with dark streaks. Cheeks whitish, a narrow black streak below. Rest of upperparts as in male. *Below*, breast and flanks rufescent with dark streaks, rest white.

STATUS, DISTRIBUTION and HABITAT. Common winter visitor to Pakistan and northwestern India from N.W.F.P. south to Quetta and east through the Punjab plains, Gilgit, Kashmir and the foothills east to west-central Nepal (Pokhara c. 84°E.) — Proud, JBNHS 58: 278. Affects bush-covered grassy slopes and cultivation, especially fallow and stubble fields; in the hills normally up to c. 1500 m, occasionally to nearly 2700 m (Simla).

EXTRALIMITAL. Breeds in Siberia from the Ob river east to the Lena river and Sakhalin Island. A subspecies in Tsinghai and eastern Kansu. Winters to China and Iran.

MIGRATION. Arrives mostly in November, remains until March, sometimes April. Recorded on passage on Burzil Pass in November.

GENERAL HABITS. In winter keeps in flocks, often with *E. cia*, sometimes with finch-larks, *Eremopterix grisea* (818). Feeds on the ground, perches in trees.

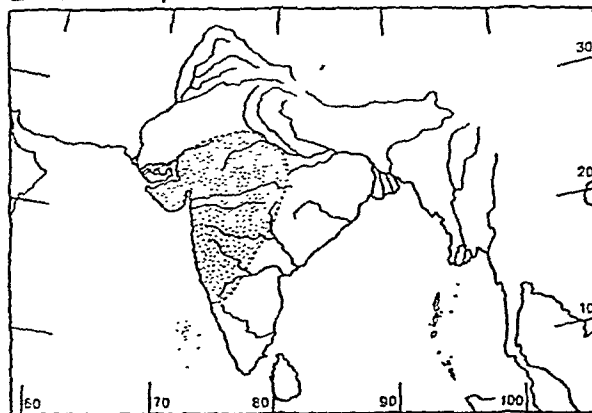
FOOD. Grass seeds, grain (mostly rice when opportunity offers); insects. VOICE and CALLS. Call-note a single sharp *zilt* or *pit*; easily distinguishable from that of *E. cia stracheyi* (2052). 'Exactly like Yellow Bunting [*E. citrinella*]' (A. E. Jones).

¹A hybrid *leucocephala* × *citrinella* has been obtained at Urak, northern Baluchistan, in April 1924 (Ticehurst, JBNHS 31: 867).

EMBERIZIDAE

208

c. 1000 km in 7 days. Thus, hypothetically, such an extreme migrant would spend about 48 days on passage each way (total 96 days). About 90 days are normally spent on the breeding grounds, and the remaining half-year — 180 days — in the winter quarters in India!

Emberiza melanocephala

Winter range

GENERAL HABITS. Keeps in flocks, often huge mixed swarms with Red-headed Buntings, feeding along cross-country cart tracks and grain fields, sometimes causing serious damage to standing crops. On disturbance by the cultivator's frantic shouts and scaring slings the swarm merely flies onto the surrounding trees, looking in the distance like a flush of bright yellow blossoms. The birds return almost immediately to resume their depredation. In such flocks a very large preponderance of yellow males has been noted. Large numbers also flock to feed from ricks of paddy, bajra, etc. stacked in fields after harvesting. Enormous concentrations roost in thorn scrub and thickets in company with House and Yellowthroated Sparrows.

FOOD. Chiefly grass seeds and cereal grains — rice, wheat, jowar, bajra, etc.

VOICE and CALLS. Only call-note in winter a musical *treeet*. Loud, pleasant whistling song of male sometimes heard before departure in spring.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters. Female differs from ♀ *bruniceps* in being larger (cf. Measurements) and in the rump being tinged with rufous (i.e. yellow).

This species, like *E. bruniceps*, has two moults each year; unlike other *Emberiza* (and all other oscines) the flight-feathers are renewed during winter moult into breeding plumage; in adult female, moult is less extensive. Postnuptial moult

BUNTINGS

209

interrupted by autumn migration. Young have a 'soft nestling plumage' followed by a moult shortly after leaving nest into a juvenal plumage, and then by a moult in the wintering area into adult plumage (Stresemann, E. & V., 1969, 'Die Mauser einiger *Emberiza*-Arten', *J. Orn.* 110: 291-313; also Ticehurst, C. B., *Ibis* 1940: 523-5).

First-winter male. Upperparts and sides of neck fulvous brown obscetely streaked with dark brown, and tinged with olive-yellow on the rump. Underparts dull white, tinged with buff on the breast and with pale yellow on belly, the breast finely striated with dark brown; under tail-coverts pale yellow. Wings and tail as juvenile, the edges and tips of tertials and coverts now faded to creamy white and later fading to white; those median coverts which have been renewed have fulvous white tips.

First-winter female, like ♂, but no yellow on belly, and sides of breast tinged brown.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	92-100	15-17	20-23	68-78 mm
♀♀	85-92	16-17	21-22	65-71 mm (SA)

Weight 3 ♂♂ 29-32 g (Dementiev). 7 ♂♂ (Oct.) 30-35 (av. 30.1); 6 ♀♀ (Oct.) 27-31 (av. 29) g—SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible horny brown; lower mandible yellowish horny. Legs and feet fleshy brown.

2044. Redheaded Bunting. *Emberiza bruniceps* Brandt

Emberiza bruniceps Brandt, 1841, Bull. Sci. Acad. Imp. St. Petersb. 9, col. 12 (Turkmenia)

Emberiza icterica Eversmann, 1842, Add. Pallas Zoogr. Rosso-Asiat. 2: 10 (Transcaspia)

Baker, FBI No. 1134, Vol. 3: 215

Plate 104, fig. 16

LOCAL NAMES. *Gāndām* (Hindi); *Dalchidi* (Sind); *Pacha jinuwaaji* (Telugu).

SIZE. Sparrow +; length c. 17 cm (6½ in.).

FIELD CHARACTERS. Male. Above, crown rufous washed with yellow (golden brown). Upper back yellow; centre of back yellowish olive with blackish streaks; rump bright yellow. A whitish double wing-bar. Below, throat and sides of head cinnamon; sides of neck and rest of underparts yellow.

Female. Above, brown streaked with darker brown. Below, buffish washed with yellow; under tail-coverts yellow.

Confusingly like ♀ Blackheaded. For distinguishing in the hand see 2043 (Museum Diagnosis).

STATUS, DISTRIBUTION AND HABITAT. Mostly a winter visitor, common and widespread. Breeds in northern Baluchistan (Kalat, Quetta, Ziarat) between c. 1600 and 2400 m where summer visitor only. Winters in most of the Indian Peninsula plains from Haryana (Ambala), Rajasthan and Gujarat

14

BUNTINGS

211

MUSEUM DIAGNOSIS. See Field Characters. Moults as in *E. melanocephala* (2043) q.v., with which it is often considered conspecific. The breeding ranges of the two are complementary and hybrids are found at points of contact. Winter ranges practically the same for both.

Young (juvenile). Upperparts with dark brown centres and ochraceous buff edges; underparts fulvous white with a variable amount of spotting on throat, breast, and flanks; under tail-coverts yellowish white; wing-coverts and tertials brown with fulvous white edges and tips, broad on both webs of the tertials; flight-feathers brown, with pale outer edges; tail brown, the outer edges and outer pair of rectrices lighter.

Postjuvénal moult of body, odd lesser- and odd median-coverts in July.

First-winter. Upperparts with heavy streaks of dark brown and with fulvous-brown or fulvous-grey edges, the streaks fine on rump and upper tail-coverts; underparts white tinged with buff, and with dark brown streaks on breast and flanks and occasionally on breast, streaking very variable and absent in some; under tail-coverts pale yellow; belly and rump tinged yellow in ♂, not in ♀; wings as juvenile, but the fulvous white edges faded to creamy white or white; new median-coverts tipped rufous-white. Birds arrive in winter quarters in this dress in August and undergo a complete moult in October and November.

First-spring male. Like adult, but less yellow on mantle; chestnut on crown less extensive, fringes long and often streaked with black. The breeding dress is acquired by abrasion of the brownish edges.

First-spring female. Like adult; possibly those with little or no yellow on rump and less yellow on underparts are characteristic of first-year birds, but this uncertain for lack of moulting material.

After breeding there is an irregular moult of some of the feathers of the crown and body, and sometimes of part of the tail. Birds arrive in winter quarters in this mixture of worn breeding dress with a few just-moulted feathers, and perform a complete moult in October and November to spring dress (Ticehurst, C. B., *Ibis* 1940: 523-5).

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	85-90	16-17	19-22	69-70 mm
♀♀	82-85	15-16		65-67 mm (SA, HW)

Weight 11 ♂♂ (April-Oct.) 22-27; 4 ♀♀ (July) 22-25 g (Faludan). 3 ♀♀ (Oct.) 20-22 g (SA).

COLOURS OF BARE PARTS. Iris brown. Bill dark brown above, plumbeous horn below. Legs and feet pale brown.

2045. Chestnut Bunting. *Emberiza rutila* Pallas

Emberiza rutila Pallas, 1776, Reise Russ. Reichs 3: 698 (Onon R., SE. Transbaicalia)

Baker, FBI No. 1135, Vol. 3: 216

Plate 104, fig. 13

LOCAL NAME. *Lāl gāndām* (Hindi).

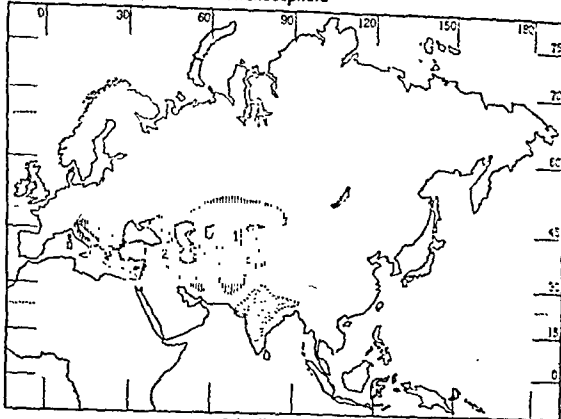
SIZE. Sparrow ±; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Male. Above, entirely chestnut. Below, throat, chestnut, rest of underparts sulphur-yellow.

210

EMBERIZIDAE

Emberiza bruniceps and *E. melanocephala*



Distributional ranges.

■ Breeding

▨ Winter (largely overlapping).

1 *E. bruniceps* (2044), 2 *E. melanocephala* (2043).

east and south to northeastern Bangladesh (Rashid), eastern Madhya Pradesh, eastern Maharashtra (Chanda), western Andhra Pradesh (Cuddapah), southern Karnataka and western Tamil Nadu (Coimbatore). Migrates through Sind, Punjab, N.W.F.P., Gilgit and the Himalayan foothills in Kashmir, Kangra, Lahul and Spiti. Has been recorded on passage once at c. 3000 m and once at c. 4600 m. Has strayed to southeastern Tibet in September (*Ibis* 1944: 361). Affects cultivation, especially grain fields.

Extralimital. Ranges from Afghanistan north to the Altai, the northern Caspian region and northern Iran (where it hybridizes with *E. melanocephala*).

MIGRATION. Autumn passage mostly in the second half of August and first half of September (earliest 22 July). Spring passage, March to early May (latest 9 June in Gilgit).

GENERAL HABITS. Very similar to those of *E. melanocephala* with which it often consorts in enormous numbers in winter to ravage cereal crops.

FOOD. As in 2043.

VOICE AND CALLS. As in 2043. In breeding season male usually sings in vicinity of nest.

BREEDING. Season, May and June. Nest, a cup of weed-stalks and fibres lined with hair, well concealed in garden hedges, rose bushes, vines and peach trees, usually within a metre or so from the ground. Eggs, normally 5, very pale green, finely speckled all over with pale sepia and yellowish brown, more at the larger end. There is no crawling as on most other buntings' eggs. Measurements: 21.5 × 15.5 to 22.5 × 15.5 and 22.5 × 16 mm (Ticehurst).

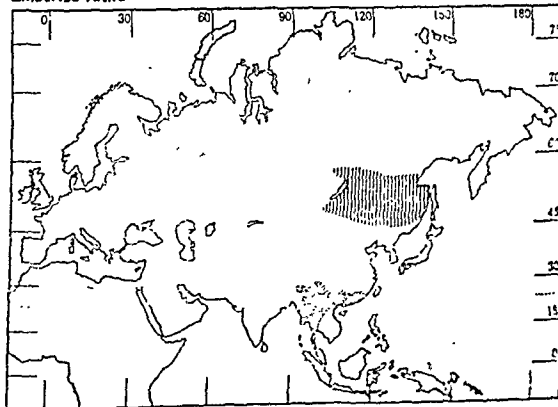
212

EMBERIZIDAE

Female. Above, crown ashy brown with dark streaks. A wide brown band on sides of crown, buffish post-ocular streak and dark ear-coverts. Back ashy brown with blackish streaks; rump chestnut. Below, throat buffish with dark malar stripes. Breast yellowish olive finely streaked; rest of underparts yellow, flanks streaked with dark brown.

STATUS, DISTRIBUTION AND HABITAT. Scarce winter visitor to Manipur, North Cachar and the Japaiguri duars (one record). Obtained in Sikkim in March-April and in Nepal in April (once — Rand & Fleming, 1957).

Emberiza rutila



Distributional range

■ Breeding

▨ Winter

Has straggled to Chitral, 2100 m, in April (Fulton, JBNHS 16: 55) and to Ladakh (Tsokar Lake, c. 4500 m) on 10 June (Osmaston, JBNHS 31: 999 and *Ibis* 1925: 698). Affects rice stubbles, bushes in cultivation and forest clearings.

Extralimital. Breeds in southeastern Siberia from Lake Baikal to Amur-land and Manchuria. Winters in Burma, southern China and northern Indochinese countries.

GENERAL HABITS. Usually in flocks in winter. Feeds on the ground, flies up into trees or bushes when disturbed.

FOOD. Seeds (of grasses, bamboo, etc.).

VOICE AND CALLS. A thin high *teeep* when disturbed (Smythirt).

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

Young. Crown, mantle and scapulars streaked black and edged yellowish tawny; a tinge of chestnut on crown. Rump and upper tail-coverts chestnut with fine black streaks. Indistinct supercilium dull buffish white. Ear-coverts brown, centre paler. Lesser-coverts brown tinged chestnut. Greater- and median-coverts

BUNTINGS

213

dark brown with ochraceous tips and edges. Chin and throat dull white more or less streaked with blackish, forming a moustache. Postjuvenile moult of body-feathers, lesser-, median- and greater-coverts.

- First-year male like adult female but chin and throat whitish tinged chestnut. Breast chestnut fringed whitish. A brown moustachial streak. Crown chestnut streaked with black, tips whitish. Chestnut of adult assumed by spring moult of head and throat.

First-year female has no chestnut on crown and breast; throat and upper breast sordid white finely streaked with dark brown. Sides of head mottled fulvous, brown and white.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	74-77	c. 14	19-20 (Baker; bill by MD)	56-59 mm

COLOURS OF BARE PARTS. Iris hazel to dark brown. Bill: upper mandible dark horny, lower mandible and gape yellowish horny. Legs and feet pale yellowish brown.

2046. Yellowbreasted Bunting. *Emberiza aureola aureola* Pallas

Emberiza Aureola Pallas, 1773, Reise Russ. Reichs 2: 711

(Irtysh River, Siberia)

Baker, FBI No. 1131, Vol. 3: 210

Plate 104, fig. 11

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male (summer). Above, forehead and sides of head blackish brown. Crown, nape, sides of neck, back and rump deep chestnut. A large white shoulder-patch and a narrow white wing-bar. Tail dark brown with outer rectrices largely white. Below, chin and upper throat blackish brown; throat yellow, this colour extending to sides of neck; a chestnut collar on upper breast; rest of underparts yellow, flanks streaked with blackish brown.

Male in winter lacks the black mask but has dark ear-coverts and a conspicuous yellowish supercilium. Rest of plumage similar but dulled by pale brown fringes.

Female. Above, brown streaked with dark brown; some chestnut on rump. A buff supercilium and dark ear-coverts. Wing-pattern as in male but white replaced by buff. Tail as in male. Below, yellow, brighter on belly and sullied with brown on breast. Flanks streaked with dark brown.

STATUS, DISTRIBUTION AND HABITAT. Winter visitor, common and abundant in the easternmost parts, scarce elsewhere: Manipur, Meghalaya, Bangladesh (all parts — Rashid), the plains of the Brahmaputra, Arunachal Pradesh, Bhutan (?), northern Bengal, Sikkim and Nepal, rarely west to Ambala (JBNHS 31: 1003 and 39: 86). One record from the Baluchistan



x c. 1

BUNTINGS

215

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♂	77-83	13-14	20-21	57-68 mm
♀ ♀	72-76			54-60 mm (HW)

Weight 1 ♂ (spring) 21.7 g (GD).

COLOURS OF BARE PARTS. Iris brown. Bill blackish brown above and at tip, brownish flesh below. Legs and feet brown.

2047. Blackfaced Bunting. *Emberiza spodocephala sordida* Blyth

E. (emberiza) sordida 'Hodgson' = Blyth, 1845 (1844), Jour. Asiat. Soc. Bengal 13: 958 (Nepal)

E. (emberiza) melanops Blyth, 1845, Jour. Asiat. Soc. Bengal 14: 554 (Tipperah)

Baker, FBI No. 1132, Vol. 3: 212

Plate 104, fig. 14

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male. Above, base of bill, lores and round eye black. Head and nape olive-grey. Back brown with blackish streaks. A whitish and a buff wing-bar. Outer rectrices white conspicuous in flight. Below, chin black. Throat and breast olive-grey. Belly very pale yellow.

'Most conspicuous field character: black patch on lores showing up against dark greenish head and neck' (Stanford).

Female. Above, crown rufous-brown streaked with dark brown like back. A pale supercilium and dark ear-coverts. Tail as in male. Below, pale yellow with dark moustachial streak, breast and flanks streaked with dark brown.

STATUS, DISTRIBUTION AND HABITAT. Common winter visitor to Manipur, Nagaland, Meghalaya, Bangladesh (all parts) and the plains of the Brahmaputra; less common in the Jalpaiguri and Sikkim duars to eastern Nepal. Kathmandu Valley (Fleming, JBNHS 68: 834). Affects high grass, bamboo and scrub jungle, hedgerows in village compounds, margins of ricefields and marshes; in the hills up to c. 1000 m.

Extralimital. Western China from northern Yunnan and northern Hupeh to Kansu and Tsinghai. Other subspecies in Japan, Sakhalin and west in Siberia to Yakutia and the Altai. The species winters in southern China, NE. Burma, and the Indochinese countries.

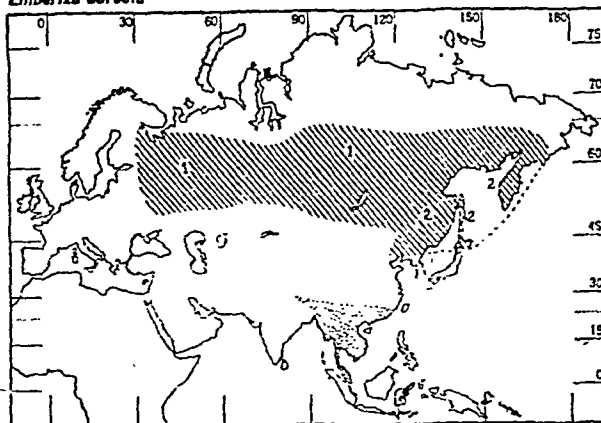
MIGRATION. Occurs in winter quarters from October (earliest 24 Oct.) to April (latest 7 Apr.). Recorded on passage at c. 2700 m in Sikkim on 19 December.

GENERAL HABITS. Keeps in pairs or small flocks of four to six birds; usually in cover and near water. Feeds on the ground in damp paddy stubbles or on moist edges of jheels and tanks. Also on ripening paddy in the ear. Flight of flock disorderly and undulating, reminiscent of a flock of munias.

FOOD. Rice and other seeds.

214

EMBERIZIDAE

Emberiza aureola

Distributional ranges.

Breeding

Winter

1 *aureola* (2046), 2 *ornata* (RE).

coast (JBNHS 31: 868) and one from the Nicobars, out of a flock of about 20 (SF 1: 258). Affects cultivation and grassland, hedgerows, gardens and sometimes threshing floors and market-places in and around hamlets; in the hills up to c. 1500 m.

Extralimital. Breeds from Finland to eastern Siberia. A subspecies in Kamchatka, Sakhalin, Hokkaido and Amurland south to Korea. Winters in Burma, southern China and the Indochinese countries.

MIGRATION. Occurs in winter quarters from October (earliest 7 Oct.) to the end of April. Passage recorded in southeastern Tibet, 2800 m in May, and in Nepal Valley.

GENERAL HABITS. In winter usually keeps in flocks, sometimes numbering up to 200 individuals, commonly in association with Spotted and other munias. Feeds on the ground, flies up into trees when disturbed. Roosts communally in bushes.

FOOD. Seeds (grass, bamboo, rice, etc.); occasionally insects. Recorded hawking flying insects from bushes (Stanford, JBNHS 37: 872).

VOICE AND CALLS. Call-notes, a short *zip* and a soft trilling note *tsrit* (Smythies). A sweet chirping song may be heard in winter quarters in March and April before departure; uttered from bare tops of small trees.

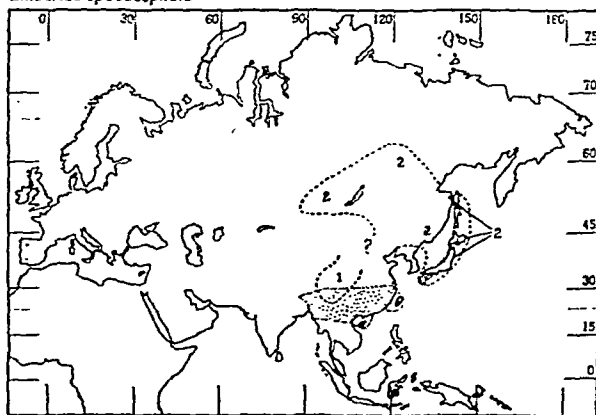
BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters. Postnuptial moult completed before arrival. Spring moult of face and part of throat in winter quarters.

Young. Above, nearly like female. Below, pale yellowish heavily streaked with brown on breast and flanks.

216

EMBERIZIDAE

Emberiza spodocephala

Distributional ranges.

Breeding

Winter

1 *sordida* (2047), 2 extralimital subspecies.

VOICE AND CALLS. Call-note *tsik*.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

First-year male, like adult but chin and throat more suffused with yellow and marked with arrow-shaped streaks.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂ ♀	74-79	14-15	c. 19	60-64 mm (Baker; bill by MD)

Weight 1 ♂ 18 g (SDR).

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible black, tomlia and lower mandible whitish horn, tip dark horn. Legs and feet pale brownish flesh.

2048. Whitecapped Bunting. *Emberiza stewarti* (Blyth)

Emberiza Stewarti Blyth, 1854, Jour. Asiat. Soc. Bengal 23: 215

(Landour and Dehra Dun)

Baker, FBI No. 1124, Vol. 3: 203

Plate 104, fig. 5

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

BUNTINGS

217

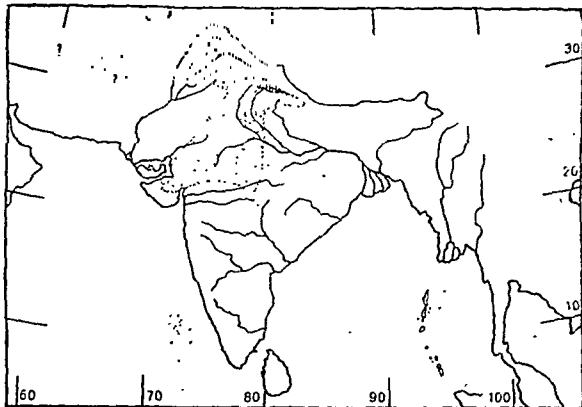
FIELD CHARACTERS. Male. *Above*, crown grey; a broad black eye-stripe from lores to nape; cheeks whitish. Back and rump chestnut; tail brown, outer rectrices white. *Below*, breast white; lower breast chestnut. Rest of underparts fulvous white, flanks streaked with chestnut. Colour pattern obscured by pale fulvous edges after postnuptial moult.

Crown becomes nearly white (by abrasion) before spring emigration.

Female. *Above*, head greyish brown; lores and round the eye fulvous; ear-coverts and sides of neck brown. Back streaked with dark brown; rump rufous-chestnut. Outer rectrices white. *Below*, throat fulvous-buff with dark moustachial streak. Breast rufous; rest of underparts fulvous with dark streaks.

STATUS, DISTRIBUTION and HABITAT. Common summer (breeding) visitor and short-range migrant. Breeds in Pakistan from northern Baluchistan north to Chitral, Gilgit, Astor and Baltistan, and along the Himalayan foothills through Murree and Kashmir to Garhwal. Breeds between c. 2200 and

Emberiza stewarti



Distributional ranges.

Breeding

Winter

2700 m in the Quetta and Chagai districts, between 1500 and 2300 m, locally 2700 m in Gilgit, Baltistan and Kashmir, up to 3000 m in the Kurram Valley, to 3300 m in Gilgit, 3600 m in Chitral (Fulton), and between 1200 and 1800 m in Chamba, Kangra and Kulu (Whistler); scanty data from farther east but apparently between c. 1500 and 2400 m in Garhwal (*Nidification* 3: 93). Affects grassy and rocky hillsides with or without bushes. Usually avoids cultivation, but in Gilgit freely nests in gardens. Prefers bare rocky slopes whereas *E. fucata* frequents bush and scrub. Ranges of *E. stewarti* and *E. cia* do not appear to overlap, the former replacing *cia* at lower levels on more open arid ground; both species may occasionally be

BUNTINGS

219

2049. *Ortolan Bunting*. *Emberiza hortulana* Linnaeus

Emberiza Hortulana Linnaeus, 1758, Syst. Nat., ed. 10, 1: 177 (Europa = Sweden) Baker, FBI No. 1130, Vol. 3: 209

Plate 104, fig. 7

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male. *Above*, head olive indistinctly streaked, with a conspicuous pale yellow eye-ring. Back brown with blackish streaks. Outer rectrices white. *Below*, throat pale yellow with distinct dark moustachial streaks, and dark fleckings on sides and lower part. Rest of underparts buffish rufous.

Female. *Above*, brown with dark streaks; a noticeable eye-ring. *Below*, cream-buff with dark moustachial streaks and heavy streaks on breast and flanks. Outer rectrices white.

Yellow throat distinguishes the male from *E. buchanani*.

STATUS, DISTRIBUTION and HABITAT. Vagrant; on spring migration obtained twice in Gilgit (*Ibis* 1881: 80 and 574) and once in Kashmir (JBNHS 18: 463). Sight recorded at Delhi, 18–19 April 1970 (P. Jackson & A. J. Gaston, JBNHS 69 (3): 654–5). Affects orchards or grassy slopes with bushes.

Extralimital. Breeds in the western Palearctic from the Altai and Iran west to Scandinavia and Spain. Winters from the Mediterranean to Senegal and Somalia, Arabia and Iran.

GENERAL HABITS. As in 2050.

FOOD. Seeds and insects.

VOICE and CALLS. Call-note on migration and in winter quarters, a sharp tick. When disturbed, a soft *pt-pt* or *ti-ti-ti* (Jackson). Different notes are uttered on breeding grounds (MD).

MUSEUM DIAGNOSIS. See Field Characters. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	80–92	c. 14	19–20	62–68 mm
♀♀	78–90			

(Dementiev, MD)

Weight ♂♂ 21–22 g (Dementiev).

COLOURS OF BARE PARTS. Iris dark brown. Bill, legs and feet reddish brown.

2050. *Greynecked Bunting*. *Emberiza buchanani buchanani* Blyth

E. (Emberiza) buchanani Blyth, 1845 (1844), Jour. Asiat. Soc. Bengal 13: 957 (Indian Peninsula)

Eu. (Spiza) Huttoni Blyth, 1849, Jour. Asiat. Soc. Bengal 18: 811 (Afghanistan)

Baker, FBI No. 1129, Vol. 3: 208

Plate 104, fig. 4

LOCAL NAME. *Jarjohārd* (Hindi).

SIZE. Sparrow; length c. 15 cm (6 in.).

218

EMBERIZIDAE

seen side by side. In northern Baluchistan also found in juniper forest. Winters in the foothills from N.W.F.P. and the Salt Range east to west-central Nepal (Rand & Fleming, *Feldiana* 41: 210), and in the plains of Punjab, Haryana, western Uttar Pradesh (to Etawah), Rajasthan [Jodhpur, Ajmer, and Bharatpur (once)], Madhya Pradesh (common in the northern part), northeastern Maharashtra (Nagpur—D'Abreu) and Gujarat [once to Jasdan (JBNHS 59: 956)]. There are no winter data from either Baluchistan or Sind, except for odd records from Quetta and the Khirthar Range in December. Affects grassy scrub-jungle and olive-groves etc. In the Himalayan foothills occurs commonly between c. 200 and 1400 m, in smaller numbers up to 1800 m, seldom 2500 m (Simla).

Extralimital. Afghanistan, eastern Iran and north to southeastern Kazakhstan.

MIGRATION. Occurs on summer grounds from April to September, post-breeding dispersal beginning in August. Autumn passage mostly in September, spring passage March to mid April. Abundant passage noted in Chagai (Baluchistan), Kashmir, Simla and Dehra Dun.

GENERAL HABITS. Gregarious in winter when usually found in small flocks, sometimes in company with other buntings. Feeds on the ground; tends to sit about stolidly on bushes or leafless branches of trees when not feeding, often with 'crest' partially raised.

FOOD. Mainly seeds of grass etc.

VOICE and CALLS. Call-note, a sharp *tit* reminiscent of that of *Cettia brunifrons* (HW). Song rendered as a monotonous *zwig-zwig-zwig* (Bates & Lowther); resembles that of the Yellow Bunting (*E. citrinella*) minus the last long-drawn note (BBO). Sings from exposed branches or top of boulders.

BREEDING. Season, mid April to July. *Nest*, a cup of grass bents and fibres lined with hair or wool, placed on the ground under a bush, tuft of grass, or boulder on steep slopes, sometimes in crevices in rocks. *Eggs*, 3 to 5, usually 4, dull white mottled and blotched with dark brown and pale purplish grey with sometimes a few streaks. Average size of 98 eggs 19.5 × 14.6 mm (Osmaston), of 100 eggs 19.7 × 14.7 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. Freshly moulted plumage (in autumn) dulled by pale fulvous edges. There is no spring moult; breeding plumage results from abrasion of fulvous edges. Pattern of plumage somewhat inconstant. In the male a black throat-patch may be present or absent and amount of chestnut on wing-coverts variable.

Young, similar to adult ♀ except that absence of fulvous fringes to feathers makes streaking appear more sharply defined; no trace of chestnut on breast.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	78–82	12–14	18–19	64–70 mm
♀♀	72–81			

(MD, Rand & Fleming)

Weight 13 ♂♂ (April–June) 12.9–17; 5 ♀♀ (April–June) 13–16.7 g (Paludan).

6 ♂♂ (Mar.–Apr.) 16–18 (av. 17); 11 ♀♀ (Mar.–Apr.) 13–17 (av. 15) g—SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible dark brown, lower plumbeous; mouth fleshy. Legs and feet brownish flesh.

220

EMBERIZIDAE

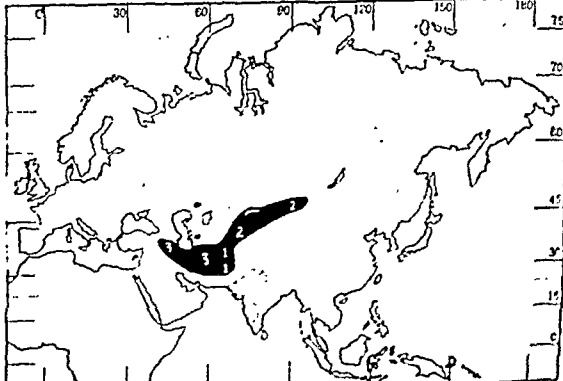
FIELD CHARACTERS. Male. *Above*, head grey with a conspicuous whitish eye-ring. Rest of upperparts brown slightly tinged with rufous and with darker streaks on back. Tail brown, distinctly forked; outer rectrices white. *Below*, throat more or less mottled rufous and whitish; an indistinct dark moustachial streak. Breast rufous-chestnut, in fresh (autumn) plumage dulled by pale fringes.

Female similar to male but a little duller; moustachial streak somewhat more noticeable.

Whitish eye-ring a very conspicuous feature in both sexes.

STATUS, DISTRIBUTION and HABITAT. Mostly winter visitor to western and central India, from northern Gujarat (including the Kathiawar Peninsula and Kutch) east and south to central Uttar Pradesh (Lucknow), eastern Maharashtra (Nagpur), northern Andhra Pradesh (Asifabad, c. 80°E.) and

Emberiza buchanani



Distributional ranges

Breeding

Winter

1 *buchanani* (2050), 2 *neobursa* (RE), 3 *ceratini* (RE).

central Karnataka (Marikānivē, c. 14°N., JBNHS 43: 583); also sparsely in Sind, perhaps not regularly. Affects stony, sparsely scrubbed country; euphorbia-covered broken hillsides, etc. — typical *Pedicularis argemone* facies; sometimes stubble fields.

A scarce summer (breeding) visitor to northern Baluchistan (Quetta) between c. 1650 and 2400 m (Mfinertzhagen, *Ibis* 1920: 142). Recorded on 8 August in the upper Yasin Valley, Gilgit, c. 3100 m (Riddulph, *Ibis* 1922: 271; early migrant?). Also breeds in Afghan Safed Koh and Tera Kotla Valley. In summer affects dry stony foothills with sparse bushes.

Extralimital. Adjacent parts of Afghanistan (Chaman, Garder, Safed

Koh) and northern Afghanistan. The species ranges north to the Altai and west to Armenia.¹

MIGRATION. Breeders arrive in Baluchistan in March, depart in September. Abundant passage through Kutch in September and March. Recorded in winter quarters from October (earliest 8 October) to April (latest 18 April in Andhra, 29 April in Gujarat). Spring passage mostly in April, autumn passage mostly in September. Migrates through Sind, Baluchistan (from the Makran Coast to Chagai), N.W.F.P., Gilgit, Kashmir (rare), Punjab, Haryana and the foothills east to Dhunda, N. of Mussooree c. 78°30'E. (in the last locality as late as 25 May).

GENERAL HABITS. Gregarious in winter when usually met with in small scattered flocks of 8 to 20 birds, sometimes in larger flocks in company with other buntings. During spring migration apparently keeps isolated or in pairs. Feeds on the ground. Flight, gait on ground, and general behaviour very pipit-like.

FOOD. Chiefly seeds.

VOICE and CALLS. Call-note, in winter, a subdued click. Song apparently identical with that of Ortolan Bunting (cf. Erard & Etchécopar, 1970), a pleasant melancholy ditty of about five notes, first four on same tone, last lower.

BREEDING. Season, May and June. Nest, a cup of coarse grass and fibres lined with finer grass stems, placed on the ground under a stone or a tuft of grass. Eggs, 4, white, blotched, spotted and hair-streaked with deep reddish brown. They measure from 19 × 14.9 to 20.3 × 15.9 mm (Baker).

MUSEUM DIAGNOSIS. See Field Characters. For details of plumage see Baker, loc. cit.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	85-93	13-15	19-22	69-79 mm
♀♀	81-88	12-15	19-20	67-72 mm

(HW, SA, CBT)

Weight 10 ♂♂ (May-July) 18-26; 7 ♀♀ (May-July) 19-24 g (Paludan). 8 ♂♂ (Oct.) 17-22 (av. 20.1); 10 ♀♀ (Oct.) 20-22 (av. 20.9) g—SA.

COLOURS OF BARE PARTS. Iris brown. Bill pale brownish yellow or brownish orange-yellow; mouth yellowish flesh. Legs and feet brownish flesh.

EMBERIZA CIA Linnaeus

Key to the Subspecies

	Page
A Crown-stripes black	
1 Paler, less rufous above, belly buffish rufous.....	<i>E. c. par</i> 222
2 Darker, more rufous above, belly chestnut.....	<i>E. c. stracheyi</i> 223
B Crown-stripes deep chestnut	
3 Paler.....	<i>E. c. khamensis</i> 224
4 Darker, more richly coloured.....	<i>E. c. yunnanensis</i> 225

¹ The winter range of the northern and western populations (*nebulosa* and *ceruilla*) is

Extralimital. Extends west to Iran and north to the Altai. The species ranges west to Spain and Morocco and to Amurland and western China.

MIGRATION. Occurs in winter quarters from November to March, a few birds until April.

GENERAL HABITS, FOOD and VOICE. As in 2052.

BREEDING. As in 2052.

MUSEUM DIAGNOSIS. Differs from *stracheyi* (2052) in being paler, less rufous above. Rufous of belly more buffish, less chestnut.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	80-87	13-14	19-21	75-81 mm
♀♀	75-89			66-79 mm

(HW, Paludan)

Weight 17 ♂♂ (March-July) 18.9-26.1; 8 ♀♀ (March-July) 18.9-22.5 g (Paludan).

COLOURS OF BARE PARTS. As in 2052.

2052. **Himalayan Rock Bunting.** *Emberiza cia stracheyi* Moore

Emberiza stracheyi Moore, 1856 (1855), Proc. Zool. Soc. London: 215, pl. 112

(Kumaon)

Baker, FBI No. 1125, Vol. 3: 205

Plate 104, fig. 6

LOCAL NAME. Wan tsar (Kashmir).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male. Above, head bluish grey; black coronal stripes, black eye-stripe, black moustachial streak looping up to join eye-stripe behind cheeks. Cheeks and supercilium whitish. Back chestnut-brown streaked with black. Rump rufous-chestnut. Outer rectrices white, often flashed open. Below, throat and breast bluish ashy; rest of underparts rufous-chestnut.

Female like male but duller.

Distinguished from rather similar *E. fucata* (2055) and *E. stewarti* (2048) by bluish grey breast.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Western Himalayas south of the main range from Hazara and Murree through Kashmir (the commonest bunting) and east to central Nepal (Lowndes, JBNHS 53: 34). See 2051 for localities where intergrades occur. Breeds between c. 2000 and 3600 m (Kashmir to Simla), in smaller numbers down to c. 1500 m (Kulu), between 2400 and 4000 m (Garhwal) and between 3000 and 3900 m (Nepal). Winters (beginning of November to March) mostly below c. 2100 m (once 3600 m), down to c. 600 m, in western Nepal obtained at c. 2500-2700 m (intermediate in varying degree between this race and *par*). Affects grassy and bush-clad slopes in boulder-strewn or rocky country, juniper forest, open pine forest and, locally, margins of cultivation.

2051. **Transcaspian Rock Bunting.** *Emberiza cia par* Hartert

Emberiza cia par Hartert, 1904, Vög. pal. Fauna 1: 184

(Gudan, Transcaspiia)

Baker, FBI No. 1126, Vol. 3: 206

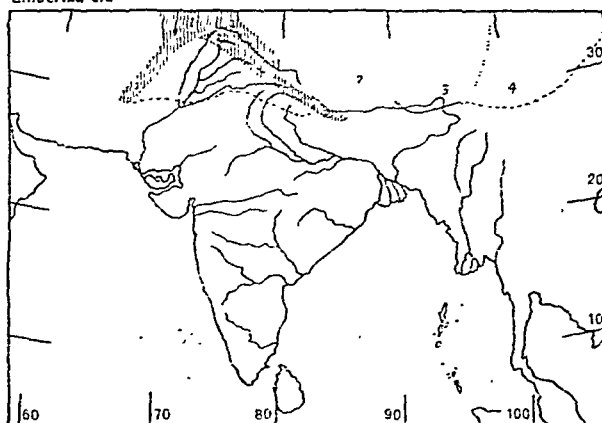
LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 2052.

STATUS, DISTRIBUTION and HABITAT. Summer (breeding) visitor to N.W.F.P. south to Waziristan and possibly northern Baluchistan (cf. JBNHS 31: 867), and east in Hazara, Hunza, Gilgit, Astor, Baltistan,

Emberiza cia



Distributional ranges

▨ Breeding. Broken line in west = winter extension of 1.

1 *par* (2051), 2 *stracheyi* (2052), 3 *khamensis* (2053), 4 *yunnanensis* (2054).

Ladakh, Suru Valley, Lahul and Spiti. Specimens from the following localities are intermediate between *par* and *stracheyi*: Kagan Valley, Chitral, Hunza, Gilgit, Astor, Baltistan, Baltal, Lolab, Suru, Dras and Sind valleys, Lahul and Spiti.

Breeds from c. 2700 m up to 3300 m (Safed Koh) and up to 4200 m from Chitral to Lahul. Winters below c. 2800 m in Baltistan, Gilgit and Chitral, in N.W.F.P. south to Quetta (rare), in the Punjab foothills (below c. 600 m) and in the plains south to Bahawalpur, Haryana to Ambala and Delhi, Dehra Dun, western Nepal (varying between *par* and *stracheyi* fide Rand & Fleming, 1957: 210). A specimen from Varanasi (Benares), Brit. Mus. Affects dry rocky hillsides with grass and bushes. In the plains frequents semi-desert, neighbourhood of canal cultivation, cotton fields and pampas grass.

Extralimital. Adjacent parts of southern Tibet.

GENERAL HABITS. Keeps singly, in pairs or small flocks. Feeds on the ground, perches on bushes or trees. Tail constantly flicked open, flashing white outer rectrices.

FOOD. Seeds, grain and insects.

VOICE and CALLS. Contact-note when feeding in flock, a thin subdued mouse-like squeak *tsi* or *swip* oft repeated. An agitated plaintive *swee, swee* when an intruder near nest. A twittering song, reminiscent of the Goldfinch's but shorter.

BREEDING. Season, May to August according to altitude. Nest, a deepish cup of dry grass lined with hair, placed on the ground on steep slopes, at the base of a bush or under a tuft of grass, occasionally in a low bush, well concealed. An unusual site recorded was in a bough of a fir tree 2.7 m above ground. Eggs, usually 3, sometimes 4, greyish white marked with dark purplish scrawls, spots and blotches. Average size of 102 eggs 21.5 × 15.7 mm (Osmaston). Building of nest and care of young by both sexes, incubation apparently by female only. Frequently brood-parasitized by *Cuculus canorus*.

MUSEUM DIAGNOSIS. See Field Characters; for distinction from *par* see 2051, under Museum Diagnosis.

Young. Above, rufous brown densely streaked with black. Below, fulvous streaked with dark brown on throat, breast and flanks.

MEASUREMENTS

	Wing	Tail
♂♀	78-87	71-79 mm (Baker). Rest as in 2051.

Weight 11 ♂♂ (April-May) 18-21 (av. 19.3) g—SA.

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible and tip of lower black; base of lower mandible pale blue. Legs and feet brownish flesh.

2053. **Tibetan Rock Bunting.** *Emberiza cia khamensis* Sushkin

Emberiza godlewskii khamensis Sushkin, 1925, Proc. Boston Soc. Nat. Hist. 38: 26

(River Dza-chu, upper Mekong)

Baker, FBI No. 1127 (part), Vol. 3: 207

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 2052, q.v.

STATUS, DISTRIBUTION and HABITAT. Common resident, subject to vertical movements. Southeastern Tibet and northern Arunachal Pradesh, breeding between 2700 and 4200 m, wintering between 2200 and 3300 m. Presumably occurs in winter in Bhutan, Sikkim and eastern Nepal since many birds were observed migrating through Arun Valley in August and September (Ibis 1922: 524). Affects dry slopes with bushes and rocks.

Extralimital. Eastern Tibet to western Szechuan and southern Tsinghai.

GENERAL HABITS, FOOD and VOICE. As in 2052.

BREEDING. Season, June-July. Nest and eggs, as in 2052. Average size of 3 eggs 22.5 × 15.7 mm (Ludlow).

BUNTINGS

225

MUSEUM DIAGNOSIS. Differs from *stracheyi* (2052) in being more richly coloured and having the coronal stripes deep chestnut.

MEASUREMENTS

	Wing	Bill (from skull)	Tail
♂♂	81-90	13-14	75-83 mm
♀♀	76-81		70-79 mm (NBK)

COLOURS OF BARE PARTS. As in 2052.

2054. Yunnan Rock Bunting. *Emberiza cia yunnanensis* Sharpe

Emberiza yunnanensis Sharpe, 1902, Bull. Brit. Orn. Cl. 13: 12
(Gyi-dzin-Shan, east of Talifu)
Baker, FBI No. 1128, Vol. 3: 207

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 2052, q.v.

STATUS, DISTRIBUTION and HABITAT. Winter visitor to southeastern Tibet. May occur in the higher hills of Arunachal Pradesh.

Extralimital. Breeds in northern Yunnan and north to northeastern Szechuan and western Hupeh.

GENERAL HABITS, FOOD and VOICE. As in 2052.

MUSEUM DIAGNOSIS. Similar to *khamensis* (2053) but darker, more richly coloured.

MEASUREMENTS and COLOURS OF BARE PARTS. As in 2053.

EMBERIZA FUCATA Pallas

Key to the Subspecies

Head grey, upperparts chestnut.....*E. f. fucata*
Head purer grey, upperparts richer chestnut *E. f. arcuata*

2055. Indian Greyheaded Bunting. *Emberiza fucata arcuata* Sharpe

E. (mberiza) arcuata Sharpe, 1888, Cat. Bds. Brit. Mus. 12: 494
(Himalayas, restricted to Simla by Baker, 1926, FBI 3: 199)
Baker, FBI No. 1121, Vol. 3: 199
Plate 104, fig. 10

LOCAL NAME. *Pāthār-chiria* (? Hindi).

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male. Above, crown and nape grey streaked with black; ear-coverts chestnut. Back rufous-brown densely streaked with black; rump rufous. Wings brown, tertials black edged with rufous-chestnut; shoulder rufous. Outer rectrices white. Below, throat and upper breast white with black moustachial stripes and dense streaking on breast forming a black gorget; lower breast chestnut. Flanks rufous-chestnut streaked with dark brown; belly whitish buff.

Female, similar to male but paler and duller: crown pale brown rather than grey; a short, whitish supercilium.

15

BUNTINGS

227

VOICE and CALLS. A bright, short, typically bunting song; may be rendered as *chick-chick-he'll get used to you-chick* (Osmaston) uttered from a bush or from top of high weeds.

BREEDING. Season, May to July. Nest, a cup of dry grass lined with hair, placed on the ground under a bush or tuft of grass on a steep slope. Eggs, 3 or 4, pale greenish grey speckled with dull reddish and purplish brown, without scrawls. Average size of 10 eggs 19.9 × 15.6 mm (Osmaston).

MUSEUM DIAGNOSIS. See Field Characters. Differs from nominate *fucata* (2055a) in having the head purer grey and the upperparts richer chestnut, less fulvous; black markings on sides of throat and breast usually heavier and more numerous; flanks richer rufous.

In this and *E. pusilla* (2056) the tail-feathers are narrower and more pointed at tips than in most other buntings.

MEASUREMENTS

Wing 69-71; tail 65-67 mm (Baker). Rest as in 2055a.

Weight 6 ♂♂ (April-June) 18-21; 7 ♀♀ (April-June) 16-19 g — SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill: upper mandible dark horny brown; lower mandible pale horny brown. Legs and feet pale fleshy brown.

2055a. Amur Greyheaded Bunting. *Emberiza fucata fucata* Pallas

Emberiza fucata Pallas, 1776, Reise Russ. Reichs 3: 698
(Onon and Ingoda Rivers)
Baker, FBI No. 1120, Vol. 3: 198

LOCAL NAMES. None recorded.

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 2055, q.v.

STATUS, DISTRIBUTION and HABITAT. Winter visitor, locally common. Manipur, Nagaland, Meghalaya, Assam, most of Bangladesh, Arunachal Pradesh and Bhutan foothills, Jalpaiguri duars, west to eastern Nepal (Hodgson; also Fleming & Traylor, 1968, *Fieldiana* 53: 190). Affects wet stubbles, marshes, grassland and bushes, usually in the lowlands.

Extralimital. Breeds in Amurland, Manchuria and Japan; winters in Southern China and northern Indochinese countries.

MIGRATION. Arrives in winter quarters in early November, departs in April (latest 14 May in Burma).

GENERAL HABITS, FOOD and VOICE. As in 2055.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See 2055.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	71-76	15-16	22-23 (Baker; bill by MD)	62-65 mm

COLOURS OF BARE PARTS. Iris brown. Bill fleshy brown, darker on culmen, paler below. Legs and feet fleshy yellow to fleshy pink.

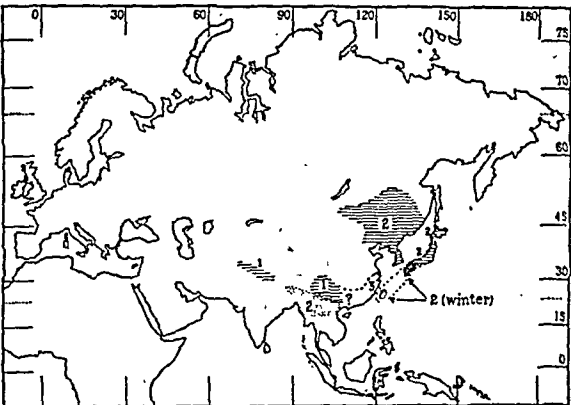
226

EMBERIZIDAE

Greyish hindneck, chestnut ear-coverts, chestnut scapulars and white outer rectrices very noticeable in flight.

STATUS, DISTRIBUTION and HABITAT. Uncommon resident, subject to vertical movements. Western Himalayas from Chitral (Reshan, Mastuj Valley, fairly common — Perreau, JBNHS 19: 913), Hazara and Murree east to Garhwal, Kumaon and western Nepal (Makala, in June) [specimens from last three regions in Brit. Mus.]. Also undated specimens from Darjeeling (Hume), Dafia Hills (Godwin-Austen) and Khasi Hills (Gould), 'seem

Emberiza fucata



Distributional ranges

■ Breeding

▨ Winter

1 *arcuata* (2055), 2 *fucata* (2055a), 3 *khamensis* (RE).

intermediate but perhaps nearer to *arcuata* (HW). See extralimital distribution, below. Breeds between c. 1800 and 2300 m in Kashmir, 1650 and 2700 m in Kulu. Winters from at least 1500 m down to the foothills and adjacent plains [Saharanpur (SA), Ambala (Jones)]. Affects hillsides with bushes and scrub of *Berberis*, *Coloneaster*, *Indigofera*, wild rose and juniper, especially along rivers. In winter also on swampy ground.

Extralimital. Northern Afghanistan (JASB 55: 85, 1887), Burma (Mt Victoria and north-east Burma, apparently in winter — Smythies, 1953), Yunnan, Szechuan and Kweichow (cf. Cheng, 1953, also Traylor, M. A., 1967). Other subspecies in eastern China (Kwangtung to Kiangsu), northern China, Manchuria, Amurland and Japan, wintering in southern Japan, southern China and northern Indochinese countries.

GENERAL HABITS. Keeps in pairs or small parties according to season, close to the ground amongst low herbage. Feeds on the ground. In winter quarters often roosts in marshy reed-beds.

FOOD. Grass seeds and small insects.

228

EMBERIZIDAE

2056. Little Bunting. *Emberiza pusilla* Pallas

Emberiza pusilla Pallas, 1776, Reise Russ. Reichs 3: 697
(Transbaikalian Alps)
Baker, FBI No. 1122, Vol. 3: 200
Plate 104, fig. 9

LOCAL NAME. *Dao miji* (Cachari).

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Male. Above. A rufous median coronal stripe between two broad black stripes on sides of crown. Supercilium and side of head rufous with a dark spot on ear-coverts. Rest of upperparts rufous-brown streaked with blackish. Outer rectrices white. Below, chin rufous, rest of underparts white streaked with black on breast and flanks.

Female, similar but duller.

Casually confusable with Tree Pipit, but rufous patch on sides of head and noticeably forked tail, though also with white outer feathers, diagnostic.

STATUS, DISTRIBUTION and HABITAT. Common winter visitor. Manipur, Nagaland, Meghalaya, Sylhet and the Chittagong Hill Tracts of Bangladesh, the plains of the Brahmaputra, Arunachal foothills, Bhutan foothills, Sikkim and Jalpaiguri duars and Darjeeling district; westward in the foothills to central Nepal, rarely to Chamba and Kotgarh. One record from South Andaman Island. Winters mostly below 1800 m. Affects reeds, grass, rice stubbles, and scrub about cultivation in open country.

Extralimital. Breeds in tundra and forest-tundra of Eurasia from Finland to the Sea of Okhotsk. Winters mostly in southern China, Burma, and northern Indochinese countries.

MIGRATION. Spring passage in March and April in Nepal and Sikkim. Arrives in winter quarters in October. Recorded on passage in Hunza gorges on 21 October. Most birds however migrate through eastern Asia.

GENERAL HABITS. In winter usually keeps singly or in small flocks, often in company with *E. fucata* and tree pipits. Rather secretive. In common with some other buntings (e.g. *spodocephala*, *aureola*, *fucata*), and accentors (e.g. *Prunella immaculata*) has a habit of keeping closely to cover on the ground. When approached, flushes out suddenly and dives instantly behind the next bush a few paces away, giving a series of short, sharp notes. Identification. If followed, repeats this 'perching

on bare tree-tops on wintry tundra; also on

FOOD. Seeds, insects and their larvae.

VOICE and CALLS. Call-note, a short *tzit*.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♀	66-74	10-13	17-22	54-61 mm (SA)

Weight 9 ♂♂ (March) 11-14 (av. 13) g — SA. 1 ♀ (Nov.) 13.5 g — SDR.

COLOURS OF BARE PARTS. Iris brown. Bill horny brown, darker above, paler below. Legs and feet pale fleshy or yellowish brown.

BUNTINGS

229

2057. **Striolated Bunting.** *Emberiza striolata striolata* (Lichtenstein)

F. (ringilla) striolata Lichtenstein, 1823, Verz. Doubl. Mus. Berlin: 24
(Ambukol, Nubia)

Emberiza striolata tescicola Koelz, 1954, Contrib. Inst. Regional Exploration, No. 1: 20
(Isin, Iran)

Baker, FBI No. 1136, Vol. 3: 217

Plate 104, fig. 8

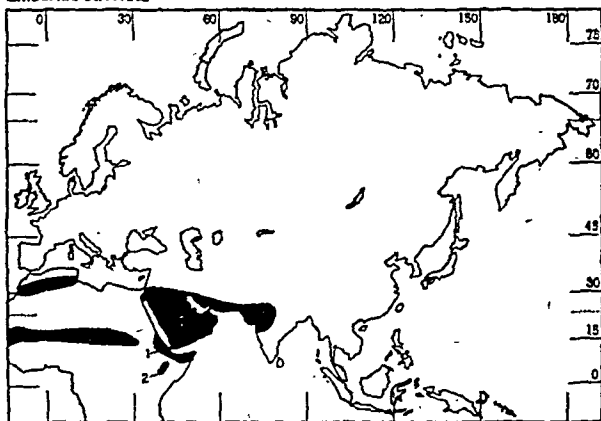
LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Male. Above, crown greyish white streaked with blackish. A white supercilium and blackish stripe behind eye. Rest of upperparts brown with darker streaks. Wings bright rufous. Below, throat and breast greyish white streaked with black, a white malar stripe on side of throat and a dark moustachial streak. Belly fulvous-buff.

Female, similar to male but head and throat brown with darker streaks. In flight, at a distance, rufous wings and general effect reminiscent of female Crested Bunting (2060).

STATUS, DISTRIBUTION and HABITAT. Common but locally distributed resident, subject to local movements. Pakistan from Baluchistan, Sind, and Punjab Salt Range, east and south in northwestern India to southern Uttar Pradesh (Etawah), central Madhya Pradesh (Sagar) and central Maha-

Emberiza striolata

■ Distributional ranges. 1 *striolata* (2057), 2 *extralimital* subspecies *rashtra* (Daulatabad). Affects rocky or stony, sparsely thorn- or euphorbia-scrubbed hillsides and nullahs, ancient hill forts and ruins, etc. In winter spreads to sandy plains, tamarisk scrub and *sarkhan* grass areas in the vicinity of canals.

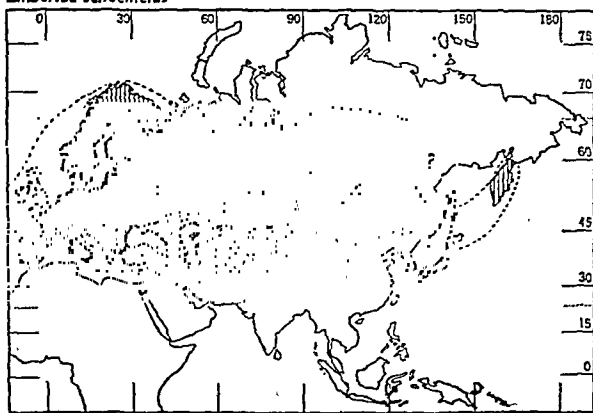
BUNTINGS

231

of head and white collar entirely concealed by rufous-brown fringes; a conspicuous buff supercilium, dark ear-coverts, buff malar stripe and sides of neck; black of throat partly concealed by pale fulvous tips.

Female has rufous-brown crown with dark streaks; pale buff throat with black streaks on sides.

STATUS, DISTRIBUTION and HABITAT. Winter visitor, locally common. Pakistan in Gilgit, N.W.F.P., Punjab, Sind and northern Baluchistan (scarce), and northwestern India in Haryana (Rohtak and Ambala), and

Emberiza schoeniclus

Distributional range of the species

▨ Breeding

▤ Winter

1 *pallidior* (2058), 2 *pyrrhuloides* (2059). Extralimital subspecies not numbered. vicinity of Delhi. Affects riverain country — reed-beds, irrigated crops, *khan* grass and *kandi* (*Prosopis*) jungle, bushes in nullah-beds, etc.

Extralimital. Southwestern Siberia from the Urals to the Altai. Winters to the south of breeding range.

MIGRATION. Arrives in winter quarters in November, departs in March. GENERAL HABITS. Keeps singly, in pairs or small parties. Usually perches on reeds. Roosts, often communally, in reed-beds.

FOOD. Seeds (chiefly of marsh plants), and insects.

VOICE and CALLS. A plaintive *tsee-u*.

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	80-85 }	c. 13	c. 21	65-70 mm
♀♀	71-79 }			(NBK, MD)

EMBERIZIDAE

230

Extralimital. Ranges west through southern Iran and Arabia to the Sinai Peninsula, Eritrea and Somalia. Other subspecies in southern Ethiopia, southern Sahara, Morocco and Algeria.

GENERAL HABITS. Keeps in pairs or in flocks according to season. Unobtrusive and easily overlooked. Feeds quietly on the ground, hopping about stiffly like a sparrow (not running like a pipit). In arid country, regularly resorts to drink at water-holes in the forenoon.

FOOD. Seeds (of grasses, compositae, etc.).

VOICE and CALLS. Song, a lively *whi-which-whi-which-whi-which*, the first two syllables short and accent on the final note; also described as a rich *whi-ehi-whi-ehi-ehi* ending in an extra, subdued *chi* (SA); uttered from a stone, bush-top or ruined building.

BREEDING. Season, end of February to November. Nest, a cup of roots and grass lined with feathers, placed on the ground under a rock, in niches in crumbling walls, etc. Eggs, 2 or 3, pale bluish or whitish, spotted and speckled with brown, intermingled with clouds and streaks of the same colour, more numerous at the large end. Average size of 15 eggs 20 × 15 mm (Baker). Both sexes share in building the nest and feeding the young.

MUSEUM DIAGNOSIS. See Field Characters.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	73-85 }	11-13	15-16	56-65 mm
♀♀	72-80 }			56-63 mm (SA, HW)

COLOURS OF BARE PARTS. Iris brown. Bill: upper mandible dark horny brown, lower mandible fleshy or yellowish horny. Legs and feet flesh-colour or yellowish flesh.

EMBERIZA SCHOENICLUS (Linnaeus)

Key to the Subspecies

- Darker and smaller, tail under 71 mm; bill pointed, upper mandible nearly straight..... *E. s. pallidior*
 Paler and larger, tail over 71 mm; bill very stout, upper mandible strongly convex..... *E. s. pyrrhuloides*

2058. **Central Asian Reed Bunting.** *Emberiza schoeniclus pallidior* Hartert

Emberiza schoeniclus pallidior Hartert, 1904, Vög. pal. Fauna 1: 197

(Aiderli, Turkestan)

Baker, FBI No. 1119, Vol. 3: 197

Plate 104, fig. 15

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 14 cm (5½ in.).

FIELD CHARACTERS. Male. Above, head black, a white collar around hindneck. Rest of upperparts rufous-brown with broad blackish streaks; rump greytinged. Wings rufous. Outer rectrices white. Below, throat and upper breast black; a white moustachial streak joining hind-collar. Rest of underparts whitish streaked with chestnut on flanks. In autumn, black

EMBERIZIDAE

232

Weight 4 ♂♂ 19.7-21.3 g (Dementiev).

COLOURS OF BARE PARTS. Iris dark brown. Bill dark brown; black on culmen. Legs and feet dark brown.

2059. **Thickbilled Reed Bunting.** *Emberiza schoeniclus pyrrhuloides* Pallas

Emberiza pyrrhuloides Pallas, 1811, Zoogr. Rosso-Asiat. 2: 49

(Astrakhan, *cide* Vaurie, 1956, Amer. Mus. Novit., No. 1795: 8)

Not in Baker, FBI

LOCAL NAMES. None recorded.

SIZE. Sparrow —; length c. 15 cm (6 in.).

FIELD CHARACTERS. As in 2058 but larger; bill noticeably stouter; back buff rather than dark brown; flanks of male unstreaked.

STATUS, DISTRIBUTION and HABITAT. Rare winter vagrant. One record: two males obtained at Wular Lake, Kashmir on 20 March (Meinertzhagen, *Ibis* 1927: 394). Affects reed-beds.

Extralimital. Ranges from the Caspian Sea to western Mongolia.

GENERAL HABITS. As in 2058.

FOOD. Apparently chiefly insects obtained from reed-stems with its large specially adapted bill, remarkably similar in shape to that of some *Paradaxornis* species which also extract insects from bamboo- and reed-stems.

VOICE and CALLS. Undescribed but said to be somewhat different from that of thin-billed races (Dementiev).

BREEDING. Extralimital.

MUSEUM DIAGNOSIS. Differs from *pallidior* in being much paler above, fulvous buff; white collar broader; flanks of male unstreaked, those of female with only fine rufous streaks. Overall size markedly larger; bill much stouter and highly arched.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	77-80 }	12-14	20-22	72-80 mm
♀♀	75-83 }			

(Wing by Dementiev; rest MD)

COLOURS OF BARE PARTS. Iris brown. Bill dark horny brown, paler below. Legs and feet fleshy brown.

Genus MELOPHUS Swainson

Melophus Swainson, 1837, Classif. Bds. 2: 290. Type, by monotypy, *Emberiza erythropterus* Jardine & Selby, 1835 = *Emberiza lathami*, Gray 1831

Differs from other buntings in having a long crest. Tail nearly square.

2060. **Crested Bunting.** *Melophus lathami* (Gray)¹

Emberiza lathami Gray, 1831, Zool. Misc. 1: 2 (Canton, Kwangtung)

Emberiza subristata Sykes, 1832, Proc. Zool. Soc. London: 93 (Dukhun)

Baker, FBI No. 1132, Vol. 3: 221

Plate 103, fig. 14

LOCAL NAME. *Pāthār-chirā* (? Hindi).

¹ Cf. Tiechurrt, C. B., 1932, Bull. Brit. Orn. Cl. 53: 15-16 for use of *lathami* v. *erythropterus*.

BUNTINGS

233

SIZE. Sparrow; length c. 15 cm (6 in.).

FIELD CHARACTERS. Male. Entirely black with chestnut wings and tail, and a long, pointed black crest.

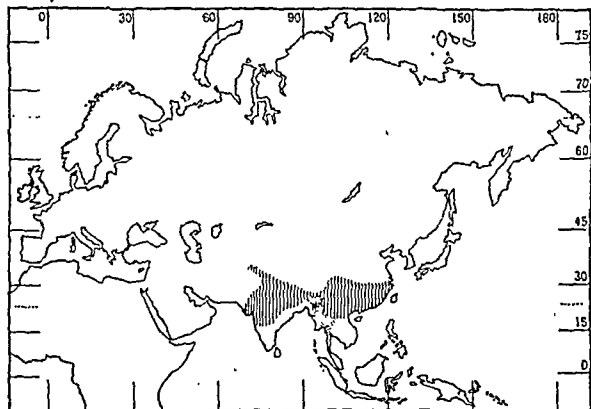


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Female. Above, olive-brown with dark brown streaks. Crest shorter; a pale eyering. Edge of wing and outer rectrices rufous. Below, yellowish buff with dark streaks on breast and dark moustachial streak.

STATUS, DISTRIBUTION and HABITAT. Common resident, but rather local and capricious; in the hills subject to vertical

movements. The Himalayan foothills from Hazara to Bhutan and south-eastern Tibet, and south in India through eastern Rajasthan and Mt Abu to Gujarat (Gir Forest. Not recorded elsewhere in Kathiawar or in Kutch), southwestern Maharashtra (Satara), northern Andhra Pradesh (Wardha Valley), eastern Madhya Pradesh (Raipur), and southern Bihar (Lohardaga); also the hills of Bangladesh, Meghalaya, Cachar and Manipur,

Melophus lathami

Residential range

Winter (non-residents)

south to the Chittagong region. In the west Himalayan foothills occurs in summer up to c. 1500 m, in central Nepal to 2200 m (Desfayes), in Sikkim and Bhutan to 1800 m, in Nagaland to 2400 (Tytler); withdraws from the higher levels in winter (leaving in October, returning in April). Seasonal movements also noted in the hills of central India and in northern Bengal (where a winter visitor). Affects dry stony sparsely scrubbed hillsides; in winter also rice stubbles and open stony scrub country in dry-deciduous

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234

EMBERIZIDAE

jungle; particularly fond of charred grass patches where its coloration is highly obliterative.

Extralimital. Ranges east to Kwangtung and Chekiang.

GENERAL HABITS. Much as other buntings. Gregarious in winter when it keeps in small loose flocks; never in such large congregations as many other buntings. Feeds on the ground in stony fields, on ghat roadsides and cross-country cart tracks, etc.; rarely, if ever, from ears of standing cereal crops. Commonly perches on rocks or bushes. Roosts in hedges and thorn thickets in company with tree pipits, etc.

Courtship (one observation, SA). Male singing from euphorbia-top, chased female with fluttering lark-like flight, tail partially cocked and crest erect. On ground he drooped his wings, spread his tail and fluffed out the rump-feathers. He raised and opened sideways the wing on the side of the hen while walking in a semicircle round her about a metre away. Female responded in same way by raising her wing on his side. Thus, they drew closer. Male hopped on to her back and treaded her, his wings fluttering throughout the act. Thereafter each picked up a blade of grass and flew off towards nest.

FOOD. Chiefly grass seeds.

VOICE and CALLS. Call-note, a repeated *tip* or *pink* while feeding. Song, rendered as *tsi-tsi-tsi-tsu-tsu-tsu*, last three notes descending (MD); also as *which* . . . *which* . . . *which-ichi-when-which* (accent on *when*). Reminiscent of the song of *Saxicoloides* but with this peculiarity that it invariably commences with the detached single (sometimes double) subdued *which* (SA). Usually uttered from the top of a bush, a rock or telegraph wire.

BREEDING. Season, April to August. Nest, a cup of grass bents and rootlets lined with fine fibres and hair, placed on the ground under a rock or in a hollow in a bank or loosely built stone wall. Eggs, 3 or 4, white faintly tinged with greenish marked with freckles, spots and tiny blotches varying from pale reddish to deep brown or purplish brown, more densely at the large end. Average size of 60 eggs 20.1 x 15.6 mm (Baker). Building (?) and incubation by female. Sometimes brood-parasitized by *Cuculus canorus*.

MUSEUM DIAGNOSIS. See Field Characters.

Young like female. Feathers of upperparts with distinct pale fringes; lower throat and breast more coarsely streaked.

First-year male. Upperparts a little darker than adult female; crest intermediate in length. Sides of head and underparts black mixed with fulvous-brown, belly and under tail-coverts mostly of the latter colour. Primary-coverts dark brown marked slightly or not with chestnut; rest of coverts as in female but more marked with chestnut. Rest of wing as in adult male but outer webs of primaries often marked with black.

MEASUREMENTS

	Wing	Bill (from skull)	Tarsus	Tail
♂♂	79-86	13-16	19-21	{ 61-69 mm
♀♀	76-80			{ 63-69 mm

Weight 3 ♂♂ 23.5-26 g (GD). 12 ♂♂ (July-Aug.) 20-25 (av. 22.7); 11 ♀♀ (July-Aug.) 18-25 (av. 21) g - SA.

COLOURS OF BARE PARTS. Iris dark brown. Bill dull orange-brown. Legs and feet purplish brown.

236

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 Wright, J. O. *see* Holmes, D. A. (1968-9).
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REGIONAL REFERENCES IN ECLECTIC BIBLIOGRAPHY

More Important References in Bold Type

Afghanistan 46, 47, 116, 117, 468, 523, 719
 Andaman Islands 21, 24, 31, 38, 110, 180, 335, 336, 511, 521
 Andhra Pradesh (*see also* Eastern Ghats) 4, 12, 60, 62, 113, 114, 485
 Arunachal Pradesh (*see also* Tibet) 88, 107, 153, 154, 525
 Assam (proper 1972) [*see also* Arunachal Pradesh, Cachar, Meghalaya, Mizoram, Nagaland] 149, 153, 194, 643
 Baltistan 458, 575
 Baluchistan 112, 142, 143, 189, 191, 192, 201, 452, 458, 465, 504, 567, 645, 657, 669, 684, 733
 Bangladesh 193, 197, 344, 409, 551, 570
 Bengal: *see* West Bengal, Bangladesh
 Bhutan 169, 428
 Bihar 97, 111, 291, 345, 346
 Bombay 32, 42, 82, 83, 453
 Burma 372, 461, 586, 597, 598, 637, 640, 641, 642, 650
 Cachar 104, 105, 339, 341, 342
 Ceylon 146, 200, 220, 311, 334, 366, 405, 406, 524, 533, 536, 538, 542, 543, 546, 668, 718
 Cochin: *see* Kerala.
 Darjeeling 414, 459, 510
 Dehra Dun 176, 522, 742, 743
 Delhi 49, 122, 135, 247, 254, 277, 354, 355
 Eastern Ghats 4, 12, 114, 375, 720
 Garhwal and Tehri Garhwal (*see also* Dehra Dun, Kumaon) 391, 395, 457, 508, 509, 512, 728, 729
 Gilgit 159, 160, 438, 610
 Gujarat (*see also* Kutch) 67, 68, 74, 77, 119, 137, 179, 181, 229, 231, 415, 456, 616-24, 626, 630
 Haryana (*see also* Lahul, Spiti) 203, 249, 250, 363, 693, 698, 701, 704, 705, 706
 Hazara: *see* N.W.F.P.
 Himachal Pradesh: *see* Kangra, Simla
 Himalayas 252, 467, 527
 Hyderabad: *see* Andhra Pradesh
 Indian Ocean (*see also* Andaman, Laccadive, Maldiva and Nicobar islands) 102, 103, 148, 220, 295, 296, 335, 501, 536, 540, 544, 545, 547, 548, 564
 Iran 168, 201, 259
 Kangra 325, 419, 705, 706
 Karnataka: *see* Mysore
 Kashmir (proper) [*see also* Ladakh] 125-31, 133, 178, 217, 416, 418, 444, 445, 447, 470, 515-20, 529, 575, 680-2, 699, 709-11, 721, 735
 Kathiawar: *see* Gujarat
 Kerala 61, 72, 79, 81, 219, 262, 263, 337, 340, 349, 350, 367-70, 486, 487, 552, 553, 647
 Kumaon 87, 93, 176, 331, 679, 727

Kutch 1, 18, 19, 68, 74, 75, 317-24, 439, 624
 Laccadive Islands 148, 338, 455
 Ladakh 392, 421, 427, 466, 517, 520
 Lahore 45, 202, 360, 471
 Lahul 51, 379, 380, 419, 704
 Madhya Pradesh 53, 63, 124, 170, 173, 205, 206, 207, 312-14, 472, 514, 594, 725, 744
 Madras: *see* Tamil Nadu
 Maharashtra (*see also* Bombay) 2, 3, 119, 138, 139, 141, 186, 213, 215, 260, 381, 434, 667
 Maldiva Islands 547, 549
 Manipur 315, 342, 383-6
 Meghalaya (*see also* Cachar) 104, 105, 106, 136, 339, 341, 383-6
 Mizoram 383-6
 Murree (*see also* Rawalpindi) 442, 443, 571, 648
 Mysore 66, 144, 147, 150, 151, 216, 219, 241, 381, 652, 738-40
 Nagaland 383-6, 581
 NEFA: *see* Arunachal Pradesh
 Nepal 164, 167, 225, 226, 242, 265, 266, 267, 268, 269, 270, 271, 271a, 272, 273, 420, 526, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 565, 566, 568, 579, 587, 609, 636
 Nicobar Islands 21, 24, 110, 180, 335
 Nilgiris 140, 145, 187, 219, 227, 552, 736
 N.W.F.P. (*see also* Murree, Rawalpindi) 175, 195, 281, 282, 330, 440, 441, 446, 528, 678, 722, 723, 724, 726
 Orissa 113, 114, 398, 473
 Pakistan (plains) [*see also* Baluchistan, Lahore, Murree, N.W.F.P., Punjab, Rawalpindi, Sind] 64, 112, 182, 343a, 528, 674, 697
 Punjab (*see also* Pakistan, Lahore, Haryana) 249, 250, 361, 700, 703
 Rajasthan 43, 44, 73, 118, 181, 432, 433, 712
 Rawalpindi 442, 443, 687, 688, 709
 Saurashtra: *see* Gujarat
 Sikkim 78, 169, 177, 283, 428, 466, 644
 Simla 121, 275, 276, 362, 364, 365, 672, 673, 695, 696, 707
 Sind 183, 184, 185, 244, 245, 253, 327, 333, 476, 589, 656, 658
 Spiti 379, 701
 Sri Lanka: *see* Ceylon
 Tamil Nadu (*see also* Eastern Ghats, Nilgiris) 115, 155, 228, 261, 279, 280, 382, 478, 499, 500, 604, 606, 653, 685, 686, 734
 Tibet 69, 99, 100, 101, 134, 169, 326, 371, 422-6, 436, 437, 574, 608, 680
 Travancore: *see* Kerala
 Turkestan (Chinese) 427, 627
 Uttar Pradesh (*see also* Dehra Dun, Garhwal, Kumaon) 172, 174, 196, 264, 297, 331, 507, 508
 West Bengal (*see also* Darjeeling) 111, 345, 346, 402, 403, 404, 409, 475, 600
 Western Ghats: *see* Kerala, Maharashtra, Mysore

CONSOLIDATED INDEX: SCIENTIFIC NAMES

- abbotti (Conurus, Psittacula), 3: 174
 — (Cyanocula, Erithacus), 8: 220
 — (Malacocincla, Trichastoma), 6: 127
 — (Megapodius), 2: 3
 — (Pitta), 4: 255
 Abornis, 8: 132
 Abroscopus, 8: 190
 abuensis (Dumetia), 6: 178
 — (Otocompsa, Pycnonotus), 6: 76
 abundus (Eurystomus), 4: 120
 Acanthis, 10: 141
 acanthizoides *see* brunneus (Cettia, Horeites)
 Acanthopneuste, 8: 132
 Acanthoptila, 6: 213
 Accipiter, 1: 232
 Accipitridae, 1: 210
 Aceros, 4: 135
 Acomorhynchus, 10: 1
 acredula (Motacilla, Phylloscopus), 8: 134
 Acridotheres, 5: 176
 Acrocephalus, 8: 100
 Actinodura, 7: 82
 Actitis, 2: 254
 acuminata (Calidris, Totanus), 2: 307
 acuta (Anas), 1: 149
 acuticanda (*sic*) [C. (ypselus)], 4: 46
 acuticauda (Cypselus), 4: 46
 — (Lonchura, M. (unia)), 10: 107
 — (Sterna), 3: 57
 acuticaudus (Apus), 4: 46
 acutirostris (Calandrella), 5: 23
 adamai (Alauda, Calandrella), 5: 26
 — (Montifringilla), 10: 83
 Adela, 8: 248
 adsimilis (Dicrurus), 5: 114
 aedon (Muscicapa, Phragmaticola), 8: 98
 — (Troglodytes), 9: 134
 Aegithaliscus, 9: 199
 Aegithalos, 9: 199
 Aegithina, 6: 47
 Aegolius, 3: 316
 Aegypius, 1: 298
 aegyptius (Caprimulgus), 4: 14, 258
 — (Cuculus), 3: 239
 aemodius (Conostoma), 6: 196
 aemodius (Conostoma), 6: 196
 — (Parus), 9: 179
 aenea (Columba), 3: 110
 — (Ducula), 3: 111
 — (Parra), 2: 201
 aeneus (Dicrurus), 5: 126
 aenobarbatus (Pteruthius), 7: 80
 aenobarbus *see* aenobarbatus (Pteruthius)
 aequabilis (Caprimulgus), 4: 19
 aequinoctialis (Procellaria), 1: 10
 aegrius (Circus, Falco), 1: 324
 aestiva (Muscicapa), 7: 169
 aethereus (Phaethon), 1: 22
 aethiopicus (Tantalus), 1: 110
 Aethiopsar, 5: 176
 Aethopyga, 10: 38
 afer (Molpastes), 6: 90
 affinis *see* monticola (Caprimulgus)
 — (Abornis, Sciercus), 8: 180
 — (Accipiter), 1: 247
 — (Aplonis, Calornis), 5: 149
 — (Apus, Cypselus), 4: 51
 — (Collocalia), 4: 32
 — (Coracias), 4: 119
 — [C. (urruca)], 8: 129
 — (Eremopterix, Pyrrhuloxia), 5: 10
 — (Garrulax), 7: 55
 — (Gelocheidion, Sterna), 3: 44
 — (Hesperiphona, Mycerobas), 10: 126
 — (Ithaginis), 2: 77
 — (Malacocircus, Turdoides), 6: 232
 — (Mirafra), 5: 5
 — (Ninox), 3: 296
 — (Palaeornis), 3: 176
 — (Petrochelidon), 9: 73
 — (Phaenocorvus), 6: 30
 — (Phylloscopus), 8: 142
 — (Taccocia), 3: 236
 — (Tephrodornis), 6: 12
 — (Treron, Vinago), 3: 99
 alghanica (Hirundo), 5: 57
 alghanorum (Temenuchus), 5: 160
 agile (Dicaeum), 10: 2
 Agilis (Fringilla), 10: 2
 Agilis (Siva), 7: 95
 agricola (Acrocephalus, Sylvia (acrocephalus)), 8: 112
 — (Columba, Streptopelia), 3: 145
 Agrobates, 8: 210
 ahomensis (Gampsorhynchus), 7: 81
 aigner (Sarcogrammus), 2: 212
 Aix, 1: 188
 akool (Amauornis, Rallus), 2: 167
 Alaeon, 5: 16
 Alauda, 5: 41
 Alaudidae, 5: 1
 alaudipes *see* doriae (Alaeon, Certhia lauda)
 Alaudula, 5: 19
 alba *see* dukhunensis (Motacilla)
 — *see* monte (Gygis)
 alba *see* stertens (Tyto)
 — (Ardea, Egretta), 1: 68
 alba (Calidris), 2: 298
 — (Motacilla), 9: 288
 — (Strix), 3: 249
 — (Tyrannus), 2: 298
 — (Tyto), 3: 249
 albellus (Mergus), 1: 201
 albeola (Anas), 1: 193
 albens (Dryobates, Picoides), 4: 216
 albicaudata (Muscicapa), 7: 199
 albicilla (Falco, Haliaeetus), 1: 286
 — (Muscicapa), 7: 156
 albicollis (Ixulus, Yuhina), 7: 101
 — (Platyrhynchus, Rhipidura), 7: 213
 — (Rynchops), 3: 75
 Albicollis (Turdus), 9: 110
 albidulus (Butorides), 1: 62
 albidus (Falco), 1: 331
 albifrons *see* erythropygius (Pericrocotus)
 — (Anser, Branta), 1: 126
 — (Sterna), 3: 64
 albigena (Sterna), 3: 55
 albigula (Eremophila, Otocoris), 5: 33
 albigularis (Abornis), 8: 190
 albilineata (Alcippe), 7: 111
 albilineatus (Lioparus), 7: 111
 albirictis [(Buchanga), Dicrurus], 5: 114
 albis *see* tyleri (Aplonis, Calornis)
 albiventer (Pnoepygia, Tesia), 6: 156
 — (Rallus), 2: 152
 albiventre (Pellorneum), 6: 125
 albiventris (Brachypteryx, Callene), 8: 206
 — (Cettia), 8: 19
 — (Copsychus, Kittacincla), 8: 247
 — (Neornis), 6: 125
 albocinctus (Acridotheres), 5: 188
 — (Turdus), 9: 110
 albugularis (Abornis, Abroscopus), 8: 194
 — (Anas, Mareca), 1: 155
 — [Dumetia, M. (alacocercus) (?)], 6: 179
 — (Garrulax, Ianthocincla), 7: 5
 — [G. (cocichla), Zoothera], 9: 90
 — [Muscicapa (Muscylva), Rhipidura], 7: 214
 — (Prinia), 8: 44
 alboides (Motacilla), 9: 292
 alboriger (Oenanthe, Saxicola), 9: 53
 — (Otus), 3: 270
 albonotatus (Caprimulgus), 4: 16
 albosuperciliaris (Abornis, Sciercus), 8: 185
 — (Garrulax), 7: 39
 alba (Motacilla), 9: 292
 Alcedinidae, 4: 68
 Alcedo, 4: 73
 alchata *see* caudacutus (Pterocles, Tetrao)
 — (Tetrao), 3: 79
 Alcippe, 7: 109
 Alcipornis, 7: 109
 Alcurus, 6: 67
 aldbrensis (Fregata), 1: 47
 Allectoris, 2: 17
 alexanderi (Cettia), 8: 15
 alexandri (Psittacula), 3: 172
 — (Psittacus), 3: 163
 alexandrinus (Charadrius), 2: 235
 almorae (Sitta), 9: 212
 alpestris (Alauda), 5: 32
 — (Eremophila), 5: 32
 alpicola (Montifringilla, Passer), 10: 83
 alpina (Tringa), 2: 308
 alpina (Calidris, Tringa), 2: 308
 Alseonax, 7: 138
 Alsocomus, 3: 119
 altaica (Cyanocula), 8: 221
 — (Fringilla, Leucosticte), 10: 148
 — (Oreopneuste), 8: 149
 altaicus (Gypaetus), 1: 314
 althaea (Sylvia), 8: 129
 altirostre (Chrysomma), 6: 192
 aluco (Strix), 3: 310
 amabilis (Malacocincla), 6: 127
 — (Muscicapa), 7: 164
 — (Zosterops), 10: 57
 amadoni (Rimator), 6: 151
 — (Turdus), 9: 89
 Amandava, 10: 101
 amandava (Estrilda, Fringilla), 10: 101
 amauroptera (Pelargopsis), 4: 83
 — (Porzana, Rallina), 2: 155
 amauropterus (Halcyon), 4: 83
 Amauornis, 2: 166
 amaurotis (Hypsipetes), 6: 102
 ambigua (Hirundo), 5: 59
 — (Stachyridopsis, Stachyris), 6: 169
 ambiguus (Caprimulgus), 4: 19
 ambrosiacus (Cypselus), 4: 56
 amictus (Merops), 4: 111
 Ammomanes, 5: 12
 Ammoperdix, 2: 8
 Ampeliceps, 5: 189
 ampelinus (Hypocotylus), 5: 268
 amurensis (Erythropus), 1: 361
 — (Falco), 1: 361
 amyaee (Acrocephalus), 8: 104
 anaethetus (Sterna), 3: 59
 analis (Picus), 4: 224
 Anas, 1: 145
 Anastomus, 1: 93
 Anatidae, 1: 122
 andamana (Coracina), 6: 17
 andamanensis *see* xanthiornis [(Coracina), Oriolus]
 — (Centropus), 3: 244
 andamanensis (Copsychus), 8: 243
 — (Corvus), 5: 254
 — (Dicrurus), 5: 134
 — (Eulabes, Gracula), 5: 196
 — (Geocichla, Zoothera), 9: 90
 — (Graucalus), 6: 17
 — (Merops), 4: 101
 — (Oriolus), 5: 107
 — (Pericrocotus), 6: 27
 — (Picoides, Picus), 4: 225
 — (Spizaeus), 1: 265
 — (Sturnus, Temenuchus), 5: 156
 andamanica *see* chloroptera (Treron)
 — (Arachnecithra, Nectarinia), 10: 31
 — (Ducula), 3: 114
 — (Irena), 6: 63
 — (Macropygia), 3: 140
 andamanicus (Caprimulgus), 4: 20
 andamanus (Graucalus), 6: 17
 andrewsi (Fregata), 1: 47
 — (Megalurus), 8: 96
 angamea (Larivora), 8: 226
 angustirostris (Anas), 1: 147
 Anhinga, 1: 43
 aninga (Plotus), 1: 43
 annectans [(Buchanga), Dicrurus], 5: 125
 — [*sic*] (Leioptila), 7: 128
 — (Passer), 10: 77
 annectens (Heterophasia), 7: 128
 Anous, 3: 71
 Anser, 1: 125
 anser *see* rubrirostris (Anser)
 — (Anas), 1: 125
 antarctica (Catharacta), 3: 18
 — (Sterna), 3: 59
 antarcticus (Lestris), 3: 18
 Anthipes, 7: 138
 Anthracoceros, 4: 139
 Anthreptes, 10: 19
 Anthropoides, 2: 146
 Anthus, 9: 242
 antigone (Ardea, Grus), 2: 141
 apiaster (Merops), 4: 102
 apicauda (Treron), 3: 94
 apivorus (Falco), 1: 221
 Aplonis, 5: 148
 aplonotus (Parus), 9: 188
 Apodidae, 4: 25
 apicaria (Pluvialis), 2: 221
 apicarius (Charadrius), 2: 221
 Apus, 4: 38
 apus *see* pekinensis (Apus, Cypselus)
 — (Hirundo), 4: 38
 aquaticus (Rallus), 2: 148
 Aquila, 1: 272
 aquilonifer (Tetraogallus), 2: 12
 aquilus (Pelecanus), 1: 47
 arabicus (Pterocles), 3: 91
 arabianicus *see* henrici (Francolinus)
 arabs (Otis), 2: 188
 Arachnothera, 10: 52
 aralensis (Cyanocula), 8: 218
 Arborophila, 2: 55
 arcana (Phylloscopus), 8: 144
 Arceuthornis, 9: 105
 arctica *see* suschkini (Gavia, Urinator)
 arcus (Pycnonotus), 6: 94
 arcuata (Anas), 1: 138
 — (Emberiza), 10: 225
 Ardea, 1: 52
 Ardeidae, 1: 49
 Ardeola, 1: 62
 ardeola (Dromas), 2: 337
 ardosiaca (Leioptila), 7: 132
 Arenaria, 2: 273
 arenicola (Streptopelia, Turtur), 3: 141
 arenicolor (Alauda), 5: 12
 — (Caprimulgus), 4: 14, 258
 argentatus (Larus), 3: 26
 argenteus (Leiothrix, Mesia), 7: 65
 argoondah (Coturnix, Perdix), 2: 49
 Argy, 6: 213
 ariel *see* iredalei (Fregata)
 — (Aethopyga), 10: 46
 Aristonetta, 1: 179
 aristus (Gecinulus), 4: 205
 armenicus (Alauda), 5: 43
 aromatica (Columba), 3: 94
 arquata (Numenius, Scolopax), 2: 245
 arquatellus (Xiphirhynchus), 6: 151
 Arrenga, 9: 75
 Artamidae, 5: 143
 Artamus, 5: 143
 arundicola (Timalia), 6: 187
 arundinaceus *see* zarudnyi (Acrocephalus)
 — (Turdus), 8: 100
 arvensis (Alauda), 5: 41
 Asarcornis, 1: 193
 Asha (Ardea), 1: 74
 asiae (Francolinus), 2: 22
 asiatica *see* ciconia (Ardea, Ciconia)
 — (Alcedo), 4: 78
 — (Certhia, Nectarinia), 10: 35
 — (Cyanops), 4: 159
 — (Megalaima), 4: 158
 — (Mycteria), 1: 104
 — (Perdix, Perdix), 2: 45
 asiaticus (Caprimulgus), 4: 21
 — (Charadrius), 2: 228
 — (Trogon), 4: 158
 — (Ephippiorhynchus), 1: 104
 Asia, 3: 312
 assamensis (Aethopyga, Ginnysis), 10: 46
 — (Chalcophaps), 10: 19
 — (Dryocapathus, Trichastoma), 6: 126
 — (Franklinia), 8: 38
 7: 29
 assamica (Mirafra), 5: 4
 — (Sturnia), 5: 152
 — (Suya), 8: 71
 assamicus (Cuculus), 3: 213
 — (Macronus [*sic*]), 6: 135
 assimilis (Phodilus), 3: 255
 — (Picoides, Picus), 4: 215
 asthenia (Cercopithecus), 9: 6
 Astigma [*sic*] (Muscicapa), 7: 169
 astrild (Loxia), 10: 101
 Astur, 1: 232
 ater *see* aemodius (Parus)
 aterrima (Bulweria, Procellaria), 1: 15
 Athene, 3: 297
 atheroni (Merops, Nyctornis), 4: 112
 atrata (Fulica), 2: 180
 atragularis [*sic*] (Accentor), 9: 159
 atrata (Pratincola, Saxicola), 9: 35
 atratus (Picoides, Picus), 4: 223
 — (Pterocles), 3: 89
 atricapilla *see* malacca (Lonchura, Loxia)
 — (Lonchura, Loxia), 10: 117
 Atricapilla (Motacilla), 8: 121
 atriceps (Brachypteryx, Rhopocichla), 6: 183
 — (Pycnonotus, Turdus), 6: 68
 atrifrons (Charadrius), 2: 238
 atrigula (Ploceus), 10: 88
 atripennis (Caprimulgus), 4: 18
 atrogularis *see* nitidus (Orthotomus)
 — (Arboricola, Arborophila), 2: 62
 — (Prinia, Suya), 8: 72
 — (Prunella), 9: 159
 — (Saxicola), 9: 47
 — (Turdus), 9: 127
 atronuchalis (Lobivanelius, Vanellus), 2: 215
 atropiscularis (Chleuasicus, Paradoxornis), 6: 206
 atrovinaea (Yuhina), 7: 100
 atthis (Alcedo), 4: 74
 aucheri (Lanius), 5: 82
 audreyana (Leucosticte), 10: 153
 augusta (Chalcophaps), 3: 319
 aurantia (Sterna), 3: 48
 aurantiaca (Pyrrhula), 10: 202
 aurantius (Br. (achypternus)), 5: 196
 aurea (Pluvialis), 2: 219
 — (Zoothera), 9: 101
 aureigularis (Leiothrix, Mesia), 7: 66
 aureola (Emberiza), 10: 213
 — (Rhipidura), 7: 207
 aureolus (Criniger), 6: 100
 aureus (Gypaetus, Vultur), 1: 314
 — (Pericrocotus), 6: 35
 — (Turdus), 9: 101
 auriceps (Picoides, Picus), 4: 221
 auricularis (Vultur), 1: 296
 aurifrons (Chloropsis, Phyllornis), 6: 55
 aurita (Anas), 1: 190
 aurita (Otis), 2: 195
 auritus (Podargus), 4: 1
 Aurocorastus (Picus), 4: 226
 auroreus *see* leucopertus (Phoenicurus)
 austeni *see* stenorhynchus (Pomatorhinus)
 — (Alcedo, Baryphaga), 7: 116
 134
 50
 australis *see* cyanotus (Bucco, Megalaima)
 — (Alauda), 5: 47
 — (Hypotaenidia), 2: 149
 — (Mycteria), 1: 104
 — (Sitta), 9: 221
 australiorientis (Muscicapa), 7: 167
 avensis (Palaeornis, Psittacula), 3: 167
 Aviceda, 1: 214
 avosetta (Recurvirostra), 2: 332
 avunculorum (Picumnus), 4: 174
 Aythya, 1: 179
 azurea (Monarcha), 7: 223
 azureitinctus (Garrulus), 5: 201
 babaulti (Pellorneum, Scotocichla), 6: 123
 Babax, 6: 236
 baboecala *see* brachyptera (Sylvia)
 babylonicus (Falco), 1: 349
 bacchus (Ardeola, Buphus), 1: 65
 bacciana (Athene), 3: 298
 — (Pica), 5: 213
 baccianus (Athene), 3: 298
 — (Passer), 10: 67
 badcigularis (Spelaeornis), 6: 161
 badia (Ducula), 3: 116
 — (Strix), 3: 253
 badius (Accipiter, Falco), 1: 237
 — (Garrulax), 7: 7
 — (Phodilus), 3: 253
 — (Picus), 4: 177
 baeri (Anas (Fuligula), Aythya), 1: 184
 baicalensis (Motacilla), 9: 295
 — (Streptopelia), 3: 142
 baileyi (Yuhina), 7: 102
 bailloni (Procellaria), 1: 13
 bakeri (Amauornis, Porzana), 2: 164
 — (Apus), 4: 42
 — (Cuculus), 3: 210
 — (Garrulax, Trochilopteron), 7: 63
 — (Lonchura), 10: 118
 — (Paradoxornis, Scaevola), 6: 203
 — (Pericrocotus), 6: 28
 — (Polyplectron), 2: 120
 — (Pomatorhinus), 6: 140
 bakeri (Yuhina), 7: 100
 bakkamoena (Otus), 3: 269
 Balasienis [*sic*] (Cypselus), 4: 56
 Balicassius (Corvus), 5: 113

- (Tringa), 2: 269
cinereiceps (Alcippe), 7: 117
 — (Siva), 7: 109
cinereifrons (Garrulax), 7: 3
cinereus (Motacilla), 7: 95
cinereus (Sitta), 4: 233
cinereocapilla (Cryptolopha), 7: 202
 — (Prinia), 8: 48
cinereocentris [Br. (achypodius)], 6: 68
cinereus *see* *divaricatus* (Lanius, Pericrocotus)
 — (Pluvianus, Vanellus), 2: 211
cinnamomea (Ardea), 1: 84
 — (Motacilla), 6: 42
 — (Pyrgita), 10: 75
cinnamomeum (Garrulax), 7: 40
cinnamomeus (Ixobrychus), 1: 84
 — (Passer), 10: 75
 — (Pericrocotus), 6: 42
cinnamovenstris (Sitta), 9: 213
Cinnyris, 10: 21
Circetus, 1: 326
circumspectus (Neornis), 8: 14
Circus, 1: 316
cirrephidemos (Charadrius), 2: 225
Cirripidesmus, 2: 225
cirrhatus (Falco, Spizaeus), 1: 262
 — (Limnaea), 1: 258
Cissa, 5: 203
Cisticola, 8: 29
cisticola (Sylvia), 8: 29
citreola (Motacilla), 9: 282
citrina (Zoothra), 9: 86
Citrinella (Emberiza), 10: 204
citrinus (Turdus), 9: 86
Clamator, 3: 192
clanga (Aquila), 1: 279
Clangula, 1: 196
clangula (Anas, Bucephala), 1: 193
 — (Glaucinetta), 1: 198
claudiae (Acanthopneuste, Phylloscopus), 8: 178
cleghorniae [F. (Franklinia)], 8: 46
clcta (Cyornis), 7: 169
clypeata (Anas), 1: 172
Coccothraustes, 10: 122
coccothraustes *see* *humii* (Coccothraustes)
 — (Loxia), 10: 122
cochinchinensis (Chaetura), 4: 35
 — (Chloropsis, Turdus), 6: 62
Cochiza, 9: 16
cockburniae (Anthus), 9: 266
coei (Stachyris), 6: 176
coelebs (Fringilla), 10: 121
coelestis (Scolopax), 2: 278
coelicalar (sic) [Gr. (andala)], 9: 4
coelicalor (Cyornis), 7: 173
 — (Grandala), 9: 4
collaris (Alcippe), 7: 120
 — (Prunella), 9: 145
 — (Sturnus), 9: 145
collini (Muscicapa), 7: 166
Collocalia, 4: 25
collurio (Lanius), 5: 87
collurioides (Lanius), 5: 83
collybita (Phylloscopus, Sylvia), 8: 136
coltarti (Alcedo), 4: 78
 — (Stachyris), 6: 177
Columba, 3: 119
columbarius (Falco), 1: 357
columbianus (Cygnus), 1: 134
Columbidae, 3: 93
columboides (Palaeornis, Psittacula), 3: 185
commoda (Alcippe), 7: 126
communis *see* *icterops* (Sylvia)
compressirostris (Lecocerca, Rhipidura), 7: 209
concinens (Acrocephalus), 8: 114
concinna (Psittacula), 9: 199
concinus (Aegithalos), 9: 200
concolor (Dicaeum), 10: 14
concolor (Falco), 1: 356
 — (Hirundo), 5: 55
concreta *see* *cyanca* (Muscicapa, Muscivora)
concretus (Picus), 4: 235
confucius (Passer), 10: 63
confusa (Luscinia), 8: 224
 — (Xantholaema), 4: 163
confusus (Erethacus), 8: 224
conjuncta (Staphida), 7: 99
connectens (Strix), 3: 308
Conostoma, 6: 196
conoveri (Dendrocygna), 4: 222
 — (Tyrannus), 3: 101
continentalis (Ceryle), 4: 68
contra (Sturnus), 5: 172
Copsychus, 8: 239
Coracias, 4: 114
Coraciidae, 4: 113
Coracina, 6: 13
corallina (Sitta), 9: 224
corax (Corvus), 5: 261
cordatus (Picus), 4: 236
coromanda (Alcedo, Halcyon), 4: 87
 — (Strix), 3: 278
coromandelianus (Anas, Nettapus), 1: 190
coromandelica (Coturnix), 2: 41
coromandelicus (Charadrius, Cursorius), 3: 9
 — (Tetrao), 2: 41
coromandus (Bubo), 3: 278
 — (Bubulcus, Canarium), 1: 66
 — (Clamator, Cuculus), 3: 192
coronata (Ficedula), 8: 174
 — (Hemiprocne, Hirundo), 4: 58
coronatus *see* *atratus* (Pterocles)
 — (Aegithalos, Remiz), 9: 198
 — (Ampeliceps, Mino), 5: 189
 — (Anthracoceros, Bucerus), 4: 142
 — (Enicurus), 9: 6
 — (Orthotomus), 8: 87
 — (Phylloscopus), 8: 174
corone (Corvus), 5: 258
Corvidae, 5: 193
Corvus, 5: 242
Coturnix, 2: 37
coturnix (Coturnix, Tetrao), 2: 37
coutellii (Anthus), 9: 269
cranbrookii (Garrulax, Grammatoptila), 7: 13
crassirostris (Carpodacus, Rhodopechys), 10: 155
 — (Larus), 3: 24
crecca (Anas), 1: 151
Crex, 2: 158
crex (Crex, Rallus), 2: 158
Criniger, 6: 100
criniger (Prinia, Prinia? Suya), 8: 70
criniger (Suya), 8: 37
crispifrons (Turdus), 6: 153
crispus (Pelecus), 1: 30
cristata (Alauda), 5: 36
 — (Galerida), 5: 36
cristatus (Colymbus, Podiceps), 1: 3
cristatus [G. (allirex)], 2: 172
 — (Lanius), 5: 98
 — (Parus), 9: 164
 — (Pavo), 2: 123
Crocethia, 2: 295
crocina (Stachyris), 6: 173
Crocopus, 3: 94
crocotius (Paradoxornis), 6: 204
Crossophilus, 2: 92
crossophilus *see* *harmani* (Crossophilus)
 — (Phasianus), 2: 92
cruentata (Ceryle), 10: 15
cruentatum (Dicaeum), 10: 15
cruentipetens (Dendrocygna), 4: 221
cruentus (Ithaginis, Phasianus), 2: 75
cruralis (Brachypteryx, Calliope), 8: 209
crypta (Tyto), 3: 250
cryptanthus (Pomatorhinus), 6: 133
Cryptoplecton, 2: 44
Cuculidae, 3: 191
cucullata (Cissa, Urocissa), 5: 207
 — (Hirundo), 5: 52
 — (Pitta), 4: 254
cucullatus *see* *coronatus* (Orthotomus)
 — (Phyllogates), 8: 80
cuculoides (Avidia), 1: 214
 — (Glaucidium, Noctua), 3: 289
cuculopsis *see* *Heterophasia*
Cuculus, 3: 193
Culicicapa, 7: 202
culminatus (Corvus), 5: 256
cuprea (Carpophaga, Ducula), 3: 118
curoticus (Charadrius), 2: 231
curra (Sylvia), 8: 126
curtians (Cisticola, Prinia), 8: 33
cursor (Charadrius, Cursorius), 3: 8
Cursorius, 3: 7
curvirostra *see* *nipalensis* (Toria, Treron)
 — (Columba), 3: 94
Curvirostra (Loxia), 10: 190
Cutia, 7: 71
cyane (Sitta), 4: 233
cyane (Sitta), 4: 233
 — (Pitta), 4: 254
cyaneus (Falco), 1: 353
cyaneus (Circus, Falco), 1: 317
 — (Turdus), 9: 75
cyanicollis (Eurytomus), 4: 120
cyaniventer (Tesia), 8: 1
cyanocapilla (Psittacula), 3: 179
cyanocapillus (Psittacus), 3: 179
Cyanops, 4: 159
Cyanosylvia, 8: 213
cyanotis (Bucco, Megalaima), 4: 160
cyanotus (Turdus, Zoothra), 9: 89
cyanouroptera (Mina, Siva), 7: 95
cyanurus (Erethacus, Motacilla), 8: 233
 — (Parus), 9: 176
Cygnus, 1: 134
cygnus (Anas, Cygnus), 1: 136
Cyornis, 7: 138
Cypsiurus, 4: 56
dabryi (Aethopyga, Nectarinia), 10: 41
dactylatra *see* *melanops* (Sula)
dallaensis (Actinodura), 7: 88
 — (Suthora), 6: 203
dalhousiae (Eurylaimus, Psittacus), 4: 248
daphanea (Aquila), 1: 273
Daption, 1: 9
darjellensis (Picoides, Pica (Dendrocygna)), 4: 218
daulias (Luscinia), 8: 228
dauma (Turdus, Zoothra), 9: 97
daurica (Hirundo), 5: 66
Davidi (Luscinia), 8: 228
dauidiana *see* *potanini* (Montifringilla, Pyrgilauda)
 — (Suthora), 6: 197
Davidsoni (Chloropsis), 6: 57
davidsoni *see* *sibirica* (Zoothra)
 — (Coracina, Lalage), 6: 23
 — (Halcyon), 4: 97
Davidsoni (Spilornis), 1: 333
davurica (Muscicapa), 7: 145
dawae (Picus), 4: 184
debilis (Passer), 10: 75
decaocto (Columba, Streptopelia), 3: 149
decapth (Anthus), 9: 263
decolorans (Parus), 9: 166
dehrae (Picus), 4: 184
 — (Sturnopastor), 5: 172
deignani (Aegithina), 6: 52
 — (Dicaeum), 10: 2
delacouri (Alcippe), 7: 112
delesserti (Crateropus, Garrulax), 7: 19
 — (Indopicus), 4: 243
Delichon, 5: 73
Demoiselle, 2: 146
Dendrocygna, 5: 215
Dendrocygna, 4: 212
Dendrocygna, 1: 138
Dendrocygna, 9: 272
Dendrocygna, 3: 94
Dendrocygna, 3: 120
denzai (Eremophila), 5: 34
derbyana (Psittacula), 3: 175
Derbyanus (Palaeornis), 3: 175
derocoptorfi (Strix, Tyto), 3: 251
deserti *see* *phoenicuroides* (Ammomanes, M. (irafra))
 — (Oenanthe, Saxicola), 9: 47
deserticolor (Onus), 3: 267
desertorum (Alauda), 5: 16
deva (Alauda, Galerida), 5: 40
dhamakumari (Pericrocotus), 6: 42
diardi (Melias, Rhodopytes), 3: 230
diatropus (Dendrocygna), 4: 218
Dicaeidae, 10: 1
Dicaeum, 10: 1
dichrous (Parus), 9: 185
Dicruridae, 5: 113
dicuriformis (Dicurus, Disemuroides), 5: 134
dicuroides (Pseudornis, Surniculus), 3: 224
Dicurus, 5: 113
didii (Butorides), 1: 62
diffusus (Oriolus), 5: 105
digitatus (Pyrrhocorax), 5: 236
diluta (Cotile, Riparia), 5: 49
 — (Otocoris), 5: 33
dilutum (Dinopium), 4: 196
dilutus [Br. (achypodius)], 4: 196
 — (Passer), 10: 70
Dinopium, 4: 196
diphone *see* *canturians* (Arundinax, Ceryle)
disessa (Cyanecula), 8: 218
discolor (Ceryle), 9: 238
dispar (Turdus), 6: 67
Disemuroides, 5: 113
Disemurulus, 5: 113
Disemurus, 5: 113
disimilis (Turdus), 9: 106
divaricatus (Lanius, Pericrocotus), 6: 39
dixonii (Geocichla Zoothra), 9: 95
dobsoni (Coracina, Graucalus), 6: 18
colosa (Eudynamis), 3: 230
domestica (Anser), 1: 125
 — (Fringilla), 10: 62
domesticus (Passer), 10: 63
domicola (Hirundo), 5: 61
dominica *see* *fulva* (Pluvialis)
dorabatai (Apus), 4: 40
doriae (Alaemon, Certhilauda), 5: 16
dorji (Cinclus), 9: 144
dorsalis (Leopolda), 7: 132
 — (Zosterops), 10: 56
dougallii *see* *koristes* (Sterna, Sternula)
drasticus (Abroscopus), 8: 191
dresseri (Sturnus), 5: 169
Dromadidae, 2: 337
Dromas, 2: 337
dryas (Hemiprocne), 4: 58
Dryomochares, 8: 203
Dryobates, 4: 213
Dryocopus, 4: 208
Dryonastes, 7: 1
dubia (Ardea), 1: 105
dubius *see* *femininus* (Carpodacus)
dubius (Charadrius), 2: 231
 — (Leptopitiles), 1: 105
Ducula, 3: 110
dukhunensis (Alauda, Calandrella), 5: 21
 — (Motacilla), 9: 288
dulcivox (Alauda), 5: 42
Dumetia, 6: 178
dumetorum (Acrocephalus), 8: 109
Dumontii (Mino), 5: 189
Dulpetor, 1: 88
dussumieri (Hemipodius, Turnix), 2: 128
dussumieri (Accipiter, Falco), 1: 235
duvaucelii (Charadrius, Vanellus), 2: 216
dybowski (Otis), 2: 186
earlei (Malacocercus, Turdoides), 6: 218
eblii (Erythrura), 10: 183
elcipes (Chlorothraupis), 6: 215
edwardsi (Streptopelia), 3: 155
edwardsii *see* *rubicunda* (Carpodacus, Erythrura)
egertoni (Actinodura), 7: 83
egregia (Zosterops), 10: 57
Egretta, 1: 68
eidos (Caprimulgus), 4: 23
Elachura, 6: 159
Elanus, 1: 212
Elaphromis, 8: 20
Elaenia, 6: 67
elegans (Leptopitiles), 8: 199
 — (Phaenicornis), 6: 25
elgini (Haematomis, Spilornis), 1: 335
elphinstoni (Columba, Ptilinopus), 3: 132
Elseya, 2: 225
Elseyornis, 2: 225
elwesi (Eremophila, Otocoris), 5: 35
 — (Zosterops), 10: 57
Emberiza, 10: 204
Emberizidae, 10: 204
Emeria (Motacilla, Pycnonotus), 6: 79
Enicurus, 9: 6
enigmatius (Anthus), 9: 250
 — (Passer), 10: 63
 — (Pterocles), 3: 86
epauleta (Pyrrhopterus, Pyrrhula?), 10: 195
Ephialtes, 3: 321
epilepota (Myiothera), 6: 152
 — (Napothera), 6: 154
episcopus (Ardea, Ciconia), 1: 98
epops (Upupa), 4: 124
Eremophila, 5: 32
Eremophila, 5: 8
erimelas (Copsychus), 8: 243
Erismatura, 1: 208
erithaca (Alcedo), 4: 81
erithacus, 8: 213
erithacus (Ceryle), 4: 81
erithronotus (Pica), 4: 201
erlangeri (Pterocles, Pteroclorus), 3: 82
erlangeri (Strix), 3: 284
ernstmayri (Hirundo), 5: 76
erithraea (Phylloscopus), 8: 152
Erolia, 2: 295
Eryornis, 7: 97
erythaca (Pyrrhula), 10: 199
erythrura (Loxia), 10: 166
erythrura (Carpodacus), 10: 166
erythrocephala (Cisticola), 8: 30
 — (Pyrrhula), 10: 201
 — (Streptopelia), 3: 146
erythrocephalus (Circosoma), 7: 57
erythrocephalus (Garrulax), 7: 57
 — (Harporhynchus, Trogon), 4: 66
 — (Parus), 9: 200
 — (Turtur), 3: 146
erythrogaster *see* *grandis* (Phoenicurus, Rutila)
 — (Turdus), 9: 70
erythrogenys (Palaeornis), 3: 177
 — (Pomatorhinus), 6: 141
erythroloaema (Garrulax, Trochalopteron), 7: 62
erythronota (Sylvia), 8: 249
erythronotus (Ceryle), 10: 1
 — (Dicaeum), 10: 1
erythronotus (Collurio, Lanius), 5: 93
 — [Dinopium (Picoides)], 4: 195
 — (Phoenicurus), 6: 249
erythroptera (Mirafla), 5: 7
erythropterus (Emberiza), 10: 232
 — (Lanius), 7: 74
erythropus (Anas, Anser), 1: 128
 — (Scolopax, Tringa), 2: 255
Erythropygia, 8: 210
erythropygia (Hirundo), 5: 70
 — (Muscicapa), 6: 45
 — (Sturnia), 5: 157
erythropygia (Pericrocotus), 6: 45
 — (Sturnus), 5: 157
erythrorhyncha (Cissa), 5: 209
 — (Coturnix, Perdicula), 2: 51
erythrorhynchus (Ceryle, Dicaeum), 10: 10
erythrorhynchus (Buceros), 4: 129
 — (Corvus), 5: 203
erythrotis (Pomatorhinus), 6: 143
erythrura (Saxicoloides), 9: 61
erythrurus [Turdus (Saxicoloides)], 9: 61
Esacus, 3: 4
esculenta (Collocalia), 4: 32
 — (Hirundo), 4: 25
estriata (Lonchura), 10: 108
Estrilda, 10: 101
esthologus (Pericrocotus), 6: 32
Eudynamis, 3: 226
eugeni (Myiophonus, Myiophonus), 9: 82
Eulabea, 5: 190
Eulabettidae *see* *Sturnidae*
Eulophus, 2: 111
Eumyias, 7: 138
eunomus (Turdus), 9: 130
eupatria (Psittacula, Psittacus), 3: 166
euphonia (Muscicapa), 7: 159
Eupoda, 2: 225
Eupodotus, 2: 193
eurhinus (Totanus, Tringa), 2: 257
eurizonoides *see* *amauroptera* (Porzana, Rallia)
europaea (Pipra?), 9: 199
 — (Sitta), 9: 208
europaea (Caprimulgus), 4: 7
 — (Charadrius), 3: 7
Eurostodius, 4: 4
Eurycerus, 8: 37
Eurylaimidae, 4: 246
Eurylaimus, 2: 312
Eurymachus, 4: 120
euterpe (Myiophonus), 9: 79
evermanni (Columba), 3: 128
Excalfactoria, 2: 37
excalfactoria (Coturnix), 2: 37
excubitor (Lanius), 5: 79
exilis (Cisticola), 8: 30
eximia (Lalage), 6: 21
eximius (Cyornis), 7: 167
eximius (Phylloscopus), 8: 174
exustus *see* *erlangeri* (Pterocles, Pteroclorus)
fabalis (Anser), 1: 125
fairbanki (Garrulax, Trochalopteron), 7: 42
falcata (Anas), 1: 165
falcinellus (Linnicola, Scolopax), 2: 315
 — (Plegadis, Tantalus), 1: 114
Falco, 1: 341
Falconidae, 1: 338
fallax (Bulweria), 1: 15
familiaris (Ceryle), 9: 232
 — (Erythropygia, Sylvia), 8: 210
 — (Prinia), 8: 37
famosa (Ceryle), 10: 21
fasciata (Aquila), 1: 266
 — (Psittacula), 3: 172
 — (Rallia), 2: 154
fasciatus (Harporhynchus, Trogon), 4: 63
 — (Hicraetetus), 1: 266
 — (Psittacus), 3: 172
 — (Rallus), 2: 154
fastuosa (Cyanecula), 7: 181
faudicus (Cuculus), 3: 204
favillaceus (Pericrocotus), 6: 32
feai (Merula, Turdus), 9: 125
femininus (Carpodacus), 10: 178
ferghanensis (Carpodacus, E. (erythrura)), 10: 163
ferina (Anas), 1: 180
ferandonis (Orthotomus), 8: 86
ferox (Accipiter), 1: 32
ferrago (Columba), 3: 143
ferraea (Saxicola), 9: 37
ferrugilatus (Pomatorhinus), 6: 141
ferruginea (Anas, Tadorna), 1: 141
 — (Hemichelidon, Muscicapa), 7: 152
 — (Saxia), 4: 176
ferrugineus (Pomatorhinus), 6: 145
 — (Saxicola), 9: 37
finchii *see* *barnesi* (Oenanthe, Saxicola)

[illegible]

lerwa (Lerwa, Perdix), 2: 6
leschenaulti (Bubo, Strix), 3: 280
leschenaultii *see* indicus (Enicurus)
— (Merops), 4: 99
Leschenaulti (Turdus), 9: 6
leschenaultii (Charadrius), 2: 226
— (Taccocua), 3: 237
lettia (Otus, Scops), 3: 270
Leucanous, 3: 73
leucocephala (Anas, Oxyura), 1: 208
— (Budytes, Motacilla), 9: 280
— (Emberiza), 10: 206
— (Phoenicurus), 9: 57
— (Turdoides), 6: 213
leucocephalus (Emberiza), 10: 206
leucocephalus *see* insularis (Amauromis)
— (Chaimarrornis), 3: 57
— (Mycteria, Tantalus), 1: 23
Leucocircia, 7: 205
leucogaster *see* plutus (Pelecanus, Sula)
— (Cinclus), 9: 139
— (Falco, Haliaeetus), 1: 287
— (Muscipeta, Terpsiphona), 7: 216
— (Pomatorhinus), 6: 130
— (Thalassidroma), 1: 20
leucogastra (Dendrocygna), 5: 223
leucogenys *see* salangensis (Dicrurus)
— (Aegithalos, Orites), 9: 203
— (Brachypus, Pycnonotus), 6: 83
leucogeranus (Grus), 2: 144
leucophilus (Corvus, Garrulax), 7: 14
leucomela (Motacilla), 9: 55
leucomelana (Procellaria), 1: 11
leucomelana (Lophura), 2: 97
leucomelanos (Phasianus), 2: 97
leucomelanura (Muscicapa) *see* cyane
(Erethacus, Motacilla)
— (Ceryle), 4: 71
— (Digenea, Muscicapa), 7: 170
leucomelas (Procellaria), 1: 11
leuconota (Columba), 3: 120
leuconyx (Apus, Cypselus), 4: 49
leucopareus *see* albogularis (Anas,
Mareca)
leucophaea *see* persica (Alaudula, Calan-
drella)
— (Ardea), 1: 55
leucophaeus (Dicrurus), 5: 119
leucophrys *see* nipalensis (Brachypteryx)
— (Sylvia), 8: 210
— (Turdus), 7: 205
Leucopolius, 2: 225
leucopolis (Charadrius), 2: 225
leucops (Digenea, Muscicapa), 7: 162
leucopsis (Motacilla), 9: 293
— (Sitta), 9: 217
leucoptera (Chlidonias, Sterna), 3: 41
— (Lanius), 5: 82
— (Phoenicurus), 8: 262
— (Saxicoloides), 9: 65
— (Sylvia), 6: 47
leucopteris *see* homeyeri (Lanius)
— (Microtus), 9: 65
— (Phoenicurus), 8: 262
leucopygialis (Acanthya), 4: 33
— (Dicrurus), 5: 124
leucorhoa *see* monorhis (Oceanodroma,
Thalassidroma)
leucorhynchus *see* humei (Artamus)
— (Lanius), 5: 143
leucorodia (Platalea), 1: 115
leucoropha (Aquila), 1: 289
leucorophus (Haliaeetus), 1: 289
Leucosticta, 10: 148
leucotis (Ixos, Pycnonotus), 6: 81
leucura [M. (uscisylvia)], 9: 1
— (Pratincola, Saxicola), 9: 30
— (Prinia), 8: 57
— (Turdus), 9: 39
leuphotes (Aviceda, Falco), 1: 218, 370
levallantii (Corvus), 5: 254
lewisi (Actinodura), 7: 84
lhamarum (Alauda), 5: 44
lherminieri *see* bailoni (Procellaria)
lilfordi (Grus), 2: 136
limes (Ceryle), 9: 234
Limicola, 2: 314
limnaeetus (Falco, Spizaetus), 1: 261
Limnaeopsis, 1: 258
Limnodromus, 2: 276
Limosa, 2: 248
limosa (Limosa, Scolopax), 2: 249
Linaria (Fringilla), 10: 141
lineata (Megalaima), 4: 153
lineatum (Cinclusoma), 7: 46
lineatus (Garrulax), 7: 46
— (Haliaeetus, Milvus), 1: 229
Lincoventer [M. (unia)], 10: 113
lisapur, 7: 109
liorarum (Passer), 10: 77
littoralis (Columba), 3: 110
livia (Columba), 3: 124
livingstoni (Garrulax), 7: 35
lobata (Tringa), 2: 321
lobatus (Phalaropus), 2: 323
Lobipes, 2: 321
Lobipluvia, 2: 205
Lobivanellus, 2: 205
Locustella, 8: 88
Locustella (Sylvia), 8: 88
Lonchura, 10: 105
londae (Chibia), 5: 131
— (Orthotomus), 8: 81
longicauda (Psittacula), 3: 176
longicaudata (Pnoepyga), 6: 162
longicaudatus (Dicrurus), 5: 119
— (Spelaecornis), 6: 162
longimembris (Strix, Tyto), 3: 252
longipennis (Hemiprocne, Hirundo), 4:
58
— (Alauda, Calandrella), 5: 19
— (Cypselus), 4: 58
— (Hirundo), 4: 58
longipennis (Ceryle), 10: 57
lt 12

CONSOLIDATED INDEX: SCIENTIFIC NAMES

- (*Hypipetes*), 6: 103
 — (*Megapodius*), 2: 1
 niethammeri (*Carpodacus*), 10: 183
 nigelli (*Lophophorus*), 2: 13
 nigellii (*Tetraogallus*), 2: 10
 niger (*Anous*), 3: 71
 niger (*Chlidonias*), 3: 42
 — (*Hydrocorax*, *Phalacrocorax*), 1: 41
 — (*Vultur*), 1: 298
 nigra see *davisoni* (*Coracina*, *Lalage*)
 — (*Ardea*, *Ciconia*), 1: 102
 — (*Rynchops*), 2: 74
 — (*Sterna*), 3: 42
 nigrescens (*Hypipetes*), 6: 114
 nigricipes see *affinis* (*Eremopterix*, *Pyrrhuloxia*)
 — (*Chloritis*, *Otis*), 2: 188
 — (*Heterophasia*, *Sibia*), 7: 131
 — (*Stachyris*), 6: 174
 nigricollis (*Gracula*), 5: 151
 — (*Grus*), 2: 139
 — (*Podiceps*), 1: 5
 — (*Pyrgita*), 10: 63
 nigrifrons (*Alcippe*, *Rhopocichla*), 6: 185
 nigrifrons (*Yuhina*), 7: 107
 nigrimentum (*Trochalopteron*), 7: 59
 nigrimentus (*Garrulax*), 7: 59
 nigroaurita (*Liopitila*), 7: 133
 nigrolineata (*Z. (apornia)*), 2: 155
 nigrolutea (*Aegithina*, *Iora*), 6: 53
 nigropileus (*Merula*, *Turdus*), 9: 117
 nigrorufa (*Muscicapa*, *Saxicola*), 7: 175
 nilghiriensis (*Anthus*), 9: 267
 nilgirienis (*Saxicola*), 9: 34
 — (*Zosterops*), 10: 60
 nilotica (*Gelochelidon*, *Sterna*), 3: 42
 niloticus (*Enneactonotus*, *Lanius*), 5: 101
 Niltava, 7: 137
 Ninex, 3: 292
 Nipalense (*Cinclosoma*), 7: 82
 nipalensis (*A. (accutor)*, *Prunella*), 9: 147
 — (*Acrocephalus*, *Bucconia*), 4: 185
 — (*Acrocephalus*, *C. (bicolor)*), 7: 86
 — (*Acrocephalus*, *C. (bicolor)*), 10: 60
 — (*Acrocephalus*, *C. (bicolor)*), 10: 60
 — (*Aquila*, *Circus*), 1: 278
 — (*Brachypteryx*), 8: 207
 — (*Bubo*), 3: 276
 — (*Bucia*), 4: 112
 — (*C. (arduelis)*, *Carpodacus*), 10: 168
 — (*Carpodacus*), 10: 181
 — (*Certhia*), 9: 240
 Nipalensis (*Cinclosoma*), 7: 82
 nipalensis (*Coracina*, *Graucalus*), 6: 16
 — (*Cutia*), 7: 71
 — (*Delichon*), 5: 76
 — (*Hirundo*), 5: 68
 — (*Lanius*), 5: 92
 — (*Ninox*), 3: 292
 — (*Nisaeus*, *Spizaeetus*), 1: 259
 — (*Palaeornis*, *Psittacula*), 3: 164
 — (*Paludicola*, *Pitta*), 4: 250
 — (*Paradoxornis*, *Suthora*), 6: 202
 — (*Parus*), 9: 169
 nipalensis (*Phasianus*), 2: 97
 nipalensis (*Pucrasia*), 2: 115
 — (*Pyrrhula*), 10: 197
 Nipalensis (*Sibia*), 7: 82
 nipalensis (*Timalia*, *Turdoides*), 6: 234
 — (*Toria*, *Treron*), 3: 97
 — (*Troglodytes*), 9: 137
 niscolor (*Cuculus*), 3: 203
 nisoides (*Accipiter*), 1: 250
 nisoria (*Fringilla*), 10: 105
 — 1: 243
 — (*Falco*), 1: 232
 — (*Haliaeetus*), 1: 285
 nitens (*Sturnus*), 5: 170
 Nitidula, 7: 201
 nitidus (*Orthotomus*), 8: 86
 — (*Phylloscopus*), 8: 170
 nivalis see *alpica* (*Montifringilla*, *Passer*)
 — (*Fringilla*), 10: 82
 niveogularis (*Acanthiparus*, *Aegithalos*)
 9: 204
 nivicola (*Strix*), 3: 311
 — 25
 noctua (*Aethna*), 3: 297
 — (*Strix*), 3: 297
 noctuivigilis (*Caprimulgus*), 4: 16
 Nopothera, 6: 153
 Nopthera, 6: 152
 notatus (*Cyornis*), 7: 170
 Notodula, 8: 239
 novaeollandiae (*Coracina*), 6: 13
 novaezeelandiae (*Anthus*), 9: 251
 noveboracensis (*Scolopax*), 2: 276
 nubifuga (*Apus*), 4: 40
 nubilosa (*Sterna*), 3: 62
 nuchalis (*Garrulax*), 7: 17
 — (*Parus*), 9: 172
 Nucifraga, 5: 231
 nudiceps (*Gyps*), 1: 306
 nudipes (*Chaetura*, *Cypselus* (*Chaetura*)), 4: 33
 Numenius, 2: 241
 Nyctala, 3: 317
 Nyctea, 3: 284
 nyctea (*Strix*), 3: 284
 nyctemerus (*Phasianus*), 2: 93
 Nycticorax, 1: 78
 nycticorax (*Ardea*, *Nycticorax*), 1: 78
 Nyctornis, 4: 111
 Nyroca, 1: 179
 nyroca (*Anas*, *Aythya*), 1: 182
 oatesi (*Muscicapa*, *Niltava*), 7: 182
 — (*Paradoxornis*, *Suthora*), 6: 205
 — (*Spelaeornis*, *Urochloa*), 6: 164
 oburgatus (*Certhia*, *Falco*), 1: 368
 obrieni (*Strix*), 3: 311
 obscura (*Leptopoeile*), 8: 202
 — (*Ninox*), 3: 295
 obscurior (*Rallus*), 2: 153
 obscuriora (*Hypotaenidia*), 2: 153
 obscurus (*Lophophorus*), 2: 16
 — (*Ninox*), 3: 295
 — (*Pomatorhinus*), 6: 133
 — (*Turdus*), 9: 126
 obsoleta see *pallida* (*Hirundo*, *Prionoprogne*)
 — (*Fringilla*, *Rhodopechys*), 10: 158
 obsoletus (*Accipiter*, *Astur*), 1: 239
 occidentalis (*Dendrocitta*), 5: 225
 — (*Garrulax*, *Ianthocincla*), 7: 26
 — (*Pteruthius*, *Pterythius* [*Strix*]), 7: 76
 occidentis (*Zosterops*), 10: 57
 occipitalis see *bakeri* (*Yuhina*)
 — [*Cissa*, *Ps. (lorhinus)*], 5: 209
 — (*Halcyon*, *Todirhamphus*), 4: 98
 — [*Ph. (yllopaenuste)*, *Phylloscopus*], 8: 172
 — (*Picus*), 4: 186
 — (*Siva*), 7: 100
 — (*Yuhina*), 7: 106
 oceanica [*Pro. (cellaria)*], 1: 17
 oceanicus (*Oceanites*), 1: 17
 Oceanodroma, 1: 20
 ocellata (*Strix*), 3: 305
 ocellatum (*Cinclosoma*), 7: 32
 — (*Syrnium*), 3: 305
 ocellatus (*Garrulax*), 7: 32
 ochracea (*Sasia*), 4: 175
 ochraceiceps (*Pomatorhinus*), 6: 147
 ochrogenys (*Syrnium*), 3: 308
 Ochromella, 7: 138
 ochrops (*Stachyris*), 6: 171
 ochropus (*emend. ochropus*) [*Tringa*], 2: 263
 ochruros (*Phoenicurus*), 8: 253
 ocellularis (*Accentor*, *Prunella*), 9: 157
 — (*Motacilla*), 9: 294
 oedememus (*Burhinus*), 3: 1
 Oenanthe, 9: 39
 oenanthe (*Motacilla*, *Oenanthe*), 9: 44
 oenas (*Columba*), 3: 119
 Oenopopelia, 3: 140
 offinis [*Strix*] (*Motacilla*), 8: 142
 oglei (*Actinura*, *Stachyris*), 6: 177
 Olcyornis, 7: 136
 Oligura, 8: 1
 olivacea (*Cyornis*), 7: 136
 — (*Gallinula*), 2: 164
 — (*Iole*), 6: 102
 — (*Perdix*), 2: 55
 — (*Phragmatocila*), 8: 98
 olivaceum (*Dicaeum*), 10: 13
 — (*Pellorneum*), 6: 119
 olivaceus (*Cephalopyrus*), 9: 197
 olivea (*Saxicola* ? *Tesia*), 8: 3
 olor (*Anas*, *Cygnus*), 1: 137
 omahura (*Cisticola*), 8: 36
 onocrotalus (*Pelecanus*), 1: 27
 Ophryta, 2: 73
 opistholeuca (*Saxicola*), 9: 50
 optatus (*Cuculus*), 3: 211
 Oreicola, 9: 22
 oreinus (*Oreocorys*), 9: 271
 Oreocincla, 9: 82
 Oreocorys, 9: 242
 oreophila (*Oenanthe*, *Saxicola*), 9: 45
 oribatia (*Babax*), 6: 236
 orientalis (*Acrocephalus*, *Salicaria*), 8: 105
 — (*Columba*, *Streptopelia*), 3: 142
 — (*Coracias*), 4: 120
 — (*Corvus*), 5: 259
 — (*Cuculus*), 3: 226
 — (*Gulicicapa*), 7: 202
 — (*Eurystomus*), 4: 120
 — (*Gallinula*), 2: 177
 — (*Hypocolius*), 5: 268
 — (*Lophura*), 10: 118
 — (*Loxia*), 10: 118
 — (*Malacocircus*, *Turdoides*), 6: 226
 — (*Mergus*), 1: 204
 — (*Merops*), 4: 109
 — (*Munia*), 10: 118
 — (*Numenius*), 2: 246
 — (*Otis*), 2: 187
 — (*Pernis*), 1: 221
 — (*Pterocles*, *Tetrao*), 3: 86
 — (*Upupa*), 4: 128
 orinus (*Acrocephalus*, *Acrocephalus* (*stenotus*)), 8: 115
 Oriolidae, 5: 101
 Oriolus, 5: 101
 oriolus (*Coracias*, *Oriolus*), 5: 102
 orissae (*Rhipidura*), 7: 214
 — (*Turdoides*), 6: 229
 ornata (*Cissa*, *Pica*), 5: 205
 ornatus (*Falco*), 1: 258
 Orthorhamphus, 3: 4
 Orthotomus, 8: 80
 oryzivora (*Loxia*, *Padda*), 10: 119
 oscitans (*Anastomus*, *Ardea*), 1: 95
 osculans (*Haematopus*), 2: 204
 osmanoni (*Cettia*, *Horeites*), 8: 8
 — (*Pelargopsis*, *Ramphalcyon*), 4: 86
 ossifragus (*Mycerobas*), 10: 130
 ostralegus (*Haematopus*), 2: 203
 Otididae, 2: 185
 otiosus (*Dic. (urus)*, *Dissemurus*), 5: 142
 Otis, 2: 185
 Otocompsa, 6: 67
 Otocoris, 5: 32
 otoleuca (*Fringilla*), 5: 8
 Otus, 3: 255
 otus (*Asio*, *Strix*), 3: 313
 ovivorus (*Ictinaetus*), 1: 283
 Oxyura, 1: 208
 oxyura (*Columba*), 3: 94
 Pachycephala, 7: 228
 Pachyglossa, 10: 1
 pacifica see *chlororhyncha* (*Procellaria*)
 — (*Hirundo*), 4: 47
 pacificus (*Apus*), 4: 47
 Padda, 10: 119
 paganus (*Francolinus*), 2: 30
 pagodarum (*Sturnus*, *Turdus*), 5: 160
 pallasi (*Alcedo*), 4: 75
 — (*Cinclus*), 9: 142
 pallescens (*Alectoris*, *Caccabis*), 2: 18
 — (*Dendrocopos*), 4: 226
 pallescens see *intermedia* (*Ardea*, *Egretta*)
 — (*Egretta*), 10: 243
 pallida (*Butalis*), 7: 140
 — (*Columba*), 3: 123
 — [*Cr. (ypsinia)*, *Dendrocitta*], 5: 217
 — (*Hirundo*, *Prionoprogne*), 5: 56
 — (*Malacias*), 7: 129
 — (*Muscicapa*), 7: 140
 — (*Perdix*), 2: 25
 pallidifrons [*L. (aninus)*], 5: 87
 pallidior (*Culicicapa*), 7: 202
 — (*Emberiza*), 10: 230
 — (*Eriothacus*), 8: 230
 — (*Leucosticte*), 10: 154
 — (*Procygna*), 6: 156
 — (*Prinia*), 8: 42
 pallidiora (*Ianthia*), 8: 230
 pallidipes (*Cettia*, *Phylloscopus*), 8: 6
 pallidirostris (*Lanius*), 5: 81
 pallidogularis [*G. (yanacula)*, *Eriothacus*], 8: 218
 pallidus (*Apus*, *Cypselus*), 4: 45
 — (*Cettia*, *Horeites*), 8: 9
 — (*Falco*), 1: 358
 — (*Francolinus*), 2: 25
 — (*Molpastes*), 6: 86
 — (*Pericocotus*), 6: 40
 — (*Pycnonotus*), 6: 86
 — (*Tephrodornis*), 6: 10
 palliolatus (*Brachypterus*), 4: 197
 pallipes (*Muscicapa*), 7: 184
 palliseri (*Brachypteryx*, *Brachypterus*), 8: 26
 palmarum (*Cypselus*), 4: 56
 palniensis (*Prinia*), 8: 64
 — (*Zosterops*), 10: 60
 palpebrosa (*Sylvia*, *Zosterops*), 10: 57
 paludicola see *chinesis* (*Hirundo*, *Riparia*)
 palumbarius (*Falco*), 1: 232
 palumboides (*Carpophaga*, *Columba*), 3: 137
 palumbus see *casiotis* (*Columba*, *Palumbus*)
 palustre (*Pellorneum*), 6: 121
 palustris (*Megalurus*), 8: 96
 pamirensis (*Leucosticte*), 10: 152
 panayensis (*Aplonis*), 5: 149
 panderi (*Podiceps*), 5: 229
 Pandion, 1: 335
 pandoo (*Monticola*, *Petrocincla*), 9: 73
 pangpui (*Mycerobas*), 10: 130
 — (*Niltava*), 7: 176
 Panurus, 6: 195
 papilio (*Phylloscopus*), 8: 162
 papillosa (*Ibis*, *Pseudibis*), 1: 112
 papuensis (*Corvus*), 6: 13
 par (*Emberiza*), 10: 222
 paradiseus (*Cuculus*, *Dic. (urus)*), 5: 137
 paradisi (*Corvus*, *Terpsiphone*), 7: 218
 paradoxa (*Tetrao*), 3: 79
 Paradoxornis, 6: 197
 paradoxus (*Syrhaptes*), 3: 79
 — (*Tetrao*), 3: 77
 parasiticus (*Larus*, *Stercorarius*), 3: 21
 Paridae, 9: 162
 parkeri (*Francolinus*), 2: 22
 parkini (*Passer*), 10: 66
 parroti (*Centropus*), 3: 243
 Parus, 9: 164
 parva (*Muscicapa*), 7: 154
 — (*Porzana*), 2: 159
 parvula (*Dendrocitta*), 5: 220
 parvus see *oceanicus* (*Oceanites*)
 — (*Cypselus*), 4: 56
 — (*Cypsiurus*), 4: 56
 — (*Harpactes*), 4: 63
 — (*Rallus*), 2: 159
 Passer, 10: 62
 passerina (*Strix*), 3: 284
 passerinus see *querulus* (*Cacomantis*)
 — (*Cacomantis*, *Cuculus*), 3: 218
 — (*Ploceus*), 10: 88
 Pastor, 5: 151
 patia (*Orthotomus*), 8: 84
 patkaicus (*Garrulax*), 7: 16
 patriciae (*Paradoxornis*), 6: 204
 Favo, 2: 122
 pectardens [*G. (alliope)*, *Eriothacus*], 8: 228
 pectorale (*Pellorneum*), 6: 120
 pectoralis see *chalcostetha* (*Nectarinia*)
 — (*Alcippe*), 7: 136
 — (*Calliope*, *Eriothacus*), 8: 221
 — (*Erythropgia*), 8: 210
 — (*Garrulax*, *Ianthocincla*), 7: 8
 — (*Huhua*), 3: 276
 — (*Leucocircus*), 7: 214
 — (*Muscicapa*), 7: 228
 — (*Pellorneum*), 6: 120
 — (*Prinia*), 8: 45
 — (*Rallus*), 2: 149
 peguensis (*Ploceus*), 10: 101
 pekinensis (*Apus*, *Cypselus*), 4: 43
 — (*Falco*), 1: 363
 pelagica (*Hirundo*), 4: 33
 Pelargopsis, 4: 83
 pelagias [*Strix*] (*Chaetura*), 4: 33
 Pelecanidae, 1: 25
 Pelecanus, 1: 26
 Pellorneum, 6: 114
 pelopus (*Anthus*), 9: 261
 pelvica (*Tenthaca*, *Tephrodornis*), 6: 6
 pendulinus see *coronatus* (*Aegithalus*, *Remiz*)
 Pendulinus (*Motacilla*), 9: 198
 pendulinus (*Parus*), 9: 198
 penelope (*Anas*), 1: 167
 penicillatus (*Pycnonotus*), 6: 95
 peninsulae (*Accipiter*), 1: 242
 peninsularis (*Dic. (urus)*), 5: 117
 — (*Gracula*), 5: 195
 pennata (*Falco*), 1: 265
 pennatus (*Falco*, *Hieraetus*), 1: 268
 Penthocyra, 3: 215
 perates (*Phoenicurus*), 8: 258
 percnopterus (*Neophron*), 1: 310
 — (*Vultur*), 1: 310
 Perdicula, 2: 44
 Perdix, 2: 34
 perdix (*Tetrao*), 2: 34
 peregrinator (*Falco*), 1: 350
 peregrinus (*Falco*), 1: 347
 — (*Parus*, *Pericocotus*), 6: 41
 percnopterus [*Strix*] (*Vultur*), 1: 310
 pergriseus (*Tockus*), 4: 130
 Pericocotus, 6: 24
 Perisospiza, 10: 124
 perniger (*Ictinaetus*), 1: 283
 pernigra (*Aquila*), 1: 283
 Pernis, 1: 221
 permix (*Phylloscopus*), 8: 152
 perpulchra (*Halcyon*), 4: 92
 persaturatus (*Garrulus*), 5: 201
 persica (*Alaudula*, *Calandrella*), 5: 25
 — (*Merops*), 4: 104
 — (*Procellaria*), 1: 14
 persicus (*Merops*), 4: 104
 — (*Puffinus*), 1: 14
 personata see *melanops* (*Sula*)
 — (*Heliopsis*, *Podica*), 2: 184
 — (*Motacilla*), 9: 291
 Petronia, 10: 78
 petronia see *intermedia* (*Petronia*)
 Petronia (*Fringilla*), 10: 78
 petrosa (*Perdix*), 2: 17
 Petronophagus, 3: 237
 phaeniceus (*Brachypterus*), 8: 269
 — [*Strix*] (*Bradypterus*), 8: 269
 phaepus (*Numenius*, *Scolopax*), 2: 242
 Phaeon, 1: 22
 Phaethonidae, 1: 21
 phaeocephalus (*Micropterus*), 4: 178
 Phalacrocoracidae, 1: 35
 Phalacrocorax, 1: 37
 Phalaropus, 2: 321
 phasianella (*Columba*), 3: 137
 Phasianidae, 2: 4
 phayrei (*Francolinus*, *Perdix*), 2: 28
 — (*Osmotreron*, *Treron*), 3: 102
 — 29
 — (*Hypipetes*)
 — (*Merops*), 4: 106
 — (*Ploceus*), 10: 88
 phillipsi (*Alcedo*), 4: 79
 — (*Ardeola*), 1: 65
 — (*Dumetia*), 6: 182
 — (*Treron*), 3: 109
 Philomachus, 2: 318
 Phodilus, 3: 253
 phoenicea (*Ianthocincla*), 7: 63
 phoeniceus (*Garrulax*), 7: 63
 Phoeniconia, 1: 121
 phoenicoptera (*Columba*, *Treron*), 3: 106
 Phoenicopteridae, 1: 118
 Phoenicopus, 1: 118
 phoenicura (*Mirafra*), 5: 14
 phoenicoides [*Ammomanes*, *M. (irafra)*], 5: 12
 — (*Hodgsonius*), 8: 269
 — (*Lanius*, *Otomela*), 5: 88
 — (*Phoenicurus*, *Ruticilla*), 8: 253
 Phoenicurus, 8: 248
 phoenicurus (*Amaurornis*, *Gallinula*), 2: 169
 — (*Ammomanes*), 5: 14
 — (*Motacilla*, *Phoenicurus*), 8: 256
 Phragmatocila, 8: 98
 Phyllegates, 8: 80
 Phylloscopus, 8: 132
 Pica, 5: 212
 pica (*Corvus*), 5: 212
 — (*Cuculus*), 3: 194
 — (*Pica*), 5: 212
 picoides (*Heterophasia*, *Sibia*), 7: 134
 picata (*Muscicapa*), 6: 3
 — (*Oenanthe*, *Saxicola*), 9: 50
 picatus (*Hemipus*), 6: 3
 Picidae, 4: 168
 picocolor (*Hemipus*), 6: 1
 Picoides, 4: 212
 picru (*Molpastes*), 6: 83
 picta (*Perdix*), 2: 27
 pictus (*Francolinus*), 2: 27
 Picumnus, 4: 172
 Picus, 4: 181
 pilaris (*Turdus*), 9: 131
 pileata (*Alcedo*, *Halcyon*), 4: 94
 — (*Sterna*), 3: 71
 — (*Timalia*), 6: 187
 pileatus (*Anous*), 3: 71
 pinwilli (*Pomatorhinus*), 6: 130
 Piprisoma, 10: 1
 piscator (*Pelecanus*), 1: 31
 pipiloletta see *persica* (*Alaudula*, *Calandrella*)
 Pitta, 4: 250
 Pitidae, 4: 250
 placens (*Sturnus*), 3: 66
 placidus (*Charadrius*), 2: 237
 plagosus (*Cuculus*), 3: 221
 planicola (*Hypotrionchus*), 1: 353
 planorum (*Parus*), 9: 168
 Platalea, 1: 115
 platyrhynchus (*Anas*), 1: 160
 platyura (*Schoenicia*, *Thimalia*), 8: 93
 platyurus (*Bradypterus*), 8: 19
 Plegadis, 1: 113
 pleschanka (*Motacilla*, *Oenanthe*), 9: 55
 pleskei see *humilis* (*Podiceps*)
 platicus (*Buceros*, *Rhyticeros*), 4: 137, 139
 Ploceidae, 10: 62
 Ploceus, 10: 87
 plotus (*Pelecanus*, *Sula*), 1: 34
 plumbea (*Ichthyophaga*), 1: 294
 plumbeiceps (*Ichthyophaga*), 1: 294
 — (*Staphida*, *Yuhina*), 7: 99

- [illegible]

- semistriata (Lonchura, Munia), 10: 110
semitorquatus *see* Sphenurus
senator *see* niloticus (Enneocenturus, Lanius)
senegalensis *see* cambayensis (Columba, Streptopelia)
— (Alcedo), 4: 87
— (Otis), 2: 193
senegallus (Pterocles, Tetrao), 3: 84
senex (Heterornis (Pastor), Sturnus), 5: 159
separatus *see* vividus (Pericrocotus)
sepium (Orthotomus), 8: 80
septentrionalis (Aegithina), 6: 48
sericeus (Sturnus), 5: 151
Serilophus, 4: 246
Serinus, 10: 146
serinus (Fringilla), 10: 146
serrator (Mergus), 1: 206
serrator (Clamator, Cuculus), 3: 194
setifer [Cinc. (Iosoma), Garrulax], 7: 48
severtzovi (Carpodacus), 10: 183
severus (Falco), 1: 356
sharpes *see* iouschistos [Aegithalos, P. (arus)]
sharpii (Corvus), 5: 260
— [Grus, Grus (Antigone)], 2: 144
shekarii (Pelargopsis), 4: 86
sherriffi (Spelaeornis), 6: 165
shorii (Dinopium, Picus), 4: 202
Sibia, 7: 82
sibirica (Limicola), 2: 317
— (Muscicapa), 7: 142
— (Zoothera), 9: 85
sibiricus *see* middendorffii (Anser)
— (Turdus), 9: 85
siccata (Pyrrhuloxia), 5: 9
siccatus (Rhopocichla), 6: 184
sidhoutensis (Pericrocotus), 6: 42
signata (Leiothrix, Muscicapa), 7: 179
sikimensis (Dryobates), 4: 211
— (Garrulax, Grammatoptila), 7: 12
— (Irena), 6: 63
— (Regulus), 8: 198
silvanus (Caprimulgus), 4: 19
simile (Trochalopecton), 7: 22
similis (Anthus), 9: 266
— (Garrulax), 7: 22
— (Hypothymis), 7: 223
simillima (Motacilla), 9: 277
simillimus (Turdus), 9: 119
simlae (Picus), 4: 192
sinalaensis (Munia, Siva), 7: 91
— (Oreocincla), 9: 92
— (Phylloscopus), 8: 158
— (Sylviparus), 9: 192
— (Vivia), 4: 172
simplex (Sitta), 9: 224
sindiana (Mirafra), 5: 7
— (Orthotomus), 8: 81
— (Prinia), 8: 66
sindianus (Crateropus, Turdoides), 6: 224
— (Mirafra), 5: 7
— (Phylloscopus), 8: 138
— (Prinia), 8: 66
sinense (Chrysomma), 6: 190
sinensis (Ardea, Ixobrychus), 1: 86
— (Centropus, Polophilus), 3: 240
— (Oriolus, Sturnus), 5: 176
— (Parus), 6: 190
— (Pelecanus, Phalacrocorax), 1: 37
— (Riparia), 5: 49
singalensis *see* rubiginensis (Anthreptes, Chalcophaps)
— (Apus), 4: 54
— (Sylvia), 10: 19
sipahi (C. (orythius), Haematospiza), 10: 194
siparaja (Aethopyga), 10: 47
— (Ceryle), 10: 38
Siphia, 7: 137
siquiorenensis *see* maclellandi (Hypsipetes)
sirkee (Centropus, Taccocia), 3: 234
sirotensis (Prunella), 9: 152
Sitta, 9: 207
Sittidae, 9: 207
Sittiparus, 7: 109
Siva, 7: 90
skua (Catharacta), 3: 17
smyrnenis (Alcedo, Halcyon), 4: 89
socialis (Chrysocolaptes), 4: 244
— (Prinia), 8: 59
socoerensis *see* monorhis (Oceanodroma)
soemmeringii (Corvus), 5: 250
sola (Cinnyris, Nectarinia), 10: 22
solaris (Pericrocotus), 6: 36
solitaria (Capella, Gallinago), 2: 278
solitarius (Monticola), 9: 72
solocensis (Accipiter, Falco), 1: 239
somervillei (Timalia, Turdoides), 6: 228
sonivia (Argya), 6: 217
sonivus (Turdoides), 6: 217
sonneratii (Cacomantis, Cuculus), 3: 215
— (Gallus), 2: 106
sophiae (Leptopoecile), 8: 201
sordida (Emberiza), 10: 215
— (Glaucomyias, Muscicapa), 7: 196
— (Pitta), 4: 254
sordidior (Gecinus, Picus), 4: 189
sordidus (Sturnus), 5: 175
soror (Passer), 10: 63
spadicea (Gallopodix), 2: 67
— (Perdix), 2: 106
— (Tetrao), 2: 66
spadiceus *see* spadicea (Tetrao)
— (Gallus), 2: 106
— (Tetrao), 2: 67
spadix (Stachyris), 6: 176
Sparmanii (Indicator), 4: 165
sparverioidea (Cuculus), 3: 198
speciosus (Pericrocotus, Turdus), 6: 25
speculigenus (Coccothraustes, Mycerobas), 10: 128
Spelaeornis, 6: 159
spenci (Turdus), 9: 119
sperta *see* brasiliana (Ceryle, Nectarinia)
Sphenocercus, 3: 94
Sphenocichla, 6: 167
sphenura (Tetreron, Vinago), 3: 96
Sphenurus, 3: 94
spicifer (Pavo), 2: 126
spilcephalus (Ephialtes, Otus), 3: 257
spilogaster (Haematornis, Spilornis), 1: 332
spilonota (Ceryle), 9: 229
spilonotus (Circus), 1: 326
— (Parus), 9: 190
— (Salpinctes), 9: 229
spiloptera [O. (reocincla), Zoothera], 9: 91
— (Saroglossa), 5: 147
spilopterus (Lamprolornis), 5: 147
Spilornis, 1: 329
spionides (Carduelis), 10: 136
spinoletta (Anthus), 9: 268
spinosus *see* duvaucelii (Charadrius, Vanellus)
— (Charadrius), 2: 205
Spinus, 10: 133
spinus (Fringilla), 10: 133
Spizactes, 1: 258
Spizixos, 6: 66
splendens (Corvus), 5: 244
spodiogaster (Butorides), 1: 61
spodocephala *see* sordida (Emberiza)
sponosa (Anas), 1: 188
squamata (Lanthocincla), 7: 51
— (Micropus), 6: 156
squamatous (Garrulax), 7: 51
— (Picus), 4: 182
squameiceps (Malurus), 6: 213
— (Tribuna), 8: 5
Squatarola, 2: 219
squatarola (Pluvialis, Tringa), 2: 220
Stachyridopsis, 6: 168
Stachyris, 6: 168
Stactocichla, 7: 1
stagnatilis (Totanus, Tringa), 2: 259
stanfordi (Alcippe), 7: 127
— (Pycnonotus), 6: 91
stanleyi (Rhipidura), 7: 213
Staphida, 7: 90
stejnegeri [Pr. (atincola), Saxicola], 9: 29
stelleri (Ardea, Botaurus), 1: 89
stellata (Brachypteryx), 8: 204
— (Gavia), 1: 2
stellatus [Brachypteryx (Dryomorphus)], 8: 204
stenorhynchus (Pomatorhinus), 6: 147
stentoreus (Acrocephalus), 8: 101
stenura (Gallinago, Scolopax), 2: 282
stephensoni (Dryobates), 4: 213
Stercorariidae, 3: 17
Stercorarius, 3: 20
Sterna, 3: 47
stertens (Tyto), 3: 250
stevensi (Acrocephalus), 8: 115
— (Dicurus), 5: 121
— (Prinia), 8: 51
stewartii (Emberiza, Eupiza), 10: 216
— (Gallopodix), 2: 69
— (Otus), 3: 268
— (Prinia), 8: 57
— (Sturniculus), 3: 226
Stictospiza, 10: 101
Stoliczkae (Ceryle), 9: 240
stolidia (Sterna), 3: 71
stolidus *see* pilata (Sterna), pilatus (Anous)
stracheyi (Emberiza), 10: 223
straminea (Locustella), 8: 91
strepera (Anas), 1: 163
Streptopelia, 3: 140
stresemanni (Cettia, Neornis), 8: 14
— (Dryobates, Picoides), 4: 213
striata *see* dobsoni (Coracina, Graucalus)
— *see* sarudnyi (Muscicapa)
— (Lonchura, Loxia), 10: 108
— (Muscicapa), 7: 137
— (Napothera), 6: 153
— (Scotocerca), 8: 77
striaticollis (Alcippe, Siva), 7: 118
striatula (Prinia), 8: 69
Striatulus (Blandfordius (sic)), 8: 69
striatulus (Blanfordius), 8: 69
striatus *see* chloriceps (Ardea, Butorides)
— (Chactornis, Megalurus?), 8: 94
— (Cossyphus, Turdoides), 6: 230
— (Euplectes), 10: 98
— (Garrulax, Garrulus), 7: 10
— (Malacocircus), 6: 234
— (Melospiza), 8: 77
— (Pycnonotus, Trichophorus), 9: 92
— (Turdinus), 6: 153
stricklandi (Brachypternus, Chrysocolaptes), 4: 245
strictus (Picus), 4: 239
stridula (Strix), 3: 303
Strigidae, 3: 248
strigula (Munia, Siva), 7: 92
striolata *see* mayri (Hirundo)
— [Emberiza, F. (ringilla)], 10: 229
striolatus (Anthus), 9: 259
— (Gecinus), 4: 184
— (Picus), 4: 184
Strix, 3: 303
strophia (Muscicapa, Siphia), 7: 159
— (Prunella), 9: 154
strophiatius [A. (centor)], 9: 154
struthersi (Ibidorhyncha), 2: 334
stuartbakeri (Saxicoloides), 9: 61
stupae (Parus), 9: 169
Sturnia, 5: 151
Sturnidae, 5: 146
sturnina (Gracula), 5: 162
sturninus (Sturninus), 5: 162
Sturnopastor, 5: 151
Sturnornis, 5: 151
Sturnus, 5: 151
styani (Monarcha, Siphia), 7: 223
subbicolor (Turdus), 9: 108
subbuteo (Falco), 1: 352
subcaeruleus (Garrulax), 7: 34
subcorax (Corvus), 5: 262
subcristata (Emberiza), 10: 232
subflava (Prinia), 8: 52
subflavum (Dicacum), 10: 14
subfurcatus (Apus, Cypselus), 4: 55
subgrisea (Melanocorypha), 5: 30
subhimachala (Propyrrhula), 10: 192
Subhimachalanus (Corythus?), 10: 192
subminuta (Tringa), 2: 305
subminutus (Calidris), 2: 305
subobscurus (Merula), 9: 126
subpallidus (Turdus), 9: 125
subrubra (Muscicapa), 7: 157
subrufa (Timalia), 6: 222
subruficollis (Tringa, Tryngites), 2: 317
subrufus (Turdoides), 6: 222
subscotata (Cotyle), 5: 49
subsquamatous (Trochalopecton), 7: 51
substriolata (Lillia), 5: 66
subtelphonus (Cuculus), 3: 207
subtilis (Alauda), 5: 43
subulata (Carduelis, Fringilla), 10: 134
subundulata (Lonchura, Munia), 10: 115
subunicolor (Garrulax, Trochalopecton), 7: 53
subviridis (Parus), 9: 191
— (Phylloscopus, Reguloides), 8: 157
Sula, 1: 31
sula *see* rubripes (Sula)
sulphurea (Aegithina), 6: 53
Sulidae, 1: 31
sultanea (Melanochlora), 9: 162
sultaneus (Chrysocolaptes, Picus), 4: 242
— (Parus), 9: 162
sumatrana (Melanochlora), 9: 162
— (Sterna), 3: 56
sundara (Muscicapa, Niltava), 7: 181
sunia (Otus, Scops), 3: 262
superba (Ceryle), 10: 21
superillaris (Abornis), 8: 190
— (Abornis), 8: 190
— [D. (imorpha)], 7: 163
— (Muscicapa), 7: 168
— (Rallus), 2: 155
— (Sturnopastor, Sturnus), 5: 175
superillaris (Xiphirhynchus), 6: 149
superilliosa (Motacilla), 8: 156
— (Ophrysia), 2: 73
superilliosus (Mergus), 4: 104
— (Rollulus), 2: 73
— (Tephrodornis), 7: 228
suratensis (Columba, Streptopelia), 3: 152
surinamensis (Sterna), 3: 38
Surniculus, 3: 224
suschkini (Gavia, Urinator), 1: 1
susicator (Turnix), 2: 132
sushkini (Prunella), 9: 156
Suthora, 6: 197
sutoria (Motacilla), 8: 85
sutorius (Orthotomus), 8: 85
Suya, 8: 37
svecica (Motacilla), 8: 217
svecicus (Eritacus), 8: 217
syama (Aves, Baza), 1: 220
sykesi (Coracina, Lalage), 6: 22
— (Hypothymis), 7: 223
sylvana (H. (eterura)), 9: 271
sylvanus (Anthus), 9: 271
sylvatica *see* dussumieri (Hemipodius, Turnix)
— (Acanthylis, Chaetura), 4: 37
— (Columba, Ductula), 3: 111
— (Prinia), 8: 64
sylvaticus (Tetrao), 2: 127
Sylvestris (Munia), 5: 160
sylvester (Sturnus), 5: 160
— (Temnuchus), 5: 160
Sylvia, 8: 121
sylvicola (Tephrodornis), 6: 8
Sylviparus, 9: 192
Sypheotides, 2: 195
Syrmaticus, 2: 119
Syrmium, 3: 308
Syrrhaptes, 3: 77
szechenyi (Tetraophasis), 2: 16
tabuensis (Lanius), 5: 148
Taccocia, 3: 234
tacksanowskia (sic) [Micropalama], 2: 276
tacsanowskia (Locustella), 8: 24
tacsanowskii (Bradypterus), 8: 24
taczanowskii (Montifringilla, Onychospiza), 10: 84
— (Riparia), 5: 49
Tadorna, 1: 141
tadorna (Anas, Tadorna), 1: 144
taeniura (Ceryle), 9: 236
tahitica (Hirundo), 5: 61
taigour (Hemipodius, Turnix), 2: 133
taiyrensis (Larus), 3: 26
taivana (Budytes, Motacilla), 9: 281
tanki (Turnix), 2: 129
tantus (Chrysocolaptes), 4: 241
taprobana (Alcedo), 4: 77
taprobana (Clamator), 3: 197
— (Turdoides), 6: 234
tarda *see* dybowskii (Otis)
— (Otis), 2: 185
Tarsiger, 8: 213
taylori (Carduelis, Hypacanthus), 10: 138
Tchitra, 7: 216
tectirostris [(Bhringa), Dicurus], 5: 128
teesa (Butastur, Circus), 1: 257
tehninae (Brachypternus, Dinopium), 4: 199
telphonus (Cuculus), 3: 208
Temenuchus, 5: 151
temminckii (Calidris, Tringa), 2: 303
— (Lillia), 5: 67
— (Myiophonus, Myophonus), 9: 79
— (Satyra, Tragopan), 2: 86
tenebrarum (Arborophila), 2: 61
tenebricola (Zoothera), 9: 101
tenebrosa (Zoothera), 9: 104
tenellipes (Phylloscopus), 8: 171
tengmalmi (Strix), 3: 316
tenuiostris *see* worcesteri (Anous, Micranous)
— (Calidris, Totanus), 2: 297
— (Cinclus), 9: 142
— (Cuculus), 3: 220
— (Gyps), 1: 306
— (Oriolus), 5: 106
— (Polyphasia), 3: 220
— (Procellaria), 1: 13
— (Puffinus), 1: 13
tephrocephalus (Culicipeta, Seicercus), 8: 184
tephrocotis [Linaria (Leucosticta)], 10: 148
tephrodrias (Seicercus), 8: 187
Tephrodornis, 6: 5
tephronota (Sitta), 9: 222
tephronotus (Collurio, Lanius), 5: 92
terek (Scolopax, Tringa), 2: 269
terpsinus (Phylloscopus), 8: 178
Terpsiphone, 7: 216
terricolor (Butalis), 7: 145
— (Dryomorphus, Prinia), 8: 52
Terricor [M. (alacocercus)], 6: 230
terrignotae (Tringa), 2: 257
tesicola (Emberiza), 10: 229
Tesia, 8: 1
testacea (Scolopax), 2: 310
— (Calidris), 2: 310
testaceus (Ammomanes), 5: 16
Tetraogallus, 2: 10
Tetraophasis, 2: 16
Tetrax, 2: 185
tetrax (Otis), 2: 185
thai (Pericrocotus), 6: 44
— (Tephrodornis), 6: 11
Thalassus, 3: 47
thalassina (Muscicapa), 7: 198
thalia (Siva), 7: 95
theresae (Sylvia), 8: 130
therophilus [G. (ichlops)], 9: 259
— [Corydalla (A.)], 9: 259
thibetana (Carduelis, Chrysomitris), 10: 139
thoracica [D. (umeticta)], 8: 21
— (Perdix), 2: 64
thoracicus (Bradypterus), 8: 21
Threkiornis, 1: 110
Threkiornithidae, 1: 109
Thringorhina, 6: 168
thunbergi (Motacilla), 9: 276
thura (Carpodacus), 10: 177
tianshanicus (Cyanistes, Parus), 9: 177
tianshanica (Cyanosylvia), 8: 221
tibetana (Anorthura), 9: 137
— (Calandrella), 5: 24
— (Prunella), 9: 156
— (Riparia), 5: 49
— (Sterna), 3: 51
tibetanus (Accentor), 9: 156
— (Bubo), 3: 272
— (Corvus), 5: 264
— [Ithagenes (sic), Ithagenis], 2: 78
— (Parus), 9: 171
— (Passer), 10: 72
— (Phylloscopus), 8: 147
— (Syrrhaptes), 3: 77
— (Tetraogallus), 2: 11
tibetensis (Corvus), 5: 256
— (Sitta), 9: 210
ticehursti (Rhyticeros), 4: 137
Tichodroma, 9: 226
tickelli *see* assamensis (Dryomorphus, Trichastoma)
— (Ptilonopus), 4: 134
— (Buceros), 4: 133
Tickellia, 8: 190
tickelliae [C. (ornis), Muscicapa], 7: 193
tigrina (Columba, Streptopelia), 3: 154
Timalia, 6: 187
tinnunculus (Falco), 1: 365
tiphia (Aegithina, Motacilla), 6: 49
titania (Yuhina), 7: 107
titar (Francolinus), 2: 30
tobata (sic) [Tringa], 2: 323
Tockus, 4: 129
toklao (Megalurus, Turdus), 8: 96
tomensis (Muscicapa), 7: 154
tonglensis (Carduelis), 10: 181
Torgos, 1: 296
torquata (Melanocorypha), 5: 29
— (Saxicola), 9: 25
torqueola (Arborophila, Perdix), 2: 57
— (Siva), 7: 90
torquella (Jynx), 4: 168
torringtoni (Columba), 3: 134
Totanus, 2: 254
totanus (Scolopax, Tringa), 2: 257
toulou *see* bengalensis (Centropus, Cuculus)
toxostomina (Stactocichla), 7: 38
toxostomus (Garrulax), 7: 38
tracheliotus (Vultur), 1: 296
Tragopan, 2: 79
tralli (Oriolus, Pastor), 5: 112
tranquebarica (Columba, Streptopelia), 3: 149
transcaspicus (Motacilla), 9: 72
— (Passer), 10: 68
transsylvialis (Paradoxornis, Scaerophorus), 6: 209
transuga (Gymnorhis, Petronia), 10: 78
transvolgensis (Cryptoglaux), 3: 317
travancorensis (Ceryle), 4: 73
— (Macholophus, Parus), 9: 189
— (Ploceus), 10: 92
— (Pomatorhinus), 6: 135
travancoriensis (Anthus), 9: 267
Trenon, 3: 94
Tribuna, 8: 19
Trichastoma, 6: 126
tricolor [(Collurio, Lanius), 5: 96
— [D. (ignea)], 7: 170
— (Muscicapa), 7: 170
tridactyla (Alcedo), 4: 80
tridactylus (Picoides), 4: 234
— (Picus), 4: 212
trifasciatus (Carpodacus), 10: 183
trigonostigma *see* rubropygium (Dicacum)
Tringa, 2: 254

CONSOLIDATED INDEX: ENGLISH NAMES

- Accentor, Altai, 9: 148
 —, Eastern Alpine, 9: 147
 —, Rufousbreasted, 9: 154
 —, Garhwal Alpine, 9: 146
 —, Maroonbacked, 9: 160
 —, Radde's, 9: 157
 —, Robin, 9: 150
 —, Siberian, 9: 160
 —, Tibet Brown, 9: 156
 —, Turkestan Alpine, 9: 145
 —, Blackthroated, 9: 158
 —, Brown, 9: 155
 —, Ural Blackthroated, 9: 159
 —, Western Rufousbreasted, 9: 152
 Accentors or 'Hedge Sparrows', 9: 145
 Adjutant, Lesser or Haircrested, 1: 107
 —, Stork, 1: 105
 Avadavat or Red Munia, 10: 101
 Avocet, 2: 332
 Avocet-Sandpiper *see* Sandpiper
 Avocets, Sulis, Ibisbill, 2: 328

 Babax, Chinese, 6: 236
 —, Giant, 6: 237
 Babbler, Abbott's, 6: 127
 —, Afghan, 6: 214
 —, Assam Blackthroated, 6: 176
 —, Brown, 6: 125
 —, Coralbilled Scimitar, 6: 146
 —, Goldenbreasted Tit-, 7: 111
 —, Quaker, 7: 124
 —, Redfronted, 6: 169
 —, Redthroated Tit-, 7: 120
 —, Rustycheeked Scimitar, 6: 143
 —, Slenderbilled Scimitar, 6: 151
 —, Spotted, 6: 119
 —, Whitebrowed Tit-, 7: 116
 —, Austen's Small Wren-, 6: 154
 —, Spotted, 6: 177
 —, Bearded Tit-, or Reedling, 6: 195
 —, Bengal Jungle, 6: 230
 —, Blackchinned, 6: 171
 —, Blackheaded, 6: 183
 —, Blackthroated, 6: 174
 —, Bombay Jungle, 6: 228
 —, Quaker, 7: 122
 —, Brown-capped, 6: 122
 —, Brown Wren-, 6: 158
 —, Cachar Rufousnecked Scimitar, 6: 140
 —, Ceylon Dry-Zone Blackheaded, 6: 184
 —, Rufous, 6: 231
 —, Wet Zone Blackheaded, 6: 185
 —, Whiteheaded, 6: 234
 —, Whitethroated, 6: 182
 Babbler, Ceylon Yellow-eyed, 6: 192
 —, Chestnutfronted Shrike-, 7: 80
 —, Chestnut-headed Tit-, 7: 113
 —, Chestnut-throated Shrike-, 7: 79
 —, Chin Hills Goldenheaded, 6: 173
 —, — Green Shrike-, 7: 78
 —, — Longtailed Wren-, 6: 164
 —, Quaker, 7: 127
 —, Common, 6: 215
 —, Ceylon Scimitar, 6: 136
 —, Deccan Scimitar, 6: 134
 —, Dusky Brown-capped, 6: 124
 —, Green or Yellowthroated Tit-, 7: 112
 —, East Himalayan Slatyheaded Scimitar, 6: 131
 —, Eastern Green Shrike-, 7: 77
 —, — Scalybreasted Wren-, 6: 156
 —, — Whitebrowed Tit-, 7: 116
 —, Grant's Wren-, 6: 155
 —, Himalayan Brownheaded Tit-, 7: 117
 —, Goldenbreasted Tit-, 7: 110
 —, Redthroated Tit-, 7: 119
 —, Hume's, 6: 194
 —, Kerala Blackheaded, 6: 183
 —, Rufous, 6: 223
 —, Scimitar, 6: 135
 —, Spotted, 6: 119
 —, Lakhimpur Slatyheaded Scimitar, 6: 133
 —, Spotted, 6: 120
 —, Large Grey, 6: 220
 —, Scimitar, 6: 144
 —, Longbilled Wren-, 6: 151
 —, Longtailed Wren-, 6: 162
 —, Malabar Jungle, 6: 228
 —, Mandelli's or Sikkim Spotted, 6: 116
 —, Manipur Brownheaded Tit-, 7: 118
 —, — Longbilled Scimitar, 6: 148
 —, Spotted, 6: 121
 —, Marsh Spotted, 6: 121
 —, Mishmi Blackthroated, 6: 176
 —, Brown, 6: 126
 —, Longbilled Scimitar, 6: 147
 —, Quaker, 7: 126
 —, Slatyheaded Scimitar, 6: 132
 —, Spotted, 6: 120
 —, Wren-, 6: 161
 —, Mizo Coralbilled Scimitar, 6: 147
 —, Mount Abu Scimitar, 6: 133
 —, — Whitethroated, 6: 178
 —, Nagaland Blackthroated, 6: 177
 —, Nepal Goldenheaded, 6: 172
 —, Quaker, 7: 125
 —, Rufousnecked Scimitar, 6: 138
 Babbler, Nepal Whitebrowed Tit-, 7: 115
 —, Nilgiri Quaker, 7: 123
 —, Orissa Jungle, 6: 229
 —, Pale Brown-capped, 6: 123
 —, Peninsular Jungle, 6: 226
 —, Spotted, 6: 117
 —, Red-capped, 6: 187
 —, Redheaded, 6: 170
 —, Redwinged Shrike-, 7: 74
 —, Rufous, 6: 222
 —, Rufousbellied, 6: 181
 —, Shrike-, 7: 73
 —, Rufousheaded Tit-, 7: 121
 —, Sikkim Coralbilled Scimitar, 6: 145
 —, — Rufousnecked Scimitar, 6: 139
 —, Sind, 6: 192
 —, Jungle, 6: 224
 —, Slenderbilled, 6: 219
 —, Scimitar, 6: 149
 —, Southern Ceylon Scimitar, 6: 137
 —, Spiny, 6: 234
 —, Spotted Longtailed Wren-, 6: 165
 —, Short-tailed Wren-, 6: 166
 —, Streaked Longtailed Wren-, 6: 163
 —, Wren-, 6: 153
 —, Streakthroated Tit-, 7: 118
 —, Striated, 6: 218
 —, Tailed Wren-, 6: 160
 —, Tamil Nadu Scimitar, 6: 136
 —, Tickell's, 6: 126
 —, West Himalayan Rustycheeked Scimitar, 6: 141
 —, — Slatyheaded Scimitar, 6: 130
 —, Western Green Shrike-, 7: 76
 —, Scalybreasted Wren-, 6: 156
 —, Spotted, 6: 115
 —, Striated, 6: 217
 —, Whitebrowed Tit-, 7: 114
 —, Yellow-eyed, 6: 189
 —, Whiteheaded, 6: 232
 —, Shrike-, 7: 81
 —, Whitethroated, 6: 179
 —, Yellowbreasted, 6: 185
 —, Yellow-eyed, 6: 190
 Babblers, 6: 114, 7: 1
 Barbet, Bluethroated, 4: 158
 —, Crimsonbreasted, or Coppermith, 4: 163
 —, Crimsonthroated, 4: 161
 —, Goldenthroated, 4: 157
 —, Great, 4: 147
 —, Indian Blue-eared, 4: 160
 —, Large Green, 4: 150
 —, Lineated, 4: 153
 —, Small Green, 4: 155
 —, Yellowfronted, 4: 157
 Barbets, 4: 146
 Barwing, Assam, 7: 85
 —, Eastern Hoary, 7: 88
 —, Himalayan, 7: 83
 —, Manipur, 7: 89
 —, Mishmi, 7: 84
 —, Mizo, 7: 85
 —, NEFA, 7: 88
 —, Nepal Hoary, 7: 86
 Baya, Eastern, 10: 93
 —, Finn's, 10: 96
 —, Finn's, 10: 90
 —, Indian, 10: 88
 —, Travancore, 10: 92
 Bayas, 10: 87
 Baza, Andaman Blackcrested, 1: 221, 370
 —, Blyth's, or Northern Brown Lizard Hawk, 1: 215
 —, Burmese Blackcrested, or Lizard Hawk, 1: 220
 —, Indian Blackcrested, or Lizard Hawk, 1: 218
 —, Legge's, or Southern Brown Lizard Hawk, 1: 216
 Bee-eater, Bluebearded, 4: 112
 —, Bluechecked, 4: 104
 —, Bluetailed, 4: 106
 —, Chestnutheaded, 4: 99
 —, European, 4: 102
 —, Small Green, 4: 108
 Bee-eaters, 4: 98
 Bittern, 1: 89
 —, Black, 1: 88
 —, Chestnut, 1: 84
 —, Little, 1: 83
 —, Malay or Tiger, 1: 80
 —, Nicobar Tiger, 1: 82
 —, Yellow, 1: 86
 Bitterns, Herons, Egrets, 1: 49
 Blackbird, Blackcapped, 9: 117
 —, Bourdillon's, 9: 120
 —, Ceylon, 9: 121
 —, Eastern Ghats, 9: 119
 —, Greywinged, 9: 112
 —, Nilgiri, 9: 119
 —, Tibetan, 9: 116
 —, Turkestan, 9: 115
 —, Whitecollared, 9: 110
 Bluebird, Fairy, 6: 63
 Blue Jays, 4: 113
 Bluethroat, Central Asian, 8: 221
 —, Ladakh, 8: 220
 —, Northern, 8: 217
 Bluethroat, Turkestan, 8: 218
 Booby, Brown, 1: 34
 —, Masked, 1: 32
 —, Redfooted, 1: 33
 Boobies, 1: 31
 Brainfever Bird or Common Hawk-Cuckoo, 3: 200
 Brambling, 10: 122
 Broadbill, Collared, 4: 247
 —, Longtailed, 4: 248
 Broadbills, 4: 246
 Bulbul, Andaman Blackheaded, 6: 70
 —, Redwhiskered, 6: 80
 —, Assam Black, 6: 114
 —, Redwhiskered, 6: 80
 —, Bengal Redvented, 6: 90
 —, Redwhiskered, 6: 79
 —, Blackcapped Yellow, 6: 74
 —, Blackcrested Yellow, 6: 72
 —, Blackheaded, 6: 68
 —, Blyth's, 6: 96
 —, Brown-eared, 6: 108
 —, Burmese Redvented, 6: 91
 —, Central Indian Redvented, 6: 86
 —, Ceylon Black, 6: 113
 —, Redvented, 6: 89
 —, Whitebrowed, 6: 99
 —, Yellowbrowed, 6: 106
 —, Finchbilled, 6: 66
 —, Greyheaded, 6: 70
 —, Himalayan Black, 6: 110
 —, Hume's White-eared, 6: 83
 —, Kumaon Redwhiskered, 6: 75
 —, Mishmi Striated Green, 6: 94
 —, Nicobar, 6: 103
 —, North Sahyadri Yellowbrowed, 6: 104
 —, Olive, 6: 102
 —, Orissa Redvented, 6: 90
 —, Punjab Redvented, 6: 85
 —, Rajasthan Redwhiskered, 6: 76
 —, Redvented, 6: 87
 —, Rubythroated Yellow, 6: 73
 —, Rufousbellied, 6: 107
 —, Shrike-, or Grey Hypocolius, 5: 268
 —, South Indian Black, 6: 112
 —, Southern Redwhiskered, 6: 77
 —, Striated Green, 6: 92
 —, Whitebrowed, 6: 98
 —, Whitechecked, 6: 83
 —, White-eared, 6: 81
 —, Whitethroated, 6: 100
 —, Yellowbrowed, 6: 105
 —, Yellow-eared, 6: 95
 —, Yellowthroated, 6: 94
 Bulbuls, 6: 65
 Bullfinch, Beavan's, 10: 199
 —, Chinese Brown, 10: 199
 —, Nepal Brown, 10: 197
 —, Orange, 10: 202
 Bullfinch, Redheaded, 10: 201
 —, Trumpeter, 10: 155
 Bunting, Amur Greyheaded, 10: 227
 —, Blackfaced, 10: 215
 —, Blackheaded, 10: 207
 —, Central Asian Reed, 10: 230
 —, Chestnut, 10: 211
 —, Corn, 10: 205
 —, Crested, 10: 232
 —, Greynecked, 10: 219
 —, Himalayan Rock, 10: 223
 —, Indian Greyheaded, 10: 225
 —, Little, 10: 228
 —, Oortolan, 10: 219
 —, Pine, 10: 206
 —, Redheaded, 10: 209
 —, Striolated, 10: 229
 —, Thickbilled Reed, 10: 232
 —, Tibetan Rock, 10: 224
 —, Transcaspian Rock, 10: 222
 —, Whitcapped, 10: 216
 —, Yellowbreasted, 10: 213
 —, Yunnan Rock, 10: 225
 Bush Quail *see* Quail
 —, Robin *see* Robin
 —, Warbler *see* Warbler
 Bustard, Eastern Little, 2: 187
 —, Great, 2: 186
 —, Indian, 2: 188
 —, Houbara, 2: 191
 Bustard-Quail *see* Quail
 Bustards, 2: 185
 'Butcher Birds' or Shrikes, 5: 78
 Button Quail *see* Quail
 Buzzard, 1: 255
 —, Crested Honey, 1: 222
 —, Desert, 1: 254
 —, Longlegged, 1: 252
 —, Siberian Honey, 1: 221
 —, Upland, 1: 253
 Buzzard-Eagle *see* Eagle
 Chaffinch, 10: 121
 Chat, Barnes's, 9: 48
 —, Brown Rock, 9: 20
 —, Burmese Pied Bush, 9: 34
 —, Ceylon Pied Bush, 9: 35
 —, Dark-grey Bush, 9: 37
 —, East Siberian Collared Bush, 9: 29
 —, Hodgson's Bush, 9: 24
 —, Hooded, 9: 52
 —, Hume's, 9: 53
 —, Indian Blue, 8: 226
 —, Collared Bush, 9: 28
 —, Isabelline, 9: 40
 —, Japanese Blue, 8: 233
 —, Jerdon's Bush, 9: 36
 —, Nilgiri Pied Bush, 9: 34
 —, Northern Pied Bush, 9: 32
 —, Pied, 9: 50
 Chat, Pleschanka's, 9: 55
 —, Redtailed, 9: 42
 —, River, or Whitecapped Redstart, 9: 57
 —, Rufous, or Greybacked Warbler, 8: 210
 —, Siberian Blue, 8: 229
 —, Stoliczka's Bush, 9: 23
 —, Tibetan Collared Bush, 9: 27
 —, West Siberian Collared Bush, 9: 26
 —, Whitetailed Bush, 9: 30
 Chats, 8: 203, 9: 1
 Chiffchaff, Brown, 8: 137
 —, European, 8: 136
 —, Sind, 8: 138
 Chloropsis, Ceylon Goldfronted, 6: 58
 —, Goldmantled, 6: 62
 —, Jerdon's, 6: 60
 —, Northern Goldfronted, 6: 55
 —, Orangebellied, 6: 59
 —, Southern Goldfronted, 6: 57
 Chough, East Himalayan Redbilled, 5: 241
 —, Himalayan Yellowbilled or Alpine, 5: 236
 —, Hume's Ground, 5: 229
 —, West Himalayan Redbilled, 5: 239
 Chukor, Northern, 2: 18
 —, Partridge, 2: 18
 —, Persian, 2: 17
 Cochoa, Green, 9: 18
 —, Purple, 9: 16
 Coot, 2: 180
 Coots, Rails, 2: 148
 Coppermith or Crimsonbreasted Barbet, 4: 163
 Cormorant, Large, 1: 37
 —, Little, 1: 41
 —, Pygmy, 1: 42
 Cormorants and Darters, 1: 35
 Corn-crake or Landrail, 2: 158
 Coucal or Common Crow-Pheasant, 3: 240
 —, Ceylon, 3: 245
 —, Lesser, 3: 246
 Courser, Creamcoloured or Desert, 3: 8
 —, Indian, 3: 9
 —, Jerdon's or Doublebanded, 3: 11
 Coursers (Courier Plovers), Pratincoles, 3: 7
 Crane, Andaman Banded, 2: 157
 —, Brown, 2: 167
 —, Eastern Baillon's, 2: 160
 —, Elwes's, 2: 166
 —, Indian or Slatylegged Banded, 2: 155
 —, Little, 2: 159
 —, Malayan or Redlegged Banded, 2: 154
 —, Northern Ruddy, 2: 164
 —, Southern Ruddy, 2: 165
 —, Spotted, 2: 162
 Crane, Blacknecked, 2: 139
 —, Burmese Sarus, 2: 144
 —, Demoiselle, 2: 146
 —, Eastern Common, 2: 136
 —, Hooded, 2: 140
 —, Indian Sarus, 2: 141
 —, Siberian or Great White, 2: 144
 Cranes, 2: 135
 Creeper, Himalayan Tree, 9: 237
 —, Indian Spotted Grey, 9: 229
 —, Kashmir Tree, 9: 232
 —, Mandelli's Tree, 9: 233
 —, Manipur Tree, 9: 239
 —, Nepal Tree, 9: 240
 —, Rajasthan Spotted Grey, 9: 229
 —, Sikkim Tree, 9: 238
 —, Tibetan Tree, 9: 234
 —, Turkestan Tree, 9: 236
 —, Wall, 9: 226
 —, West Himalayan Tree, 9: 234
 —, Nepal Tree, 9: 237
 Creepers and Nuthatches, 9: 207
 —, Spotted, 9: 229
 —, Tree, 9: 231
 —, Wall, 9: 226
 Crossbill, 10: 190
 Crow, Ceylon House, 5: 246
 —, Eastern Carrion, 5: 259
 —, Hooded, 5: 260
 —, Jungle, 5: 254
 —, Himalayan Jungle, 5: 252
 —, Indian House, 5: 244
 —, Jungle, 5: 256
 —, King, or Ceylon Black Drongo, 5: 118
 —, or North Indian Black Drongo, 5: 114
 —, or South Indian Black Drongo, 5: 117
 —, Maldiva House, 5: 247
 —, Sind House, 5: 243
 —, Tibetan Jungle, 5: 256
 Crow-Pheasant, Andaman, 3: 244
 —, Common, or Coucal, 3: 240
 —, East Pakistan, 3: 242
 —, Southern, 3: 243
 Crows, Magpies, Jays, etc., 5: 198
 Cuckoo, 3: 208
 —, Asiatic, 3: 207
 —, Ceylon Baybanded, 3: 217
 —, Drongo-, 3: 226
 —, Hawk-, 3: 202
 —, Pied Crested, 3: 197
 —, Common Hawk-, or Brainfever Bird, 3: 200
 —, Eastern Sirkeer, 3: 236
 —, Emerald, 3: 221
 —, Himalayan, 3: 211
 —, Hodgson's Hawk-, 3: 203
 —, Horsfield's, 3: 213, 319
 —, Indian, 3: 204
 Cuckoo, Indian Baybanded, 3: 215
 —, Drongo-, 3: 224
 —, Plaintive, 3: 218
 —, Khasi Hills, 5: 210
 —, Large Hawk-, 3: 198
 —, Pied Crested, 3: 194
 —, Redwinged Crested, 3: 192
 —, Rufousbellied or Burmese Plaintive, 3: 220
 —, Small, 3: 213
 —, Southern Sirkeer, 3: 237
 —, Violet, 3: 223
 —, Western Sirkeer, 3: 234
 Cuckoo-Dove *see* Dove
 Cuckoos, 3: 191
 Cuckoo-Shrike *see* Shrike

- , Karakoram or Hume's Short-toed, 5: 23
 —, Ladakh Longbilled Calandra, 5: 30
 —, Large Desert, 5: 16
 —, Longbilled Horned, 5: 34
 —, Madras Bush, 5: 5
 —, Malabar Crested, 5: 39
 —, Pamir Horned, 5: 33
 —, Persian Rufoustailed Finch-, 5: 13
 —, Short-toed, 5: 25
 —, Redwinged Bush, 5: 7
 —, Rufous Short-toed, 5: 21
 —, Saurashtra Sand, 5: 27
 —, Sikkim or Elwes's Horned, 5: 35
 —, Longbilled Calandra, 5: 31
 —, Sind Redwinged Bush, 5: 7
 —, Singing Bush, 5: 2
 —, Southern Rufoustailed Finch-, 5: 16
 —, Tibet Short-toed, 5: 24
 —, Yarkand Short-toed, 5: 19
 Larks, 5: 1
 Laughing Thrush *see* Thrush
 Leaf Birds, 6: 47
 Leaf Warbler *see* Warbler
 Leiothrix, Eastern Redbilled, 7: 68
 —, Western Redbilled, 7: 67
 Linnet, Eastern, 10: 141
 Lizard Hawk *see* Baza and/or Hawk
 Loons, Divers, 1: 1
 Lorikeet, Ceylon, 3: 190
 —, Indian, 3: 188
 Magpie, Burmese Redbilled Blue, 5: 212
 —, Ceylon Blue, 5: 205
 —, Eastern Yellowbilled Blue, 5: 208
 —, Green, 5: 204
 —, Himalayan Redbilled Blue, 5: 209
 —, Kashmir or Whiterumped, 5: 213
 —, Tibet or Blackrumped, 5: 215
 —, Western Yellowbilled Blue, 5: 207
 Magpie-Robin *see* Robin
 Magpies, Crows, Jays, etc., 5: 198
 Malkoha-, Burmese Large Greenbilled, 3: 232
 —, Large Greenbilled, 3: 231
 —, Redfaced, 3: 238
 Malkoha, Small Greenbilled, 3: 233
 Mallard, 1: 160
 Marsh Warbler *see* Warbler
 Martin, Crag, 5: 53
 —, Dusky Crag, 5: 55
 —, Eastern Collared Sand, 5: 51
 —, European House, 5: 74
 —, Indian Greythroated Sand, 5: 51
 —, Kashmir House, 5: 75
 —, Nepal House, 5: 76
 —, Pale Crag, 5: 56
 —, Siberian Collared, 5: 49
 Megapode, North Nicobar, 2: 1
 —, South Nicobar, 2: 3
 Megapodes, 2: 1
 Merganser, Common, or Goosander, 1: 203
 —, Eastern, 1: 204
 —, Redbreasted, 1: 206
 Merlin, North Asiatic, 1: 357
 —, Pallid, 1: 358
 —, Redheaded, 1: 359
 Mesia, Assam Silvercrested, 7: 66
 —, Burmese Silvercrested, 7: 67
 —, Himalayan Silvercrested, 7: 65
 Minivet, Andaman Scarlet, 6: 27
 —, Ashy, 6: 39
 —, Burmese Scarlet, 6: 28
 —, East Himalayan Longtailed, 6: 34
 —, Indian Scarlet, 6: 29
 —, Eastern Small, 6: 44
 —, Malabar Small, 6: 43
 —, Nagaland Longtailed, 6: 35
 —, North Indian Scarlet, 6: 25
 —, Northern Small, 6: 41
 —, Peninsular Indian Scarlet or Orange, 6: 27
 —, Rosy, 6: 37
 —, Shortbilled, 6: 30
 —, Sind Small, 6: 40
 —, Southern Small, 6: 42
 —, Western Small, 6: 43
 —, White-throated, 6: 32
 —, Yellow-bellied, 6: 31
 Minivets, 6: 1
 Minla, Redtailed, 7: 90
 Moorhen, Baluchi Purple, 2: 178
 —, Indian, 2: 175
 —, Purple, 2: 178
 —, Malay, 2: 177
 Munia, Andaman Whitebacked, 10: 110
 —, Burmese Spotted, 10: 115
 —, Ceylon Hill, 10: 112
 —, Eastern Blackheaded, 10: 117
 —, Green, 10: 103
 —, Indian Spotted, 10: 113
 —, Jerdon's Rufousbellied, 10: 111
 —, Nepal Blackheaded, 10: 116
 —, Nicobar Whitebacked, 10: 110
 —, Red, or Avadavat, 10: 101
 —, Southern Blackheaded, 10: 118
 —, Whitebacked, 10: 108
 —, Whitebacked, 10: 107
 —, White-throated, 10: 105
 Myna, Andaman Hill, 5: 196
 —, Whiteheaded, 5: 156
 —, Bank, 5: 181
 —, Blackheaded or Brahminy, 5: 160
 —, Burmese Pied, 5: 175
 —, Ceylon, 5: 180
 —, Hill, 5: 197
 —, Whiteheaded, 5: 159
 —, Chinese or Greybacked, 5: 176
 —, Collared, 5: 168
 —, Daurian, 5: 162
 —, Eastern Hill, 5: 195
 —, Jungle, 5: 186
 —, Pied, 5: 175
 —, Goldcrested, 5: 189
 —, Greyheaded, 5: 152
 —, Indian, 5: 177
 —, Pied, 5: 172
 —, Kachal Whiteheaded, 5: 158
 —, Nicobar Whiteheaded, 5: 157
 —, Northern Hill, 5: 191
 —, Jungle, 5: 183
 —, Orangebilled Jungle, 5: 187
 —, Southern Hill, 5: 194
 —, Jungle, 5: 185
 —, Whiteheaded, 5: 154
 —, Whitewinged, 5: 155
 Mynas, 5: 146
 Myzornis, Firetailed, 7: 70
 Nakta or Comb Duck, 1: 192
 Nightingale, Persian, 8: 214
 —, Nightjar, Egyptian, 4: 14, 258
 —, Franklin's or Allied, 4: 23
 —, Great Eared, 4: 4
 —, Hume's European, 4: 12
 —, Indian Little, 4: 21
 —, Indian Jungle, 4: 8
 —, Longtailed, 4: 16
 —, Syke's, 4: 14
 Nightjars, 4: 4
 Niltava, Eastern Rufousbellied, 7: 181
 —, Small, 7: 179
 —, Large, 7: 176
 —, Western Rufousbellied, 7: 180
 —, Small, 7: 178
 Niltava, Whitebellied Blue, 7: 184
 —, Whitetailed Blue, 7: 183
 Noddy, Whitecapped, 3: 72
 Nutcracker, Himalayan, 5: 233
 —, Larger-spotted, 5: 231
 —, Yunnan, 5: 235
 Nuthatch, Assam Whitetailed, 9: 221
 —, Beautiful, 9: 223
 —, Chinese, 9: 210
 —, Eastern Chestnutbellied, 9: 213
 —, Ghats Chestnutbellied, 9: 216
 —, Rock, 9: 222
 —, Whitefaced, 9: 219
 —, Himalayan Whitetailed, 9: 219
 —, Kashmir, 9: 208
 —, Naga, 9: 211
 —, Chestnutbellied, 9: 215
 —, Peninsular Chestnutbellied, 9: 215
 —, Velvetfronted, 9: 224
 —, Western Chestnutbellied, 9: 212
 —, Whitecheeked, 9: 217
 Nuthatches, 9: 207
 Nuthatches and Creepers, 9: 207
 Oriole, Andaman Blackheaded, 5: 109
 (footnote)
 —, Blacknaped, 5: 107
 —, Ceylon Blackheaded, 5: 111
 —, Eastern Blacknaped, 5: 105
 —, European Golden, 5: 102
 —, Indian Golden, 5: 103
 —, Maroon, 5: 112
 —, Nicobar Blacknaped, 5: 108
 —, North Indian Blackheaded, 5: 108
 —, Slenderbilled Blacknaped, 5: 106
 —, South Indian Blackheaded, 5: 110
 Orioles, 5: 101
 Osprey, 1: 336
 Owl, Andaman Barn, 3: 251
 —, Brown Hawk-, 3: 296
 —, Lesser Scops, 3: 265
 —, Andaman Scops, 3: 265
 —, Brown Fish, 3: 280
 —, Wood, 3: 308
 —, Burmese Brown Hawk-, 3: 294
 —, Collared Scops, 3: 270
 —, Central Indian Collared Scops, 3: 268
 —, Ceylon Bay, 3: 255
 —, Brown Fish, 3: 282
 —, Collared Scops, 3: 269
 —, Forest Eagle-, 3: 277
 —, Scops, 3: 264
 —, Dusky Horned, 3: 278
 —, Eastern Scops, 3: 261
 —, Spotted Scops, 3: 257
 —, Forest Eagle-, 3: 276
 —, Gangetic Collared Scops, 3: 268
 Owl, Grass, 3: 252
 —, Himalayan Brown Wood, 3: 307
 —, Horned or Eagle-, 3: 273
 —, Wood, 3: 311
 —, Hume's Brown Hawk-, 3: 295
 —, Wood, 3: 304
 —, Indian Barn, 3: 250
 —, Brown Hawk-, 3: 292
 —, Great Horned or Eagle-, 3: 273
 —, Longeared, 3: 313
 —, Nicobar Brown Hawk-, 3: 297
 —, Scops, 3: 263, 320
 —, North Indian Scops, 3: 262
 —, Northern Mottled Wood, 3: 305
 —, Peninsular Bay, 3: 255, 319
 —, Peninsular Scops, 3: 263
 —, Punjab Collared Scops, 3: 266
 —, Saurashtra Mottled Wood, 3: 304
 —, Scully's Wood, 3: 310
 —, Shorteared, 3: 314
 —, Sikkim Bay, 3: 253
 —, Snowy, 3: 284
 —, South Indian Brown Hawk-, 3: 295
 —, Southern Mottled Wood, 3: 305
 —, Striated or Pallid Scops, 3: 259
 —, Tawny Fish, 3: 283
 —, Tengmalm's, 3: 317
 —, Tibetan Horned or Eagle-, 3: 272
 —, Turkistan Horned or Eagle-, 3: 271
 —, West Pakistan Collared Scops, 3: 267
 —, Western Spotted Scops, 3: 256
 Owllet, Barred Jungle, 3: 286
 —, Burmese Barred, 3: 291
 —, Chestnutbacked Barred, 3: 288
 —, Collared Pygmy, 3: 285
 —, East Assam Spotted, 3: 301
 —, Himalayan Barred, 3: 291
 —, Forest Spotted, 3: 302
 —, Hutton's, 3: 298
 —, Malabar Barred Jungle, 3: 288
 —, Northern Spotted, 3: 299
 —, Southern Spotted, 3: 302
 —, Tibet, 3: 299
 —, West Himalayan Barred, 3: 289
 Owls, 3: 249
 Oystercatcher, Chinese, 2: 204
 —, or Sea-Pie, 2: 203
 Oystercatchers, 2: 202
 Paddybird or Indian Pond Heron, 1: 63
 Paddyfield Warbler *see* Warbler
 Parakeet, Andaman Redbreasted, 3: 174
 —, Redcheeked, 3: 176
 —, Arakan Blossomheaded, 3: 182
 —, Assam Blossomheaded, 3: 181
 —, Bluewinged, 3: 185
 —, Blyth's Nicobar, 3: 175
 —, Eastern Slatyheaded, 3: 184
 —, Himalayan Slatyheaded, 3: 183
 Parakeet, Indian Redbreasted, 3: 172
 —, Large Andaman, 3: 168
 —, Burmese, 3: 167
 —, Ceylonese, 3: 166
 —, Indian, 3: 164
 —, Layard's, 3: 187
 —, Lord Derby's, 3: 175
 —, Nicobar Redcheeked, 3: 177
 —, Northern Blossomheaded, 3: 178
 —, Roseringed, 3: 169
 —, Roseringed, 3: 171
 —, Rothschild's, 3: 182
 —, Southern Blossomheaded, 3: 179
 Parrotbill, Ashy-eared, 6: 202
 —, Assam Greyheaded, 6: 209
 —, Redheaded, 6: 208
 —, Blackbrowed, 6: 206
 —, Blackfronted, 6: 202
 —, Blyth's or Assam Orange, 6: 203
 —, Brown, 6: 198
 —, Fulvousfronted, 6: 199
 —, Garhwal, 6: 201
 —, Gould's or Blackthroated, 6: 210
 —, Great, 6: 196
 —, Greater Redheaded, 6: 207
 —, Greyheaded, 6: 209
 —, Lesser Redheaded, 6: 205
 —, Mizo Hills, 6: 204
 —, Tibetan Fulvousfronted, 6: 260
 —, Small, 6: 204
 —, Whitethroated, 6: 212
 Parrots, 3: 163
 Partridge, Arakan Hill, 2: 61
 —, Assam Black, 2: 24
 —, Bamboo, 2: 64
 —, Hill, 2: 58
 —, Baluchistan Grey, 2: 29
 —, Ceylon Painted, 2: 27
 —, Chukor, 2: 18
 —, Common Hill, 2: 57
 —, Indian Black, 2: 22
 —, Kachin Hill, 2: 59
 —, Ladakh, 2: 35
 —, North Indian Grey, 2: 30
 —, Northern Painted, 2: 25
 —, Redbreasted Hill, 2: 63
 —, Rufoustroated Hill, 2: 59
 —, Seesee, 2: 8
 —, Simla Hill, 2: 56
 —, Snow, 2: 6
 —, South Indian Grey, 2: 31
 —, Persian Black, 2: 21
 —, Southern Painted, 2: 27
 —, Swamp, or Kyah, 2: 33
 —, Tibetan, 2: 35
 —, Whitecheeked Hill, 2: 62
 Partridges, Pheasants, Quails, etc., 2: 4
 Pastor, Rosy, or Rosy Starling, 5: 163
 Peacock-Pheasant *see* Pheasant
 Peafowl, Burmese or Green, 2: 126
 Peafowl, Indian, 2: 123
 Peewit, Lapwing, or Green Plover, 2: 210
 Pelican, Dalmatian, 1: 30
 —, Spottedbilled or Grey, 1: 29
 —, White or Rosy, 1: 27
 Pelicans, 1: 25
 Petrel, Bulwer's Gadfly, 1: 16
 —, Cape, 1: 10
 —, Duskyvented Storm, 1: 20
 —, Forktailed Storm, 1: 21
 —, Jouanin's Gadfly, 1: 15
 —, Mascarene Black, 1: 15
 —, Wilson's Storm, 1: 17
 Petrels, Shearwaters, 1: 9
 —, Storm, 1: 17
 Phalarope, Grey, 2: 322
 —, Rednecked, 2: 323
 Phalaropes, 2: 321
 Pheasant, Bhutan Peacock-, 2: 120
 —, Blackbacked Kaleej, 2: 98
 —, Blackbreasted Kaleej, 2: 99
 —, Burmese Peacock-, 2: 122
 —, Chestnutmantled Koklas, 2: 111
 —, Chinese Crimson Horned, or Temminck's Tragopan, 2: 86
 —, Chir, 2: 116
 —, Crimson Horned, or Satyr Tragopan, 2: 82
 —, Elwes's Eared, 2: 92
 —, Impeyan or Himalayan Monal, 2: 88
 —, Kashmir Koklas, 2: 113
 —, Koklas, 2: 113
 —, Mishmi Blood, 2: 78
 —, Moffitt's Kaleej, 2: 101
 —, Mrs Hume's Barredback, 2: 119
 —, Nepal Blood, 2: 75
 —, Kaleej, 2: 97
 —, Koklas, 2: 115
 —, Selator's or Mishmi Monal, 2: 90
 —, Sikkim Blood, 2: 77
 —, Tibetan Blood, 2: 78
 —, Western Horned, 2: 80
 —, Whitecrested Kaleej, 2: 94
 —, Williams's Kaleej, 2: 101
 Pheasant-Grouse, 2: 16
 Pheasants, Partridges, Quails, etc., 2: 4
 Piculet, Speckled, 4: 172
 —, Rufous, 4: 175
 Pie, Andaman Tree, 5: 228
 —, Blackbrowed Tree, 5: 222
 —, East Himalayan Tree, 5: 226
 —, Kerala Tree, 5: 220
 —, Northeastern Tree, 5: 218
 —, Northwestern Tree, 5: 216
 —, Southeastern Tree, 5: 221
 —, West Himalayan Tree, 5: 225
 —, Western Tree, 5: 217
 Pie, Whitebellied Tree, 5: 223
 Pigeon, Andaman Green Imperial, 3: 114
 —, Greyfronted Green, 3: 103
 —, Wood, 3: 137
 —, Ashyheaded Green, 3: 102
 —, Bengal Green, 3: 106
 —, Blue Rock, 3: 125
 —, Ceylon Green, 3: 109
 —, Orangebreasted Green, 3: 106
 —, Wood, 3: 134
 —, East Himalayan Snow, 3: 122
 —, Eastern Stock, 3: 128
 —, Wood, or Cushat, 3: 129
 —, Greyfronted Green, 3: 99
 —, Greyheaded Imperial, 3: 119
 —, Hodgson's or Nepal Maroonbacked Imperial, 3: 116
 —, Indian Blue Rock, 3: 125
 —, Orangebreasted Green, 3: 104
 —, Jerdon's or Southern Maroonbacked Imperial, 3: 118
 —, Kokla or Wedgetailed Green, 3: 96
 —, Ashy Wood, 3: 134
 —, Nepal Greyfronted Green, 3: 101
 —, Nicobar, 3: 161
 —, Green Imperial, 3: 113
 —, Nilgiri Wood, 3: 132
 —, Northern Green Imperial, 3: 111
 —, Pied Imperial, 3: 115
 —, Pintailed Green, 3: 94
 —, Pompadour or Ceylon Greyfronted Green, 3: 100
 —, Purple Wood, 3: 135
 —, Southern Green, 3: 108
 —, Imperial, 3: 112
 —, Speckled Wood, 3: 131
 —, Thickbilled Green, 3: 97
 —, Turkistan Hill, 3: 123
 —, West Himalayan Snow, 3: 120
 Pigeons, Doves, 3: 93
 Pintail, 1: 149
 Pipit, Blyth's, 9: 259
 —, Brown Rock, 9: 263
 —, Central Asian Water, 9: 269
 —, European Tree, 9: 246
 —, Indian Paddyfield, 9: 253
 —, Tree, 9: 243
 —, Japanese Water, 9: 270
 —, Kerala Rock, 9: 267
 —, Malay Paddyfield, 9: 255
 —, Meadow, 9: 250
 —, Nilgiri, 9: 267
 —, Northwestern Paddyfield, 9: 252
 —, Persian Rock, 9: 263
 —, Redthroated, 9: 260
 —, Richard's, 9: 251
 —, Rufous Rock, 9: 266
 —, Siberian Tawny, 9: 258
 —, Tree, 9: 245
 Pipit, Tawny, 9: 256
 —, Upland, 9: 271
 —, Vinaceousbreasted, 9: 261
 —, Witherby's Tree, 9: 248
 Pippits, 9: 241
 Pitta, Blue, 4: 256
 —, Bluenaped, 4: 250
 —, Bluewinged, 4: 253
 —, Hooded or Greenbreasted, 4: 254
 —, Indian, 4: 252
 Pittas, 4: 250
 Plover, Australian Blackfronted, 2: 227
 —, Stone, 3: 6
 —, Blackbellied or Grey, 2: 220
 —, Caspian Sand, 2: 228
 —, Ceylon Kentish, 2: 237
 —, Crab, 2: 337
 —, Eastern Golden, 2: 222
 —, Ringed, 2: 230
 —, Sand, 2: 229
 —, European Little Ringed, 2: 231
 —, Golden, 2: 221
 —, Great Stone, 3: 5
 —, Green, Peewit or Lapwing, 2: 210
 —, Indian Little Ringed, 2: 231
 —, Kentish, 2: 235
 —, Large Sand, 2: 226
 —, Longbilled Ringed, 2: 237
 —, Pampirs Lesser Sand, 2: 238
 Plovers, Sandpipers, Snipe, 2: 205
 —, Courier (Coursers), Pratincoles, 3: 7
 Pochard, Baer's, or Eastern White-eye, 1: 184
 —, Common, 1: 180
 —, Redcrested, 1: 177
 —, White-eyed, or Ferruginous Duck, 1: 182
 Pratincole, Collared, or Swallow-Plover, 3: 12
 —, Large Indian, or Swallow-Plover, 3: 14
 —, Small Indian, or Swallow-Plover, 3: 15
 Pratincoles, Coursers (Courier Plovers), 3: 7
 Quacky-duck or Cotton Teal, 1: 190
 Quail, Assam Painted Bush, 2: 53
 —, Blackbreasted or Rain, 2: 41
 —, Bluebreasted, 2: 42
 —, Burmese Yellowlegged Button, 2: 131
 —, Ceylon Bustard-, 2: 135
 —, Jungle Bush, 2: 48
 —, Decan Rock Bush, 2: 49
 —, Grey, 2: 37
 —, Indian Bustard-, 2: 133
 —, Yellowlegged Button, 2: 129
 Quail, Japanese Grey, 2: 40
 —, Jungle Bush, 2: 45
 —, Konkani Jungle Bush, 2: 48
 —, Little Bustard-, 2: 128
 —, Lower Bengal Bustard-, 2: 132
 —, Manipur Painted Bush, 2: 54
 —, Mountain, 2: 73

- , Mysore or Laterite Rock Bush, 2: 50
 —, Nicobar Bluebreasted, 2: 44
 —, Northern Bustard, 2: 132
 —, Painted Bush, 2: 53
 —, Painted Bush, 2: 51
 —, Punjab Jungle Bush, 2: 47
 —, Rajasthan Rock Bush, 2: 49
 —, Tamil Nadu Jungle Bush, 2: 48, 338
 Quails, Pheasants, Partridges, etc., 2: 4
 —, Bustard, 2: 127
 Quaker Babbler *see* Babbler
 Rail, Andaman Bluebreasted Banded, 2: 153
 —, Indian Bluebreasted Banded, 2: 152
 —, Water, 2: 151
 —, Turkestan Water, 2: 149
 Rails, Coots, 2: 148
 Raven, Brown-necked, 5: 265
 —, Punjab, 5: 262
 —, Tibet, 5: 264
 Redshank, Common, 2: 237
 —, Eastern, 2: 257
 —, Spotted or Dusky, 2: 255
 Redstart, Bluefronted, 8: 258
 —, Blueheaded, 8: 251
 —, Daurian, 8: 262
 —, Eastern Black, 8: 255
 —, Eversmann's, 8: 249
 —, Guldensstädt's, 8: 264
 —, Hodgson's, 8: 257
 —, Kashmir Black, 8: 253
 —, Plumbeous, 8: 266
 —, Whitebelled, or Hodgson's Short-winged, 8: 269
 —, Whitecapped, or River Chat, 9: 57
 —, Whitefronted, 8: 256
 —, Whitethroated, 8: 260
 Redwing, 9: 132
 Reed Warbler *see* Warbler
 Reedling, or Bearded Tit-Babbler, 6: 195
 Robin, Andaman Magpie, 8: 243
 —, Assam Magpie, 8: 243
 —, Bengal Black, 9: 61
 —, Blackbacked Indian, 9: 62
 —, Bluefronted, 9: 3
 —, Brownbacked Indian, 9: 60
 —, Ceylon Black, 9: 65
 —, Magpie, 8: 242
 —, Deccan Black, 9: 62
 —, Eastern Redflanked Bush, 8: 234
 —, Indian Magpie, 8: 239
 Robin, Kashmir Redflanked Bush, 8: 230
 —, Rufousbelled Bush, 8: 237
 —, Western Golden Bush, 8: 234
 —, Whitebrowed Bush, 8: 236
 —, Whitetailed Blue, 9: 1
 Roller, Broadbilled, 4: 120
 —, Indian, 4: 116
 —, Kashmir, 4: 114
 Rollers or Blue Jays, 4: 113
 Rook, 5: 248
 Rosefinch, Blanford's, 10: 169
 —, Caucasus, 10: 166
 —, Common, or Scarlet Grosbeak, 10: 166
 —, Eastern Great, 10: 185
 —, Redbreasted, 10: 189
 —, Garhwal Dark, 10: 167
 —, Great, 10: 183
 —, Himalayan Beautiful, 10: 179
 —, Indian, 10: 164
 —, Kashmir Whitebrowed, 10: 176
 —, Kun Lun Redbreasted, 10: 187
 —, Nepal Dark, 10: 168
 —, Pinkbrowed, 10: 171
 —, Redheaded, 10: 192
 —, Redmantled, 10: 173
 —, Sikim Large, 10: 181
 —, Whitebrowed, 10: 177
 —, Spottedwinged, 10: 175
 —, Threebanded, 10: 183
 —, Tibet Beautiful, 10: 181
 —, Turkestan, 10: 163
 —, Vinaceous, 10: 172
 —, Western Redbreasted, 10: 188
 —, Yunnan Whitebrowed, 10: 178
 Rubycheck, 10: 19
 Rubythroat, 8: 215
 —, Eastern, 8: 224
 —, Tibetan, 8: 225
 —, West Himalayan, 8: 221
 Ruff, 2: 318
 Sanderling, 2: 298
 Sandgrouse, 3: 76
 —, Closebarred, 3: 91
 —, Coronetted, 3: 89
 —, Imperial or Blackbelled, 3: 86
 —, Indian, 3: 82
 —, Large Pintail, 3: 80
 —, Painted, 3: 92
 —, Pallas's, 3: 79
 —, Spotted, 3: 84
 —, Tibetan, 3: 77
 Sandpiper, Armstrong's, or Spotted Greenshank, 2: 268
 Sandpiper, Asian Pectoral or Sharptailed, 2: 307
 —, Broadbilled, 2: 315
 —, Buffbreasted, 2: 317
 —, Common, 2: 271
 —, Curlew, 2: 310
 —, Eastern Broadbilled, 2: 317
 —, Green, 2: 263
 —, Marsh, or Little Greenshank, 2: 259
 —, Spoonbilled, 2: 313
 —, Terek, or Avocet, 2: 269
 —, Wood or Spotted, 2: 265
 Sandpipers, Plovers, Snipe, 2: 205, 241
 Scimitar Babbler *see* Babbler
 Scissorbill or Indian Skimmer, 3: 75
 Scrub Warbler *see* Warbler
 Sea-Pie or Oystercatcher, 2: 203
 Sedge Warbler *see* Warbler
 Shag, Indian, 1: 39
 Shama, Andaman, 8: 247
 —, Ceylon, 8: 245
 —, Indian, 8: 246
 —, Malabar, 8: 244
 Shearwater, Mauritius, 1: 13
 —, Persian, 1: 14
 —, Pinkfooted, 1: 11
 —, Slenderbilled or Short-tailed, 1: 13
 —, Wedgetailed, 1: 12
 —, Whitefronted or Streaked, 1: 11
 Shearwaters, Petrels, 1: 9
 Shelduck, Common, 1: 144
 —, Ruddy, or Brahminy Duck, 1: 141
 Shikra, Burmese, 1: 237
 —, Car Nicobar, 1: 238
 —, Central Asian, 1: 235
 —, Ceylon, 1: 237
 —, Indian, 1: 235
 —, Kachal, 1: 239
 Shortwing, Gould's, 8: 204
 —, Hodgson's, or Whitebelled Redstart, 8: 269
 —, Lesser, 8: 207
 —, Rufousbelled, 8: 206
 —, Rustybelled, 8: 205
 —, Whitebelled, 8: 206
 —, Whitebrowed, 8: 209
 Shoveller, 1: 172
 Shrike, Andaman Large Cuckoo, 6: 17
 —, Ashy Swallow, 5: 143
 —, Baluchistan Baybacked, 5: 84
 —, Grey, 5: 81
 —, Barred Cuckoo, 6: 18
 —, Blackbacked Pied Flycatcher, 6: 3
 —, Blackheaded, 5: 96
 —, Brown, 5: 98
 —, Brownbacked Pied Flycatcher, 6: 1
 —, Ceylon Large Cuckoo, 6: 17
 —, Pied Flycatcher, 6: 5
 —, Wood, 6: 12
 —, Chestnutrumped, 5: 83
 Shrike, Dark Grey Cuckoo, 6: 19
 —, Eastern Tibet Greybacked, 5: 92
 —, Woodchat, 5: 101
 —, Himalayan Blackheaded Cuckoo, 6: 21
 —, Large Cuckoo, 6: 16
 —, Indian Baybacked, 5: 85
 —, Grey, 5: 79
 —, Large Cuckoo, 6: 14
 —, Wood, 6: 11
 —, Ladakh Greybacked, 5: 91
 —, Lesser Grey, 5: 83
 —, Malabar Wood, 6: 8
 —, Nepal Wood, 6: 6
 —, Nicobar Pied Cuckoo, 6: 23
 —, Pale Brown, 5: 89
 —, Peninsular Blackheaded Cuckoo, 6: 22
 —, Persian Grey, 5: 82
 —, Philippine, 5: 100
 —, Redbacked, 5: 87
 —, Rufous, 5: 88
 —, Rufousbacked, 5: 93
 —, Sind Wood, 6: 10
 —, South Indian Greybacked, 5: 96
 —, Turkestan Grey, 5: 82
 —, Whitebreasted Swallow, 5: 145
 Shrike-Babbler *see* Babbler
 Shrikes or 'Butcher Birds', 5: 78
 —, Cuckoo, 6: 1
 —, Sibia, Beautiful, 7: 133
 —, Chestnutbacked, 7: 128
 —, Eastern Blackcapped, 7: 131
 —, Grey, 7: 132
 —, Longtailed, 7: 134
 —, Nepal Blackcapped, 7: 131
 —, Western Blackcapped, 7: 129
 Siskin, Tibetan, 10: 139
 Siva, Assam Barthroated, 7: 95
 —, Bluewinged, 7: 95
 —, Eastern Barthroated, 7: 92
 —, NEFA Barthroated, 7: 94
 —, Western Barthroated, 7: 91
 Skimmer, Indian, or Scissorbill, 3: 75
 Skua, Antarctic or Falkland, 3: 18
 —, Brown or Great, 3: 19
 —, Parasitic or Richardson's, or Jaeger, 3: 21
 —, Pomatorhine, or Jaeger, 3: 20
 —, South Polar, 3: 19
 Skuas, Jaegers, 3: 17
 Skylark, Caucasian, 5: 43
 —, Indian Small, 5: 46
 —, Kashmir Small, 5: 44
 —, Nilgiri Small, 5: 47
 —, Tibetan Small, 5: 45
 —, Turkestan Small, 5: 44
 —, West Siberian, 5: 42
 —, Yunnan Small, 5: 48
 Smew, 1: 201
 Snake-bird or Darter, 1: 43
 Snipe, Common or Fantail, 2: 287
 —, Eastern Solitary, 2: 278
 —, Great, 2: 286
 —, Jack, 2: 290
 —, Painted, 2: 325
 —, Pintail, 2: 282
 —, Swinhoe's, 2: 284
 —, Wood, 2: 280
 Snipe, Plovers, Sandpipers, 2: 205, 241
 Snow Finch *see* Finch
 Snowcock, Central Tibetan, 2: 13
 —, Himalayan, 2: 13
 —, Sikim, 2: 12
 —, Tibetan, 2: 11
 Sparrow, Afghan Scrub, 10: 77
 —, Tree, 10: 70
 —, Himalayan Cinnamon Tree, 10: 75
 —, Indian House, 10: 63
 —, Yellowthroated, 10: 80
 —, Java, 10: 119
 —, Kashmir House, 10: 66
 —, Malay Tree, 10: 71
 —, Mishmi Tree, 10: 73
 —, Rock, 10: 81
 —, Sind Jungle, 10: 73
 —, Yellowthroated, 10: 78
 —, Spanish, 10: 63
 —, Tibetan Tree, 10: 72
 —, Turkestan House, 10: 67
 —, Yunnan Cinnamon Tree, 10: 77
 Sparrow-Hawk *see* Hawk
 Sparrows, House and Rock, 10: 62
 Spiderhunter, Little, 10: 52
 —, Streaked, 10: 54
 Spoonbill, 1: 116
 Spurfowl, Aravalli Red, 2: 68
 —, Ceylon, 2: 71
 —, Painted, 2: 70
 —, Red, 2: 67
 —, Travancore Red, 2: 69
 Squaw, Old, or Longtail Duck, 1: 196
 Stare, Andaman Glossy, 5: 150
 —, Spottedwinged, 5: 147
 —, Tipperah Glossy, 5: 149
 Starling, Central Asian, 5: 169
 —, Finsch's or Common Indian, 5: 166
 —, Hume's or Afghan, 5: 168
 —, Kashmir, 5: 170
 —, Rosy, or Rosy Pastor, 5: 163
 —, Sind, 5: 170
 Starlings, 5: 146
 Stilt, Ceylon Blackwinged, 2: 331
 —, Indian Blackwinged, 2: 329
 Sults, Avocets, Ibisbill, 2: 328
 Stint, Eastern Little, 2: 300
 —, Little, 2: 301
 —, Longtoed, 2: 305
 —, Temminck's, 2: 303
 Stork, Adjutant, 1: 105
 Stork, Black, 1: 102
 —, Blacknecked, 1: 104
 —, Eastern White, 1: 102
 —, Openbill, 1: 95
 —, Painted, 1: 93
 —, White, 1: 99
 —, Whitenecked, 1: 98
 Storks, 1: 91
 Storm Petrels, 1: 8
 Sunbird, Andaman Olivebacked, 10: 31
 —, Assam Blackbreasted, 10: 46
 —, Purple, 10: 37
 —, Yellowbacked, 10: 49
 —, Car Nicobar Olivebacked, 10: 33
 —, Ceylon Maroonbreasted, 10: 30
 —, Purplerrumped, 10: 24
 —, Dabry's, 10: 41
 —, Eastern Yellowbacked, 10: 44
 —, Firetailed Yellowbacked, 10: 50
 —, Himalayan Blackbreasted, 10: 44
 —, Indian Maroonbreasted, 10: 27
 —, Purple, 10: 35
 —, Purplerrumped, 10: 22
 —, Yellowbacked, 10: 47
 —, Manipur Yellowbacked, 10: 40
 —, Mrs Gould's, 10: 39
 —, Nepal Yellowbacked, 10: 43
 —, Nicobar Olivebacked, 10: 32
 —, Yellowbacked, 10: 50
 —, Sind Purple, 10: 33
 —, Small, 10: 25
 —, Van Hasselt's, 10: 26
 —, Vigors's Yellowbacked, 10: 49
 —, Western Yellowbacked, 10: 42
 Sunbirds, 10: 18
 Swallow, Ceylon Striated or Red-rumped, 5: 72
 —, Chinese Striated or Redrumped, 5: 73
 —, Daurian Striated or Redrumped, 5: 66
 —, Eastern, 5: 59
 —, European Striated or Redrumped, 5: 67
 —, Himalayan Striated or Redrumped, 5: 68
 —, Indian Cliff, 5: 64
 —, Striated or Redrumped, 5: 70
 —, Wiretailed, 5: 63
 —, Japanese Striated or Redrumped, 5: 70
 —, Western, 5: 69
 —, Western, 5: 57
 Swallow-Plover, Collared, or Pratincole, 3: 12
 —, Large Indian, 3: 14
 —, Small Indian, or Pratincole, 3: 15
 Swallows, 5: 48
 Swallow-Shrikes or Wood Swallows, 5: 143
 Swan, Bewick's or Western Whistling, 1: 134
 —, Jankowski's or Eastern Whistling, 1: 135
 —, Mute, 1: 137
 —, Whooper, 1: 136
 Swans, 1: 122
 Swift, 4: 43
 —, Alpine, 4: 39
 —, Cochinchina Spinetail, 4: 35
 —, Crested, 4: 58
 —, Darkbacked, 4: 46
 —, House, 4: 50
 —, Large Brownthroated Spinetail, 4: 36
 —, Whiterumped, 4: 47
 —, Pallid, 4: 45
 —, Whiterumped Spinetail, 4: 37
 —, Whitethroated Spinetail, 4: 33
 —, Whiterumped or Whiterumped or
 —, 26
 —, 4: 29
 —, 4: 28
 Swifts, 4: 25
 Tailor Bird, Bengal, 8: 84
 —, Blacknecked, 8: 86
 —, Ceylon, 8: 85
 —, Highland, 8: 86
 —, Goldenheaded, 8: 87
 —, Indian, 8: 81
 —, Mishmi, 8: 84
 Teal, Baikal, Clucking or 'Formosa', 1: 154
 —, Common, 1: 151
 —, Cotton, or Quacky-duck, 1: 199
 —, Falco or Bronzeced, 1: 165
 —, Gargancy or Bluewinged, 1: 169, 370
 —, Grey, Andaman or Oceanic, 1: 155
 —, Large Whistling, 1: 139
 —, Lesser Whistling, or Tree Duck, 1: 138
 —, Marbled, 1: 147
 —, Tern, Arctic, 3: 54
 —, Tern, Black, 3: 42
 —, Blackbelled, 3: 57
 —, Caspian, 3: 45
 —, Eastern Blacknaped, 3: 56
 —, European Common, 3: 50
 —, Gullbilled, 3: 42
 —, Indian Lesser Crested, 3: 69
 —, Ocean White or Fairy, 3: 73
 —, River, 3: 48
 —, Whiskered, 3: 39
 —, Javan Gullbilled, 3: 44
 —, Little, or Ternlet, 3: 64
 —, Noddy, 3: 71
 —, Brownwinged, 3: 59
 —, Large Crested, 3: 67
 —, Rosate or Rosy, 3: 52
 —, Sandwich, 3: 70
 —, Sooty, 3: 67
 —, Tibetan Common, 3: 51
 —, Western Blacknaped, 3: 57
 —, Whitecheeked, 3: 55
 —, Whitewinged Black, 3: 41
 —, Ternlet, Blackshafed, 3: 65
 —, or Little Tern, 3: 64
 —, Whiteshaded, 3: 66
 Terns, 3: 38
 Thickhead, Grey, or Mangrove Whistler, 7: 228
 Thickheads or Shrikebilled Flycatchers, 7: 228
 Thick-knees, 3: 1
 Thrush, Andaman Ground, 9: 90
 —, Ashy Laughing, 7: 24
 —, Ashyheaded Laughing, 7: 3
 —, Assam Blackgorgeted Laughing, 7: 8
 —, Crimsonwinged Laughing, 7: 63
 —, Rufouschinned Laughing, 7: 29
 —, Spottedbreasted Laughing, 7: 37
 —, Striated Laughing, 7: 13
 —, Whitecrested Laughing, 7: 16
 —, Baluchistan Streaked Laughing, 7: 44
 —, Bhutan Streaked Laughing, 7: 49
 —, Blackbreasted, 9: 106
 —, Blackthroated, 9: 127
 —, Blueheaded Rock, 9: 67
 —, Bluewinged Laughing, 7: 51
 —, Browncrested Laughing, 7: 50
 —, Burmese Whistling, 9: 82
 —, Rufouschinned Laughing, 7: 28
 —, Ceylon Scaly, 9: 100
 —, Whistling, 9: 76
 —, Chestnutbacked Laughing, 7: 17
 —, Chestnutbellied Rock, 9: 70
 —, Coorg Whitebreasted Laughing, 7: 42
 —, Dark, 9: 126
 —, Dusky, 9: 130
 Thrush, Eastern Blackfaced Laughing, 7: 55
 —, Greyheaded, 9: 124
 —, Plainbacked Mountain, 9: 94
 —, Variegated Laughing, 7: 23
 —, Whitethroated Laughing, 7: 5
 —, Fea's, 9: 125
 —, Garhwal Whitepotted Laughing, 7: 31
 —, Giant Laughing, 7: 29
 —, Gilgit Streaked Laughing, 7: 46
 —, Golden, 9: 101
 —, Himalayan Crimsonwinged Laughing, 7: 63
 —, Greysided Laughing, 7: 33
 —, Whistling, 9: 79
 —, Whitecrested Laughing, 7: 14
 —, Indian Blue Rock, 9: 73
 —, Iranian Blue Rock, 9: 72
 —, Kerala Laughing, 7: 42
 —, Kessler's, 9: 124
 —, Khasi Hills Greysided Laughing, 7: 34
 —, Redheaded Laughing, 7: 61
 —, Rufouschinned Laughing, 7: 28
 —, Large Brown, 9: 101
 —, Lesser Brown, 9: 104
 —, Longtailed Mountain, 9: 95
 —, Malabar Whistling, 9: 77
 —, Manipur Redheaded Laughing, 7: 62
 —, Spottedbreasted Laughing, 7: 38
 —, 7: 7
 —, Nagaland Greysided Laughing, 7: 35
 —, Redheaded Laughing, 7: 61
 —, Necklaced Laughing, 7: 6
 —, NEFA Redheaded Laughing, 7: 60
 —, Nepal Blackgorgeted Laughing, 7: 8
 —, Redheaded Laughing, 7: 59
 —, Streaked Laughing, 7: 40
 —, Striated Laughing, 7: 12
 —, Nicobar Ground, 9: 90
 —, Nilgiri, 9: 100
 —, Laughing, 7: 40
 —, Orangeheaded Ground, 9: 86
 —, Pied Ground, 9: 83
 —, Plaincoloured Laughing, 7: 53
 —, Prince Henry's Laughing, 7: 54
 —, Redheaded Laughing, 7: 57
 —, Redthroated, 9: 129
 —, Rock, 9: 66
 —, 7: 27
 —, 7: 59
 —, Striated Laughing, 7: 12
 —, Simla Streaked Laughing, 7: 45
 —, Smallbilled Mountain, 9: 97
 Thrush, South Kerala Laughing, 7: 43
 —, Spottedwinged Ground, 9: 91
 —, Tickell's, 9: 103

- , Western Blackfaced Laughing, 7: 55
- , Greyheaded, 9: 122
- , Plainbacked Mountain, 9: 92
- , Rufouschinned Laughing, 7: 26
- , Striated Laughing, 7: 10
- , Variegated Laughing, 7: 22
- , Whitethroated Laughing, 7: 4
- , Whitebrowed Ground, 9: 85
- , Laughing, 7: 39
- , Whitespotted Laughing, 7: 32
- , Whitethroated Ground, 9: 89
- , Wynaad Laughing, 7: 19
- , Yellowbreasted Laughing, 7: 21
- , Yellowthroated Laughing, 7: 18
- Tit, Afghanistan Grey, 9: 166
- , Baluchistan Grey, 9: 165
- , Blackbilled, 9: 177
- , Burmese Blackspotted Yellow, 9: 191
- , Central India Yellowcheeked, 9: 188
- , Ceylon Grey, 9: 170
- , Crested Black, 9: 178
- , Eastern Brown Crested, 9: 185
- , Firecapped, 9: 197
- , Redheaded, 9: 202
- , Yellowbrowed, 9: 193
- , Greenbacked, 9: 174
- , Himalayan Blackspotted Yellow, 9: 190
- , Coal, 9: 179
- , Indian Grey, 9: 169
- , Kashmir Grey, 9: 167
- , Lakhimpur Grey, 9: 171
- , Manipur Redheaded, 9: 202
- , Nagaland Black, 9: 184
- , Nepal Grey, 9: 168
- , Northern Yellowcheeked, 9: 186
- , Penduline, 9: 193
- , Rufousbellied Crested, 9: 182
- , Rufousfronted, 9: 206
- , Sikkim Black, 9: 183
- , Simla Black, 9: 180
- , Yellowbrowed, 9: 192
- , Southern Yellowcheeked, 9: 189
- , Sultan, 9: 162
- , Tibet Grey, 9: 171
- , Tien Shan Blue, 9: 177
- , Western Brown Crested, 9: 184
- , Firecapped, 9: 195
- , Redheaded, 9: 200
- , Whitecheeked, 9: 203
- , Whitethroated, 9: 204
- , Whitewinged Black, 9: 172
- , Yellowbreasted Blue, 9: 176
- Tit-dabbler *see* Babbler
- Titmice, Longtailed, 9: 199
- , Penduline, 9: 195
- Tits or Titmice, 9: 162
- Tits, True, 9: 162
- Tit-warbler *see* Warbler
- Tragopan, Greybellied, 2: 85
- , Satyr, or Crimson Horned Pheasant, 2: 82
- , Temminck's, or Chinese Crimson Horned Pheasant, 2: 86
- , Tibetan Greybellied, 2: 84
- Tree Pie *see* Pie
- Tree Warbler *see* Warbler
- Trogon, 4: 61
- , Redheaded, 4: 64
- , Ward's, 4: 66
- Trogons, 4: 60
- Tropic-Bird, Redtailed, 1: 24
- , Short-tailed, 1: 22
- , White, 1: 24
- Turnstone, 2: 274
- Twite, Stoliczka's, 10: 142
- , Tibetan, 10: 143
- Vulture, Black or King, 1: 296
- , Cincereous, 1: 298
- , Egyptian, 1: 310
- , Himalayan Bearded, or Lämmergeier, 1: 314
- , Griffon, 1: 302
- , Longbilled, 1: 306
- , Indian Griffon, 1: 301
- , Longbilled, 1: 304
- , Scavenger, 1: 312
- , Whitebacked, 1: 307
- Vultures, Hawks, 1: 210
- Wagtail, Blackbacked Yellowheaded, 9: 284
- , Blueheaded Yellow, 9: 278
- , Forest, 9: 273
- , Greenheaded Yellow, 9: 281
- , Grey, 9: 285
- , Greyheaded Yellow, 9: 276
- , Hodgson's Pied, 9: 292
- , Indian White, 9: 288
- , Large Pied, 9: 296
- , Masked, 9: 291
- , Northern Yellowheaded, 9: 282
- , Short-tailed Greyheaded Yellow, 9: 277
- , Streaked Pied, 9: 294
- , Swinhoe's Pied, 9: 295
- , Turkestan Blackheaded, 9: 280
- , Western Yellowheaded, 9: 283
- , Whitefaced Pied, 9: 293
- , Whiteheaded Yellow, 9: 280
- , Yellowbacked, 9: 279
- Wagtails, 9: 273
- Wall Creeper, *see* Creeper
- Warbler, Allied Flycatcher-, 8: 180
- , Andaman Palefooted Bush, 8: 8
- , Arctic Leaf, 8: 163
- , Arunachal Rufouscapped Bush, 8: 18
- , Yellowbellied Flycatcher-, 8: 191
- , Asian Reed, 8: 108
- , Assam Aberrant Bush, 8: 14
- , Ashy Wren-, 8: 59
- , Blackfaced Flycatcher-, 8: 193
- , Blackthroated Hill, 8: 73
- , Bluntwinged Paddyfield, 8: 115
- , Brown Hill, 8: 70
- , Crowned Leaf, 8: 178
- , Great Reed, 8: 104
- , Greyheaded Flycatcher-, 8: 187
- , Large Bush, 8: 13
- , Yellowbellied Wren-, 8: 67
- , Balistan Greenish Leaf, 8: 168
- , Barred, 8: 121
- , Blackbrowed Reed, 8: 107
- , or Yellowfaced Leaf, 8: 179
- , Blyth's Crowned Leaf, 8: 177
- , Reed, 8: 109
- , Bright Green Leaf, 8: 170
- , Bristled Grass, 8: 94
- , Broadbilled Flycatcher-, 8: 195
- , Broadtailed Grass, 8: 93
- , Brooks's Leaf, 8: 157
- , Brown Bush, 8: 25
- , Buffbellied Leaf, 8: 144
- , Burmese Blackbrowed Flycatcher-, 8: 184
- , Central Greyfaced Leaf, 8: 161
- , India Plain Wren-, 8: 53
- , Cetti's, 8: 19
- , Ceylon Ashy Wren-, 8: 61
- , Ashy-grey Wren-, 8: 45
- , Bush, 8: 26
- , Great Reed, 8: 104
- , Jungle Wren-, 8: 65
- , Plain Wren-, 8: 57
- , Streaked Fantail, 8: 36
- , Chestnut-headed Flycatcher-, 8: 189
- , Ground, 8: 4
- , Chinese Bush, 8: 8: 24
- , Crested-Tit, 8: 199
- , Desert, 8: 130
- , Eastern Blackbrowed Flycatcher-, 8: 183
- , Crowned Leaf, 8: 174
- , Grasshopper, 8: 91
- , Great Reed, 8: 106
- , Greenish Leaf, 8: 169
- , Greyfaced Leaf, 8: 162
- , Longtailed Grass, 8: 76
- , Orangebarred Leaf, 8: 152
- , Orphean, 8: 122
- , Pallas's Leaf, 8: 160
- Warbler, Eastern Plain Wren-, 8: 55
- , Rufouscapped Bush, 8: 17
- , Spotted Bush, 8: 21
- , Streaked Wren-, 8: 51
- , Eurasian Great Reed, 8: 105
- , Franklin's Ashy-grey Wren-, 8: 42
- , Gangetic Jungle Wren-, 8: 62
- , Greybacked, or Rufous Chat, 8: 210
- , Greycheeked Flycatcher-, 8: 188
- , Himalayan Aberrant Bush, 8: 13
- , Blackthroated Hill, 8: 72
- , Brown Hill, 8: 70
- , Large Bush, 8: 12
- , Hodgson's Wren-, 8: 48
- , Hume's Bush, 8: 15
- , Yellowbrowed Leaf, 8: 153
- , Indian Booted Tree, 8: 118
- , Great Reed, 8: 101
- , Paddyfield, 8: 112
- , Palefooted Bush, 8: 6
- , Streaked Wren-, 8: 49
- , Kashmir Bluntwinged Paddyfield, 8: 114
- , Kerala Streaked Fantail, 8: 35
- , Large Crowned Leaf, 8: 172
- , Grass, 8: 78
- , Largebilled Bush, 8: 22
- , Leaf, 8: 164
- , Reed, 8: 115
- , Malay Streaked Fantail, 8: 37
- , Mandelli's Yellowbrowed Leaf, 8: 155
- , Manipur Aberrant Bush, 8: 15
- , Dusky Leaf, 8: 149
- , Mishmi Greyheaded Flycatcher-, 8: 187
- , Moustached Sedge, 8: 27
- , Nepal Blackfaced Flycatcher-, 8: 192
- , Greyheaded Flycatcher-, 8: 186
- , Pallas's Leaf, 8: 159
- , Nilgiri Plain Wren-, 8: 56
- , Northern Ashy Wren-, 8: 57
- , Ashy-grey Wren-, 8: 40
- , Leaf, 8: 134
- , Paddyfield, 8: 113
- , Northwestern Jungle Wren-, 8: 64
- , Plain Wren-, 8: 52
- , Olivaceous Leaf, 8: 145
- , Orissa Jungle Wren-, 8: 65
- , Pale Strongfooted Bush, 8: 9
- , Palelegged Leaf, 8: 171
- , Pallas's Central Asian Grasshopper, 8: 89
- , Siberian Grasshopper, 8: 89
- , Peninsular Jungle Wren-, 8: 64
- , Plain Leaf, 8: 139
- , Redheaded Fantail, 8: 30
- , Rufous Wren-, 8: 36
- , Rufousfronted Wren-, 8: 46
- , Siberian Booted Tree, 8: 117
- Warbler, Siberian Dusky Leaf, 8: 149
- , Leaf, 8: 135
- , Yellowbrowed Leaf, 8: 156
- , Sikkim Yellowbellied Flycatcher-, 8: 190
- , Sind Brown Hill, 8: 69
- , Yellowbellied Wren-, 8: 66
- , Slatybellied Ground, 8: 3
- , Small Crowned Leaf, 8: 175
- , Smoky Leaf, 8: 146
- , Southern Ashy Wren-, 8: 59
- , Ashy-grey Wren-, 8: 44
- , Streaked Fantail, 8: 33
- , Grasshopper, 8: 90
- , Scrub, 8: 77
- , Striated Marsh, 8: 96
- , Strongfooted Bush, 8: 10
- , Szechuan Dusky Leaf, 8: 148
- , Thickbilled, 8: 98
- , Tibetan Smoky Leaf, 8: 147
- , Tit-, 8: 202
- , Tickell's Leaf, 8: 142
- , Turkestan Tit, 8: 201
- , Tytler's Leaf, 8: 141
- , Upcher's Tree, 8: 119
- , Western Blackbrowed Flycatcher-, 8: 182
- , Greenish Leaf, 8: 166
- , Greyfaced Leaf, 8: 161
- , Greyheaded Flycatcher-, 8: 185
- , Longtailed Grass, 8: 74
- , Orangebarred Leaf, 8: 151
- , Pallas's Leaf, 8: 158
- , Rufouscapped Bush, 8: 17
- , Spotted Bush, 8: 20
- , Whitethroated Flycatcher-, 8: 194
- , Yellowbrowed Ground, 8: 1
- , Yellowheaded Fantail, 8: 31
- , Yunnan Crowned Leaf, 8: 178
- Watercock or Kora, 2: 172
- Waterhen, Andamans Whitebreasted, 2: 171
- , Ceylonese Whitebreasted, 2: 171
- , Chinese Whitebreasted, 2: 171
- Waxwing, 5: 266
- Weaver Bird, Blackthroated, 10: 96
- , Burmese Streaked, 10: 101
- , Indian Streaked, 10: 98
- Weaver Birds, 10: 87
- Wheatcar, 9: 44
- , Central Asian Desert, 9: 47
- , Tibetan Desert, 9: 45
- Whimbrel, 2: 242
- , Eastern, 2: 244
- Whistler, Mangrove, or Grey Thick-head, 7: 228
- White-eye, Andhra, 10: 59
- , Ceylon, 10: 61
- , Eastern, or Baer's Pochard, 1: 184
- , Indian, 10: 57
- White-eye, Nicobar, 10: 60
- , Nilgiri, 10: 60
- White-eyes, 10: 56
- Whitethroat, Hume's Lesser, 8: 129
- , Indian, 8: 124
- , Kirghiz Lesser, 8: 128
- , Siberian Lesser, 8: 126
- , Small, 8: 128
- Wigeon, 1: 167
- Wood Swallows or Swallow-Shrikes, 5: 143
- Woodcock, 2: 292
- Woodpecker, Black 4: 210
- , Blackbacked, 4: 239
- , Blacknaped Green, 4: 186
- , Browheaded Pied, 4: 221
- , Crimsonbreasted Pied, 4: 219
- , Darjeeling Pied, 4: 218
- , Fulvousbreasted Pied, 4: 224
- , Great Black, 4: 208
- , Slaty, 4: 206
- , Spotted, 4: 213
- , Grey-crowned Pigmy, 4: 228
- , Heartspotted, 4: 236
- , Himalayan Goldenbacked Threetoed, 4: 203
- , Pied, 4: 216
- , Indian Goldenbacked Threetoed, 4: 203
- , Larger Goldenbacked, 4: 242
- , Lesser Goldenbacked, 4: 196
- , Little Scalybellied Green, 4: 184
- , Palcheaded, 4: 205
- , Pigmy, 4: 231
- , Redeared Bay, 4: 238
- , Rufous, 4: 177
- , Rufousbellied, 4: 211
- , Scalybellied Green, 4: 182
- , Sind Pied, 4: 215
- , Small Yellownaped, 4: 192
- , Stripebreasted Pied, 4: 223
- , Threetoed, 4: 234
- , Yellowfronted Pied, 4: 226
- , Yellownaped Woodpecker, 4: 190
- Woodpeckers, 4: 168
- Wren, Cachar Wedgebilled, 6: 168
- , Kashmir, 9: 136
- , Magrath's, 9: 135
- , Nepal, 9: 137
- , Sikkim Wedgebilled, 6: 167
- Wrens, 9: 134
- Wren-Babbler *see* Babbler
- Wren-Warbler *see* Warbler
- Wryneck, 4: 168
- Yuhina, Assam Yellownaped, 7: 103
- , Blackchinned, 7: 107
- , Chestnut-headed, 7: 99
- , Eastern Stripethroated, 7: 104
- , Yellownaped, 7: 102
- , Mishmi Whitebrowed, 7: 99
- , Sikkim Whitebrowed, 7: 98
- , Slatyheaded or Rufousvented, 7: 106
- , Western Stripethroated, 7: 104
- , Yellownaped, 7: 101
- , Whitebellied, 7: 108
- , Whitenaped, 7: 100

PLATES

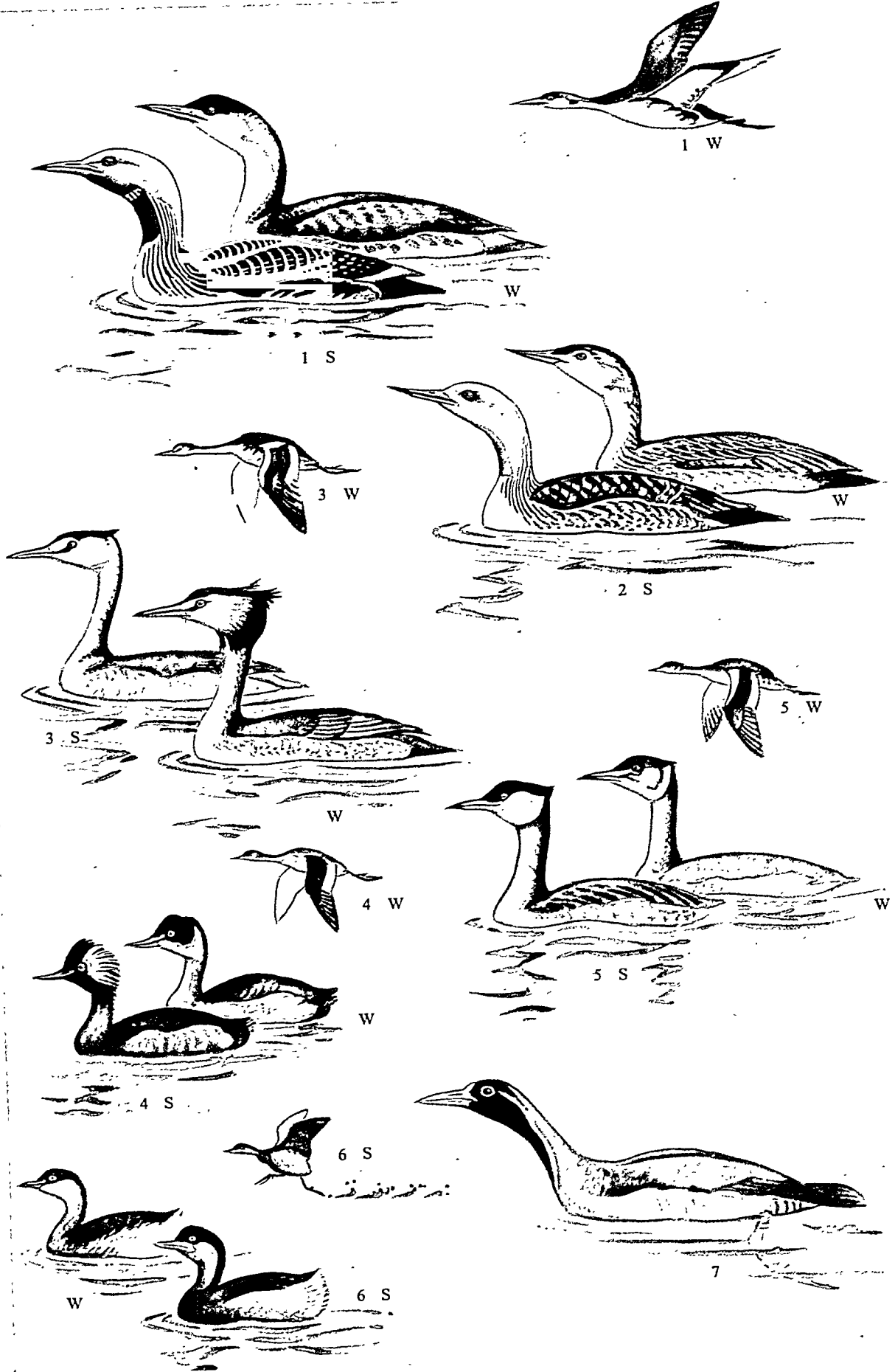


PLATE I

- | | |
|---|---|
| 1 <i>Gavia arctica</i> , Blackthroated Diver (1) | 5 <i>Podiceps grisegena</i> , Rednecked Grebe (3a) |
| 2 <i>Gavia stellata</i> , Redthroated Diver (2) | 6 <i>Podiceps ruficollis</i> , Little Grebe (5) |
| 3 <i>Podiceps cristatus</i> , Great Crested Grebe (3) | 7 <i>Heliopais personata</i> , Masked Finfoot (351) |
| 4 <i>Podiceps nigricollis</i> , Blacknecked Grebe (4) | |



PLATE 2

- | | |
|--|--|
| 1 <i>Oceanites oceanicus</i> , Wilson's Storm Petrel (14) | 7 <i>Procellaria pacifica</i> , Wedgetailed Shearwater (9) |
| 2 <i>Oceanodroma leucorhoa</i> , Leach's or Forktailed Storm Petrel (16) | 8 <i>Procellaria carneipes</i> , Pinkfooted Shearwater (8) |
| 3 <i>Oceanodroma matsudairae</i> , Matsudaira's Storm Petrel (SE) | 9 <i>Procellaria tenuirostris</i> , Short-tailed Shearwater (SE) |
| 4 <i>Fregatta tropica</i> , Duskyvented Storm Petrel (15) | 10 <i>Calonestris leucomelas</i> , Streaked Shearwater (SE) |
| 5 <i>Bulweria bulwerii</i> , Bulwer's Gadfly Petrel (13b) | 11 <i>Pelagodroma marina</i> , Whitefaced Storm Petrel (SE) |
| 6 <i>Bulweria fallax</i> , Jouanin's Gadfly Petrel (13a) | 12 <i>Daption capensis</i> , Cape Petrel (6) |
| | 13 <i>Procellaria therminieri</i> , Audubon's Shearwater (11) |

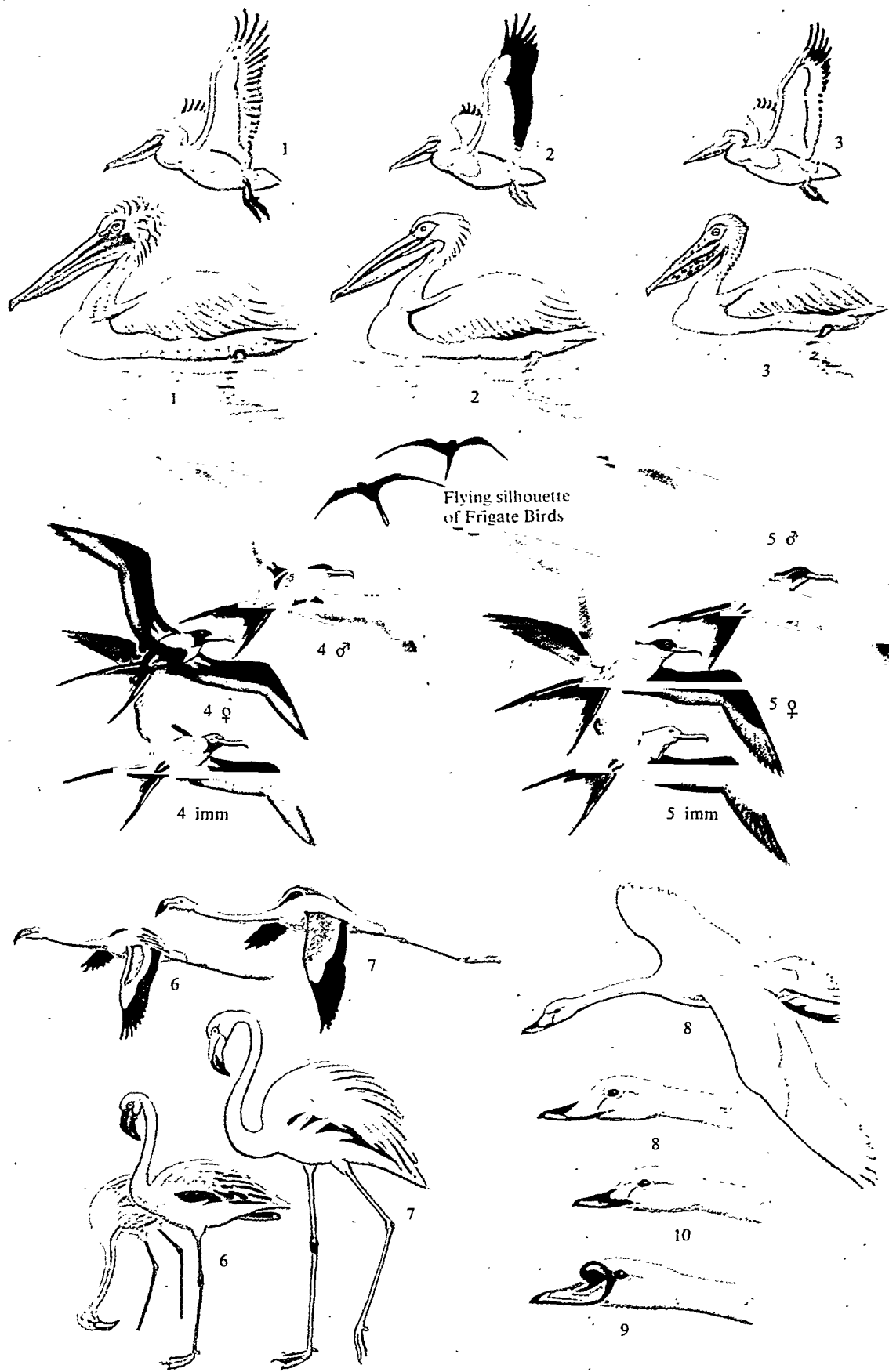


PLATE 3

- 1 *Pelecanus philippensis*, Spottedbilled Pelican (21)
- 2 *Pelecanus onocrotalus*, Rosy or White Pelican (20)
- 3 *Pelecanus p. crispus*, Dalmatian Pelican (22), ssp of 21
- 4 *Fregata ariel*, Least Frigate Bird (32)
- 5 *Fregata minor*, Lesser Frigate Bird (31)

- 6 *Phoeniconaias minor*, Lesser Flamingo (74)
- 7 *Phoenicopterus roseus*, Flamingo (73)
- 8 *Cygnus cygnus*, Whooper Swan (86)
- 9 *Cygnus olor*, Mute Swan (87)
- 10 *Cygnus c. bewickii*, Bewick's Swan (84), ssp. of 86



PLATE 4

- 1 *Phalacrocorax carbo*, Cormorant (26)
- 2 *Phalacrocorax fuscicollis*, Indian Shag (27)
- 3 *Phalacrocorax niger*, Little Cormorant (28)
- 4 *Phalacrocorax pygmaeus*, Pygmy Cormorant (28a)
- 5 *Anhinga rufa*, Darter (29)

- 6 *Botaurus stellaris*, Bittern (59)
- 7 *Egretta garzetta*, Little Egret (49)
- 8 *Gorsachius melanolophus*, Malay or Tiger Bittern (53)
- 9 *Ardeola grayii*, Pond Heron or Paddybird (42)
- 10 *Nycticorax nycticorax*, Night Heron (52)



PLATE 5

- 1 *Phaethon rubricauda*, Redtailed Tropic-Bird (18)
- 2 *Phaethon aethereus*, Redbilled (or Short-tailed) Tropic-Bird (17)
- 3 *Sula dactylatra*, Masked Booby (23)

- 4 *Phaethon lepturus*, Longtailed Tropic-Bird (19)
- 5 *Sula sula*, Redfooted Booby (24)
- 6 *Sula leucogaster*, Brown Booby (25)

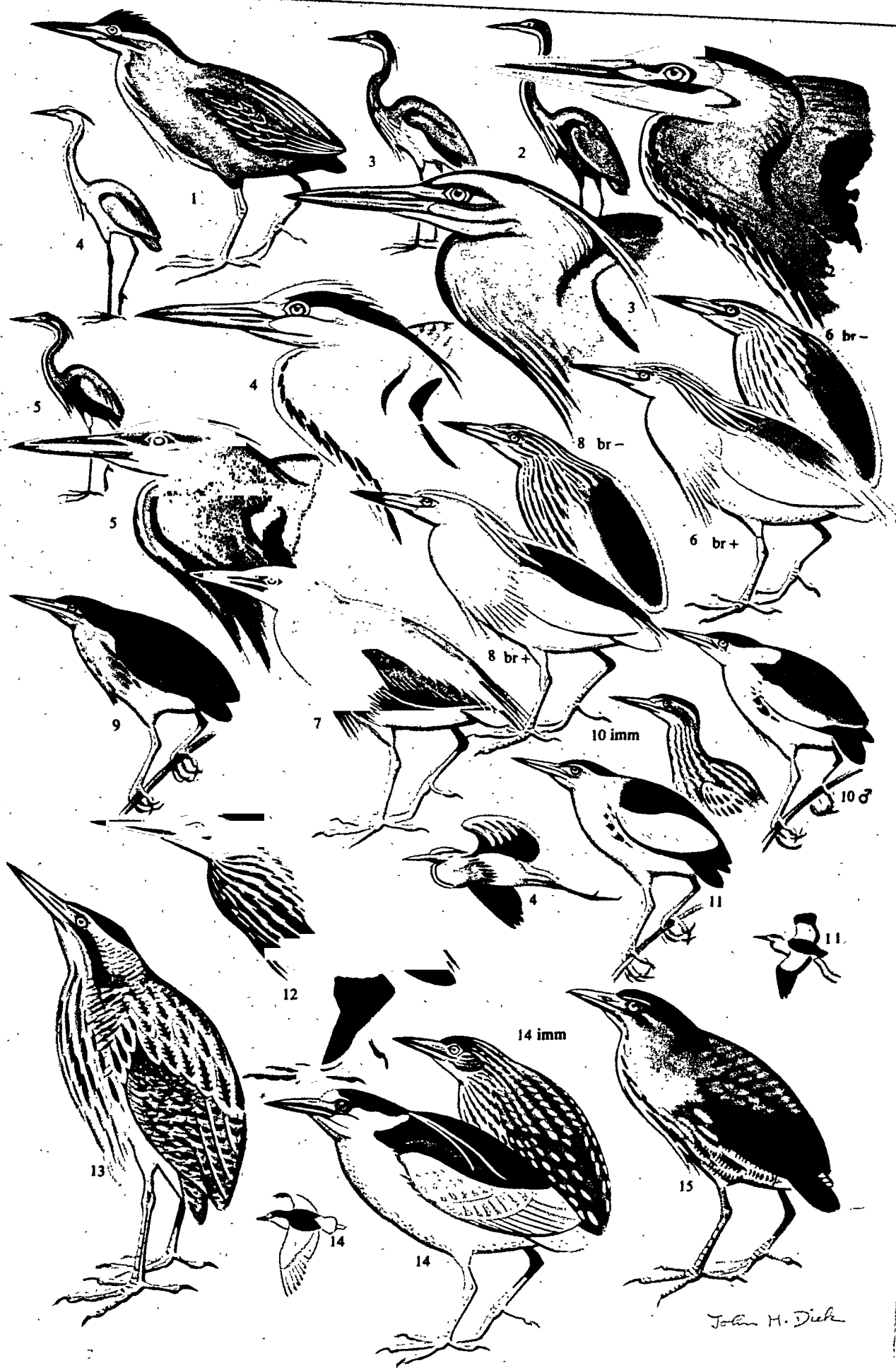


PLATE 6

- | | |
|---|---|
| 1 <i>Butorides striatus</i> , Little Green Heron (38) | 9 <i>Ixobrychus cinnamomeus</i> , Chestnut Bittern (56) |
| 2 <i>Ardea goliath</i> , Giant Heron (34) | 10 <i>Ixobrychus sinensis</i> , Yellow Bittern (57) |
| 3 <i>Ardea insignis</i> , Great Whitebellied Heron (33) | 11 <i>Ixobrychus minutus</i> , Little Bittern (55) |
| 4 <i>Ardea cinerea</i> , Grey Heron (36) | 12 <i>Ixobrychus flavicollis</i> , Black Bittern (58) |
| 5 <i>Ardea purpurea</i> , Purple Heron (37) | 13 <i>Botaurus stellaris</i> , Bittern (59) |
| 6 <i>Ardeola ralloides</i> , Squacco Heron (SE) | 14 <i>Nycticorax nycticorax</i> , Night Heron (52) |
| 7 <i>Ardeola bacchus</i> , Chinese Pond Heron (43) | 15 <i>Gorsachius melanolophus</i> , Malay or Tiger Bittern (53) |
| 8 <i>Ardeola grayii</i> , Pond Heron or Paddybird (42) | |

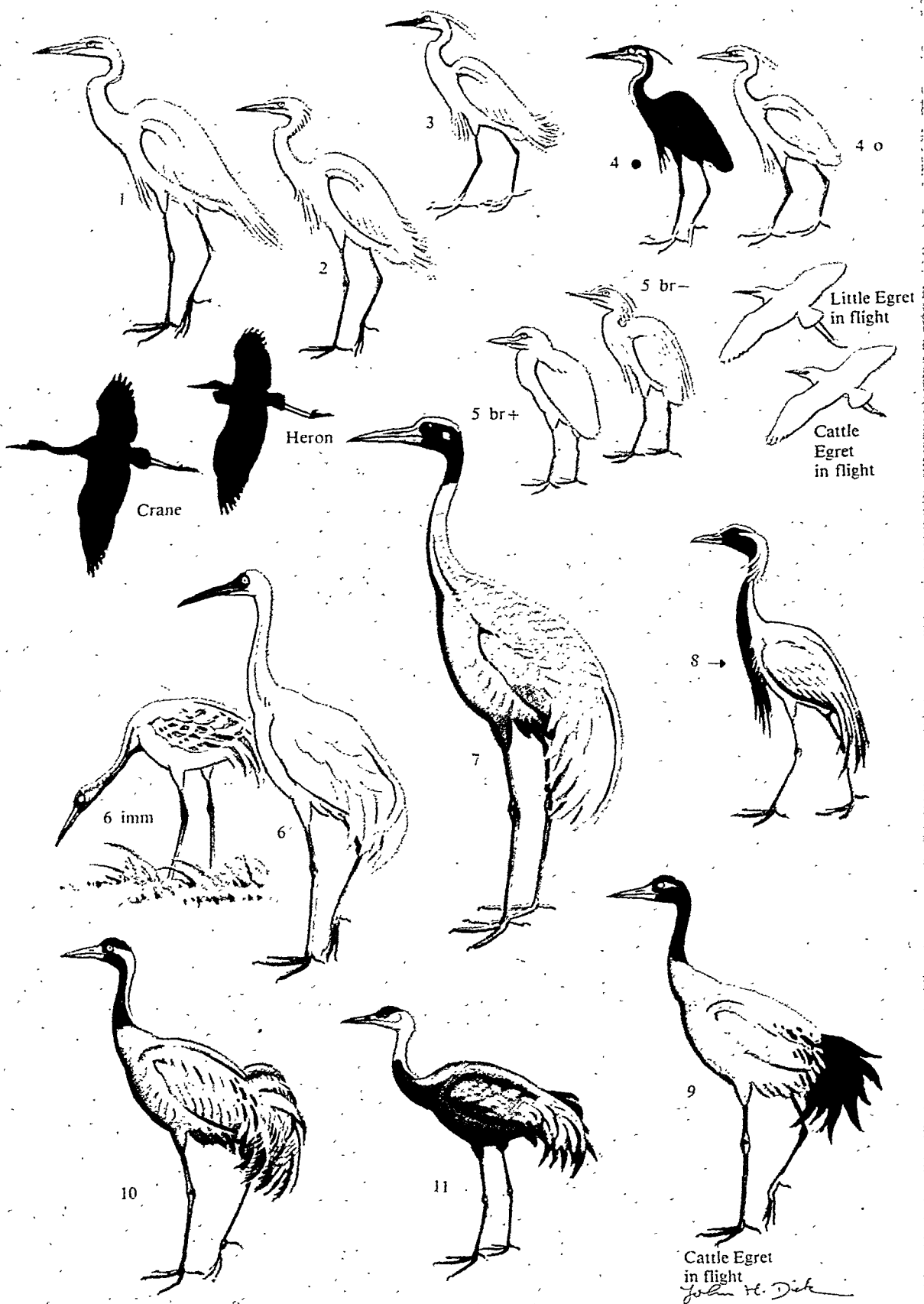


PLATE 7

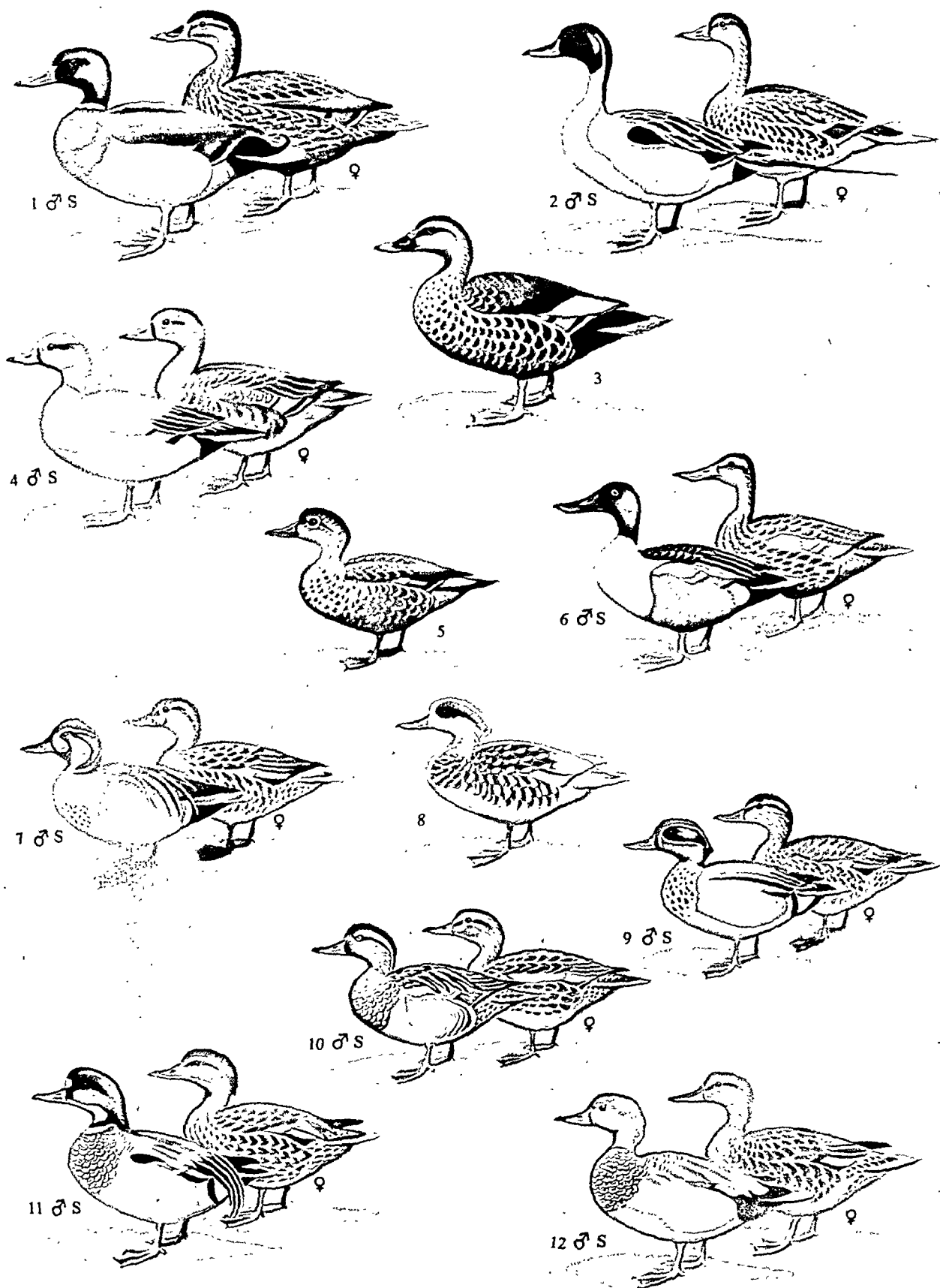
- 1 *Ardea alba*, Large Egret (46)
- 2 *Egretta intermedia*, Smaller Egret (47)
- 3 *Egretta garzetta*, Little Egret (49)
- 4 *Egretta gularis*, Indian Reef Heron (50)
- 5 *Bubulcus ibis*, Cattle Egret (44)
- 6 *Grus leucogeranus*, Siberian Crane (325)

- 7 *Grus antigone*, Sarus Crane (323)
- 8 *Anthropoides virgo*, Demoiselle Crane (326)
- 9 *Grus nigricollis*, Blacknecked Crane (321)
- 10 *Grus grus*, Common Crane (320)
- 11 *Grus monacha*, Hooded Crane (322)



PLATE 8

- | | |
|--|--|
| 1 <i>Ephippiorhynchus asiaticus</i> , Blacknecked Stork (66) | 7 <i>Pseudibis papillosa</i> , Black Ibis (70) |
| 2 <i>Mycteria leucocephala</i> , Painted Stork (60) | 8 <i>Platalea leucorodia</i> , Spoonbill (72) |
| 3 <i>Ciconia ciconia</i> , White Stork (63) | 9 <i>Plegadis falcinellus</i> , Glossy Ibis (71) |
| 4 <i>Ciconia nigra</i> , Black Stork (65) | 10 <i>Leptoptilos dubius</i> , Adjutant (67) |
| 5 <i>Anastomus oscitans</i> , Openbill Stork (61) | 11 <i>Threskiornis aethiopica</i> , White Ibis (69) |
| 6 <i>Ciconia episcopus</i> , Whitenecked Stork (62) | 12 <i>Leptoptilos javanicus</i> , Lesser Adjutant (68) |



John H. Dick

PLATE 9

- | | |
|---|--|
| 1 <i>Anas platyrhynchos</i> , Mallard (100) | 7 <i>Anas formosa</i> , Baikal Teal (95) |
| 2 <i>Anas acuta</i> , Pintail (93) | 8 <i>Marmaronetta angustirostris</i> , Marbled Teal (92) |
| 3 <i>Anas poecilorhyncha</i> , Spotbill Duck (97) | 9 <i>Anas crecca</i> , Common Teal (94) |
| 4 <i>Anas penelope</i> , Wigeon (103) | 10 <i>Anas querquedula</i> , Garganey (104) |
| 5 <i>Anas gibberifrons</i> , Grey Teal (96) | 11 <i>Anas falcata</i> , Falcated Teal (102) |
| 6 <i>Anas clypeata</i> , Shoveller (105) | 12 <i>Anas strepera</i> , Gadwall (101) |

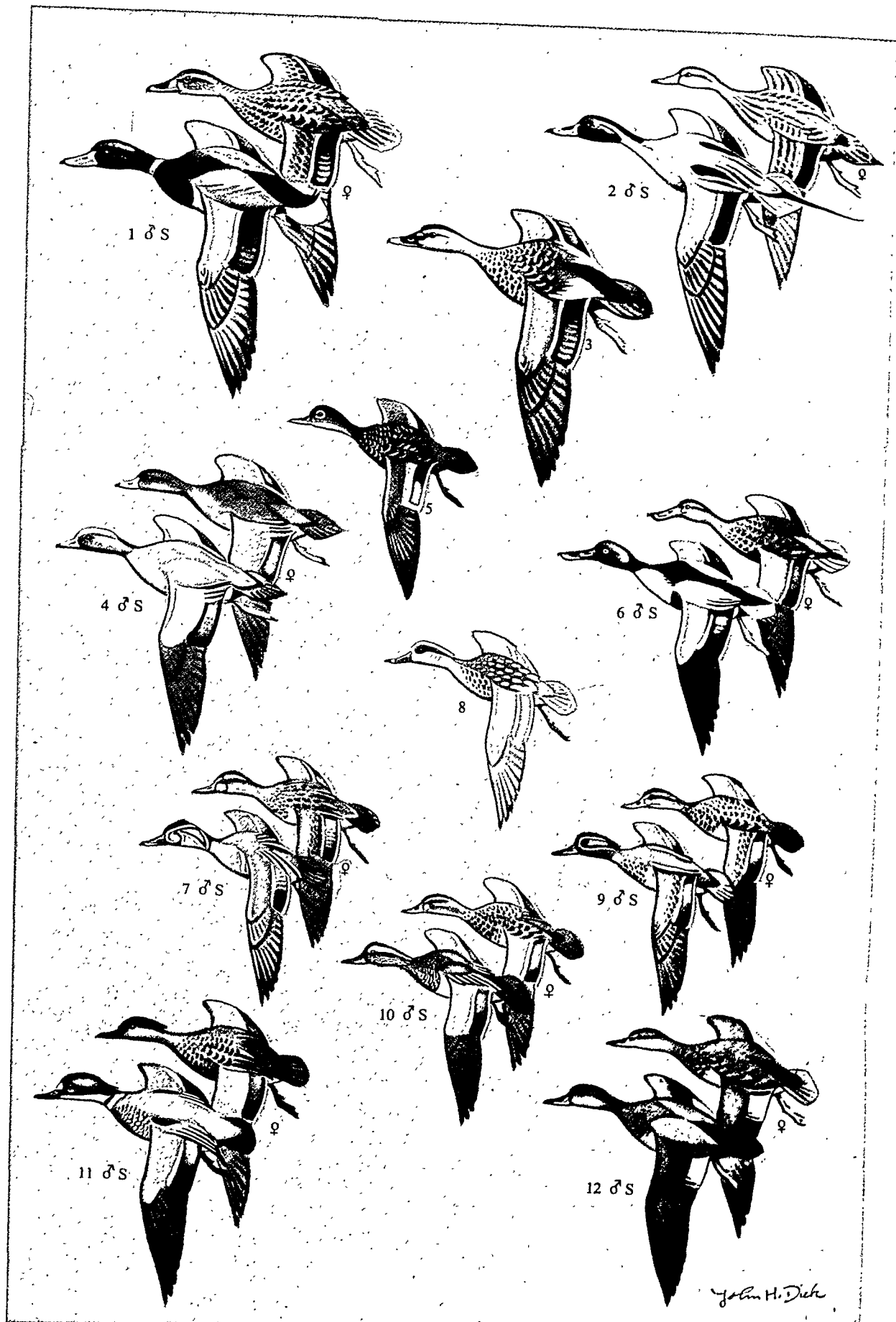


PLATE 10
(Ducks in flight)

- | | |
|---|--|
| 1 <i>Anas platyrhynchos</i> , Mallard (100) | 7 <i>Anas formosa</i> , Baikal Teal (95) |
| 2 <i>Anas acuta</i> , Pintail (93) | 8 <i>Marmaronetta angustirostris</i> , Marbled Teal (92) |
| 3 <i>Anas poecilorhyncha</i> , Spotbill Duck (97) | 9 <i>Anas crecca</i> , Common Teal (94) |
| 4 <i>Anas penelope</i> , Wigeon (103) | 10 <i>Anas querquedula</i> , Garganey (104) |
| 5 <i>Anas gibberifrons</i> , Grey Teal (96) | 11 <i>Anas falcata</i> , Falcated Teal (102) |
| 6 <i>Anas clypeata</i> , Shoveller (105) | 12 <i>Anas strepera</i> , Gadwall (101) |

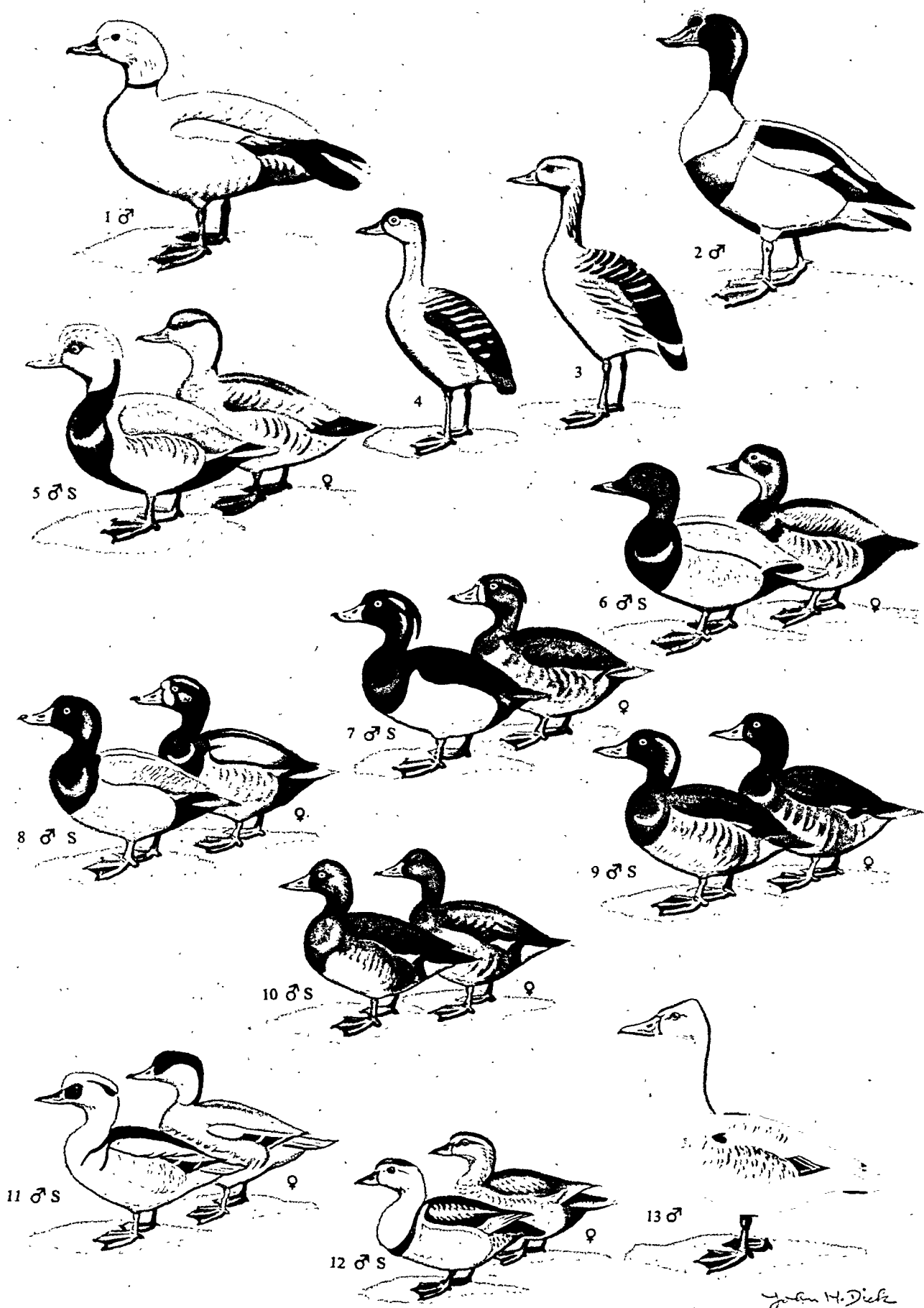


PLATE 11

- | | |
|---|--|
| 1 <i>Tadorna ferruginea</i> , Ruddy Shelduck (90) | 8 <i>Aythya marila</i> , Scaup Duck (112) |
| 2 <i>Tadorna tadorna</i> , Common Shelduck (91) | 9 <i>Aythya baeri</i> , Baer's Pochard (110) |
| 3 <i>Dendrocygna bicolor</i> , Large Whistling Teal (89) | 10 <i>Aythya nyroca</i> , White-eyed Pochard or Ferruginous Duck (109) |
| 4 <i>Dendrocygna javanica</i> , Lesser Whistling Teal or Tree Duck (88) | 11 <i>Mergus albellus</i> , Smew (119) |
| 5 <i>Netta rufina</i> , Redcrested Pochard (107) | 12 <i>Nettapus coromandelianus</i> , Cotton Teal or Quacky-Duck (114) |
| 6 <i>Aythya ferina</i> , Common Pochard (108) | 13 <i>Rhodonessa caryophyllacea</i> , Pinkheaded Duck (106) |
| 7 <i>Aythya fuligula</i> , Tufted Duck (111) | |

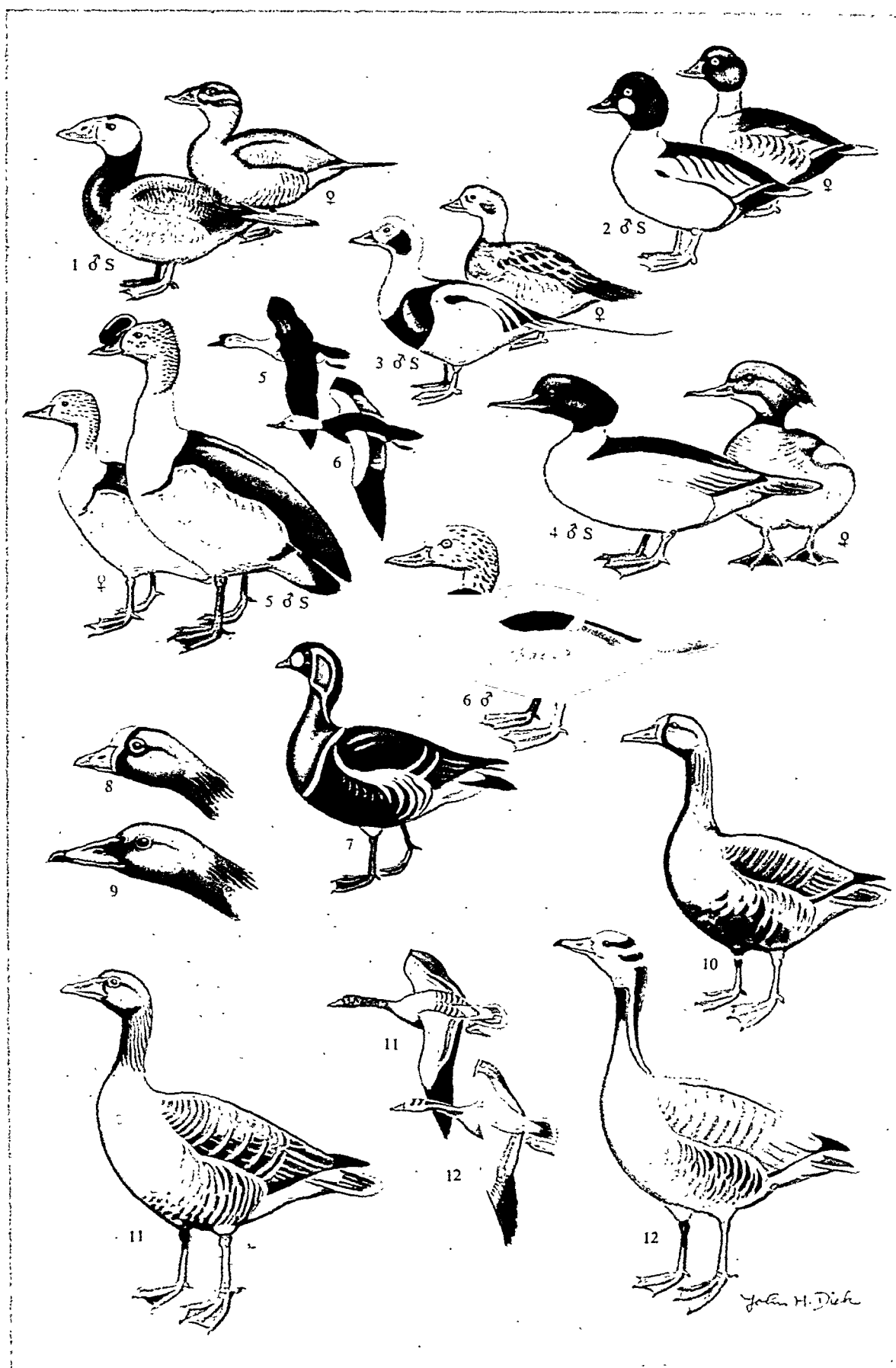


PLATE 12

- 1 *Oxyura leucocephala*, Whiteheaded Stiff-tailed Duck (123)
- 2 *Bucephala clangula*, Goldeneye Duck (118)
- 3 *Clangula hyemalis*, Longtail or Old Squaw Duck (117)
- 4 *Mergus merganser*, Goosander or Common Merganser (121)
- 5 *Sarkidiornis melanotos*, Comb Duck (115)

- 6 *Cairina scutulata*, Whitewinged Wood Duck (116)
- 7 *Branta ruficollis*, Siberian Redbreasted Goose (75)
- 8 *Anser erythropus*, Lesser Whitefronted Goose (80)
- 9 *Anser fabalis*, Bean Goose (76)
- 10 *Anser albifrons*, Whitefronted Goose (79)
- 11 *Anser anser*, Greylag Goose (81)
- 12 *Anser indicus*, Barheaded Goose (82)

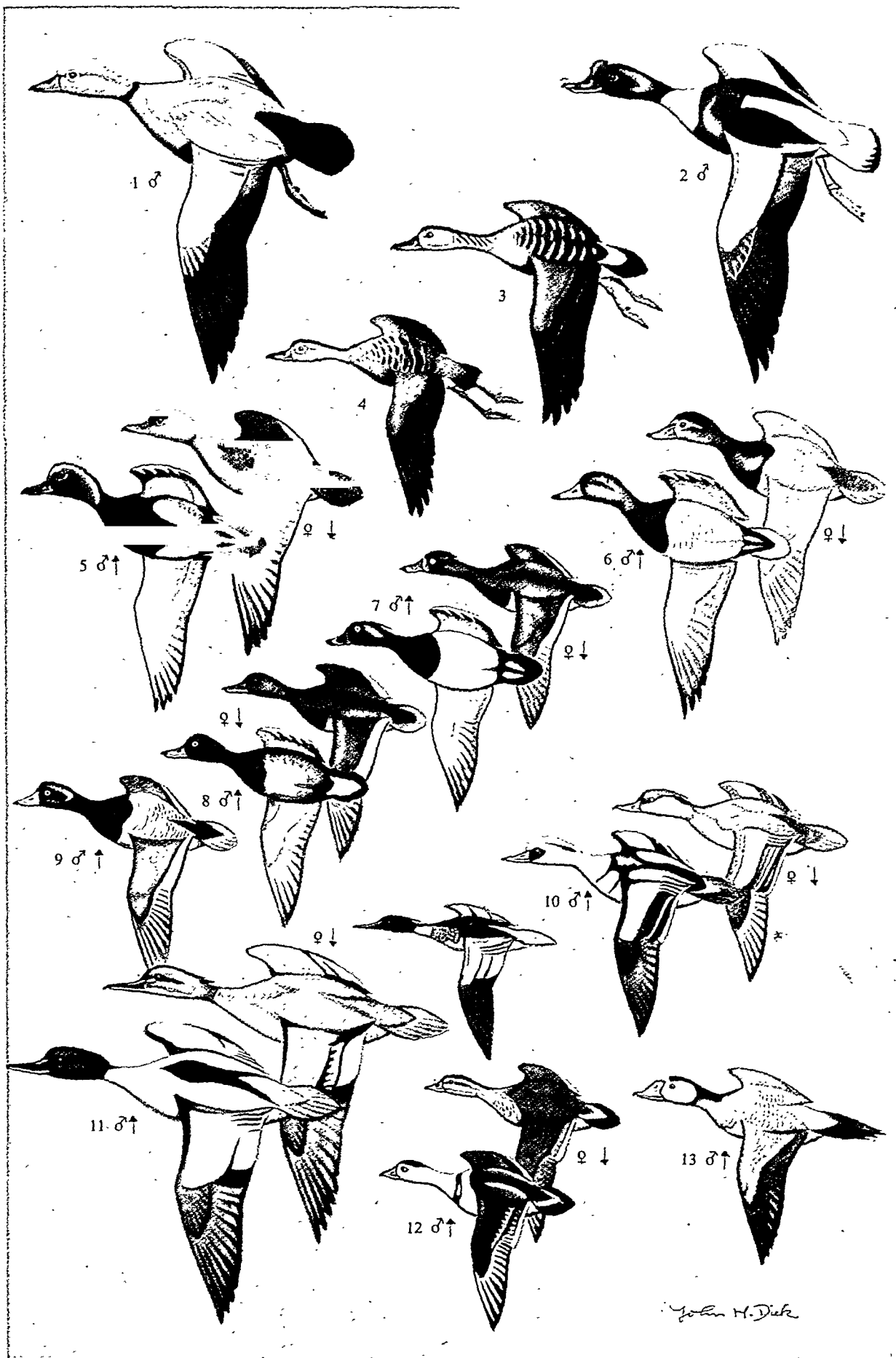
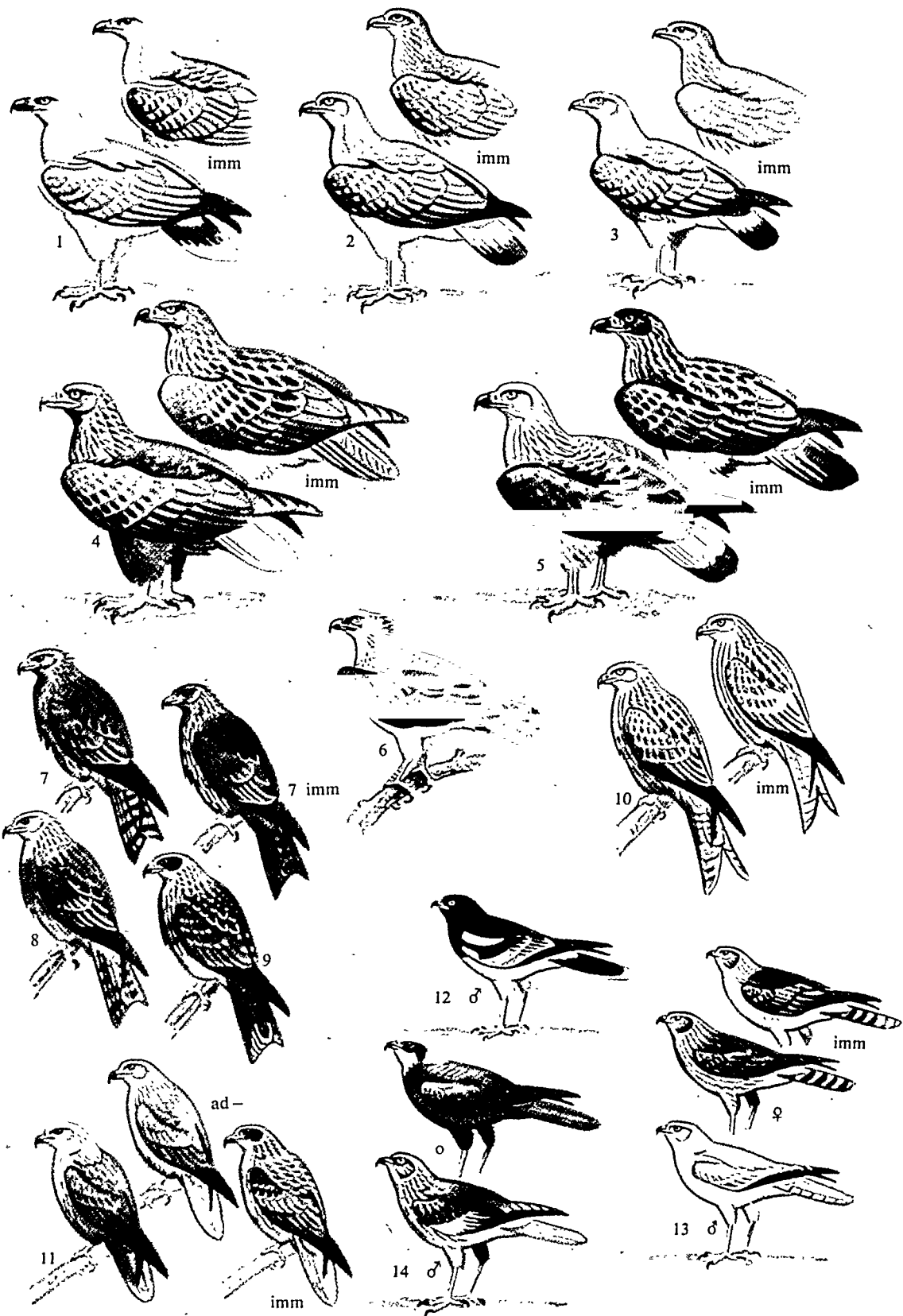


PLATE 13
(Ducks in flight)

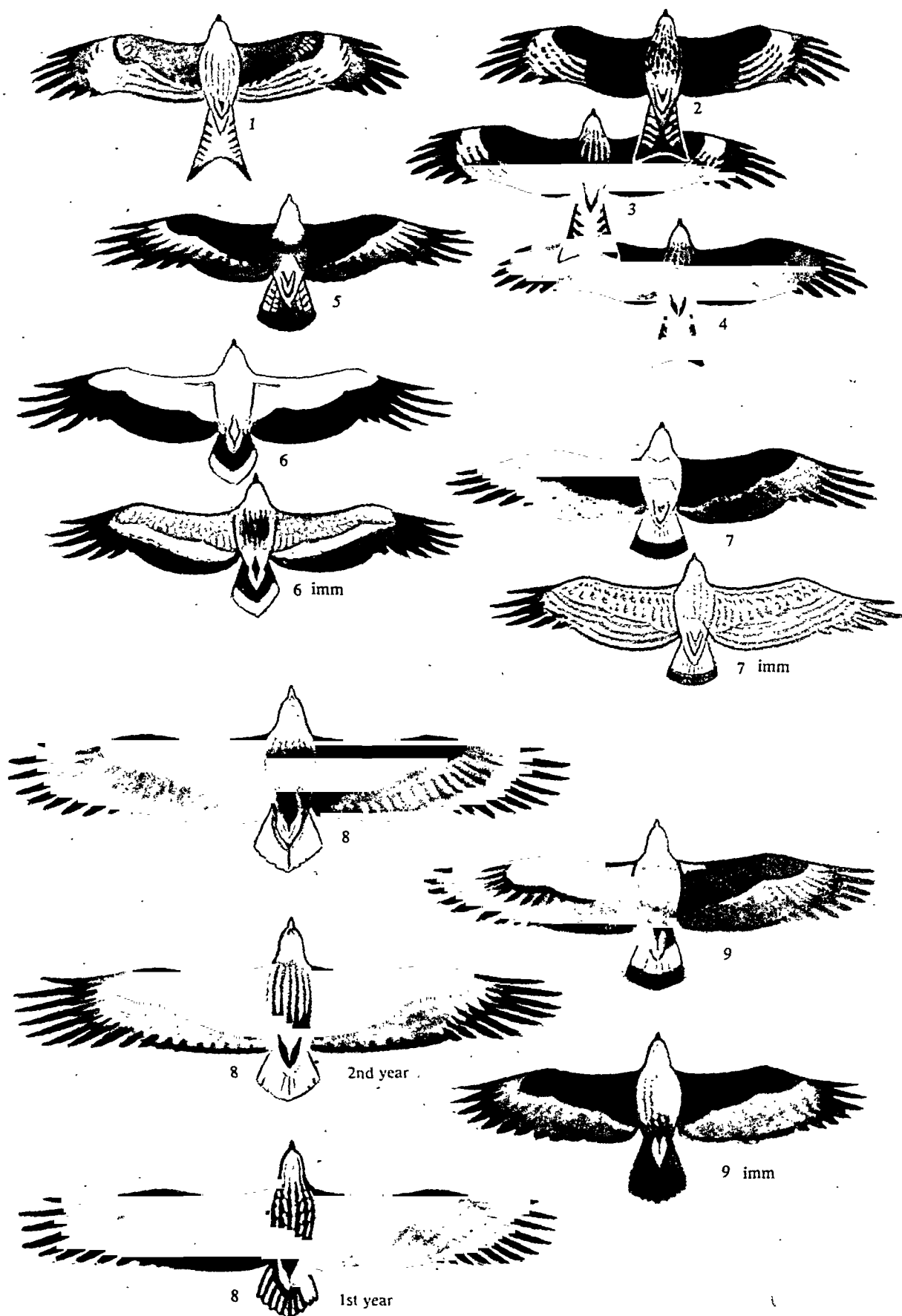
- | | |
|---|---|
| 1 <i>Tadorna ferruginea</i> , Ruddy Shelduck (90) | 9 <i>Aythya marila</i> , Scaup Duck (112) |
| 2 <i>Tadorna tadorna</i> , Common Shelduck (91) | 10 <i>Mergus albellus</i> , Smew (119) |
| 3 <i>Dendrocygna bicolor</i> , Large Whistling Teal (89) | 11 <i>Mergus merganser</i> , Goosander or Common Merganser (121) |
| 4 <i>Dendrocygna javanica</i> , Lesser Whistling Teal or Tree Duck (88) | 12 <i>Nettion coromandelianus</i> , Cotton Teal or Quack-Duck (114) |
| 5 <i>Netta rufina</i> , Redcrested Pochard (107) | 13 <i>Oxyura leucocephala</i> , Whiteheaded Stiff-tailed Duck (123) |
| 6 <i>Aythya ferina</i> , Common Pochard (108) | |
| 7 <i>Aythya fuligula</i> , Tufted Duck (111) | |
| 8 <i>Aythya nyroca</i> , White-eyed Pochard or Ferruginous Duck (109) | |



John M. Dick

PLATE 14

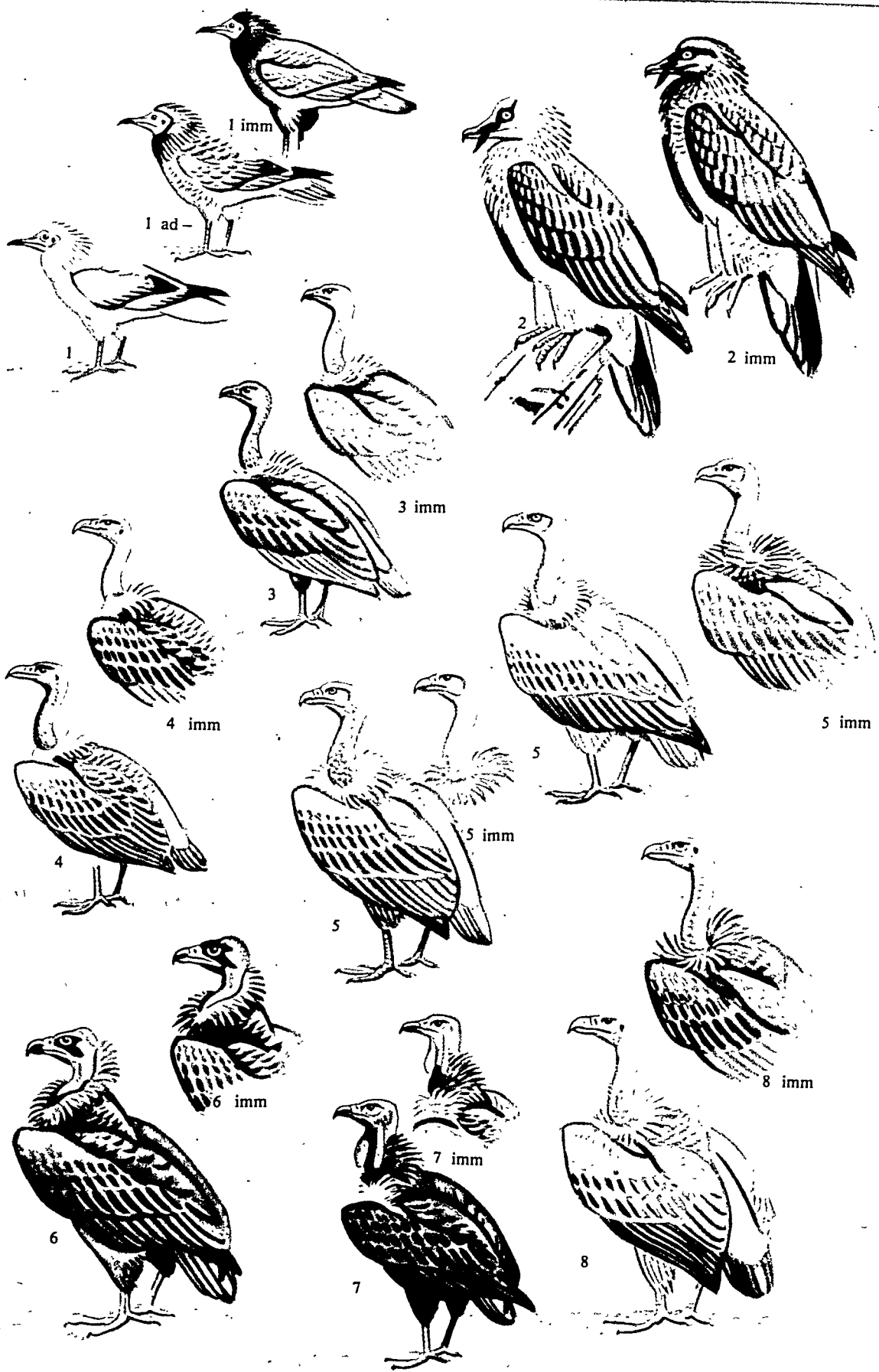
- 1 *Haliaeetus leucogaster*, Whitebellied Sea Eagle (173)
- 2 *Ichthyophaga ichthyaetus*, Greyheaded Fishing Eagle (175)
- 3 *Ichthyophaga nana*, Himalayan Greyheaded Fishing Eagle (177)
- 4 *Haliaeetus albicilla*, Whitetailed Eagle (172a)
- 5 *Haliaeetus leucoryphus*, Pallas's Fishing Eagle (174)
- 6 *Pandion haliaetus*, Osprey (203)
- 7 *Milvus m. govinda*, Pariah Kite (133), ssp of 132
- 8 *Milvus migrans*, Black Kite (132)
- 9 *Milvus m. lineatus*, Blackeared or Large Indian Kite (134), ssp of 132
- 10 *Milvus milvus*, Red Kite (131)
- 11 *Haliastur indus*, Brahminy Kite (135)
- 12 *Circus melanoleucos*, Pied Harrier (192)
- 13 *Circus macrourus*, Pale Harrier (190)
- 14 *Circus aeruginosus*, Marsh Harrier (193)



John H. Dick

PLATE 15
(Kites and Eagles in flight)

- | | |
|---|---|
| 1 <i>Milvus milvus</i> , Red Kite (131) | 6 <i>Haliaeetus leucogaster</i> , Whitebellied Sea Eagle (173) |
| 2 <i>Milvus m. lineatus</i> , Blackeared or Large Indian Kite (134), ssp of 132 | 7 <i>Ichthyophaga ichthyaeetus</i> , Greyheaded Fishing Eagle (175) |
| 3 <i>Milvus m. govinda</i> , Pariah Kite (133), ssp of 132 | 8 <i>Haliaeetus albicilla</i> , Whitetailed Eagle (172a) |
| 4 <i>Milvus migrans</i> , Black Kite (132) | 9 <i>Haliaeetus leucoryphus</i> , Pallas's Fishing Eagle (174) |
| 5 <i>Ichthyophaga nana</i> , Himalayan Greyheaded Fishing Eagle (177) | |



John H. Dietz

PLATE 16

- | | |
|--|---|
| 1 <i>Neophron percnopterus</i> , Egyptian or Scavenger Vulture (186) | 4 <i>Gyps indicus</i> , Indian Longbilled Vulture (182) |
| 2 <i>Gypaetus barbatus</i> , Bearded Vulture or Lämmergeier (188) | 5* <i>Gyps fulvus</i> , Griffon Vulture (180) |
| 3 <i>Gyps bengalensis</i> , Indian Whitebacked Vulture (185) | 6 <i>Aegypius monachus</i> , Cinereous Vulture (179) |
| | 7 <i>Sarcogyps calvus</i> , Black or King Vulture (178) |
| | 8 <i>Gyps himalayensis</i> , Himalayan Griffon (181) |

* No. 5 is repeated because since this plate was painted the two subspecies shown in the plate have been synonymized.

From above

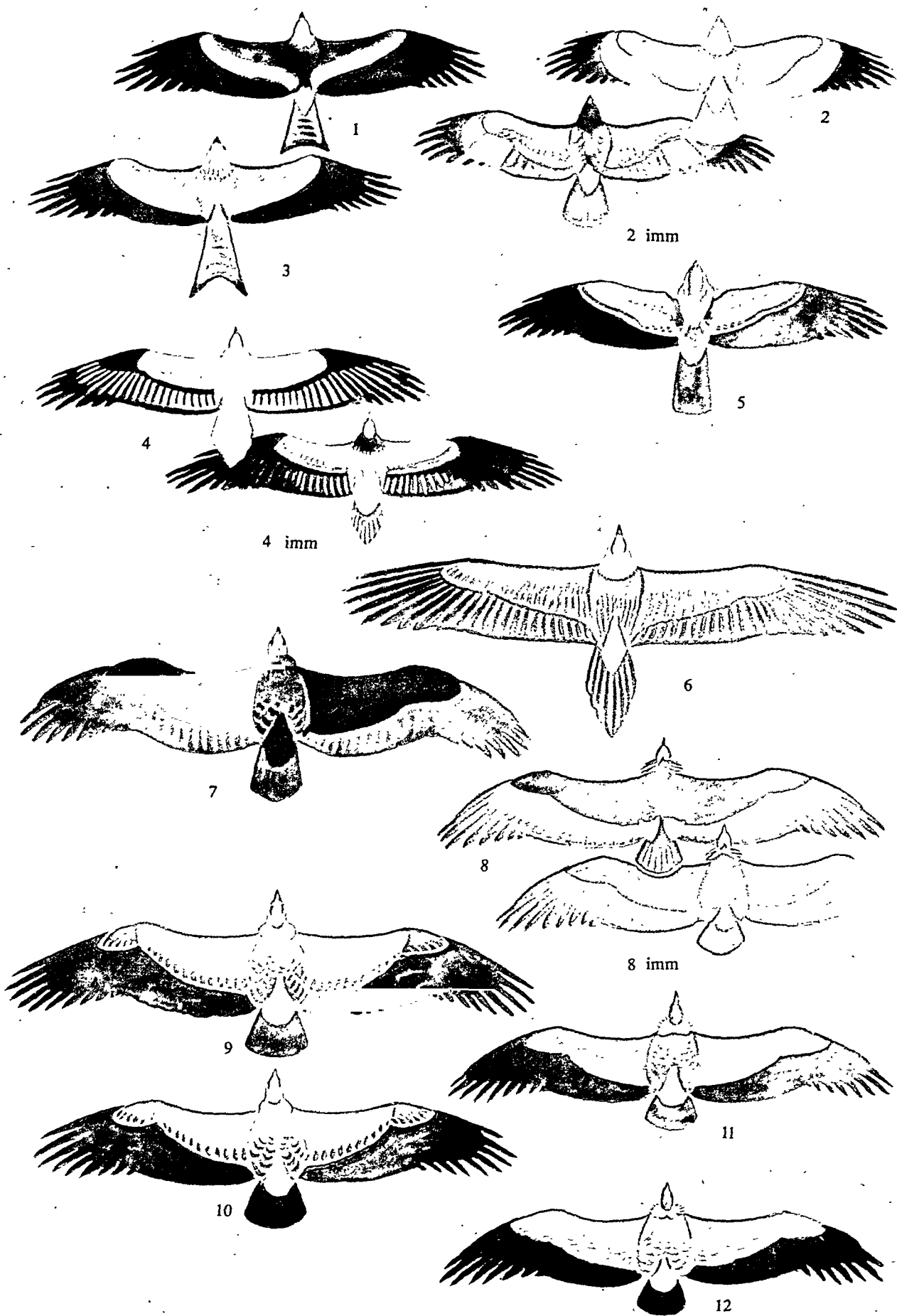
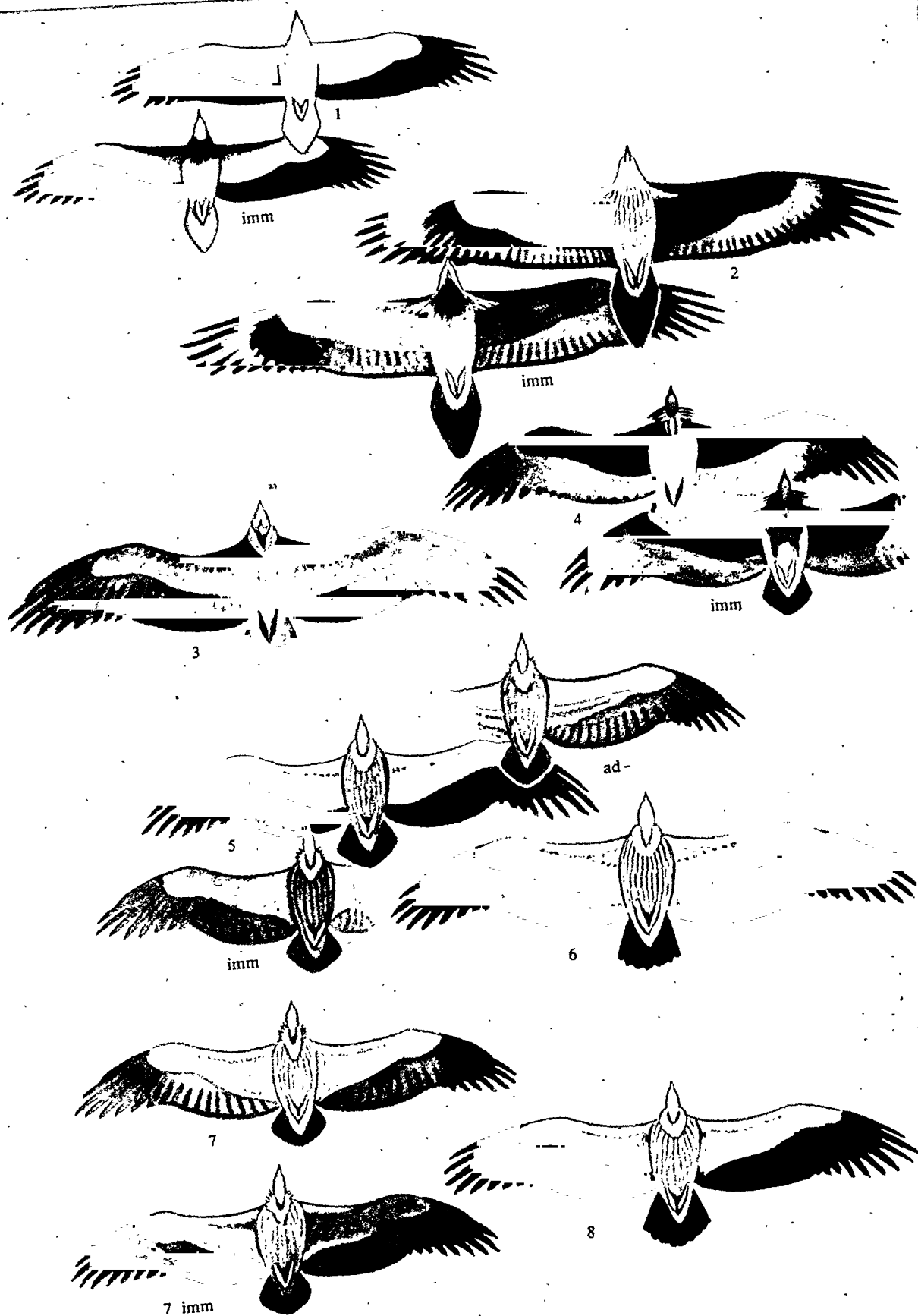


PLATE 17

(Kites, Vultures and Eagles in flight)

- | | |
|--|---|
| 1 <i>Milvus migrans govinda</i> , Pariah Kite (133) | 7 <i>Aegyptius monachus</i> , Cinereous Vulture (179) |
| 2 <i>Haliastur indus</i> , Brahminy Kite (135) | 8 <i>Sarcogyps calvus</i> , Black or King Vulture (178) |
| 3 <i>Milvus milvus</i> , Red Kite (131) | 9 <i>Gyps himalayensis</i> , Himalayan Griffon (181) |
| 4 <i>Neophron percnopterus</i> , Egyptian or Scavenger Vulture (186) | 10 <i>Gyps fulvus</i> , Griffon Vulture (180) |
| 5 <i>Hieraaetus pennatus</i> , Booted Hawk-Eagle (164) | 11 <i>Gyps bengalensis</i> , Indian Whitebacked Vulture (185) |
| 6 <i>Gypaetus barbatus</i> , Bearded Vulture or Lämmergeier (188) | 12 <i>Gyps indicus</i> , Indian Longbilled Vulture (182) |



John H. Dike

PLATE 18
(Vultures in flight)

- | | |
|--|--|
| 1 <i>Neophron percnopterus</i> , Egyptian or Scavenger Vulture (186) | 4 <i>Sarcogyps calvus</i> , Black or King Vulture (178) |
| 2 <i>Gypaetus barbatus</i> , Bearded Vulture or Lämmergeier (188) | 5 <i>Gyps bengalensis</i> , Indian Whitebacked Vulture (185) |
| 3 <i>Aegypius monachus</i> , Cinereous Vulture (179) | 6 <i>Gyps himalayensis</i> , Himalayan Griffon (181) |
| | 7 <i>Gyps indicus</i> , Indian Longbilled Vulture (182) |
| | 8 <i>Gyps fulvus</i> , Griffon Vulture (180) |

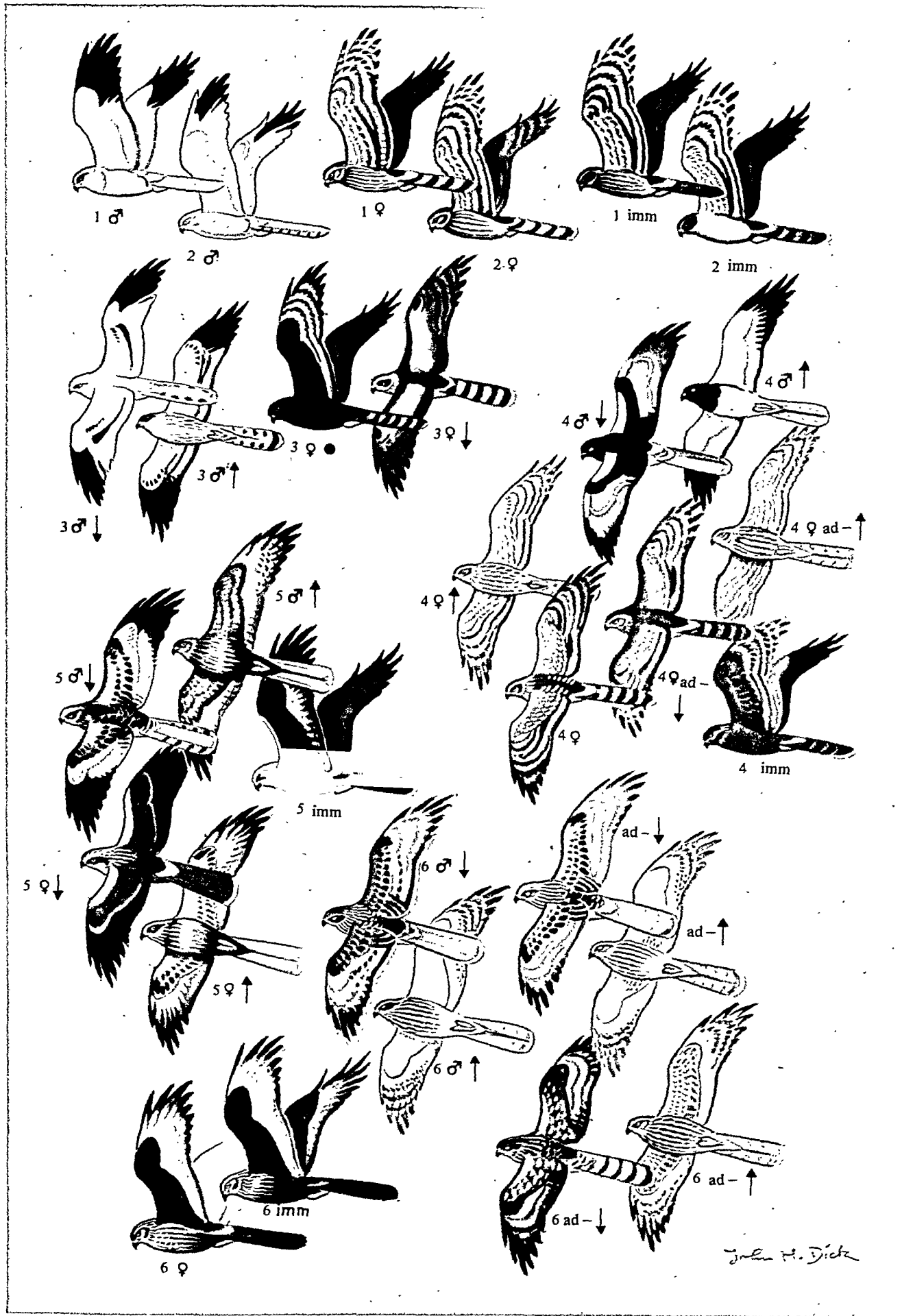


PLATE 19
(Harriers in flight)

- | | |
|--|--|
| 1 <i>Circus cyaneus</i> , Hen-Harrier (189) | 5 <i>Circus aeruginosus</i> , Marsh Harrier (193) |
| 2 <i>Circus macrourus</i> , Pale Harrier (190) | 6 <i>Circus a. spilonotus</i> , (Eastern) Marsh Harrier or |
| 3 <i>Circus pygargus</i> , Montagu's Harrier (191) | Striped Harrier (194), ssp of 193 |
| 4 <i>Circus melanoleucos</i> , Pied Harrier (192) | |

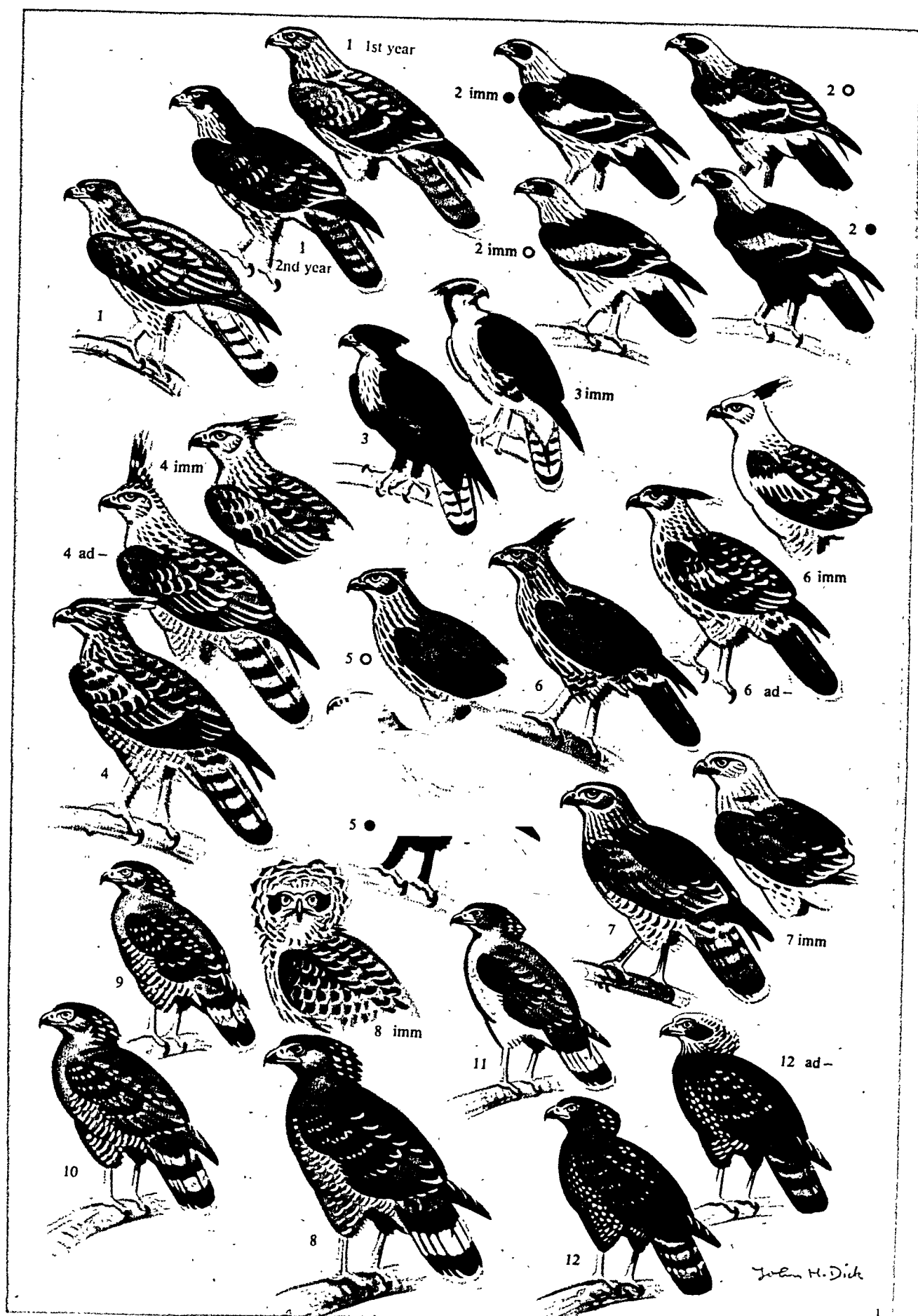


PLATE 20

- | | |
|--|--|
| 1 <i>Hieraaetus fasciatus</i> , Bonelli's Eagle (163) | 8* <i>Spilornis cheela</i> , Crested Serpent Eagle (196) |
| 2 <i>Hieraaetus pennatus</i> , Booted Hawk-Eagle (164) | 9 <i>Spilornis c. davisoni</i> , Andaman Pale Serpent Eagle (200), ssp of 196 |
| 3 <i>Hieraaetus kienerii</i> , Rufousbellied Hawk-Eagle (165) | 10 <i>Spilornis c. minimus</i> , Nicobar Crested Serpent Eagle (201), ssp of 196 |
| 4 <i>Spizaetus nipalensis</i> , Hodgson's Hawk-Eagle (158) | 11 <i>Spilornis klossi</i> , Great Nicobar Serpent Eagle (202) |
| 5 <i>Spizaetus c. linnaeetus</i> , Changeable Hawk-Eagle (160), ssp of 161 | 12 <i>Spilornis elgini</i> , Andaman Dark Serpent Eagle (202a) |
| 6 <i>Spizaetus cirrhatus</i> , Crested Hawk-Eagle (161) | |
| 7 <i>Circus gallicus</i> , Short-toed Eagle (195) | |

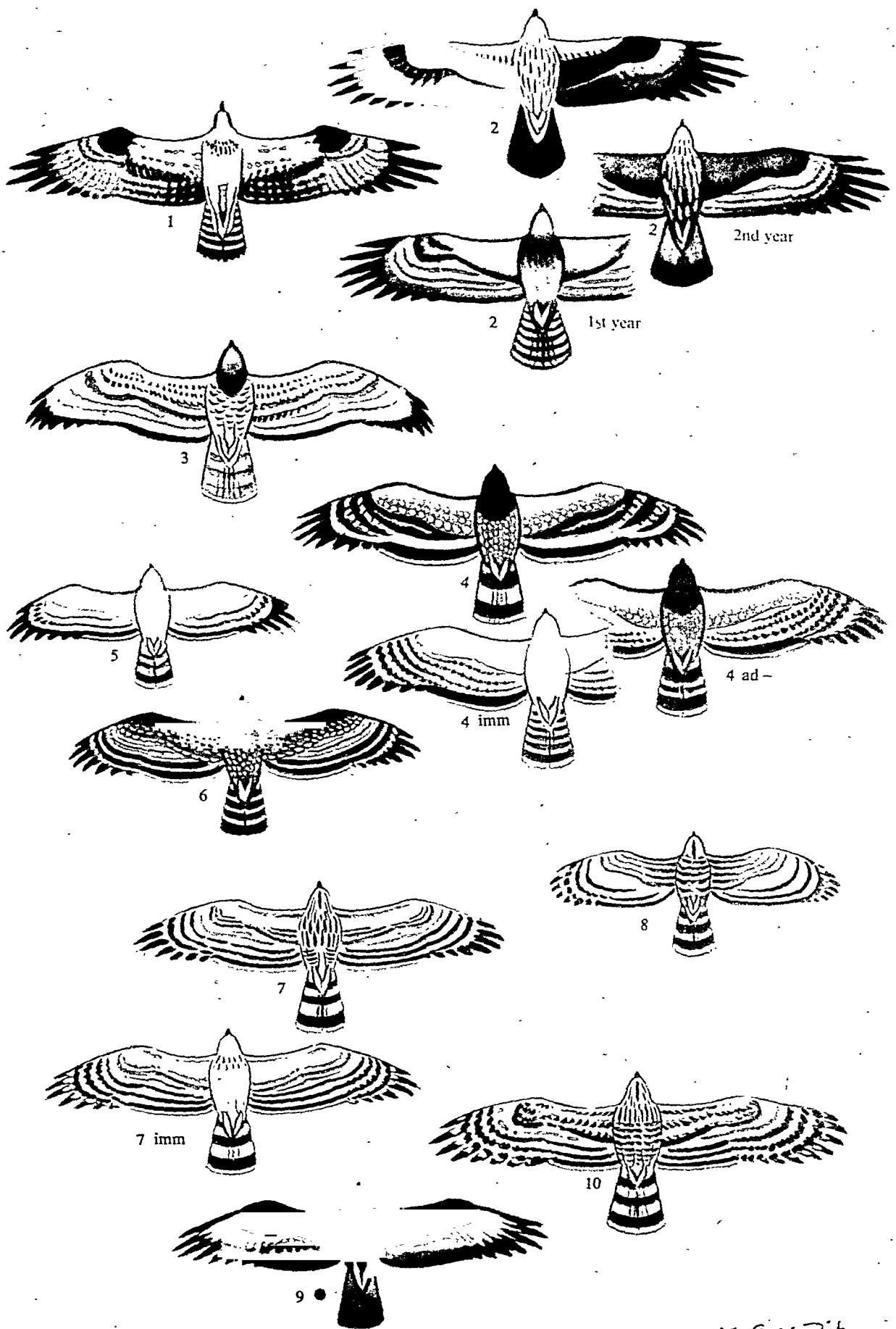
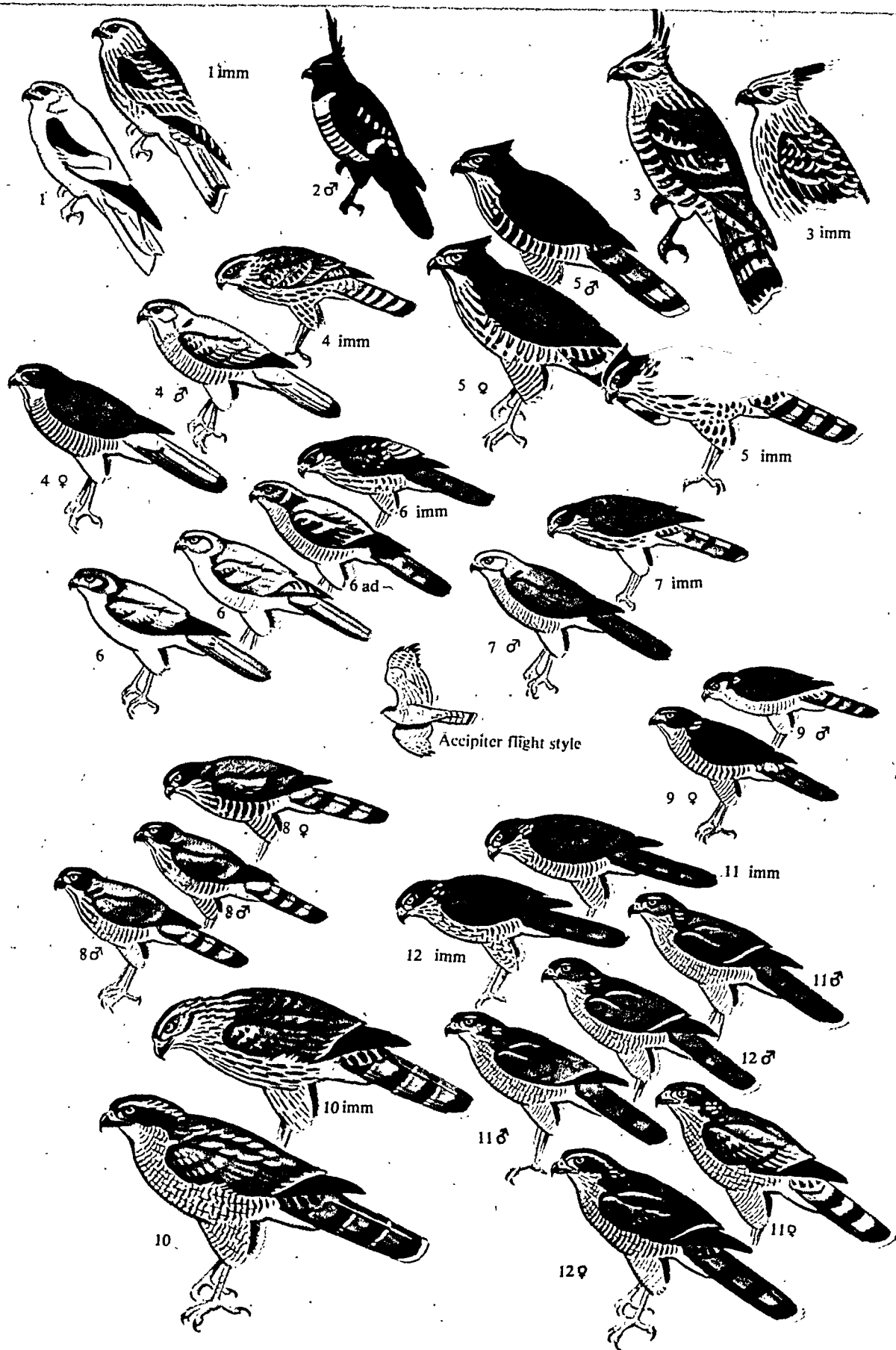


PLATE 21
(Raptors in flight)

- | | |
|---|--|
| 1 <i>Pandion haliaetus</i> , Osprey (203) | 7 <i>Spizaetus cirrhatus</i> , Crested Hawk-Eagle (161) |
| 2 <i>Hieraetus fasciatus</i> , Bonelli's Eagle (163) | 8 <i>Aviceda jerdoni</i> , Blyth's Baza (125) |
| 3 <i>Circaetus gallicus</i> , Short-toed Eagle (195) | 9 <i>Spizaetus c. limnaeetus</i> , Changeable Hawk-Eagle (160), ssp of 161 |
| 4 <i>Spilornis cheela</i> , Crested Serpent Eagle (196) | 10 <i>Spizaetus nipalensis</i> , Hodgson's Hawk-Eagle (158) |
| 5 <i>Spilornis klossi</i> , Great Nicobar Serpent Eagle (202) | |
| 6 <i>Spilornis elgini</i> , Andaman Dark Serpent Eagle (202a) | |



John H. Dick

PLATE 22

- 1 *Elanus caeruleus*, Blackwinged Kite (124)
- 2 *Aviceda leuphotes*, Blackcrested Baza (127)
- 3 *Aviceda jerdoni*, Blyth's Baza (125)
- 4 *Accipiter badius*, Shikra (139)
- 5 *Accipiter trivirgatus*, Crested Goshawk (144)
- 6 *Accipiter soloensis*, Horsfield's Goshawk (143)
- 7 *Accipiter b. butleri*, Car Nicobar Shikra (141),
ssp of 139

- 8 *Accipiter virgatus besra*, Besra Sparrow-Hawk (151)
- 9 *Accipiter virgatus gularis*, Eastern Besra Sparrow-Hawk (152)
- 10 *Accipiter gentilis*, Goshawk (136)
- 11 *Accipiter nisus nisosimilis*, Sparrow-Hawk (147)
- 12 *Accipiter nisus melaschistos*, Sparrow-Hawk (148)

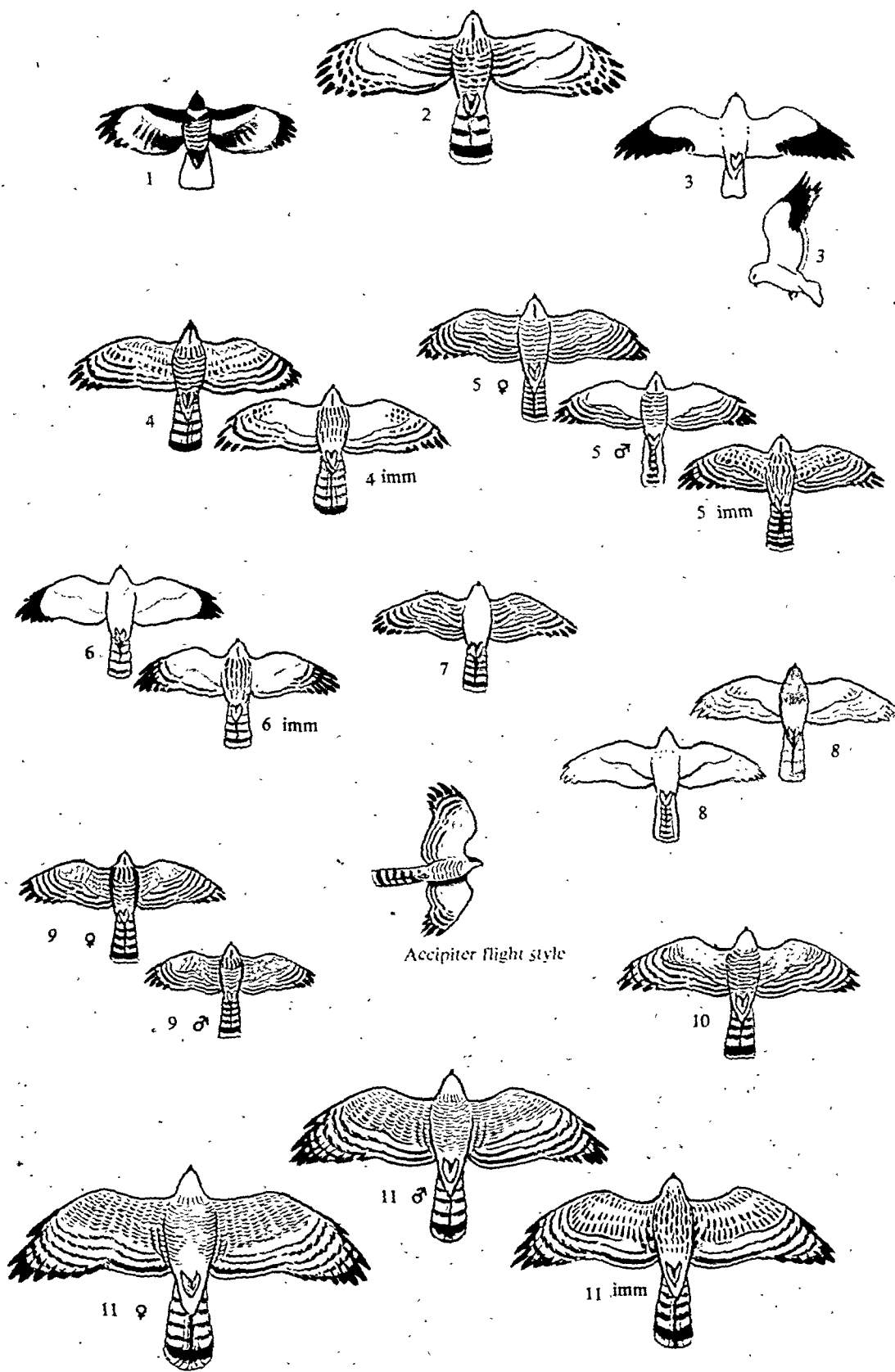


PLATE 23
(Raptors in flight)

- | | |
|--|---|
| 1 <i>Aviceda leuphotes</i> , Blackcrested Baza (127) | 8 <i>Accipiter b. butleri</i> , Car Nicobar Shikra (141),
ssp of 139 |
| 2 <i>Aviceda jerdoni</i> , Blyth's Baza (125) | 9 <i>Accipiter virgatus besra</i> , Besra Sparrow-
Hawk (151) |
| 3 <i>Elanus caeruleus</i> , Blackwinged Kite (124) | 10 <i>Accipiter nisus</i> , Sparrow-Hawk (148) |
| 4 <i>Accipiter trivirgatus</i> , Crested Goshawk (144) | 11 <i>Accipiter gentilis</i> , Goshawk (136) |
| 5 <i>Accipiter badius</i> , Shikra (139) | |
| 6 <i>Accipiter soloensis</i> , Horsfield's Goshawk (143) | |
| 7 <i>Accipiter virgatus gularis</i> , Eastern Besra Sparrow-
Hawk (152) | |

Variant plumages

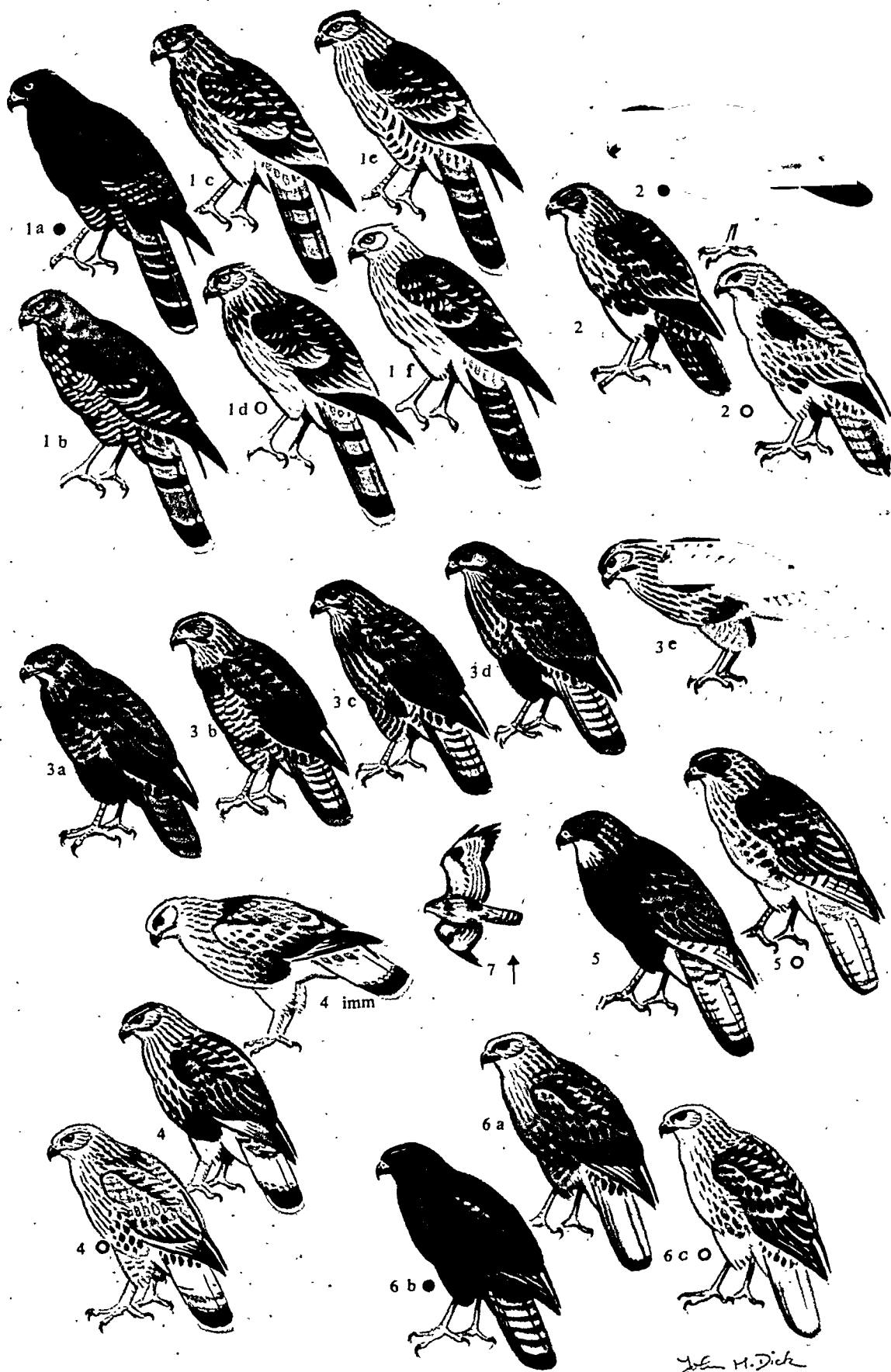
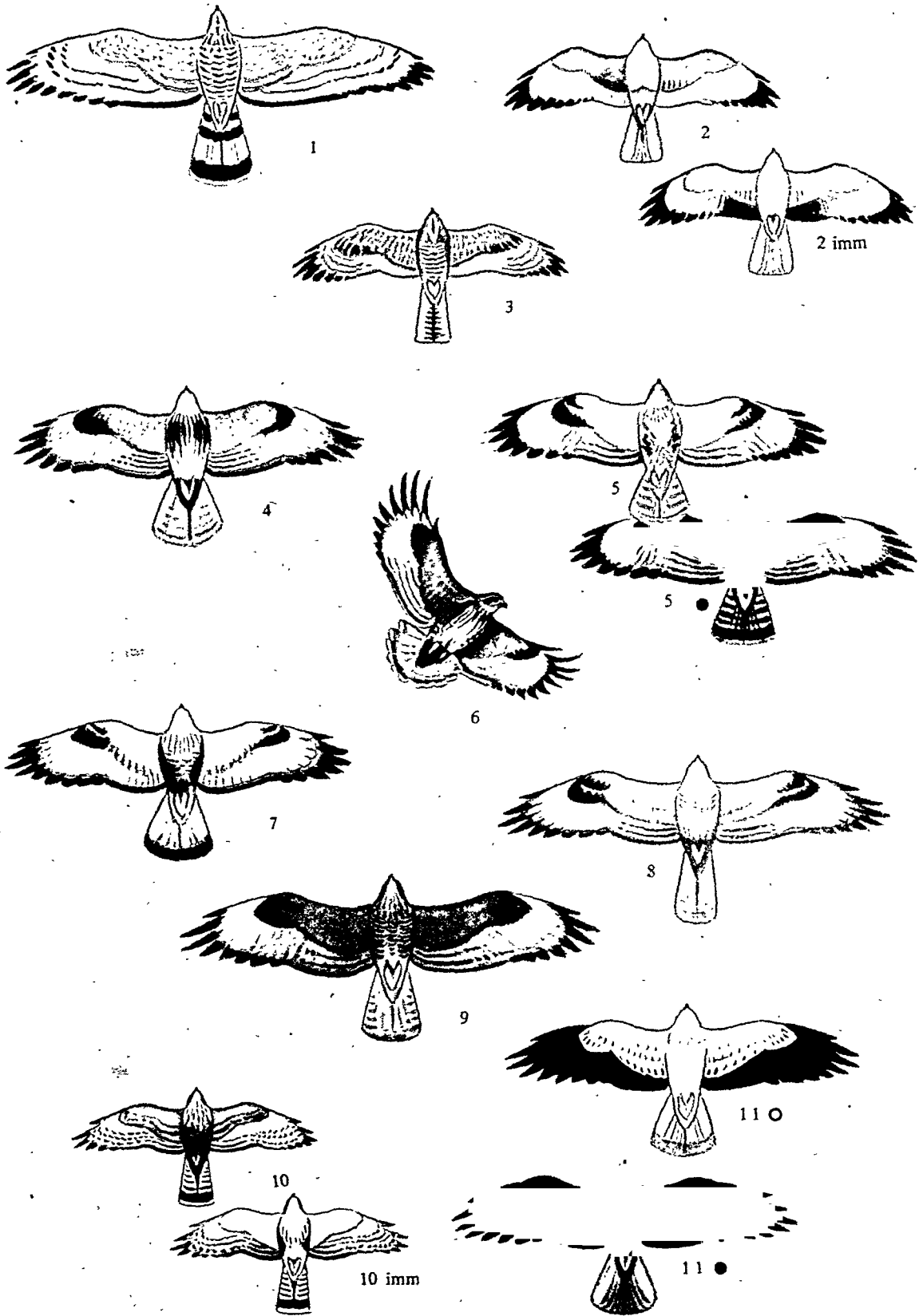


PLATE 24

- | | |
|---|---|
| 1 <i>Pernis ptilorhynchus</i> , Honey Buzzard (130) | 5 <i>Buteo hemilasius</i> , Upland Buzzard (154) |
| 2 <i>Buteo buteo japonicus</i> , Japanese Buzzard (156) | 6 <i>Buteo rufinus</i> , Longlegged Buzzard (153) |
| 3 <i>Buteo buteo vulpinus</i> , Desert Buzzard (155) | 7 Typical buzzard flight style |
| 4 <i>Buteo lagopus</i> , Roughlegged Buzzard (SE) | |

From below



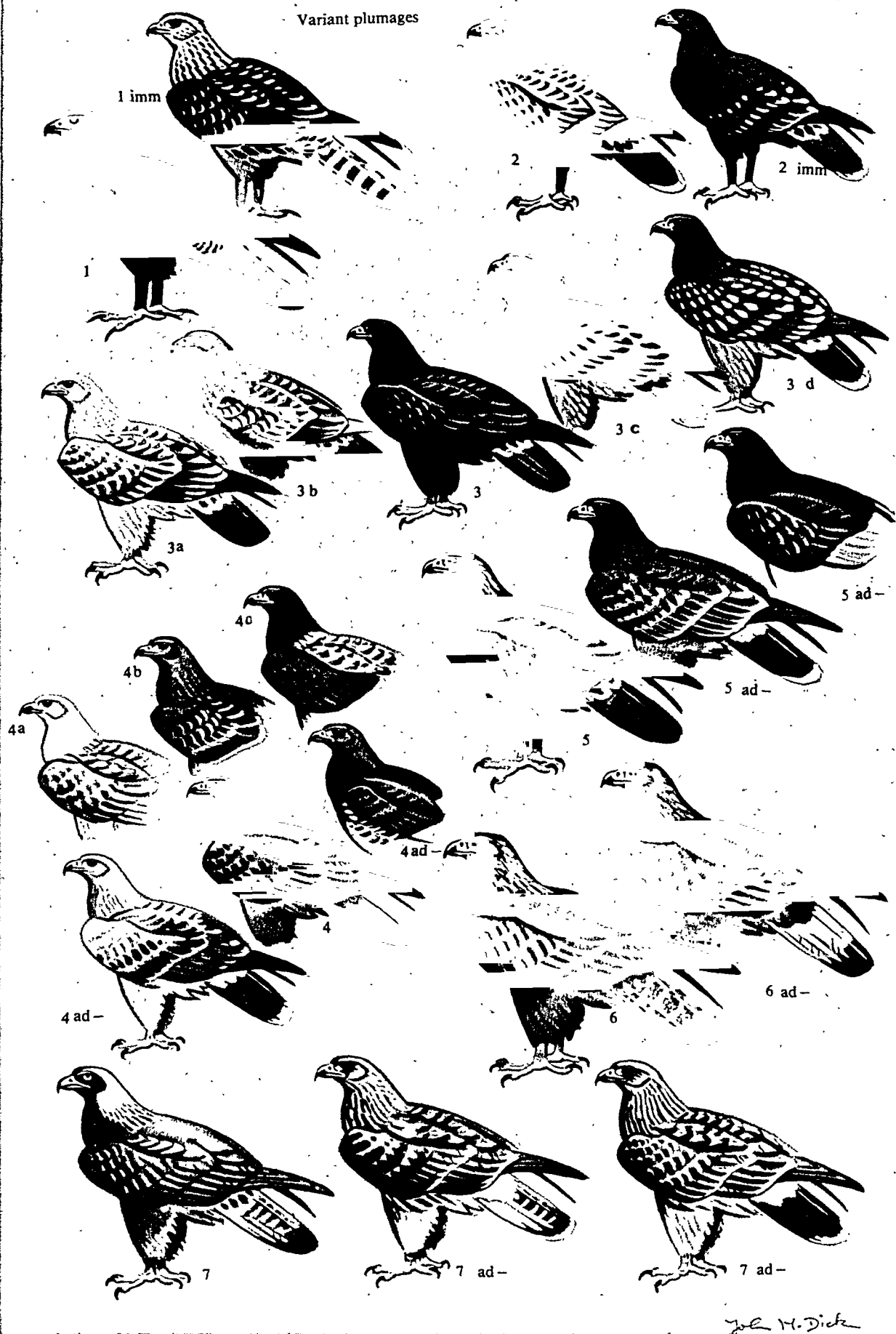
John H. Dick

PLATE 25

(Kites, Buzzards and Eagles in flight)

- | | |
|--|--|
| 1 <i>Pernis ptilorhyncus</i> , Honey Buzzard (130) | 7 <i>Buteo lagopus</i> , Roughlegged Buzzard (SE) |
| 2 <i>Haliastur indus</i> , Brahminy Kite (135) | 8 <i>Buteo rufinus</i> , Longlegged Buzzard (153) |
| 3 <i>Butastur teesa</i> , White-eyed Buzzard-Eagle (157) | 9 <i>Buteo hemilasius</i> , Upland Buzzard (154) |
| 4 <i>Buteo buteo vulpinus</i> , Desert Buzzard (155) | 10 <i>Hieraaetus kienerii</i> , Rufousbellied Hawk-Eagle (165) |
| 5 <i>Buteo buteo japonicus</i> , Japanese Buzzard (156) | 11 <i>Hieraaetus pennatus</i> , Booted Hawk-Eagle (164) |
| 6 Typical buzzard flight style | |

Variant plumages



John H. Dick

PLATE 26

- 1 *Ictinaetus malayensis*, Black Eagle (172)
- 2 *Aquila pomarina*, Lesser Spotted Eagle (171)
- 3 *Aquila clanga*, Greater Spotted Eagle (170)
- 4 *Aquila rapax vindhiana*, Tawny Eagle (168)

- 5 *Aquila rapax nipalensis*, Eastern Steppe Eagle (169)
- 6 *Aquila chrysaetos*, Golden Eagle (166)
- 7 *Aquila heliaca*, Imperial Eagle (167)

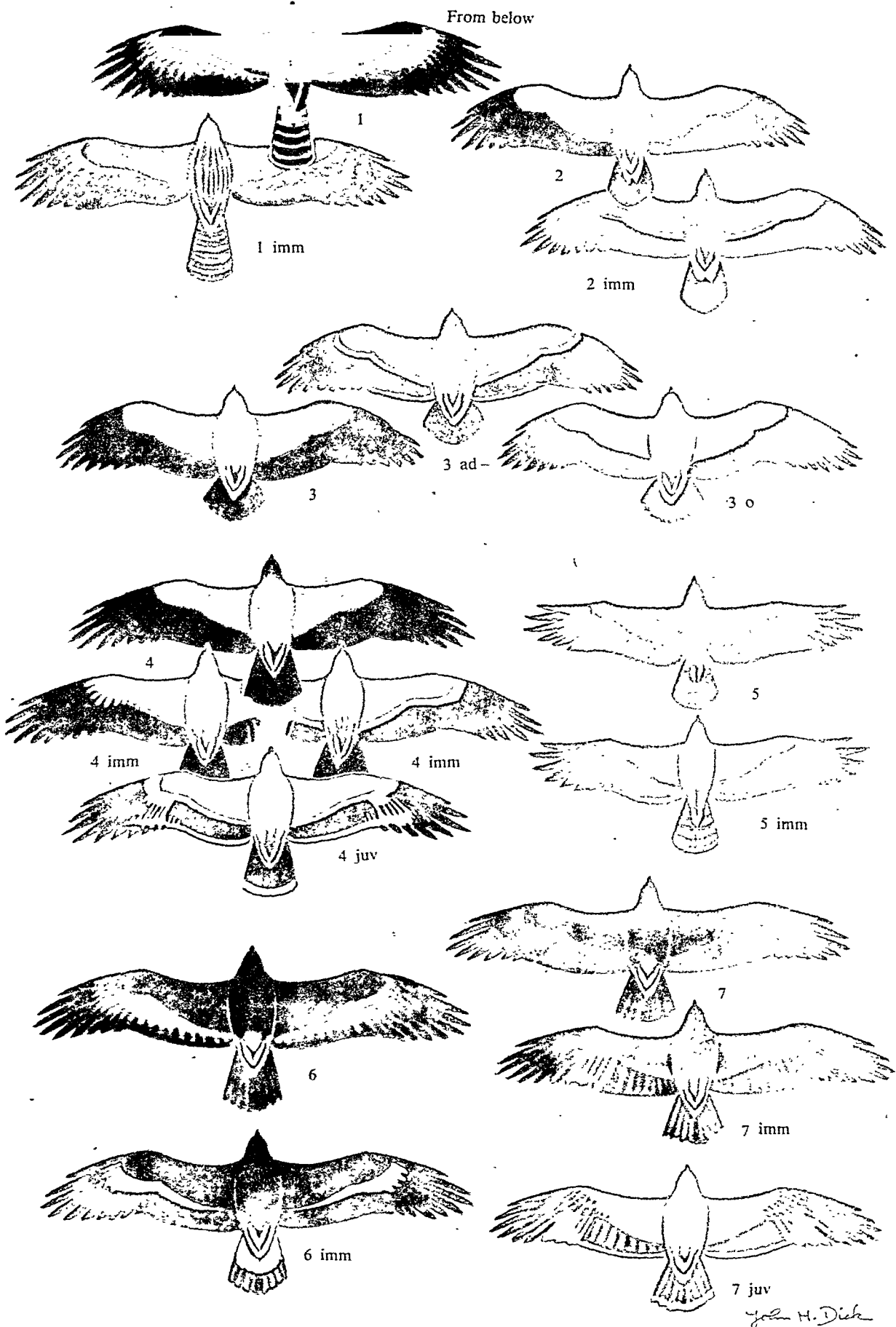


PLATE 27
(Eagles in flight)

- 1 *Ictinaetus malayensis*, Black Eagle (172)
- 2 *Aquila pomarina*, Lesser Spotted Eagle (171)
- 3 *Aquila clanga*, Greater Spotted Eagle (170)
- 4 *Aquila rapax nipalensis*, Eastern Steppe Eagle (169)

- 5 *Aquila rapax vindhiana*, Tawny Eagle (168)
- 6 *Aquila chrysaetos*, Golden Eagle (166)
- 7 *Aquila heliaca*, Imperial Eagle (167)

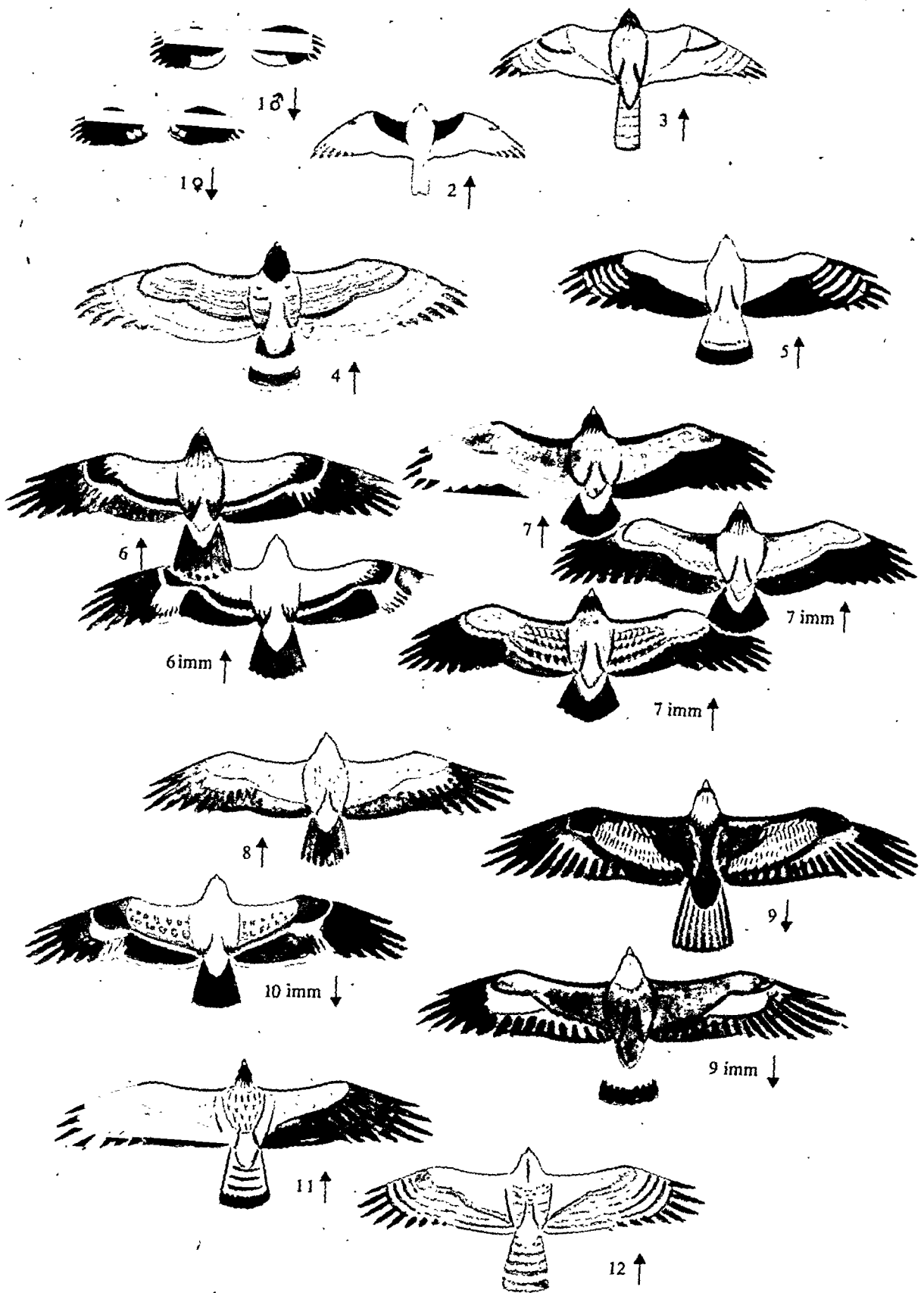


PLATE 28

(Baza, Kites, Buzzards & Eagles in flight)

- | | |
|---|--|
| 1 <i>Aviceda leuphotes</i> , Indian Blackcrested Baza (127) | 7 <i>Aquila clanga</i> , Greater Spotted Eagle (170) |
| 2 <i>Elanus caeruleus</i> , Blackwinged Kite (124) | 8 <i>Aquila rapax vindhiana</i> , Tawny Eagle (168) |
| 3 <i>Butastur teesa</i> , White-eyed Buzzard-Eagle (157) | 9 <i>Aquila chrysaetos</i> , Golden Eagle (166) |
| 4 <i>Spilornis cheela</i> , Crested Serpent Eagle (196) | 10 <i>Aquila heliaca</i> , Imperial Eagle (167) |
| 5 <i>Buteo lagopus</i> , Roughlegged Buzzard (SE) | 11 <i>Hieraaetus fasciatus</i> , Bonelli's Eagle (163) |
| 6 <i>Aquila rapax nipalensis</i> , Eastern Steppe Eagle (169) | 12 <i>Spizaetus cirrhatu</i> s, Crested Hawk-Eagle (161) |

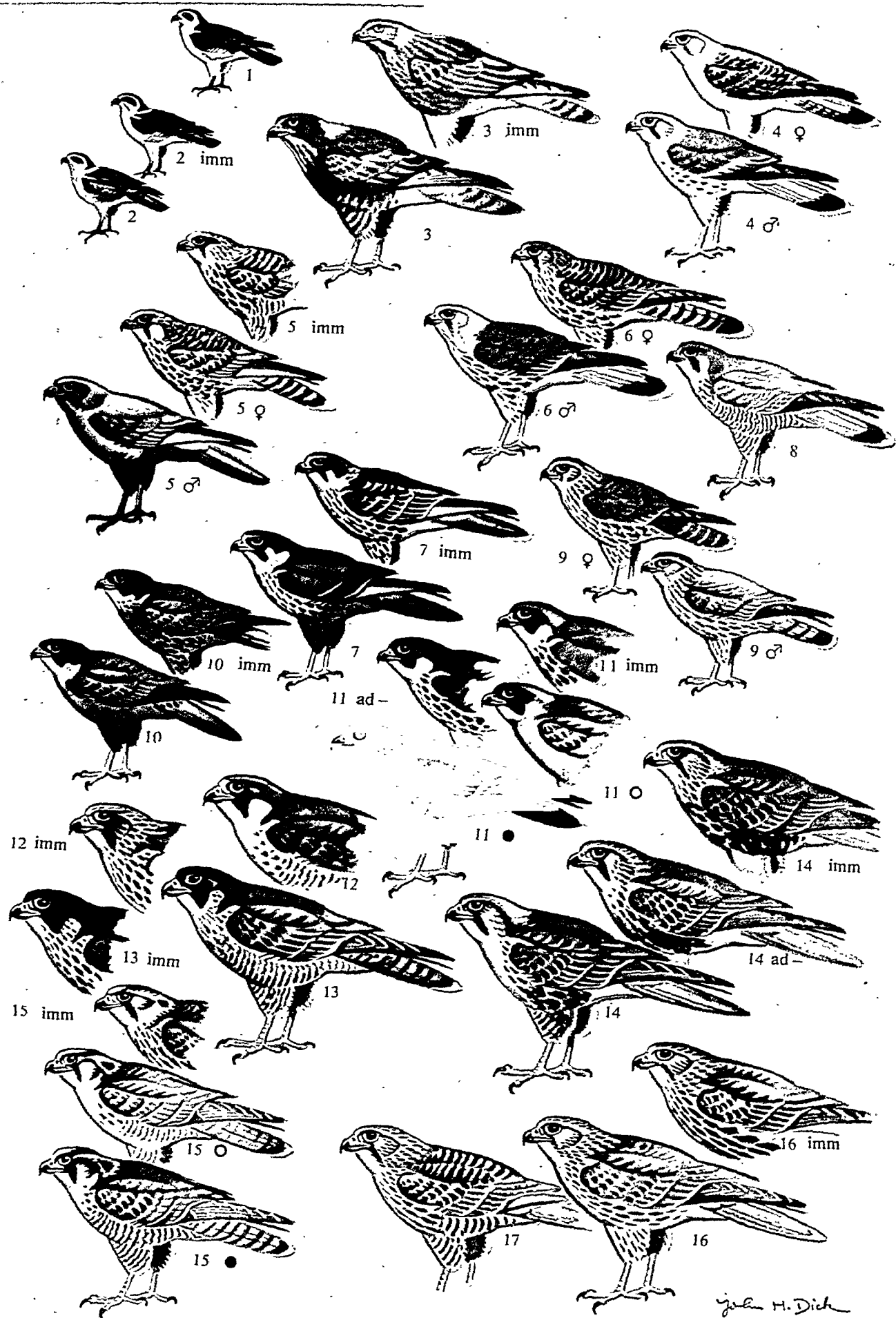
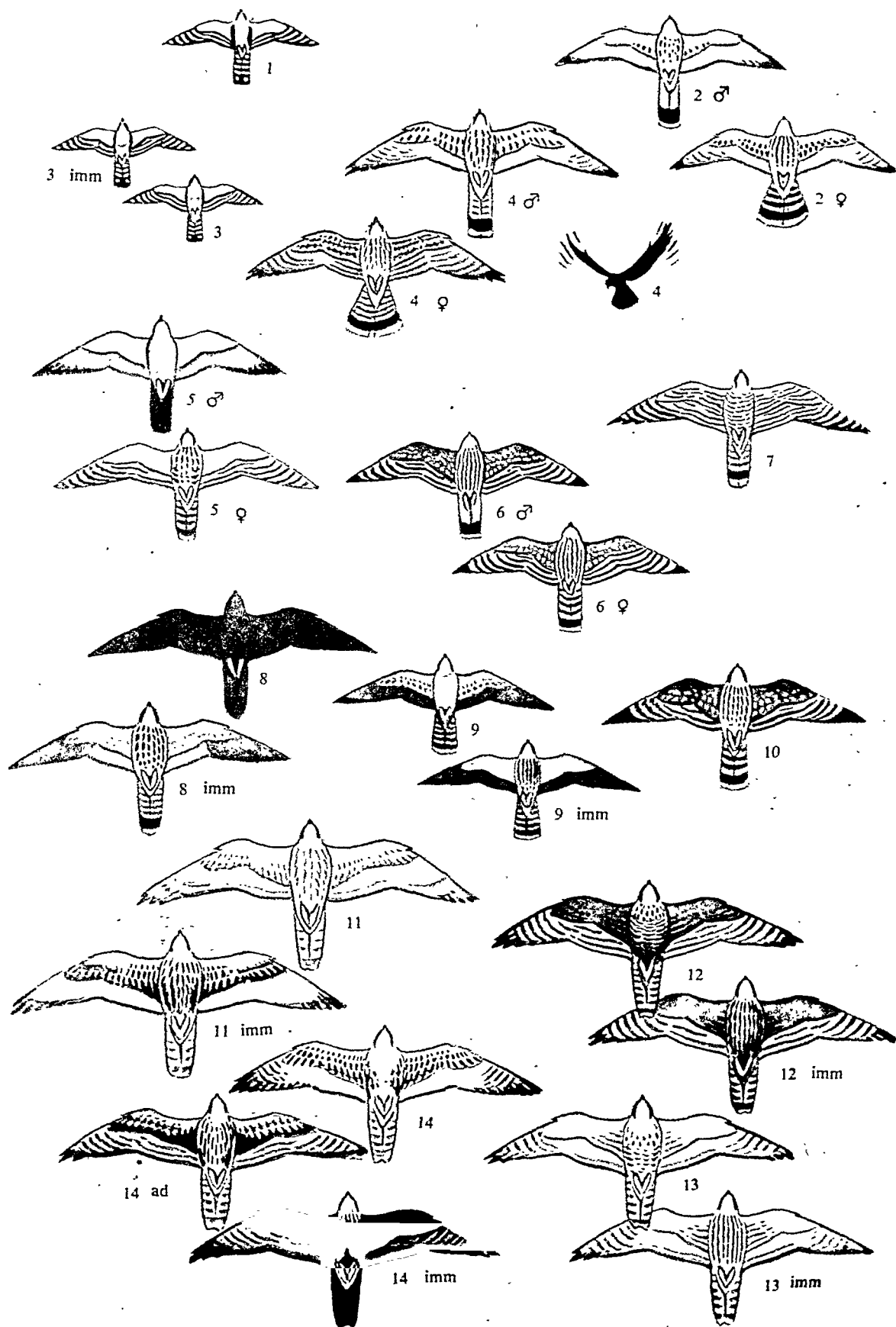


PLATE 29

- 1 *Microhierax melanoleucos*, Whitelegged Falconet (205)
- 2 *Microhierax caeruleus*, Redbreasted Falconet (204)
- 3 *Buteo teesa*, White-eyed Buzzard-Eagle (157)
- 4 *Falco naumanni*, Lesser Kestrel (221)
- 5 *Falco vespertinus*, Redlegged Falcon (220)
- 6 *Falco tinnunculus*, Kestrel (222)
- 7 *Falco subbuteo*, Hobby (212)
- 8 *Falco chicquera*, Redheaded Merlin (219)
- 9 *Falco columbarius*, Merlin (217)

- 10 *Falco severus*, Oriental Hobby (215)
- 11 *Falco concolor*, Sooty Falcon (216)
- 12 *Falco peregrinus japonensis*, Peregrine Falcon (209)
- 13 *Falco peregrinus peregrinator*, Shaheen Falcon (211)
- 14 *Falco biarmicus jugger*, Laggar Falcon (208)
- 15 *Falco pelegrinoides*, Barbary Falcon (SE)
- 16 *Falco biarmicus cherrug*, Saker or Cherrug (Lanner) Falcon (206)
- 17 *Falco biarmicus milvipes*, Shanghar Falcon (207)



John H. Dick

PLATE 30
(Falcons in flight)

- | | |
|--|--|
| 1 <i>Microhierax melanoleucos</i> , Whitelegged Falconet (205) | 9 <i>Falco serverus</i> , Oriental Hobby (215) |
| 2 <i>Falco naumanni</i> , Lesser Kestrel (221) | 10 <i>Falco subbuteo</i> , Hobby (212) |
| 3 <i>Microhierax caerulescens</i> , Redbreasted Falconet (204) | 11 <i>Falco biarmicus cherrug</i> , Saker or Cherrug (Lanner) Falcon (206) |
| 4 <i>Falco tinnunculus</i> , Kestrel (222) | 12 <i>Falco peregrinus peregrinator</i> , Shaheen Falcon (211) |
| 5 <i>Falco vespertinus</i> , Redlegged Falcon (220) | 13 <i>Falco peregrinus japonensis</i> , Peregrine Falcon (209) |
| 6 <i>Falco columbarius</i> , Merlin (217) | 14 <i>Falco biarmicus jugger</i> , Laggar Falcon (208) |
| 7 <i>Falco chicquera</i> , Redheaded Merlin (219) | |
| 8 <i>Falco concolor</i> , Sooty Falcon (216) | |

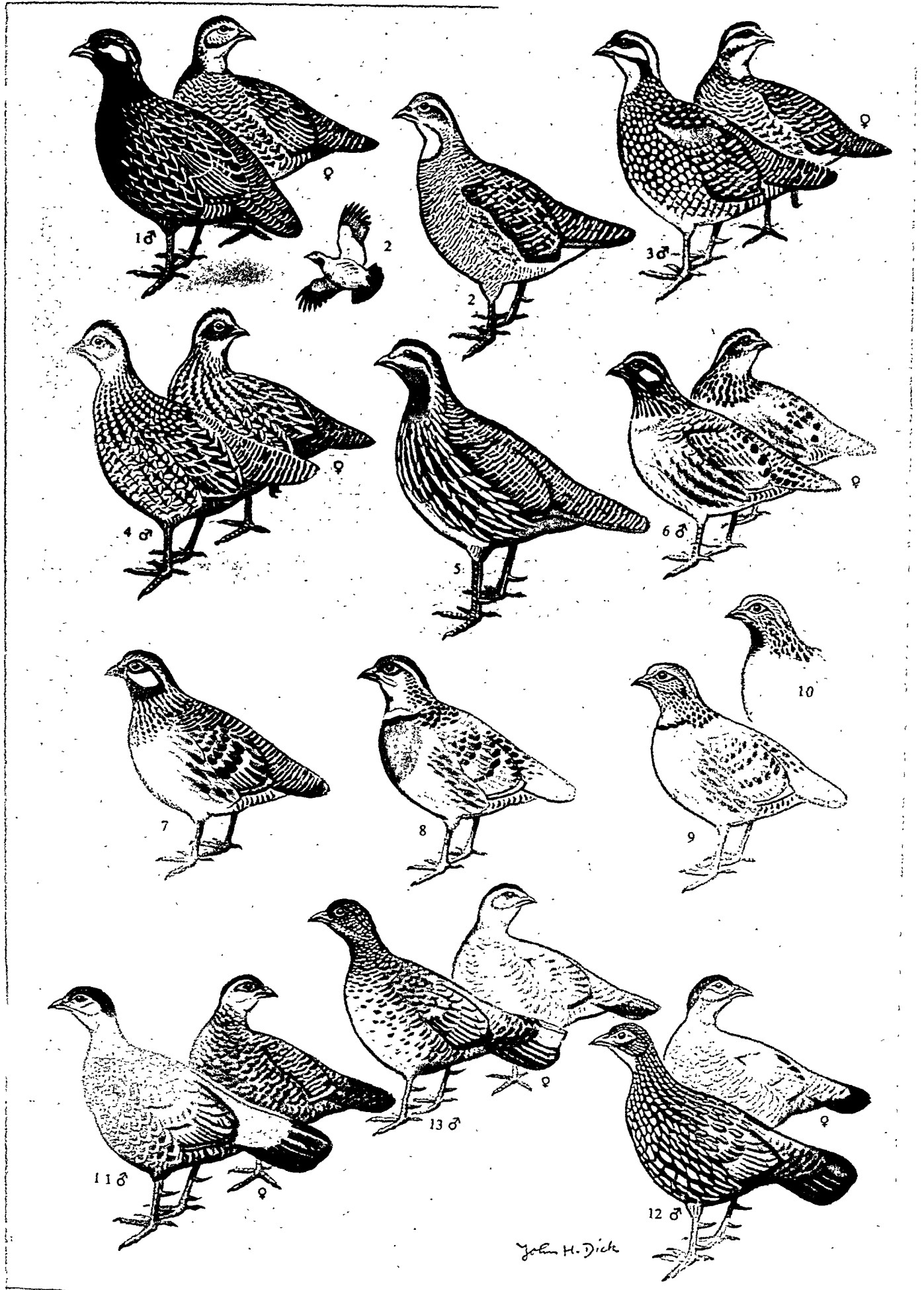


PLATE 31

- | | |
|---|--|
| 1 <i>Francolinus francolinus</i> , Black Partridge (238) | 8 <i>Arborophila mandellii</i> , Redbreasted Hill Partridge (273) |
| 2 <i>Francolinus pondicerianus</i> , Grey Partridge (246) | 9 <i>Arborophila rufogularis</i> , Rufousthroated Hill Partridge (270) |
| 3 <i>Francolinus pintadeanus</i> , Chinese Francolin (243) | 10 <i>Arborophila r. intermedia</i> (271), ssp of 270 |
| 4 <i>Francolinus pictus</i> , Painted Partridge (241) | 11 <i>Galloperdix spadicea</i> , Red Spurfowl (275) |
| 5 <i>Francolinus gularis</i> , Swamp Partridge or Kyah (247) | 12 <i>Galloperdix bicalcarata</i> , Ceylon Spurfowl (279) |
| 6 <i>Arborophila torqueola</i> , Common Hill Partridge (267) | 13 <i>Galloperdix lunulata</i> , Painted Spurfowl (278) |
| 7 <i>Arborophila atrigularis</i> , Whitenecked Hill Partridge (272) | |

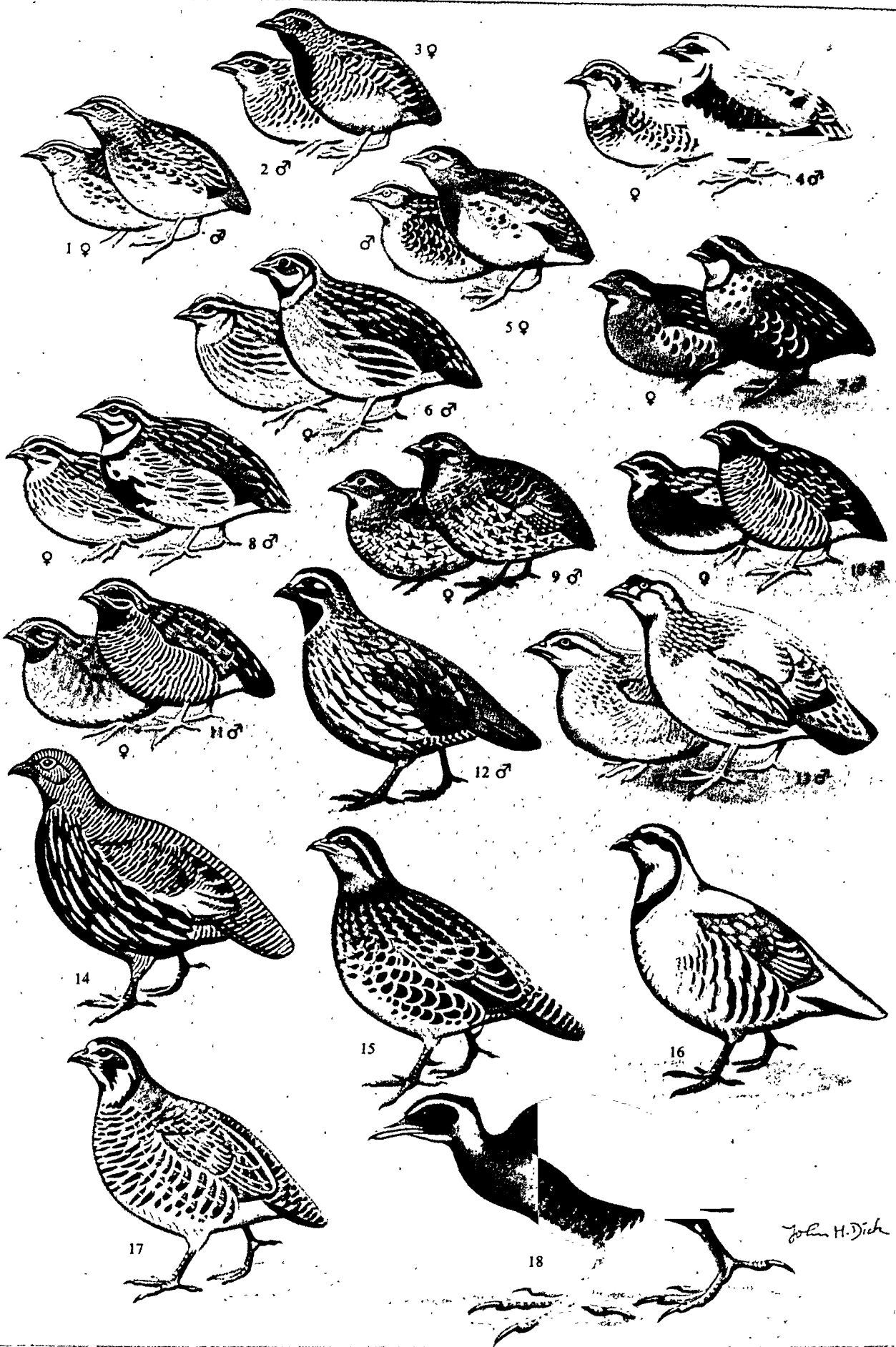


PLATE 32

- | | |
|---|--|
| 1 <i>Turnix sylvatica</i> , Little Bustard-Quail (313) | 10 <i>Perdicula argoondah</i> , Rock Bush Quail (260) |
| 2 <i>Turnix suscitator</i> , Common Bustard-Quail (318) | 11 <i>Perdicula asiatica</i> , Jungle Bush Quail (255) |
| 3 <i>Turnix s. leggei</i> (319), ssp of 318 | 12 <i>Ophrysia superciliosa</i> , Mountain Quail (280) |
| 4 <i>Coturnix chinensis</i> , Bluebreasted Quail (253) | 13 <i>Ammoperdix griseogularis</i> , Scesece Partridge (228) |
| 5 <i>Turnix tanki</i> , Yellowlegged Button Quail (314) | 14 <i>Lerwa lerwa</i> , Snow Partridge (227) |
| 6 <i>Coturnix coturnix</i> , Grey Quail (250) | 15 <i>Bambusicola fitchii</i> , Bamboo Partridge (274) |
| 7 <i>Perdicula erythrorhyncha</i> , Painted Bush Quail (262) | 16 <i>Alectoris chukar</i> , Chukor Partridge (236) |
| 8 <i>Coturnix coromandelica</i> , Blackbreasted or Rain Quail (252) | 17 <i>Perdix hodgsoniae</i> , Tibetan Partridge (249) |
| 9 <i>Perdicula manipurensis</i> , Manipur Bush Quail (265) | 18 <i>Megapodius freycinet</i> , Megapode (225) |

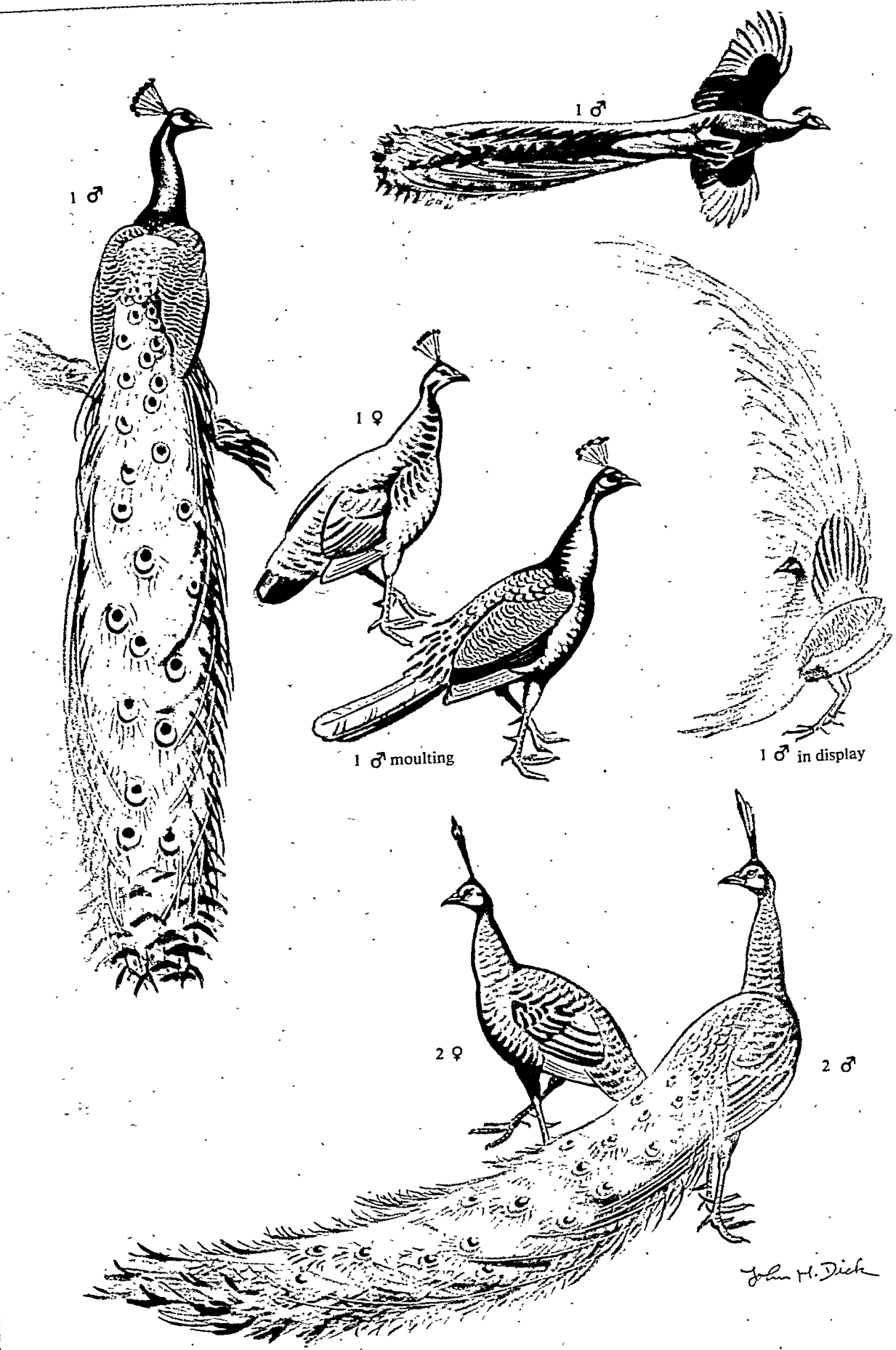


PLATE 33

- 1 *Pavo cristatus*, Common Peafowl (311) 2 *Pavo muticus*, Burmese Peafowl (312)

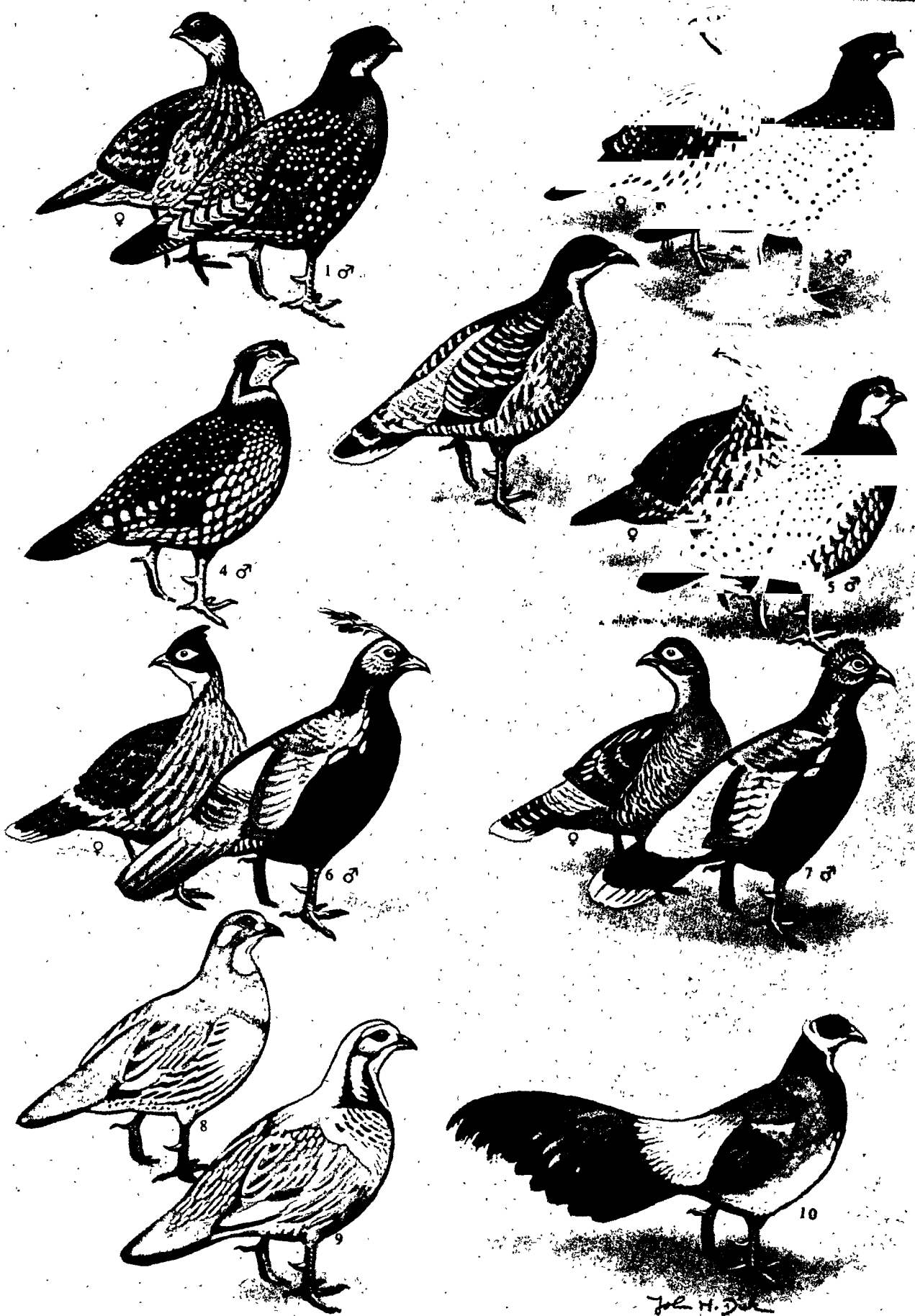


PLATE 34

- 1 *Tragopan melanocephalus*, Western Tragopan (285)
- 2 *Tragopan satyra*, Crimson or Satyr Tragopan (286)
- 3 *Tetraophasis szechenyii*, Pheasant-Grouse (233)
- 4 *Tragopan temminckii*, Temminck's Tragopan (289)
- 5 *Tragopan blythii*, Blyth's or Greybellied Tragopan (288)
- 6 *Lophophorus impejanus*, Impeyan or Monal Pheasant (290)
- 7 *Lophophorus sclateri*, Scelater's Monal (291)
- 8 *Tetraogallus tibetanus*, Tibetan Snowcock (229)
- 9 *Tetraogallus himalayensis*, Himalayan Snowcock (232)
- 10 *Crossoptilon crossoptilon*, Eared Pheasant (292)

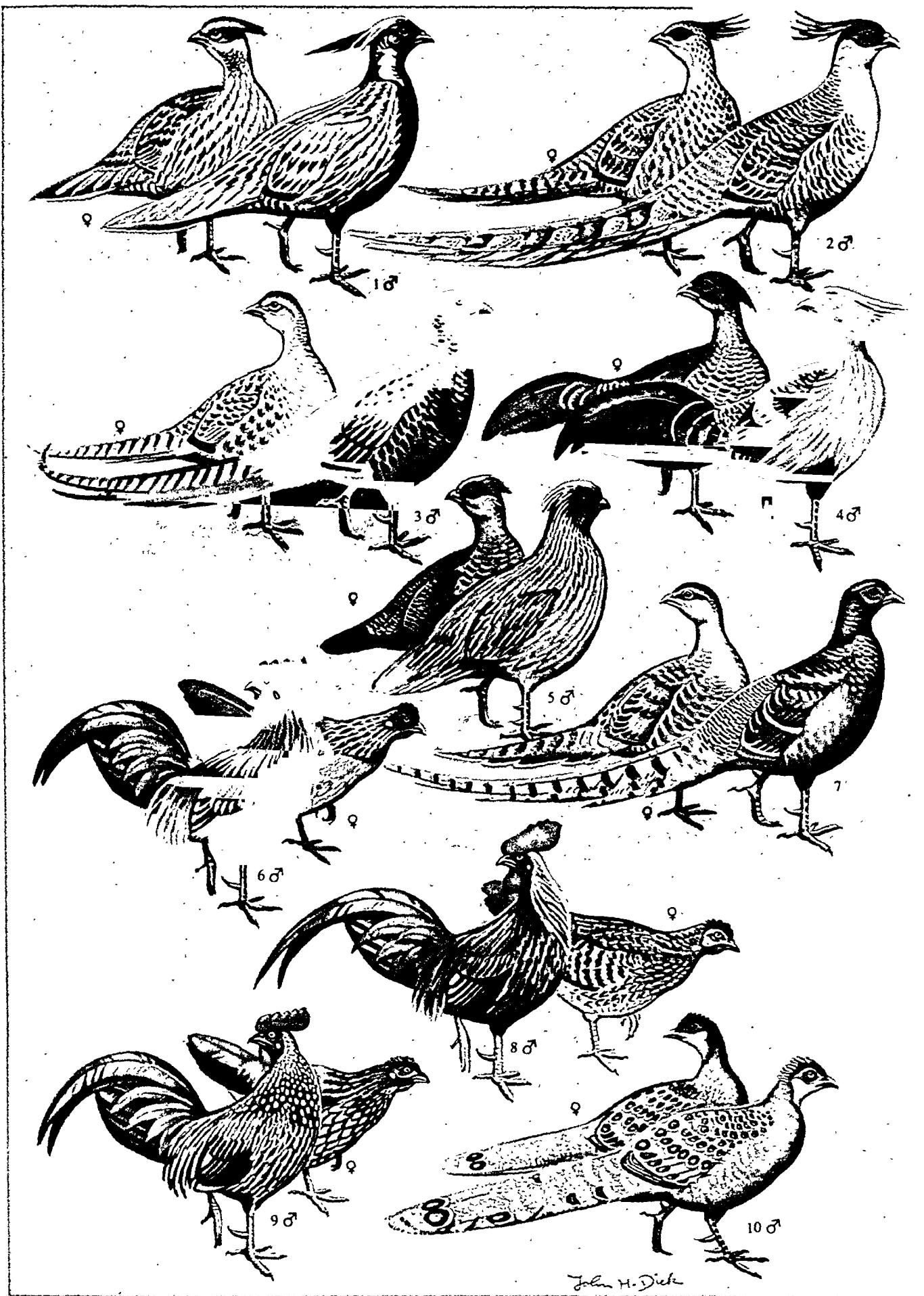


PLATE 35

- | | |
|--|---|
| 1 <i>Pucrasia macrolopha</i> , Koklas Pheasant (305) | 7 <i>Syrnaticus humiae</i> , Mrs Hume's Barredback Pheasant (308) |
| 2 <i>Catreus wallichii</i> , Chir Pheasant (307) | 8 <i>Gallus lafayettii</i> , Ceylon Junglefowl (302) |
| 3 <i>Phasianus colchicus</i> , Common Pheasant (SE) | 9 <i>Gallus sonneratii</i> , Grey or Sonnerat's Junglefowl (301) |
| 4 <i>Lophura leucomelana</i> , Kalij Pheasant (293) | 10 <i>Polyplectron bicalcaratum</i> , Peacock-Pheasant (310) |
| 5 <i>Ithaginis cruentus</i> , Blood Pheasant (282) | |
| 6 <i>Gallus gallus</i> , Red Junglefowl (299) | |

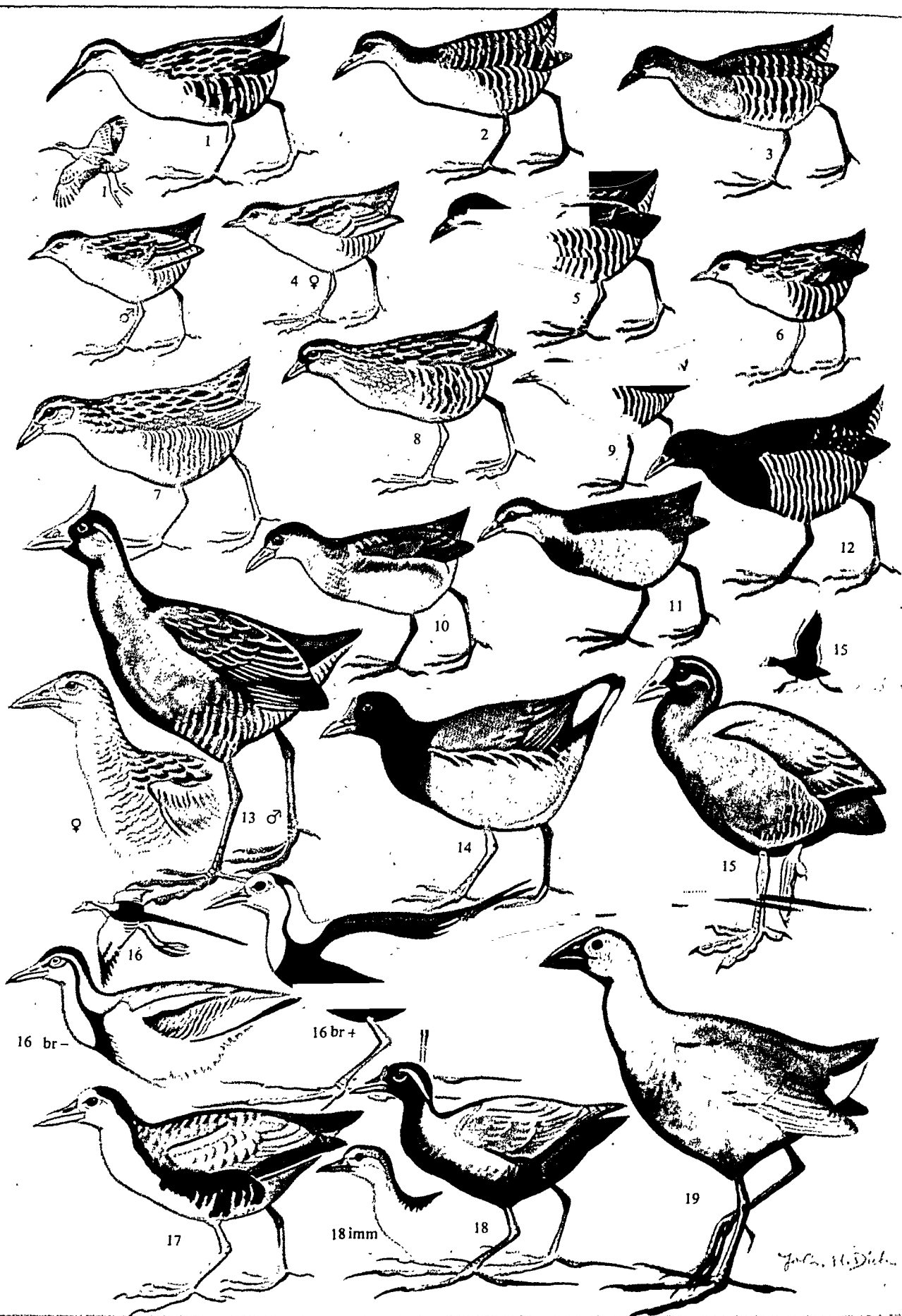


PLATE 36

- | | |
|---|---|
| 1 <i>Rallus aquaticus</i> , Water Rail (327) | 12 <i>Rallina canningi</i> , Andaman Banded Crake (333) |
| 2 <i>Rallus striatus</i> , Bluebreasted Banded Rail (329) | 13 <i>Gallix rex cinerea</i> , Water Cock (346) |
| 3 <i>Rallina fasciata</i> , Redlegged Banded Crake (331) | 14 <i>Gallinula chloropus</i> , Moorhen (347) |
| 4 <i>Porzana parva</i> , Little Crake (335) | 15 <i>Fulica atra</i> , Coot (350) |
| 5 <i>Rallina eurizonoides</i> , Banded Crake (332) | 16 <i>Hydrophasianus chirurgus</i> , Pheasant-tailed Jacana (358) |
| 6 <i>Porzana pusilla</i> , Baillon's Crake (337) | 17 <i>Amauornis phoenicurus</i> , Whitebreasted Waterhen (343) |
| 7 <i>Crex crex</i> , Corn Crake (334) | 18 <i>Metopidius indicus</i> , Bronzewinged Jacana (359) |
| 8 <i>Porzana porzana</i> , Spotted Crake (338) | 19 <i>Porphyrio porphyrio</i> , Purple Moorhen (319) |
| 9 <i>Porzana fusca</i> , Ruddy Crake (339) | |
| 10 <i>Amauornis akool</i> , Brown Crake (342) | |
| 11 <i>Amauornis bicolor</i> , Elwes's Crake (341) | |

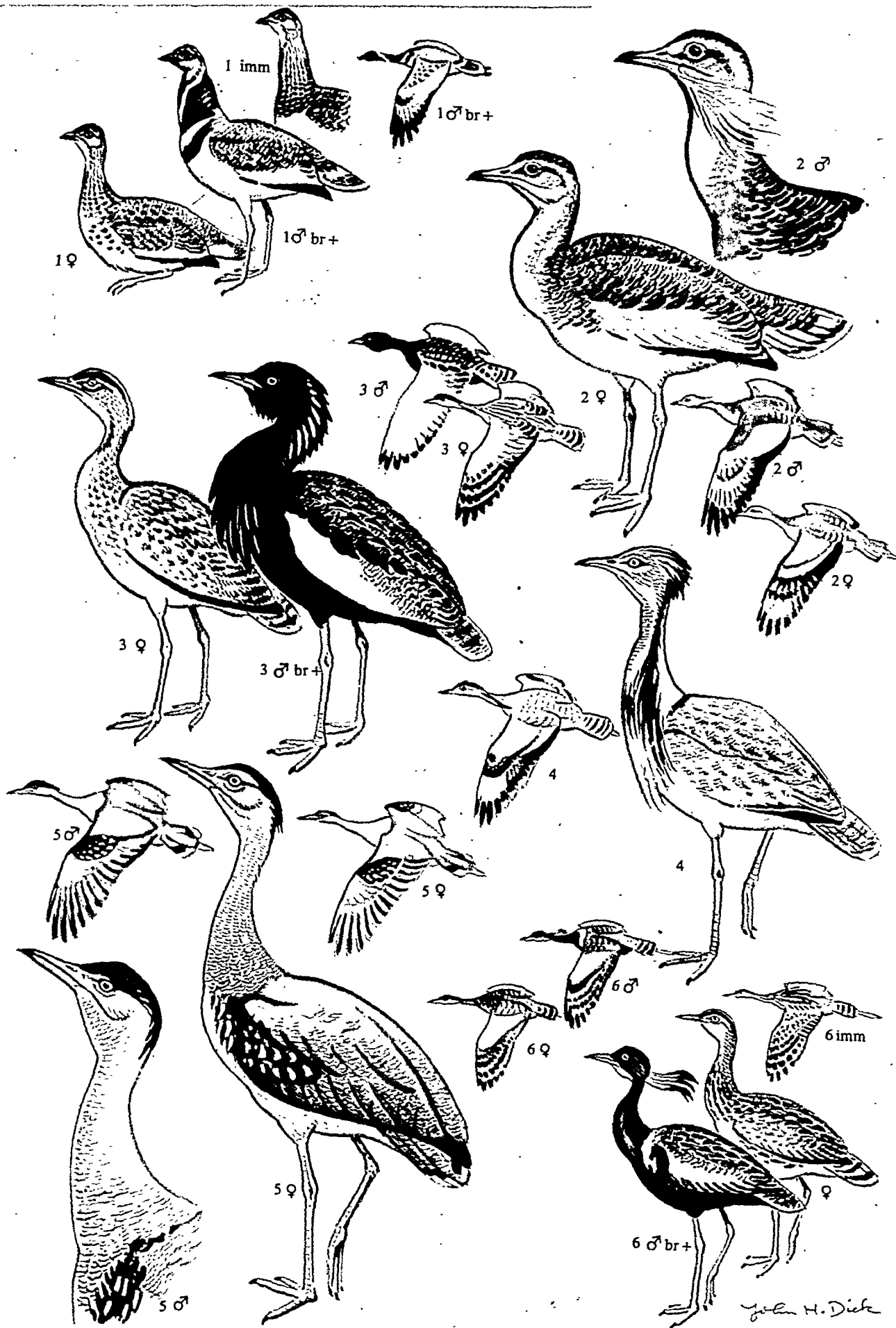


PLATE 37

- | | |
|--|--|
| 1 <i>Otis tetrax</i> , Little Bustard (353) | 4 <i>Chlamydotis undulata</i> , Houbara (355) |
| 2 <i>Otis tarda</i> , Great Bustard (352) | 5 <i>Choriotis nigriceps</i> , Great Indian Bustard (354) |
| 3 <i>Eupodotis bengalensis</i> , Bengal Florican (356) | 6 <i>Syphieotides indica</i> , Likh or Lesser Florican (357) |

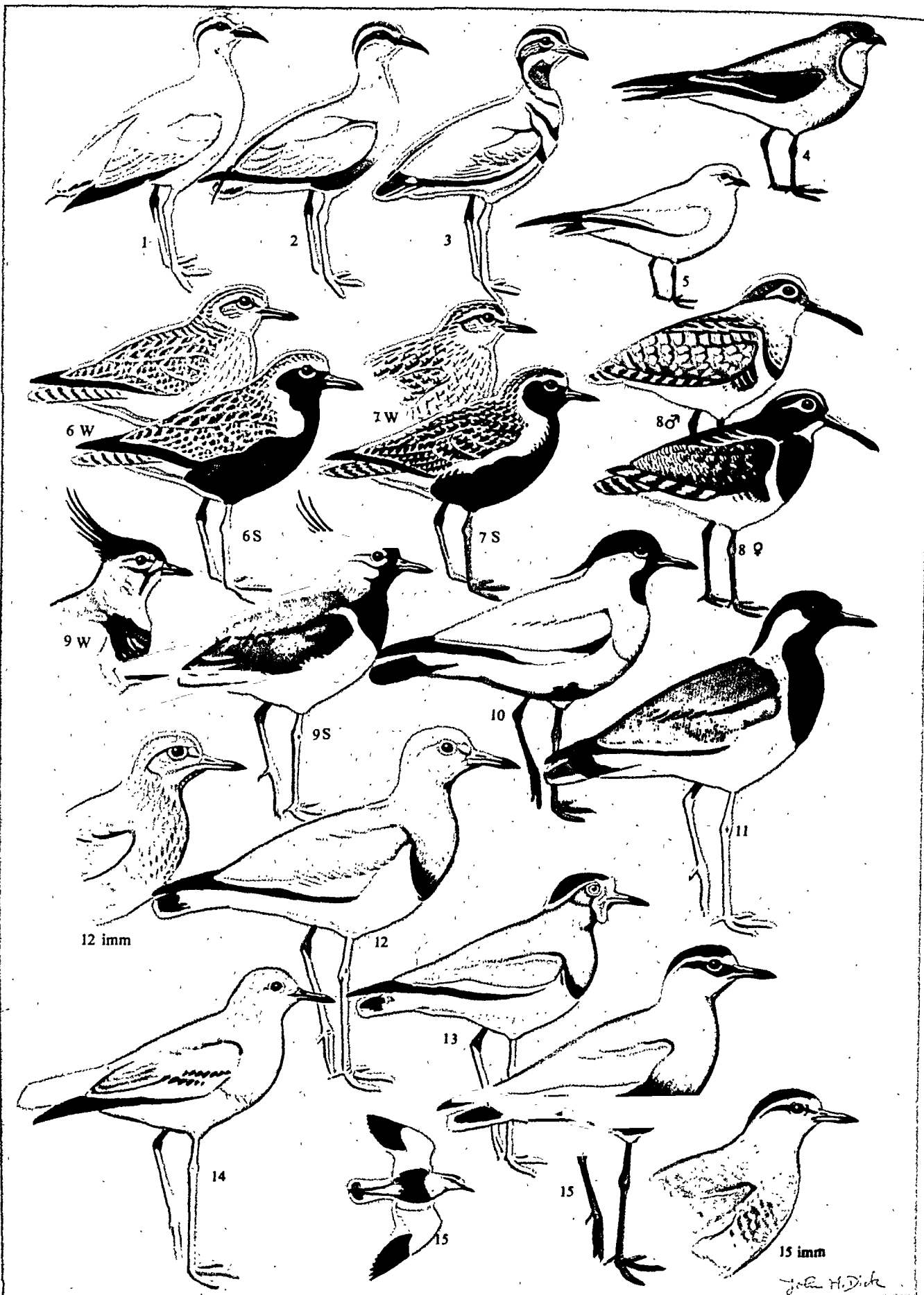


PLATE 38

- | | |
|---|---|
| 1 <i>Cursorius cursor</i> , Creamcoloured Courser (439) | 8 <i>Rostratula benghalensis</i> , Painted Snipe (429) |
| 2 <i>Cursorius coromandelicus</i> , Indian Courser (440) | 9 <i>Vanellus vanellus</i> , Lapwing (364) |
| 3 <i>Cursorius bitorquatus</i> , Jerdon's or Doublebanded Courser (441) | 10 <i>Vanellus spinosus</i> , Spurwinged Lapwing (369) |
| 4 <i>Glareola pratincola</i> , Collared Pratincole (443) | 11 <i>Vanellus indicus</i> , Redwattled Lapwing (366) |
| 5 <i>Glareola lactea</i> , Small Indian Pratincole (444) | 12 <i>Vanellus cinereus</i> , Greyheaded Lapwing (365) |
| 6 <i>Pluvialis squatarola</i> , Grey or Blackbellied Plover (371) | 13 <i>Vanellus malabaricus</i> , Yellow-wattled Lapwing (370) |
| 7 <i>Pluvialis dominica</i> , Eastern Golden Plover (373) | 14 <i>Vanellus leucurus</i> , Whitetailed Lapwing (362) |
| | 15 <i>Vanellus gregarius</i> , Sociable Lapwing (363) |



PLATE 39

- | | |
|--|--|
| 1 <i>Vanellus vanellus</i> , Lapwing (364) | 10 <i>Limosa limosa</i> , Blacktailed Godwit (389) |
| 2 <i>Vanellus indicus</i> , Redwattled Lapwing (366) | 11 <i>Limosa lapponica</i> , Bartailed Godwit (391) |
| 3 <i>Vanellus cinereus</i> , Greyheaded Lapwing (365) | 12 <i>Limnodromus semipalmatus</i> , Snipebilled Godwit or Asian Dowitcher (403) |
| 4 <i>Vanellus leucurus</i> , Whitetailed Lapwing (362) | 13 <i>Numenius arquata</i> , Curlew (388) |
| 5 <i>Haematopus ostralegus</i> , Oystercatcher (360) | 14 <i>Burhinus oedicephalus</i> , Stone Curlew (436) |
| 6 <i>Recurvirostra avosetta</i> , Avocet (432) | 15 <i>Esacus magnirostris</i> , Great Stone Plover (437) |
| 7 <i>Dromas ardeola</i> , Crab Plover (434) | 16 <i>Ibidorhyncha struthersii</i> , Ibisbill (433) |
| 8 <i>Himantopus himantopus</i> , Blackwinged Stilt (430) | |
| 9 <i>Numenius phaeopus</i> , Whimbrel (385) | |

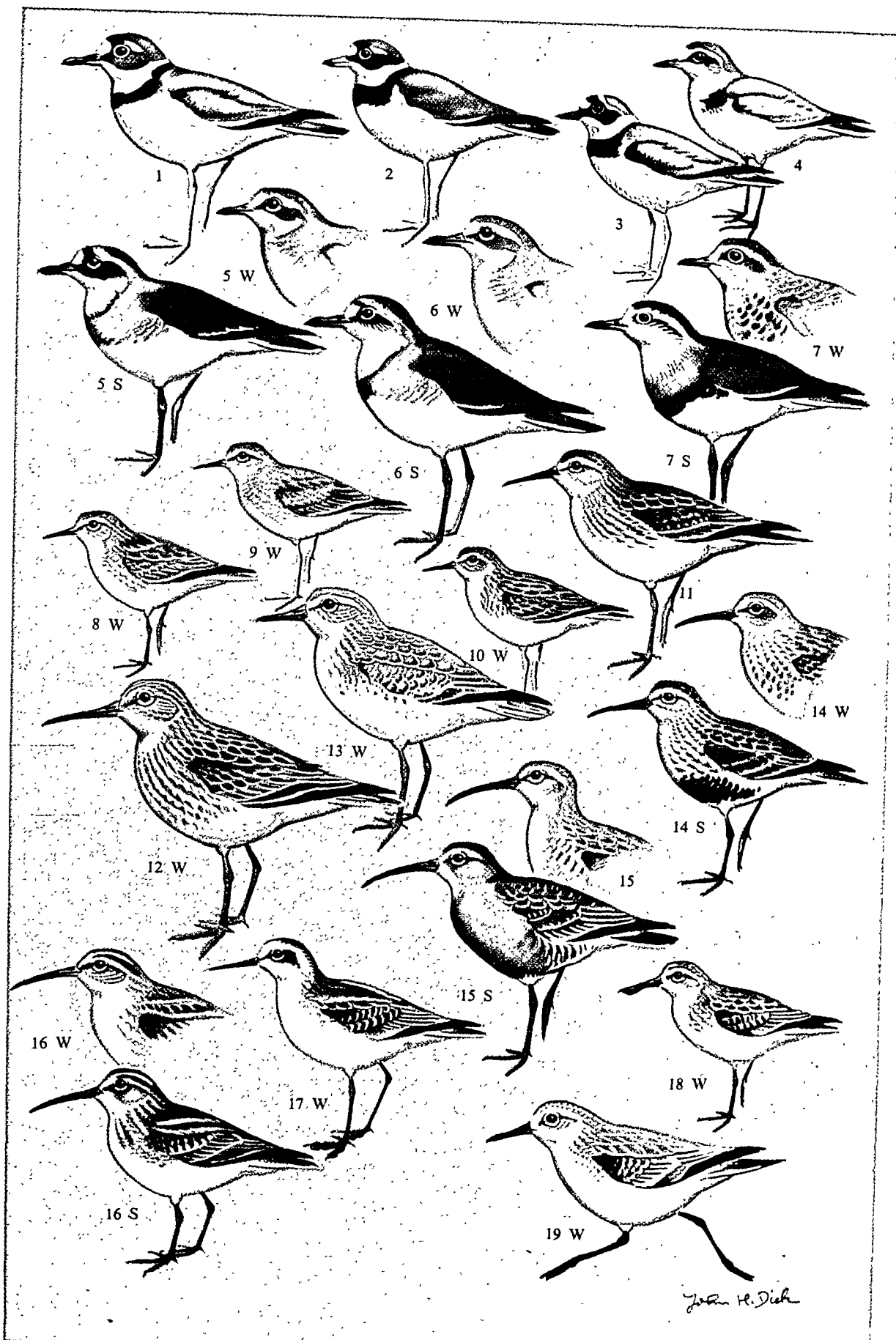


PLATE 40

- | | |
|---|--|
| 1 <i>Charadrius placidus</i> , Longbilled Ringed Plover (383) | 11 <i>Calidris acuminata</i> , Asian Pectoral Sandpiper (419) |
| 2 <i>Charadrius hiaticula</i> , Ringed Plover (378) | 12 <i>Calidris tenuirostris</i> , Eastern Knot (413) |
| 3 <i>Charadrius dubius</i> , Little Ringed Plover (380) | 13 <i>Calidris canuta</i> , Knot (412) |
| 4 <i>Charadrius alexandrinus</i> , Kentish Plover (381) | 14 <i>Calidris alpina</i> , Dunlin (420) |
| 5 <i>Charadrius mongolus</i> , Lesser Sand Plover (384) | 15 <i>Calidris testacea</i> , Curlew-Sandpiper (422) |
| 6 <i>Charadrius leschanaultii</i> , Large Sand Plover (374) | 16 <i>Limicola falcinellus</i> , Broadbilled Sandpiper (424) |
| 7 <i>Charadrius asiaticus</i> , Caspian Sand Plover (376) | 17 <i>Phalaropus lobatus</i> , Rednecked Phalarope (428) |
| 8 <i>Calidris minuta</i> , Little Stint (416) | 18 <i>Eurynorhynchus pygmeus</i> , Spoonbilled Sandpiper (423) |
| 9 <i>Calidris temminckii</i> , Temminck's Stint (417) | 19 <i>Calidris alba</i> , Sanderling (414) |
| 10 <i>Calidris subminuta</i> , Longtoed Stint (418) | |

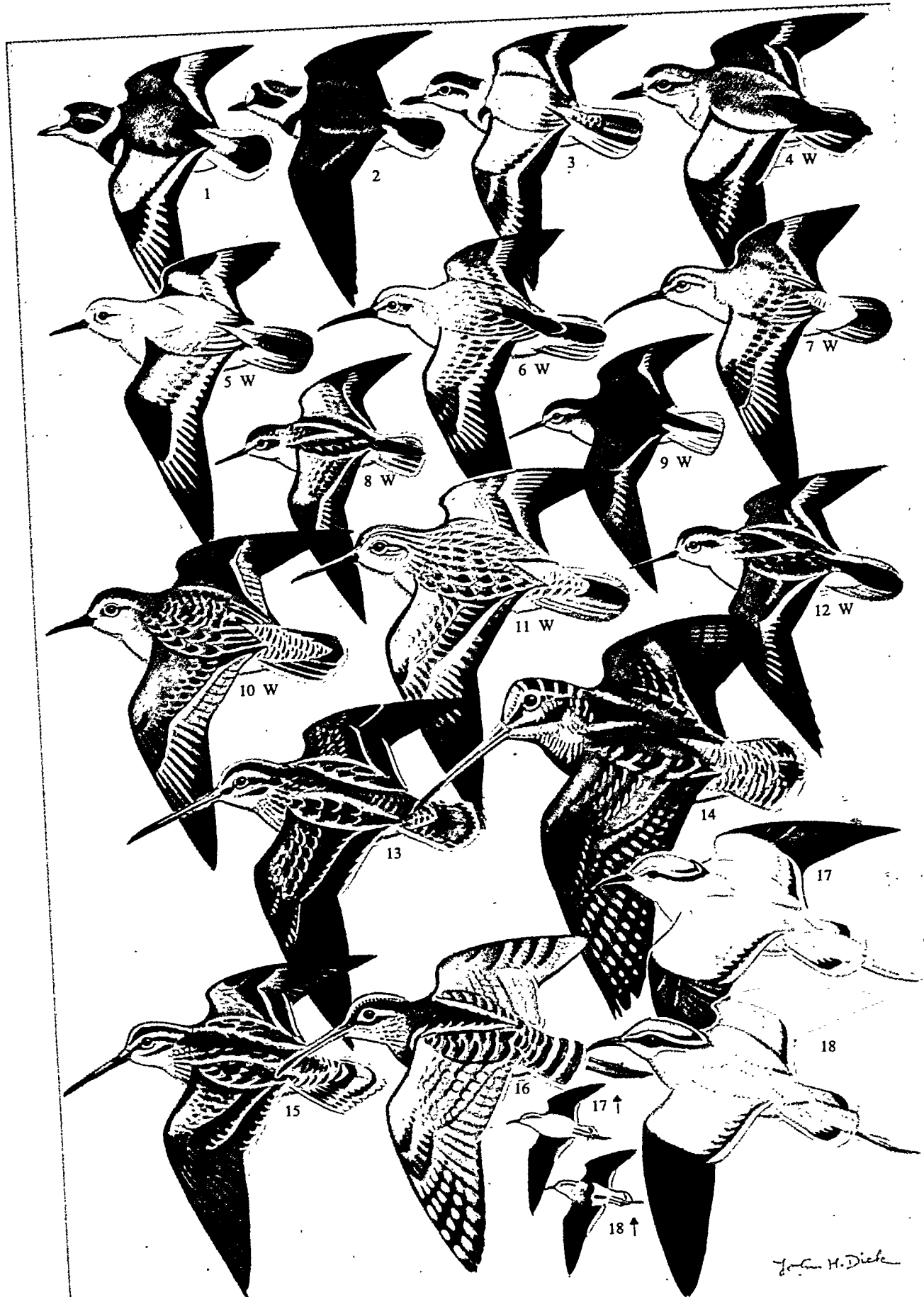


PLATE 41
(Waders in flight)

- | | |
|---|---|
| 1 <i>Charadrius hiaticula</i> , Ringed Plover (378) | 10 <i>Calidris canuta</i> , Knot (412) |
| 2 <i>Charadrius dubius</i> , Little Ringed Plover (380) | 11 <i>Calidris tenuirostris</i> , Eastern Knot (413) |
| 3 <i>Charadrius alexandrinus</i> , Kentish Plover (381) | 12 <i>Phalaropus lobatus</i> , Rednecked Phalarope (428) |
| 4 <i>Charadrius mongolus</i> , Lesser Sand Plover (384) | 13 <i>Gallinago gallinago</i> , Fantail Snipe (409) |
| 5 <i>Calidris alba</i> , Sanderling (414) | 14 <i>Scolopax rusticola</i> , Woodcock (411) |
| 6 <i>Calidris alpina</i> , Dunlin (420) | 15 <i>Gallinago stenura</i> , Pintail Snipe (406) |
| 7 <i>Calidris testacea</i> , Curlew-Sandpiper (422) | 16 <i>Rostratula benghalensis</i> , Painted Snipe (429) |
| 8 <i>Calidris minuta</i> , Little Stint (416) | 17 <i>Cursorius cursor</i> , Creamcoloured Courser (439) |
| 9 <i>Calidris temminckii</i> , Temminck's Stint (417) | 18 <i>Cursorius coromandelicus</i> , Indian Courser (440) |

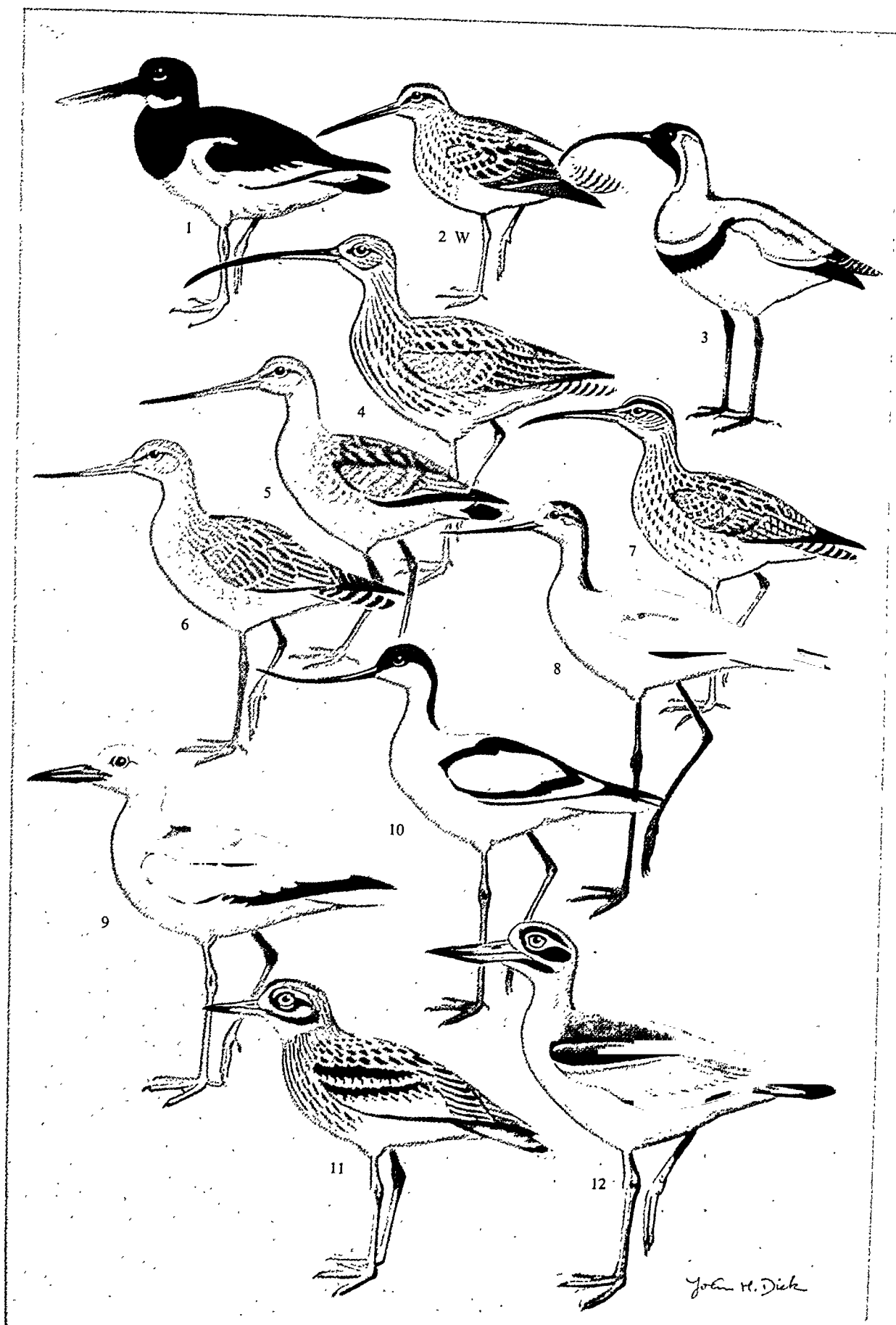


PLATE 42

- | | |
|---|--|
| 1 <i>Haematopus ostralegus</i> , Oystercatcher (360) | 7 <i>Numenius phaeopus</i> , Whimbrel (385) |
| 2 <i>Limnodromus semipalmatus</i> , Snipebilled Godwit or Asian Dowitcher (403) | 8 <i>Himantopus himantopus</i> , Blackwinged Stilt (430) |
| 3 <i>Ibidorhyncha struthersii</i> , Ibisbill (433) | 9 <i>Dromas ardeola</i> , Crab Plover (434) |
| 4 <i>Numenius arquata</i> , Curlew (388) | 10 <i>Recurvirostra avosetta</i> , Avocet (432) |
| 5 <i>Limosa limosa</i> , Blacktailed Godwit (389) | 11 <i>Burhinus oedinenus</i> , Stone Curlew (436) |
| 6 <i>Limosa lapponica</i> , Bartailed Godwit (391) | 12 <i>Esacus magnirostris</i> , Great Stone Plover (437) |

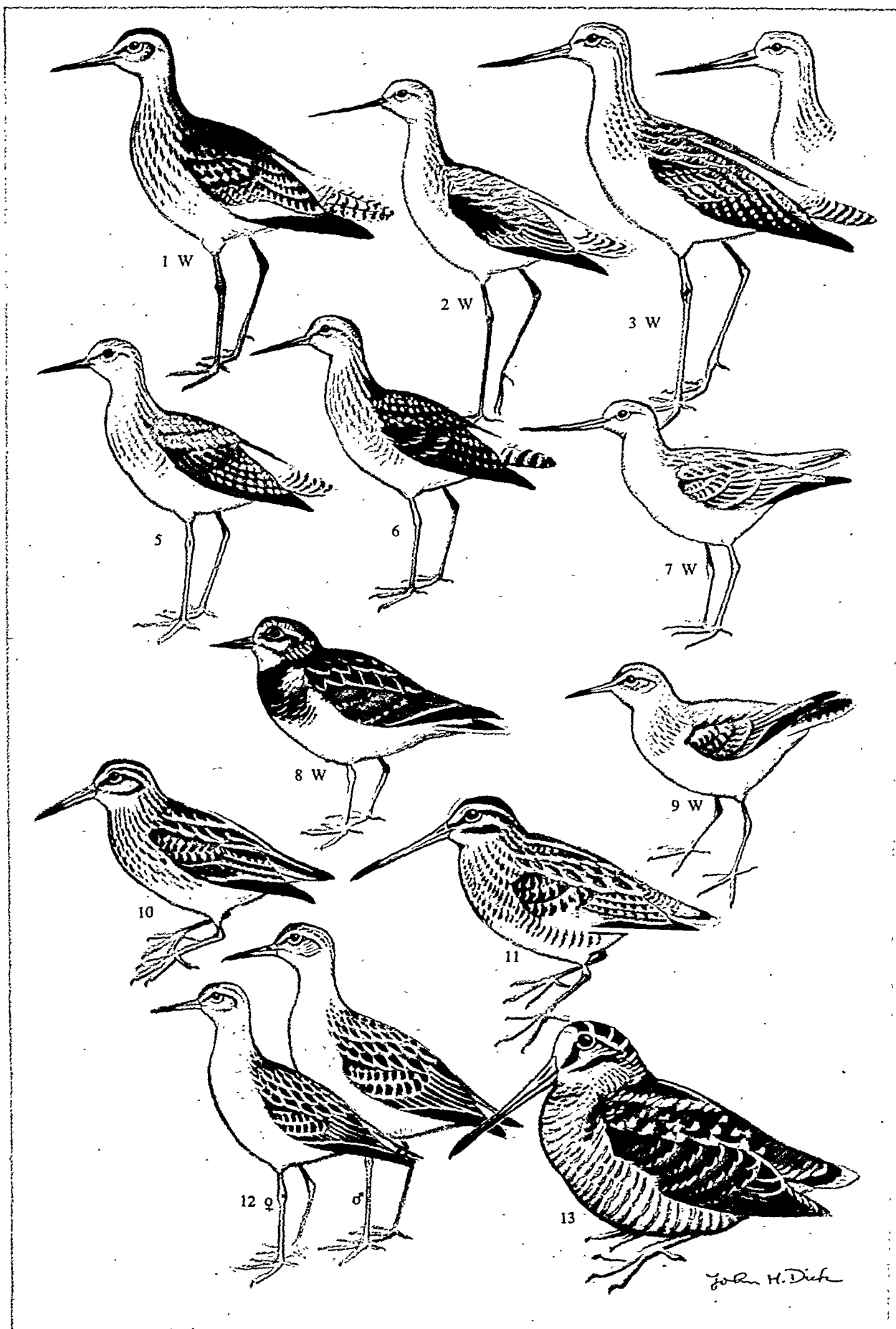


PLATE 43

- | | |
|---|---|
| 1 <i>Tringa totanus</i> , Redshank (393) | 8 <i>Arenaria interpres</i> , Turnstone (402) |
| 2 <i>Tringa stagnatilis</i> , Marsh Sandpiper (395) | 9 <i>Tringa hypoleucos</i> , Common Sandpiper (401) |
| 3 <i>Tringa nebularia</i> , Greenshank (396) | 10 <i>Gallinago minima</i> , Jack Snipe (410) |
| 4 <i>Tringa guttifer</i> , Spotted Greenshank (399) | 11 <i>Gallinago gallinago</i> , Fantail Snipe (409) |
| 5 <i>Tringa glareola</i> , Wood Sandpiper (398) | 12 <i>Philomachus pugnax</i> , Ruff and Reeve (426) |
| 6 <i>Tringa ochropus</i> , Green Sandpiper (397) | 13 <i>Scolopax rusticola</i> , Woodcock (411) |
| 7 <i>Tringa terek</i> , Terek Sandpiper (400) | |



PLATE 44
(Waders in flight)

- | | |
|--|--|
| 1 <i>Pluvialis squatarola</i> , Grey Plover (371) | 8 <i>Tringa ochropus</i> , Green Sandpiper (397) |
| 2 <i>Glareola pratincola</i> , Collared Pratincole (442) | 9 <i>Tringa erythropus</i> , Spotted or Dusky Redshank (392) |
| 3 <i>Glareola p. maldivarum</i> (Oriental) Collared Pratincole (443), ssp of 442 | 10 <i>Tringa nebularia</i> , Greenshank (396) |
| 4 <i>Glareola lactea</i> , Small Indian Pratincole (444) | 11 <i>Tringa glareola</i> , Wood Sandpiper (398) |
| 5 <i>Pluvialis apricaria</i> , Golden Plover (372) | 12 <i>Tringa totanus</i> , Redshank (393) |
| 6 <i>Arenaria interpres</i> , Turnstone (402) | 13 <i>Tringa hypoleucos</i> , Common Sandpiper (401) |
| 7 <i>Pluvialis dominica</i> , Eastern Golden Plover (373) | 14 <i>Tringa terek</i> , Terek Sandpiper (400) |
| | 15 <i>Philomachus pugnax</i> , Ruff and Reeve (426) |

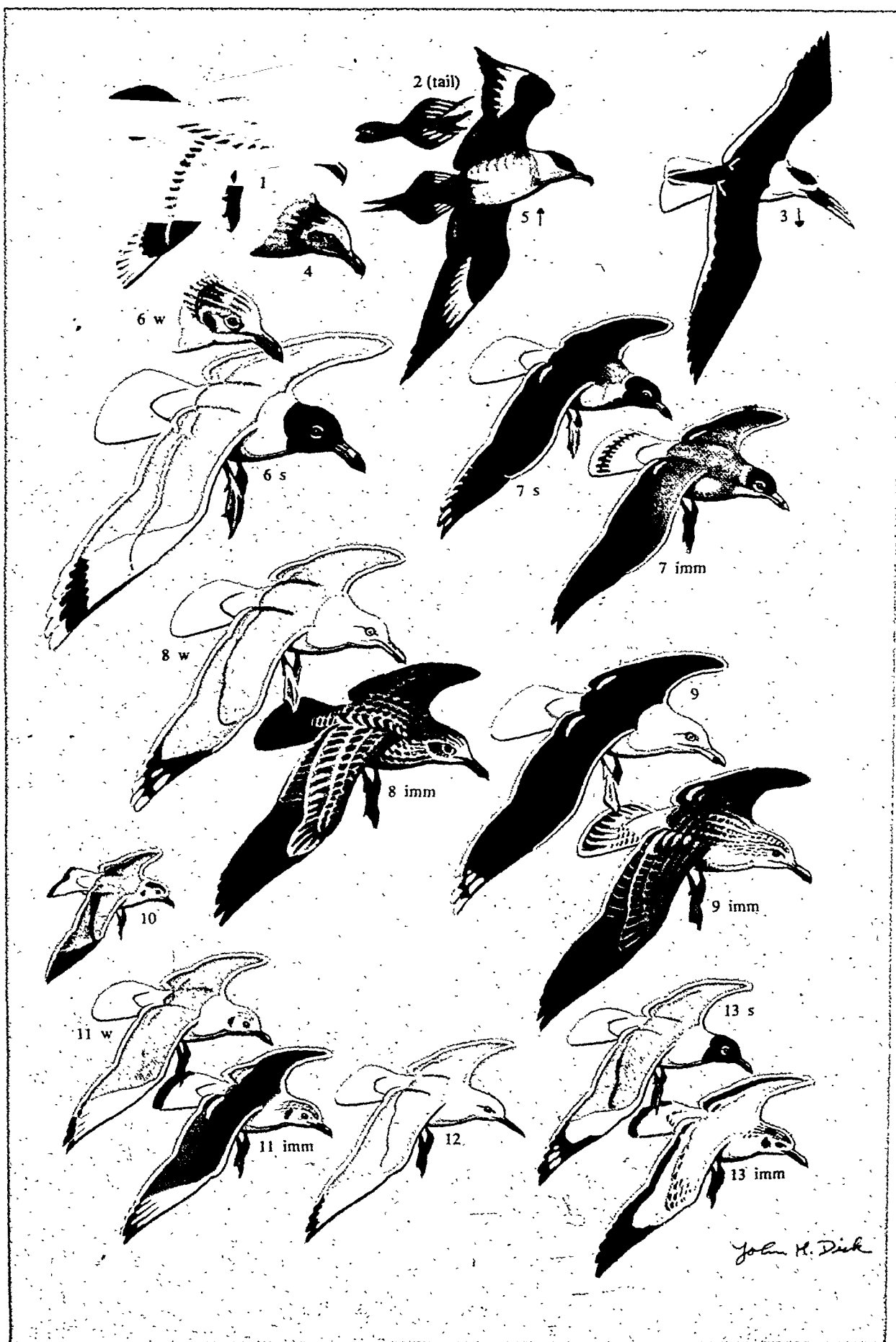


PLATE 45

- | | |
|--|---|
| 1 <i>Catharacta skua antarctica</i> , Antarctic Skua (445) | 6 <i>Larus ichthyaetus</i> , Great Blackheaded Gull (453) |
| 2 <i>Stercorarius pomarinus</i> , Pomatorhine Skua or Jaeger (447) | 7 <i>Larus hemprichii</i> , Sooty Gull (449) |
| 3 <i>Rynchops albicollis</i> , Indian Skimmer (484) | 8 <i>Larus argentatus</i> , Herring Gull (450) |
| 4 <i>Catharacta skua maccormicki</i> , (Maccormick's Skua) Antarctic Skua (446a) | 9 <i>Larus fuscus</i> , Lesser Blackbacked Gull (452) |
| 5 <i>Stercorarius parasiticus</i> , Parasitic or Richardson's Skua or Jaeger (448) | 10 <i>Larus minutus</i> , Little Gull (457) |
| | 11 <i>Larus ridibundus</i> , Blackheaded Gull (455) |
| | 12 <i>Larus genei</i> , Slenderbilled Gull (456) |
| | 13 <i>Larus brunnicephalus</i> , Brownheaded Gull (454) |

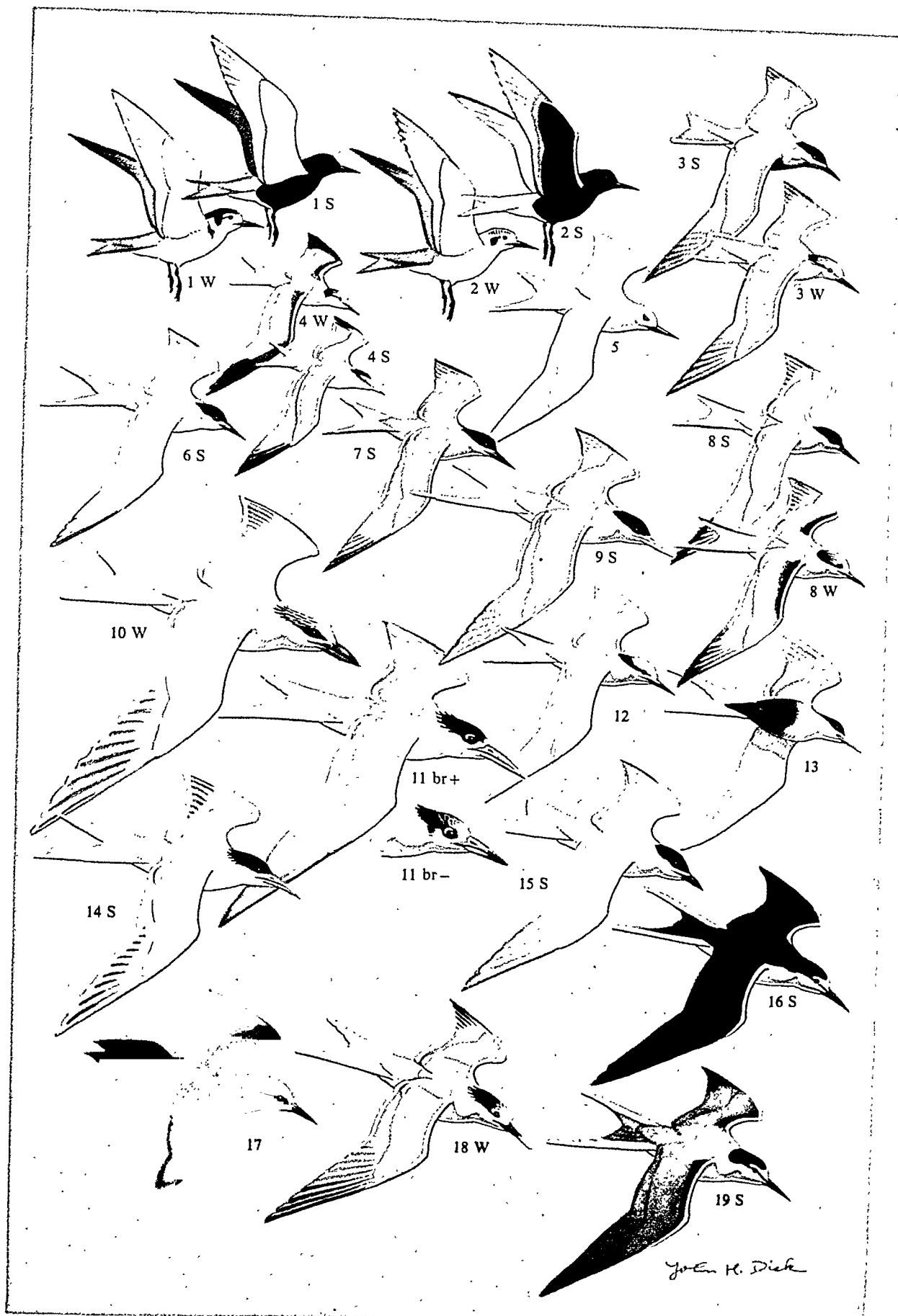


PLATE 46

- | | |
|---|---|
| 1 <i>Chlidonias niger</i> , Black Tern (459a) | 10 <i>Hydroprogne caspia</i> , Caspian Tern (462) |
| 2 <i>Chlidonias leucopterus</i> , Whitewinged Black Tern (459) | 11 <i>Sterna bergii</i> , Large Crested Tern (478) |
| 3 <i>Chlidonias hybrida</i> , Whiskered Tern (458) | 12 <i>Sterna sumatrana</i> , Blacknaped Tern (468) |
| 4 <i>Sterna albifrons</i> , Little Tern (475) | 13 <i>Sterna acuticauda</i> , Blackbellied Tern (470) |
| 5 <i>Gygis alba</i> , Indian Ocean White Tern or Fairy Tern (483) | 14 <i>Sterna bengalensis</i> , Indian Lesser Crested Tern (479) |
| 6 <i>Sterna dougallii</i> , Roseate or Rosy Tern (466) | 15 <i>Gelochelidon nilotica</i> , Gullbilled Tern (460) |
| 7 <i>Sterna repressa</i> , Whitecheeked Tern (467) | 16 <i>Sterna fuscata</i> , Sooty Tern (474) |
| 8 <i>Sterna hirundo</i> , Common Tern (464) | 17 <i>Anous stolidus</i> , Noddy Tern (481) |
| 9 <i>Sterna aurantia</i> , Indian River Tern (463) | 18 <i>Sterna sandwicensis</i> , Sandwich Tern (480) |
| | 19 <i>Sterna anaethetus</i> , Brownwinged Tern (471) |

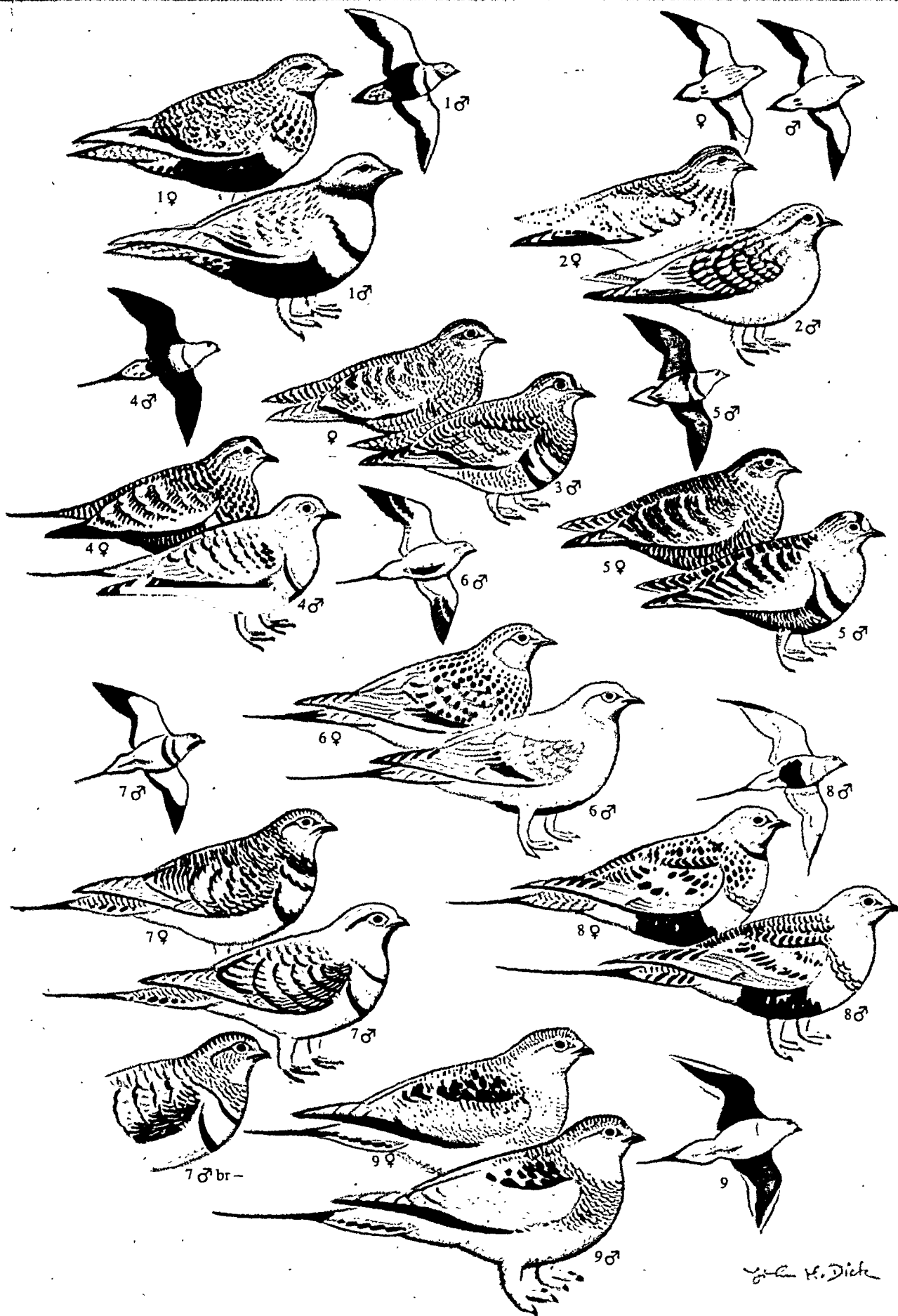


PLATE 47

- 1 *Pterocles orientalis*, Imperial Sandgrouse (489)
- 2 *Pterocles coronatus*, Coronetted Sandgrouse (490)
- 3 *Pterocles i. arabicus*, Closebarred Sandgrouse (491),
ssp of 492
- 4 *Pterocles exustus*, Indian Sandgrouse (487)

- 5 *Pterocles indicus*, Painted Sandgrouse (492)
- 6 *Pterocles senegallus*, Spotted Sandgrouse (488)
- 7 *Pterocles alchata*, Large Pintail Sandgrouse (486)
- 8 *Syrhaptes paradoxus*, Pallas's Sandgrouse (485a)
- 9 *Syrhaptes tibetanus*, Tibetan Sandgrouse (485)

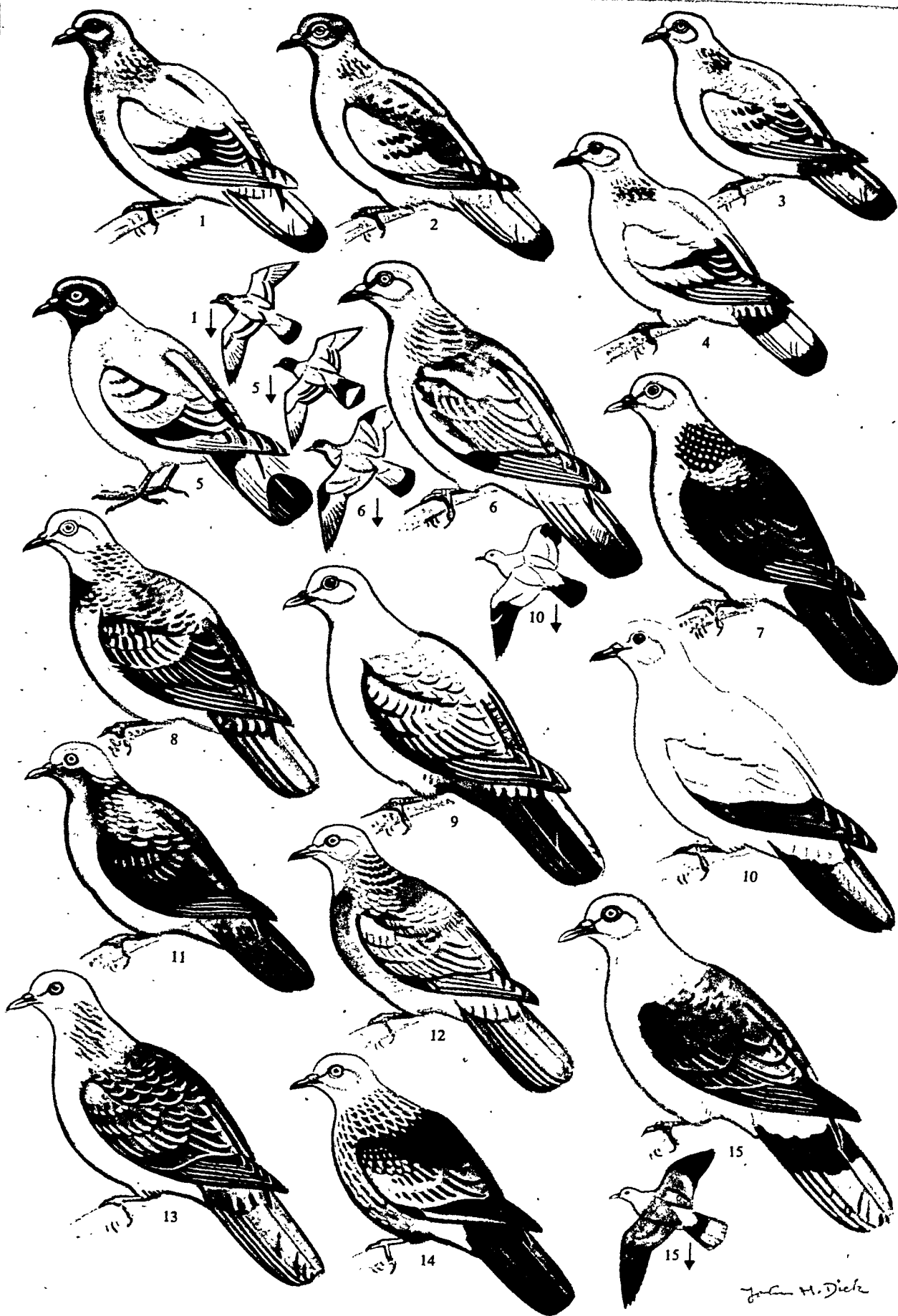


PLATE 48

- | | |
|---|---|
| 1 <i>Columba livia</i> , Blue Rock Pigeon (517) | 9 <i>Ducula aenea</i> , Green Imperial Pigeon (506) |
| 2 <i>Columba oenas</i> , Stock Pigeon (SE) | 10 <i>Ducula bicolor</i> , Pied Imperial Pigeon (509) |
| 3 <i>Columba eversmanni</i> , Eastern Stock Pigeon (518) | 11 <i>Columba punicea</i> , Purple Wood Pigeon (524) |
| 4 <i>Columba rupestris</i> , Hill Pigeon (515) | 12 <i>Columba torringtoni</i> , Ceylon Wood Pigeon (522) |
| 5 <i>Columba leuconota</i> , Snow Pigeon (513) | 13 <i>Columba palumboides</i> , Andaman Wood Pigeon (525) |
| 6 <i>Columba palumbus</i> , Wood Pigeon (519) | 14 <i>Columba hodgsonii</i> , Speckled Wood Pigeon (520) |
| 7 <i>Columba elphinstonii</i> , Nilgiri Wood Pigeon (521) | 15 <i>Ducula badia</i> , Imperial Pigeon (510) |
| 8 <i>Columba pulchricollis</i> , Ashy Wood Pigeon (523) | |

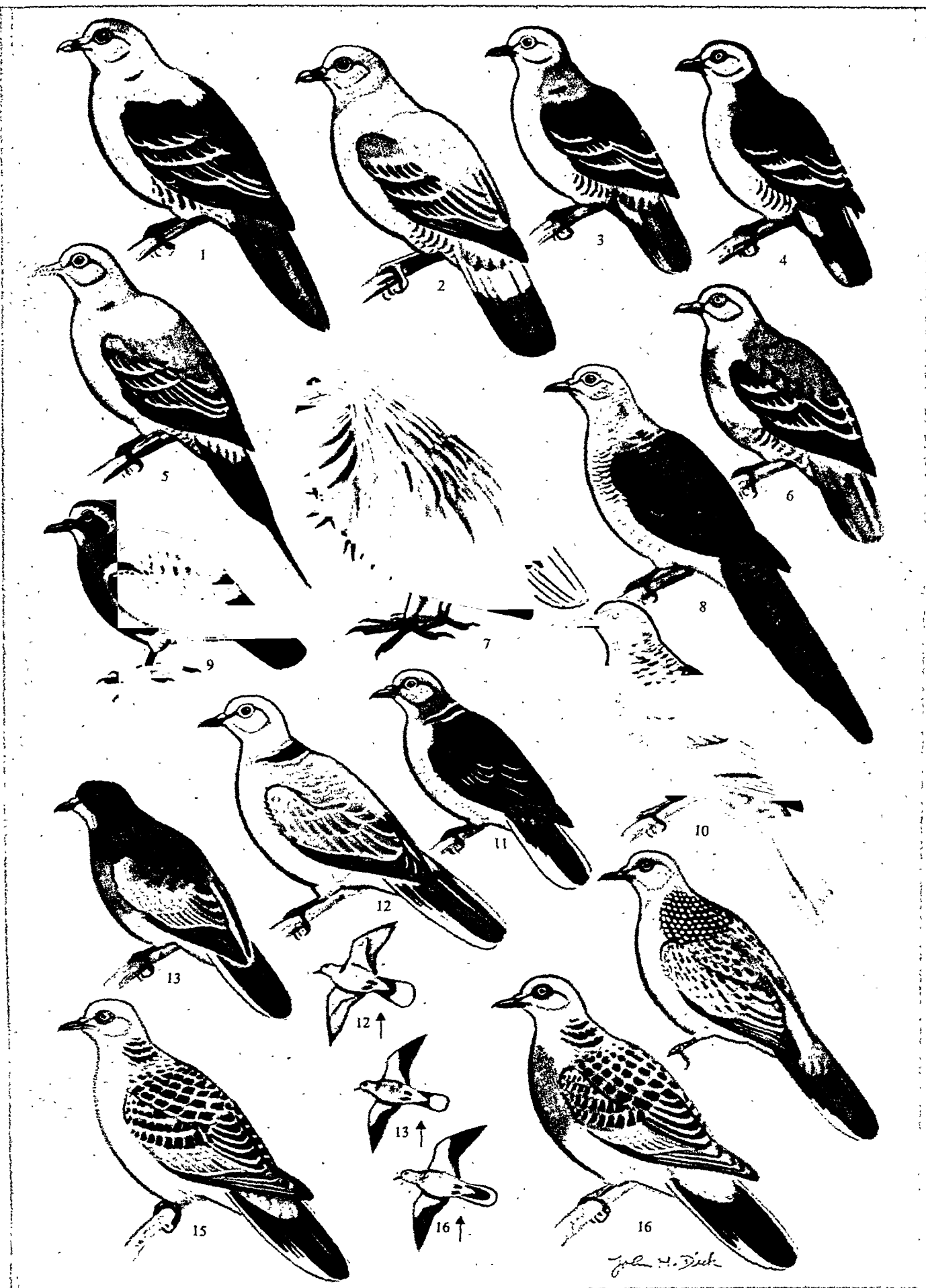


PLATE 49

- | | |
|---|--|
| 1 <i>Treron sphenura</i> , Wedgetailed Green Pigeon (494) | 9 <i>Chalcophaps indica</i> , Emerald or Bronzewinged Dove (542) |
| 2 <i>Treron phoenicoptera</i> , Yellowlegged Green Pigeon (503) | 10 <i>Macropygia rufipennis</i> , Andaman Cuckoo-Dove (527) |
| 3 <i>Treron pompadora</i> , Pompadour or Greyfronted Green Pigeon (496) | 11 <i>Streptopelia tranquebarica</i> , Red Turtle Dove (535) |
| 4 <i>Treron curvirostra</i> , Thickbilled Green Pigeon (495) | 12 <i>Streptopelia decaocto</i> , Indian Ring Dove (534) |
| 5 <i>Treron apicauda</i> , Pintailed Green Pigeon (493) | 13 <i>Streptopelia senegalensis</i> , Little Brown or Senegal Dove (541) |
| 6 <i>Treron bicincta</i> , Orangebreasted Green Pigeon (501) | 14 <i>Streptopelia chinensis</i> , Spotted Dove (537) |
| 7 <i>Caloenas nicobarica</i> , Nicobar Pigeon (544b) | 15 <i>Streptopelia turtur</i> , Turtle Dove (529) |
| 8 <i>Macropygia unchall</i> , Bartailed Cuckoo-Dove (526) | 16 <i>Streptopelia orientalis</i> , Rufous Turtle Dove (532) |

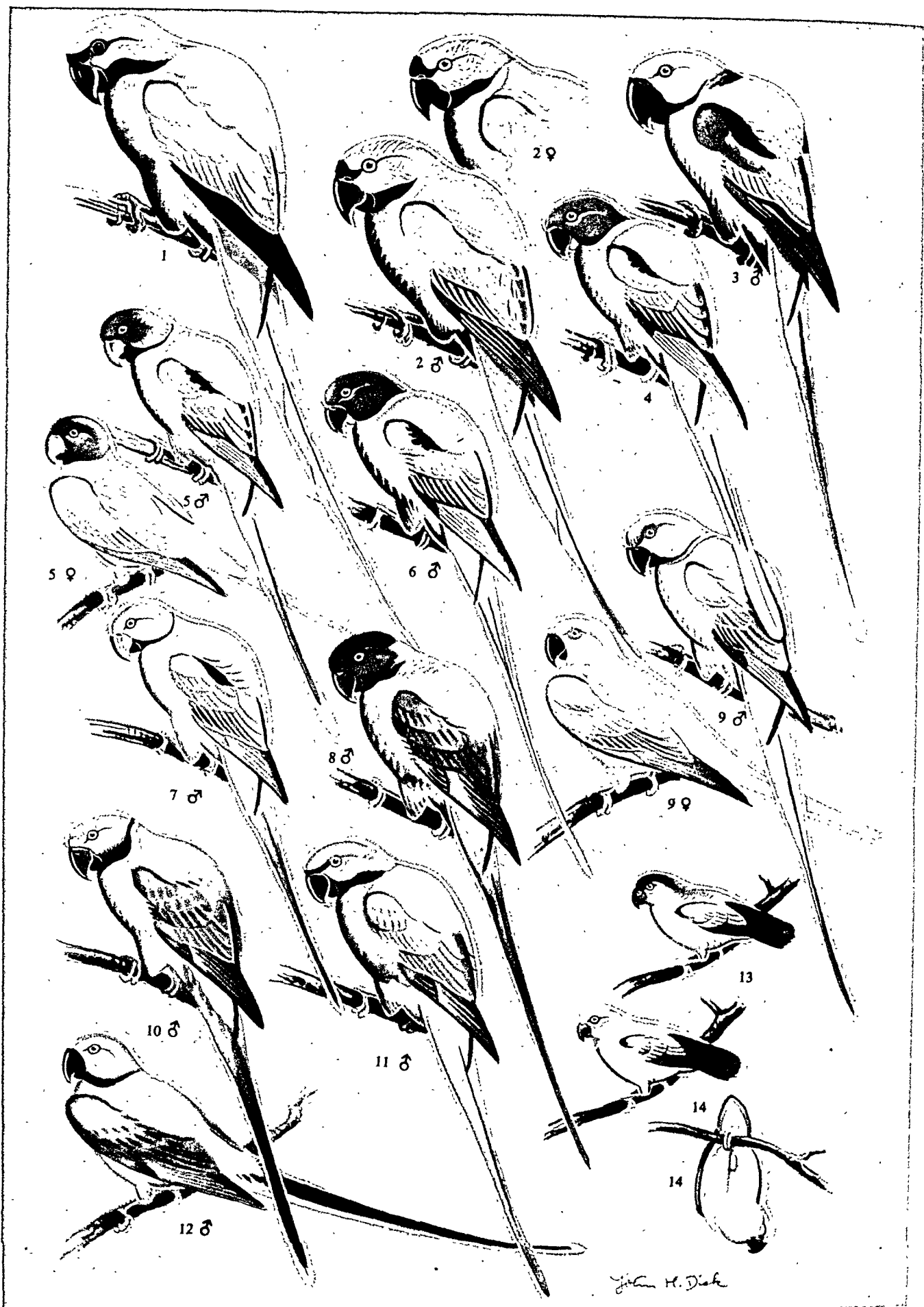


PLATE 50

- | | |
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| 1 <i>Psittacula caniceps</i> , Nicobar Parakeet (553) | 8 <i>Psittacula longicauda</i> , Redchecked Parakeet (555) |
| 2 <i>Psittacula derbyana</i> , Lord Derby's Parakeet (554) | 9 <i>Psittacula krameri</i> , Roseringed Parakeet (550) |
| 3 <i>Psittacula eupatria</i> , Alexandrine Parakeet (546) | 10 <i>Psittacula columboides</i> , Bluewinged Parakeet (564) |
| 4 <i>Psittacula finschii</i> , Eastern Slatyheaded Parakeet (563) | 11 <i>Psittacula alexandri</i> , Redbreasted Parakeet (551) |
| 5 <i>Psittacula cyanocephala</i> , Blossomheaded Parakeet (558) | 12 <i>Psittacula calthropae</i> , Layard's Parakeet (565) |
| 6 <i>Psittacula himalayana</i> , Slatyheaded Parakeet (562) | 13 <i>Loriculus beryllinus</i> , Ceylon Lorikeet (568) |
| 7 <i>Psittacula roseata</i> , Eastern Blossomheaded Parakeet (559) | 14 <i>Loriculus vernalis</i> , Indian Lorikeet (566) |

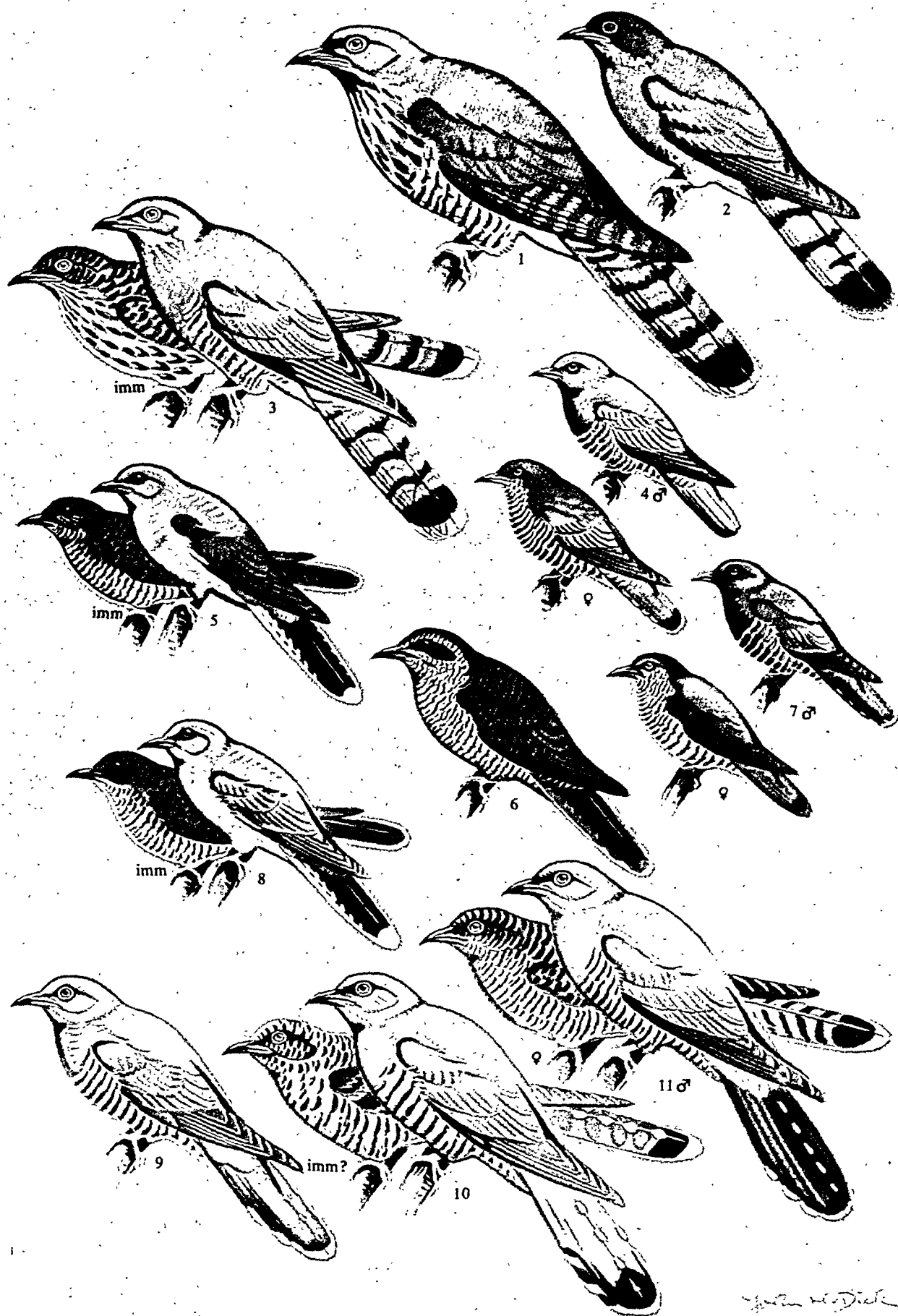


PLATE 51

- | | |
|---|---|
| 1 <i>Cuculus sparveroides</i> , Large Hawk-Cuckoo (572) | 6 <i>Cacomantis sonneratii</i> , Indian Banded Bay Cuckoo (582) |
| 2 <i>Cuculus fugax</i> , Hodgson's Hawk-Cuckoo (575) | 7 <i>Chalcites xanthorhynchus</i> , Violet Cuckoo (587) |
| 3 <i>Cuculus varius</i> , Common Hawk-Cuckoo or Brainfever Bird (573) | 8 <i>Cacomantis passerinus</i> , Indian Plaintive Cuckoo (584) |
| 4 <i>Chalcites maculatus</i> , Emerald Cuckoo (586) | 9 <i>Cuculus poliocephalus</i> , Small Cuckoo (581) |
| 5 <i>Cacomantis merulinus</i> , Rufousbellied Plaintive Cuckoo (585) | 10 <i>Cuculus micropterus</i> , Indian Cuckoo (576) |
| | 11 <i>Cuculus canorus</i> , The Cuckoo (578) |



PLATE 52

- | | |
|---|---|
| 1 <i>Rhopodytes viridirostris</i> , Small Greenbilled Malkoha (595) | 6 <i>Centropus toulou</i> , Lesser Coucal (605) |
| 2 <i>Clamator jacobinus</i> , Pied Crested Cuckoo (571) | 7 <i>Phaenicophaeus pyrrhocephalus</i> , Redfaced Malkoha (599) |
| 3 <i>Clamator coromandus</i> , Redwinged Crested Cuckoo (569) | 8 <i>Centropus sinensis</i> , Crow-Pheasant or Coucal (600) |
| 4 <i>Rhopodytes tristis</i> , Large Greenbilled Malkoha (593) | 9 <i>Centropus chlororhynchus</i> , Ceylon Coucal (604) |
| 5 <i>Taccocua leschenaultii</i> , Sirkeer Cuckoo (598) | 10 <i>Centropus (sinensis) andamanensis</i> , Andaman Crow-Pheasant (603) |

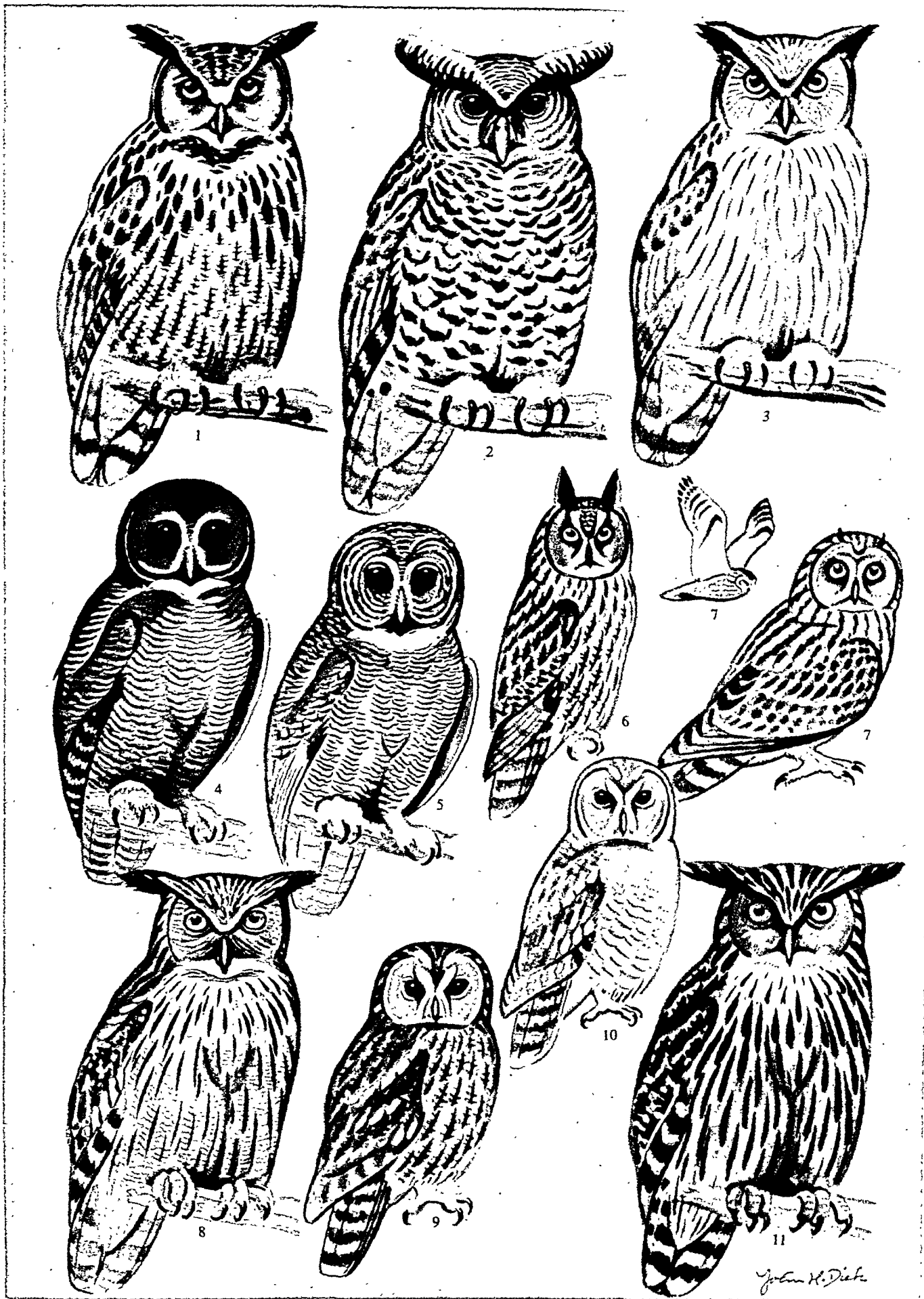


PLATE 53

- | | |
|--|--|
| 1 <i>Bubo bubo</i> , Eagle-Owl or Great Horned Owl (627) | 7 <i>Asio flammeus</i> , Shorteared Owl (664) |
| 2 <i>Bubo nipalensis</i> , Forest Eagle-Owl (628) | 8 <i>Bubo zeylonensis</i> , Brown Fish Owl (631) |
| 3 <i>Bubo coromandus</i> , Dusky Horned Owl (630) | 9 <i>Strix aluco</i> , Himalayan Wood Owl (662) |
| 4 <i>Strix leptogrammica</i> , Brown Wood Owl (659) | 10 <i>Strix butleri</i> , Hume's Wood Owl (654) |
| 5 <i>Strix ocellata</i> , Mottled Wood Owl (657) | 11 <i>Bubo flavipes</i> , Tawny Fish Owl (633) |
| 6 <i>Asio otus</i> , Longeared Owl (663) | |

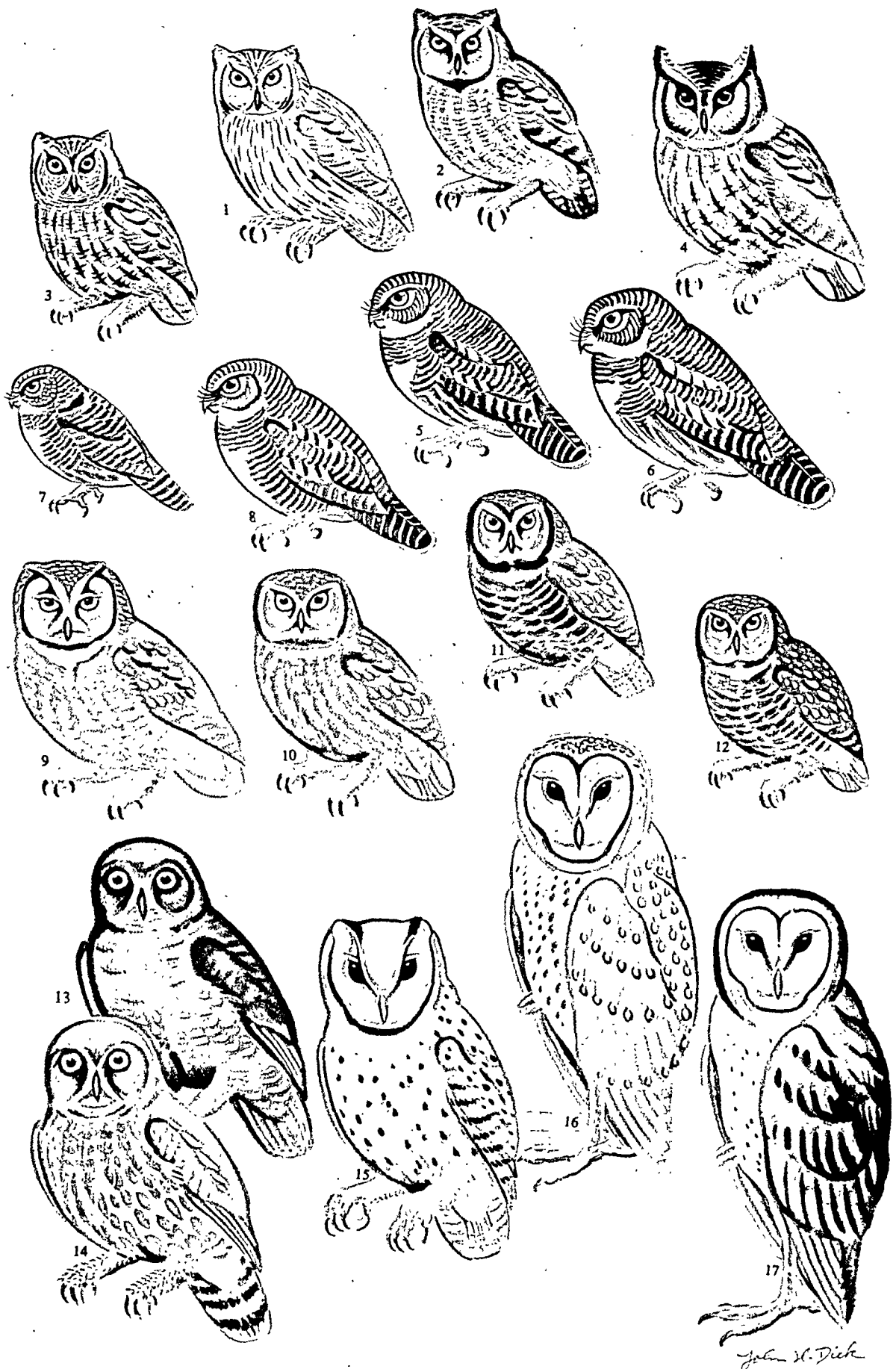


PLATE 54

- | | |
|---|--|
| 1 <i>Otus brucei</i> , Striated, or Pallid, Scops Owl (614) | 10 <i>Athene noctua</i> , Little Owl (648) |
| 2 <i>Otus spilocephalus</i> , Spotted Scops Owl (612) | 11 <i>Athene blewitti</i> , Forest Spotted Owlet (653) |
| 3 <i>Otus scops</i> , Scops Owl (617) | 12 <i>Athene brama</i> , Spotted Owlet (652) |
| 4 <i>Otus bakkamoena</i> , Collared Scops Owl (623) | 13 <i>Ninox s. obscura</i> (645), ssp of 642 |
| 5 <i>Glaucidium r. castanonotum</i> (638), ssp of 636 | 14 <i>Ninox scutulata</i> , Brown Hawk-Owl (642) |
| 6 <i>Glaucidium cuculoides</i> , Barred Owlet (639) | 15 <i>Phodilus badius</i> , Bay Owl (609) |
| 7 <i>Glaucidium brodiei</i> , Collared Pigmy Owlet (635) | 16 <i>Tyto alba</i> , Barn Owl (606) |
| 8 <i>Glaucidium radiatum</i> , Jungle Owlet (636) | 17 <i>Tyto capensis</i> , Grass Owl (608) |
| 9 <i>Aegolius funereus</i> , Tengmalm's Owl or Boreal Owl (665) | |

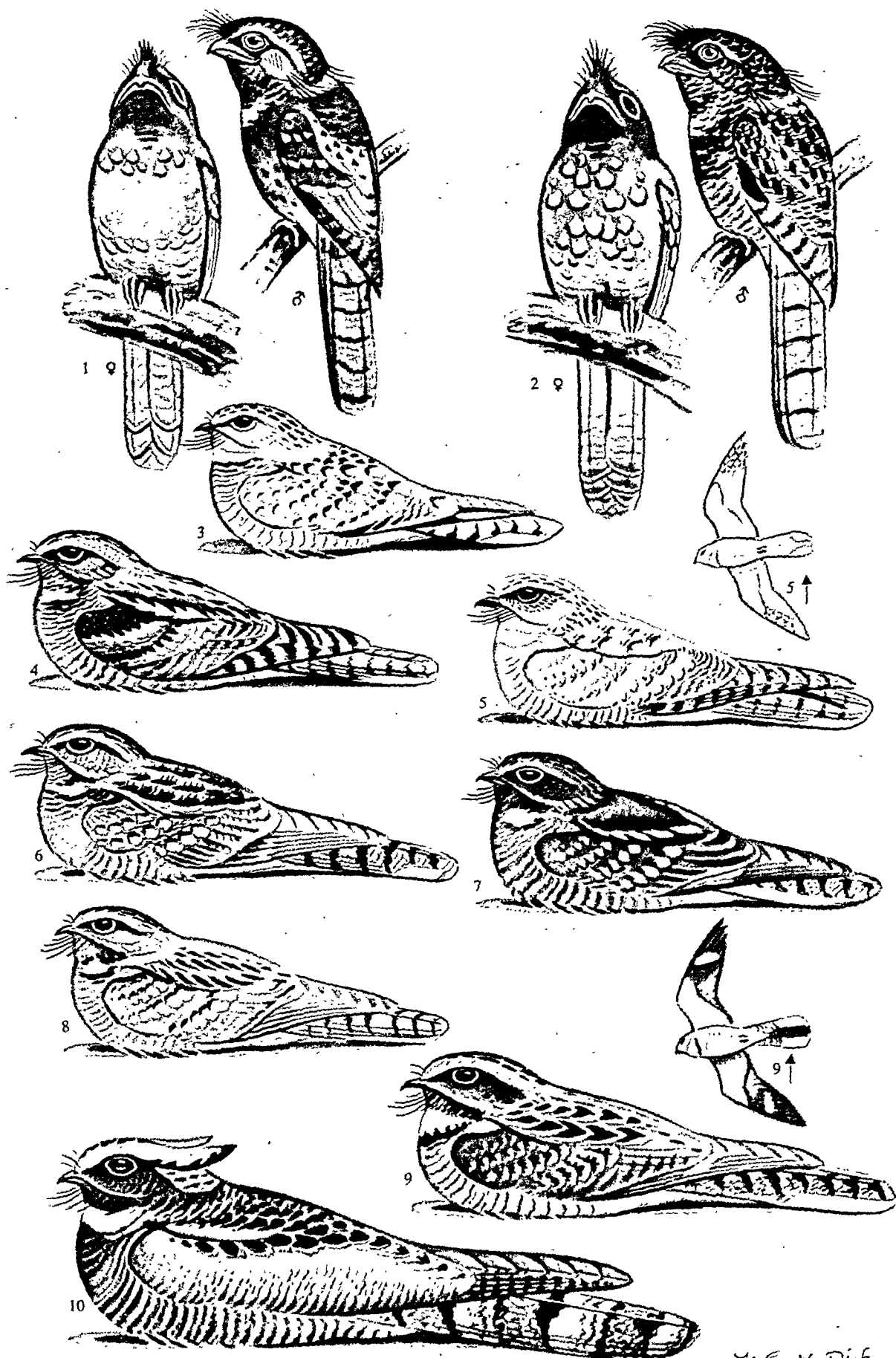


PLATE 55

- | | |
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| 1 <i>Batrachostomus moniliger</i> , Ceylon Frogmouth (666) | 7 <i>Caprimulgus affinis</i> , Franklin's or Allied Nightjar (682) |
| 2 <i>Batrachostomus hodgsoni</i> , Hodgson's Frogmouth (667) | 8 <i>Caprimulgus asiaticus</i> , Common Indian Nightjar (680) |
| 3 <i>Caprimulgus mahrattensis</i> , Sykes's Nightjar (674) | 9 <i>Caprimulgus macrurus</i> , Longtailed Nightjar (675) |
| 4 <i>Caprimulgus europaeus</i> , European Nightjar (673) | 10 <i>Eurostopodus macrotis</i> , Great Eared Nightjar (669) |
| 5 <i>Caprimulgus aegyptius</i> , Egyptian Nightjar (673a) | |
| 6 <i>Caprimulgus indicus</i> , Indian Jungle Nightjar (671) | |



PLATE 56

- | | |
|--|---|
| 1 <i>Chaetura sylvatica</i> , Whiterumped Spinetail (692) | 10 <i>Chaetura gigantea</i> , Large Brownthroated Spinetail Swift (691) |
| 2 <i>Collocalia brevirostris</i> , Himalayan Swiftlet (683) | 11 <i>Chaetura cochinchinensis</i> , Cochinchina Spinetail Swift (690) |
| 3 <i>Collocalia esculenta</i> , Whitebellied Swiftlet (687) | 12 <i>Apus melba</i> , Alpine Swift (693) |
| 4 <i>Apus affinis</i> , House Swift (703) | 13 <i>Cypsiurus parvus</i> , Palm Swift (707) |
| 5 <i>Apus pallidus</i> , Pallid Swift (697) | 14 <i>Chaetura caudacuta</i> , Whitethroated Spinetail Swift (688) |
| 6 <i>Apus apus</i> , The Swift (696) | |
| 7 <i>Apus pacificus</i> , Large Whiterumped Swift (699) | |
| 8 <i>Collocalia unicolor</i> , Indian Edible-nest Swiftlet (685) | |
| 9 <i>Apus acuticauda</i> , Darkbacked Swift (698) | |

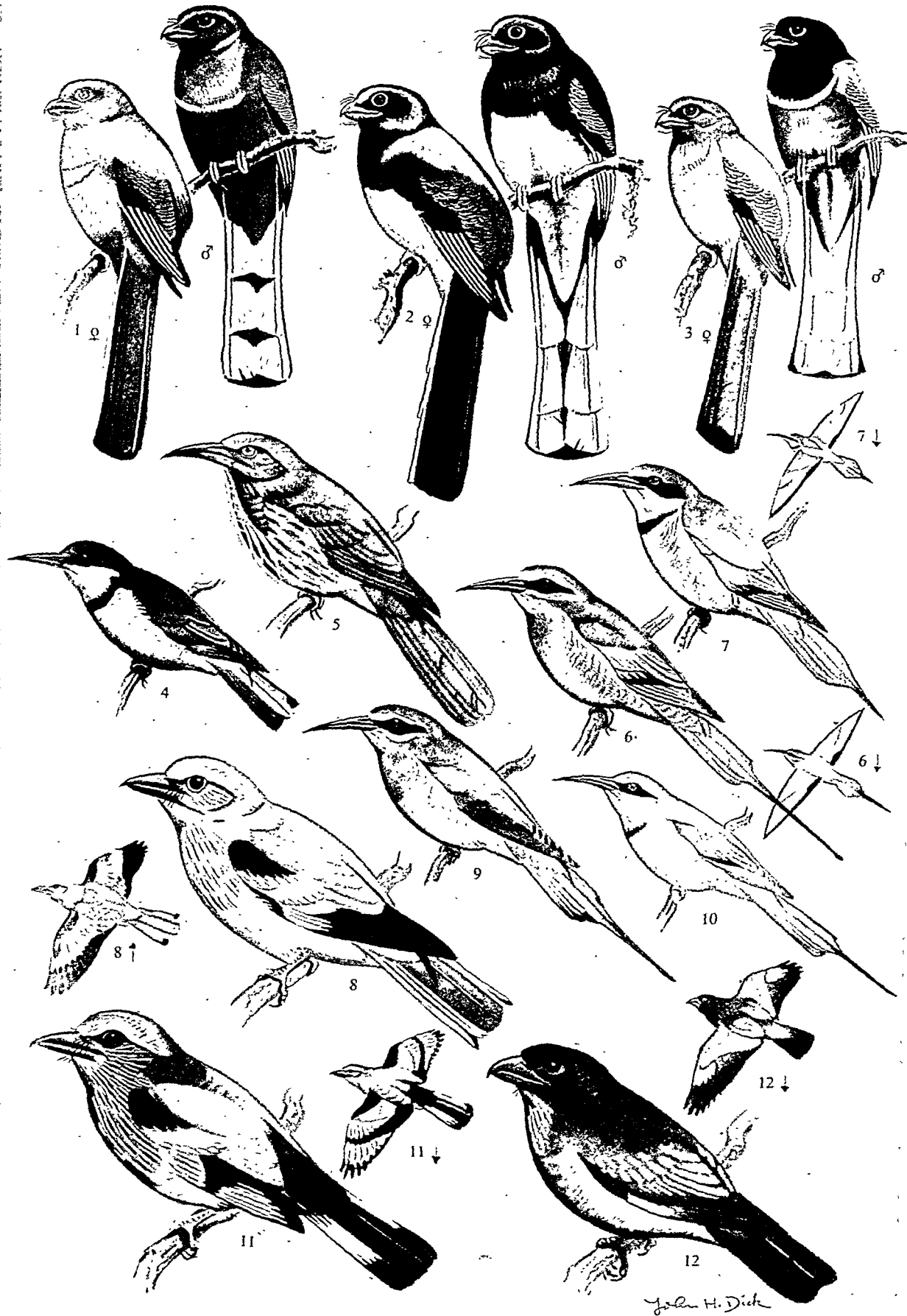


PLATE 57

- | | |
|---|--|
| 1 <i>Harpactes erythrocephalus</i> , Redheaded Trogon (715) | 7 <i>Merops apiaster</i> , European Bee-eater (746) |
| 2 <i>Harpactes wardi</i> , Ward's Trogon (716) | 8 <i>Coracias garrulus</i> , European Roller (754) |
| 3 <i>Harpactes fasciatus</i> , Malabar Trogon (711) | 9 <i>Merops philippinus</i> , Bluetailed Bee-eater (748) |
| 4 <i>Merops leschenaulti</i> , Chestnutheaded Bee-eater (744) | 10 <i>Merops orientalis</i> , Green Bee-eater (750) |
| 5 <i>Nyctornis athertoni</i> , Bluebearded Bee-eater (753) | 11 <i>Coracias benghalensis</i> , Indian Roller (755) |
| 6 <i>Merops superciliosus</i> , Bluecheeked Bee-eater (747) | 12 <i>Eurystomus orientalis</i> , Broadbilled Roller (758) |



PLATE 58

- 1 *Ceryle lugubris*, Himalayan Pied Kingfisher (717)
- 2 *Ceryx e. rufidorsus*? (727a), ssp of 727?
- 3 *Ceryle rudis*, Lesser Pied Kingfisher (719)
- 4 *Ceryx erithacus*, Threetoed Kingfisher (727)
- 5 *Alcedo meninting*, Blue-eared Kingfisher (725)
- 6 *Alcedo atthis*, Common, or Small Blue, Kingfisher (723)
- 7 *Alcedo hercules*, Blyth's, or Great Blue, Kingfisher (721)

- 8 *Halcyon pileata*, Blackcapped Kingfisher (739)
- 9 *Pelargopsis capensis*, Storkbilled Kingfisher (730)
- 10 *Halcyon chloris*, Whitecollared Kingfisher (740)
- 11 *Halcyon coromanda*, Ruddy Kingfisher (733)
- 12 *Pelargopsis amauroptera*, Brownwinged Kingfisher (729)
- 13 *Halcyon smymensis*, Whitebreasted Kingfisher (736)
- 14 *Upupa epops*, Hoopoe (763)



PLATE 59

- 1 *Rhyticeros plicatus*, Narcondam Hornbill (773)
- 2 *Tockus birostris*, Common Grey Hornbill (767)
- 3 *Ptilolaemus tickelli*, Whitethroated Brown Hornbill (770)
- 4 *Buceros bicornis*, Great Pied Hornbill (776)

- 5 *Tockus griseus*, Malabar Grey Hornbill (768)
- 6 *Anthracoseros malabaricus*, Indian Pied Hornbill (774)
- 7 *Rhyticeros undulatus*, Wreathed Hornbill (772)
- 8 *Anthracoseros coronatus*, Malabar Pied Hornbill (775)
- 9 *Aceros nipalensis*, Rufousnecked Hornbill (771)



PLATE 60

- | | |
|---|---|
| 1 <i>Megalaima lineata</i> , Lineated Barbet (784) | 11 <i>Megalaima australis</i> , Blue-eared Barbet (789) |
| 2 <i>Megalaima viridis</i> , Small Green Barbet (785) | 12 <i>Chrysocolaptes festivus</i> , Blackbacked Woodpecker (858) |
| 3 <i>Megalaima zeylanica</i> , Large Green Barbet (782) | 13 <i>Dinopium benghalense</i> , Lesser Goldenbacked Woodpecker (819) |
| 4 <i>Megalaima virens</i> , Great Hill Barbet (778) | 14 <i>Dinopium b. psarodes</i> (823), ssp of 819 |
| 5 <i>Megalaima asiatica</i> , Bluethroated Barbet (788) | 15 <i>Dinopium shorii</i> , Himalayan Goldenbacked Threetoed Woodpecker (824) |
| 6 <i>Megalaima franklinii</i> , Goldenthroated Barbet (787) | 16 <i>Dinopium javanense</i> , Indian Goldenbacked Threetoed Woodpecker (825) |
| 7 <i>Megalaima flavifrons</i> , Yellowfronted Barbet (786) | 17 <i>Chrysocolaptes lucidus</i> , Larger Goldenbacked Woodpecker (861) |
| 8 <i>Megalaima haemacephala</i> , Crimsonbreasted Barbet or Coppersmith (792) | 18 <i>Chrysocolaptes l. stricklandi</i> (863), ssp of 861 |
| 9 <i>Megalaima r. malabarica</i> (790), ssp of 791 | |
| 10 <i>Megalaima rubricapilla</i> , Crimsonthroated Barbet (791) | |



PLATE 61

- | | |
|---|--|
| 1 <i>Dendrocopos moluccensis</i> , Browncapped Woodpecker (SE) | 11 <i>Hypopicus hyperythrus</i> , Rufousbellied Woodpecker or Sapsucker (833) |
| 2 <i>Picumnus innominatus</i> , Speckled Piculet (798) | 12 <i>Picoides assimilis</i> , Sind Pied Woodpecker (835) |
| 3 <i>Picoides canicapillus</i> , Greycrowned Pigmy Woodpecker (850) | 13 <i>Picoides cathpharius</i> , Crimsonbreasted Pied Woodpecker (840) |
| 4 <i>Hemicircus canente</i> , Heartspotted Woodpecker (856) | 14 <i>Picoides major</i> , Great Spotted, or Redcrowned Pied, Woodpecker (834) |
| 5 <i>Sasia ochracea</i> , Rufous Piculet (800) | 15 <i>Picoides himalayensis</i> , Himalayan Pied Woodpecker (837) |
| 6 <i>Picoides auriceps</i> , Brownfronted Pied Woodpecker (842) | 16 <i>Picoides h. albens</i> (836), ssp of 837 |
| 7 <i>Picoides tridactylus</i> , Threetoed Woodpecker (855) | 17 <i>Dendrocopos leucopterus</i> , Whitemantled Woodpecker (SE) |
| 8 <i>Picoides atratus</i> , Stripebreasted Pied Woodpecker (844) | 18 <i>Picoides darjellensis</i> , Darjeeling Pied Woodpecker (838) |
| 9 <i>Picoides maharattensis</i> , Yellowfronted Pied Woodpecker (847) | |
| 10 <i>Picoides macei</i> , Fulvousbreasted Pied Woodpecker (845) | |



PLATE 62

- 1 *Jynx torquilla*, Wryneck (796)
- 2 *Picus chlorolophus*, Small Yellownaped Woodpecker (815)
- 3 *Picus e. chlorigaster* (816), ssp of 815
- 4 *Picus flavinucha*, Large Yellownaped Woodpecker (813)
- 5 *Picus canus*, Blacknaped Green Woodpecker (809)
- 6 *Picus squamatus*, Scalybellied Green Woodpecker (807)
- 7 *Picus pyrrhotis*, Little Scalybellied Green Woodpecker (808)
- 8 *Dryocopus javensis*, Indian Great Black Woodpecker (830)
- 9 *Dryocopus j. hodgei* (831), ssp of 830
- 10 *Mulleripicus pulverulentus*, Himalayan Great Slaty Woodpecker (828)
- 11 *Picus vittatus*, Laced Woodpecker (SE)
- 12 *Gecinulus grantia*, Paleheaded Woodpecker (827)
- 13 *Blythipicus pyrrhotis*, Redeared Bay Woodpecker (857)

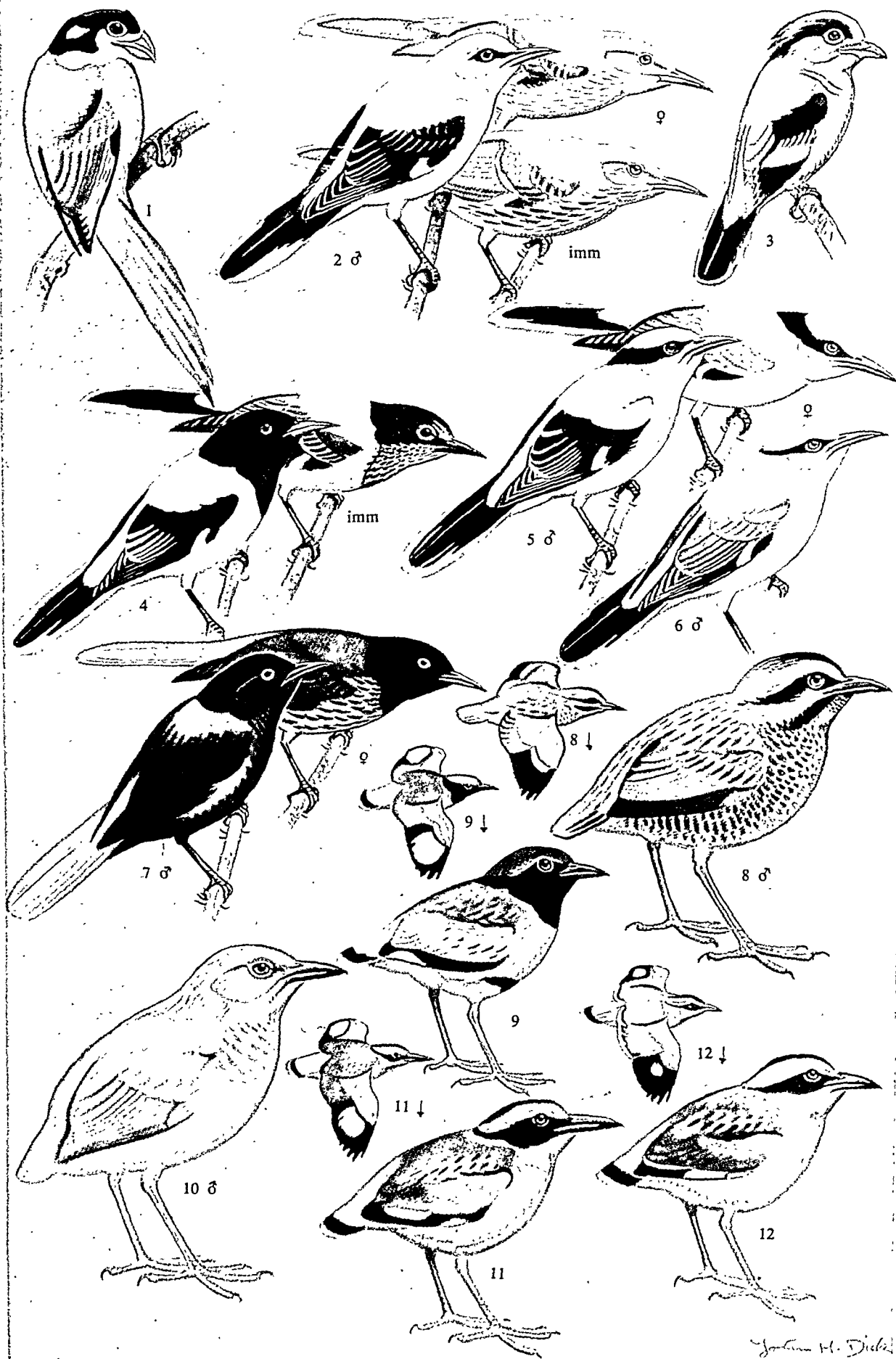


PLATE 63

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|---|--|
| 1 <i>Psarisomus dalhousiae</i> , Longtailed Broadbill (865) | 7 <i>Oriolus traillii</i> , Maroon Oriole (961) |
| 2 <i>Oriolus oriolus</i> , Golden Oriole (953) | 8 <i>Pitta cyanea</i> , Blue Pitta (871) |
| 3 <i>Serilophus lunatus</i> , Collared Broadbill (864) | 9 <i>Pitta sordida</i> , Hooded or Greenbreasted Pitta (869) |
| 4 <i>Oriolus xanthornus</i> , Blackheaded Oriole (958) | 10 <i>Pitta nipalensis</i> , Bluenaped Pitta (866) |
| 5 <i>Oriolus chinensis diffusus</i> , Blacknaped Oriole (954) | 11 <i>Pitta moluccensis</i> , Bluewinged Pitta (868) |
| 6 <i>Oriolus chinensis tenuirostris</i> , Slenderbilled Blacknaped Oriole (955) | 12 <i>Pitta brachyura</i> , Indian Pitta (867) |

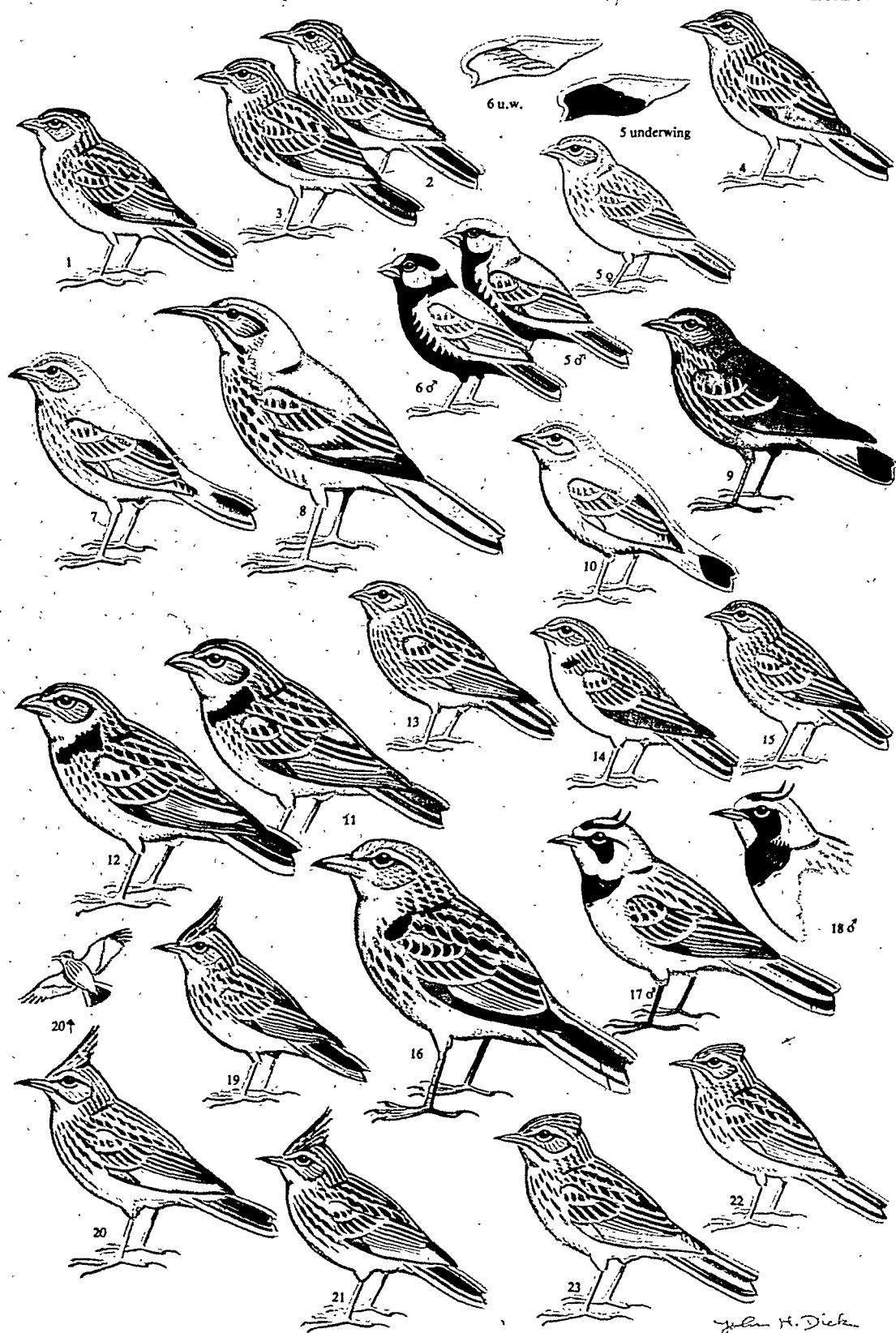


PLATE 64

- | | |
|---|---|
| 1 <i>Mirafrja javanica</i> , Singing Bush Lark (872) | 12 <i>Melanocorypha calandra</i> , Calandra Lark (SE) |
| 2 <i>Mirafrja assamica</i> , Bush Lark (873) | 13 <i>Calandrella rufescens</i> , Lesser Short-toed Lark (888a) |
| 3 <i>Mirafrja a. affinis</i> (874), ssp of 873 | 14 <i>Calandrella cinerea</i> , Short-toed Lark (886) |
| 4 <i>Mirafrja erythroptera</i> , Redwinged Bush Lark (877) | 15 <i>Calandrella raytal</i> , Sand Lark (891) |
| 5 <i>Eremopterix grisea</i> , Ashycrowned Finch-Lark (878) | 16 <i>Melanocorypha maxima</i> , Longbilled Calandra Lark (894) |
| 6 <i>Eremopterix nigriceps</i> , Blackcrowned Finch-Lark (879) | 17 <i>Eremophila alpestris</i> , Horned Lark (897) |
| 7 <i>Ammomanes deserti</i> , Desert Finch-Lark (880) | 18 <i>Eremophila a. albigula</i> (895), ssp of 897 |
| 8 <i>Alaemon alaudipes</i> , Bifasciated, or Large Desert, Lark (884) | 19 <i>Galerida deva</i> , Sykes's Crested Lark (902) |
| 9 <i>Ammomanes phoenicurus</i> , Rufoustailed Finch-Lark (882) | 20 <i>Galerida cristata</i> , Crested Lark (899) |
| 10 <i>Ammomanes cincturus</i> , Bartailed Desert Lark (881) | 21 <i>Galerida malabarica</i> , Malabar Crested Lark (901) |
| 11 <i>Melanocorypha bimaculata</i> , Eastern Calandra Lark (892) | 22 <i>Alauda gulgula</i> , Eastern Skylark (907) |
| | 23 <i>Alauda arvensis</i> , Skylark (903) |

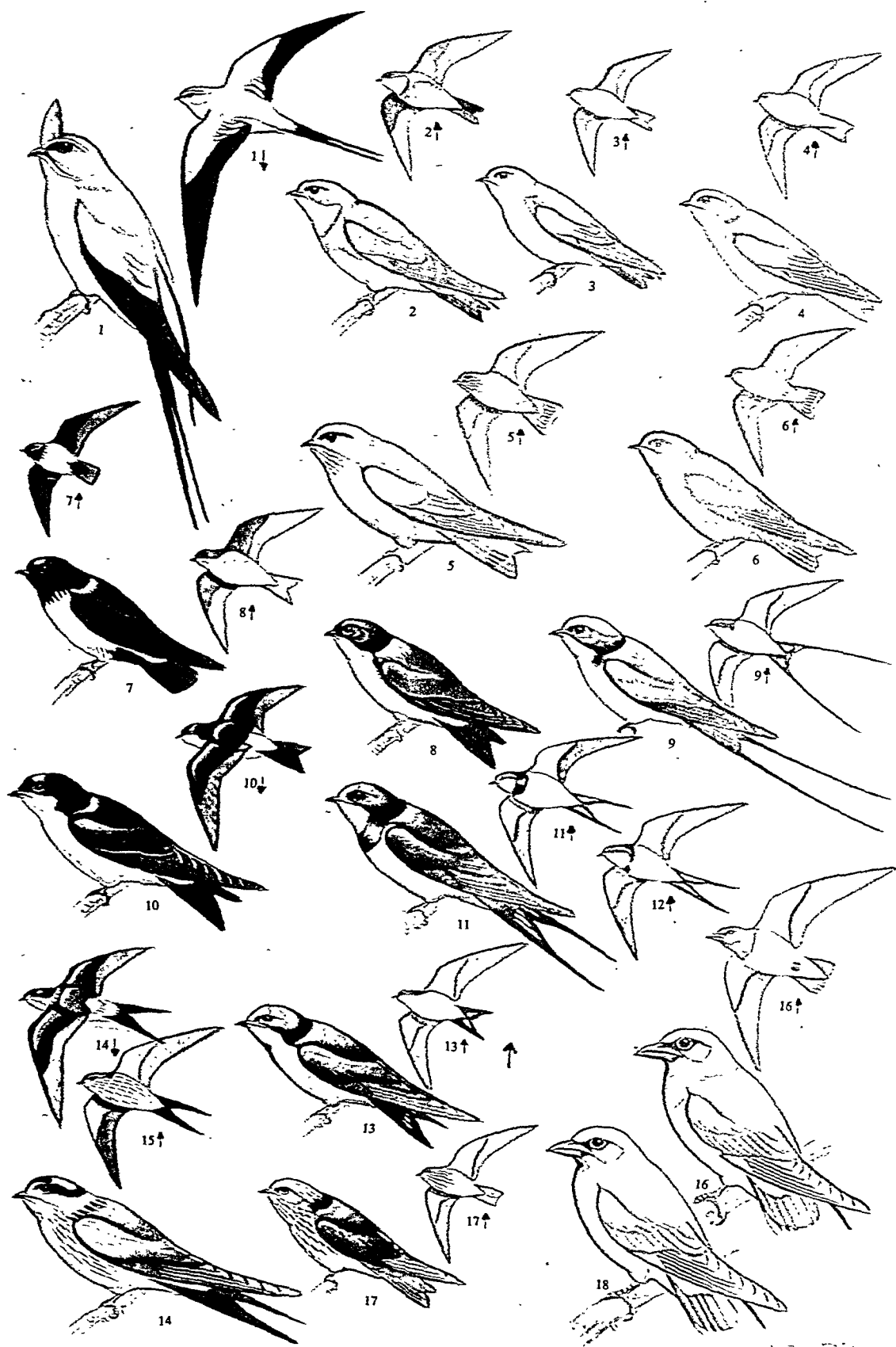


PLATE 65

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| 1 <i>Hemiprocne longipennis</i> , Crested Tree Swift (709) | 11 <i>Hirundo rustica</i> , Swallow (916) |
| 2 <i>Riparia riparia</i> , Collared Sand Martin (910) | 12 <i>Hirundo r. tytleri</i> (918), ssp of 916 |
| 3 <i>Riparia paludicola</i> , Plain Sand Martin (912) | 13 <i>Hirundo tahitica</i> , House Swallow (919) |
| 4 <i>Hirundo obsoleta</i> , Pale Crag Martin (915) | 14 <i>Hirundo daurica</i> , Striated or Redrumped Swallow (927) |
| 5 <i>Hirundo rupestris</i> , Crag Martin (913) | 15 <i>Hirundo d. hyperythra</i> (928), ssp of 927 |
| 6 <i>Hirundo concolor</i> , Dusky Crag Martin (914) | 16 <i>Artamus leucorhynchus</i> , Whitebreasted Swallow-Shrike (983) |
| 7 <i>Delichon nipalensis</i> , Nepal House Martin (932) | 17 <i>Hirundo fluvicola</i> , Indian Cliff Swallow (922) |
| 8 <i>Delichon dasypus</i> , Asian House Martin (SE) | 18 <i>Artamus fuscus</i> , Ashy Swallow-Shrike (982) |
| 9 <i>Hirundo smithii</i> , Wiretailed Swallow (921) | |
| 10 <i>Delichon urbica</i> , House Martin (931) | |



PLATE 66

- 1 *Hypothymis azurea*, Blacknaped Flycatcher (1465)
- 2 *Terpsiphone paradisi*, Paradise Flycatcher (1461)
- 3 *Rhipidura a. albogularis* (1458), ssp of 1455
- 4 *Rhipidura aureola*, Whitebrowed Fantail Flycatcher (1451)
- 5 *Rhipidura albicollis*, Whitethroated Fantail Flycatcher (1455)
- 6 *Lanius vittatus*, Baybacked Shrike (940)
- 7 *Lanius c. isabellinus* (943), ssp of 941
- 8 *Lanius c. phoenicuroides* (942), ssp of 941
- 9 *Lanius cristatus*, Brown Shrike (949)
- 10 *Lanius collurio*, Burmese Shrike (938)
- 11 *Lanius minor*, Lesser Grey Shrike (937)
- 12 *Lanius excubitor*, Grey Shrike (933)
- 13 *Lanius collurio*, Redbacked Shrike (941)
- 14 *Lanius senator*, Woodchat Shrike (951)
- 15 *Lanius tephronotus*, Greybacked or Tibetan Shrike (945)
- 16 *Bombycilla garrulus*, Waxwing (1062)
- 17 *Lanius schach*, Rufousbacked Shrike (946)
- 18 *Lanius s. tricolor* (918), ssp of 916
- 19 *Hypocolius ampelinus*, Grey Hypocolius (1063)

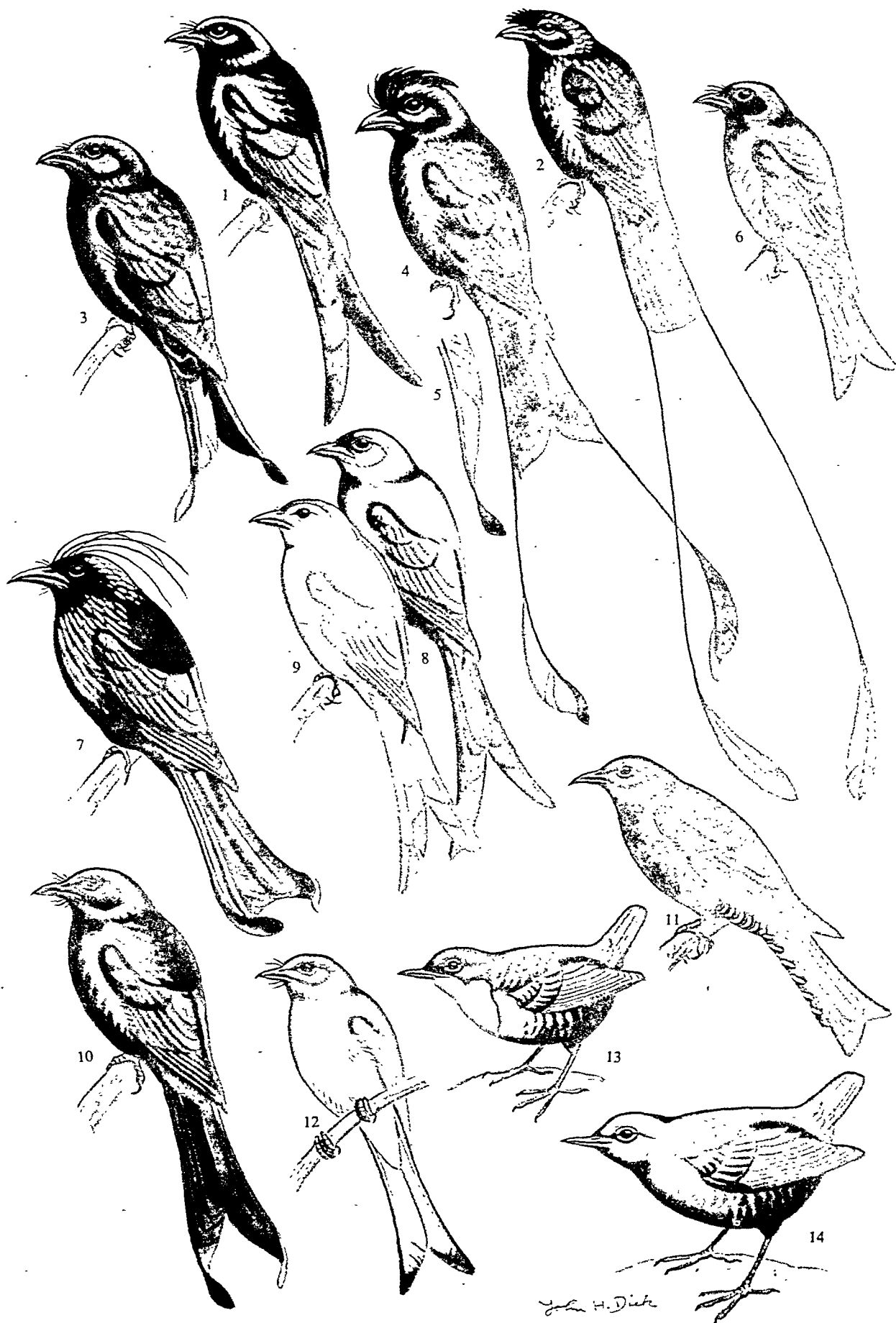


PLATE 67

- 1 *Dicrurus adsimilis*, Black Drongo or King-Crow (963)
- 2 *Dicrurus remifer*, Lesser Racket-tailed Drongo (972)
- 3 *Dicrurus annectans*, Crowbilled Drongo (970)
- 4 *Dicrurus paradiseus*, Greater Racket-tailed Drongo (976)
- 5 *Dicrurus p. lophorhinus* (979), ssp of 976
- 6 *Dicrurus aeneus*, Bronzed Drongo (971)
- 7 *Dicrurus hottentottus*, Haircrested or Spangled Drongo (973)

- 8 *Dicrurus leucophaeus*, Grey or Ashy Drongo (965)
- 9 *Dicrurus l. salangensis* (966a), ssp of 965
- 10 *Dicrurus andamanensis*, Andaman Drongo (975)
- 11 *Surniculus lugubris*, Drongo-Cuckoo (588)
- 12 *Dicrurus caerulescens*, Whitebellied Drongo (967)
- 13 *Cinclus cinclus*, Whitebreasted Dipper (1773)
- 14 *Cinclus pallasii*, Brown Dipper (1775)

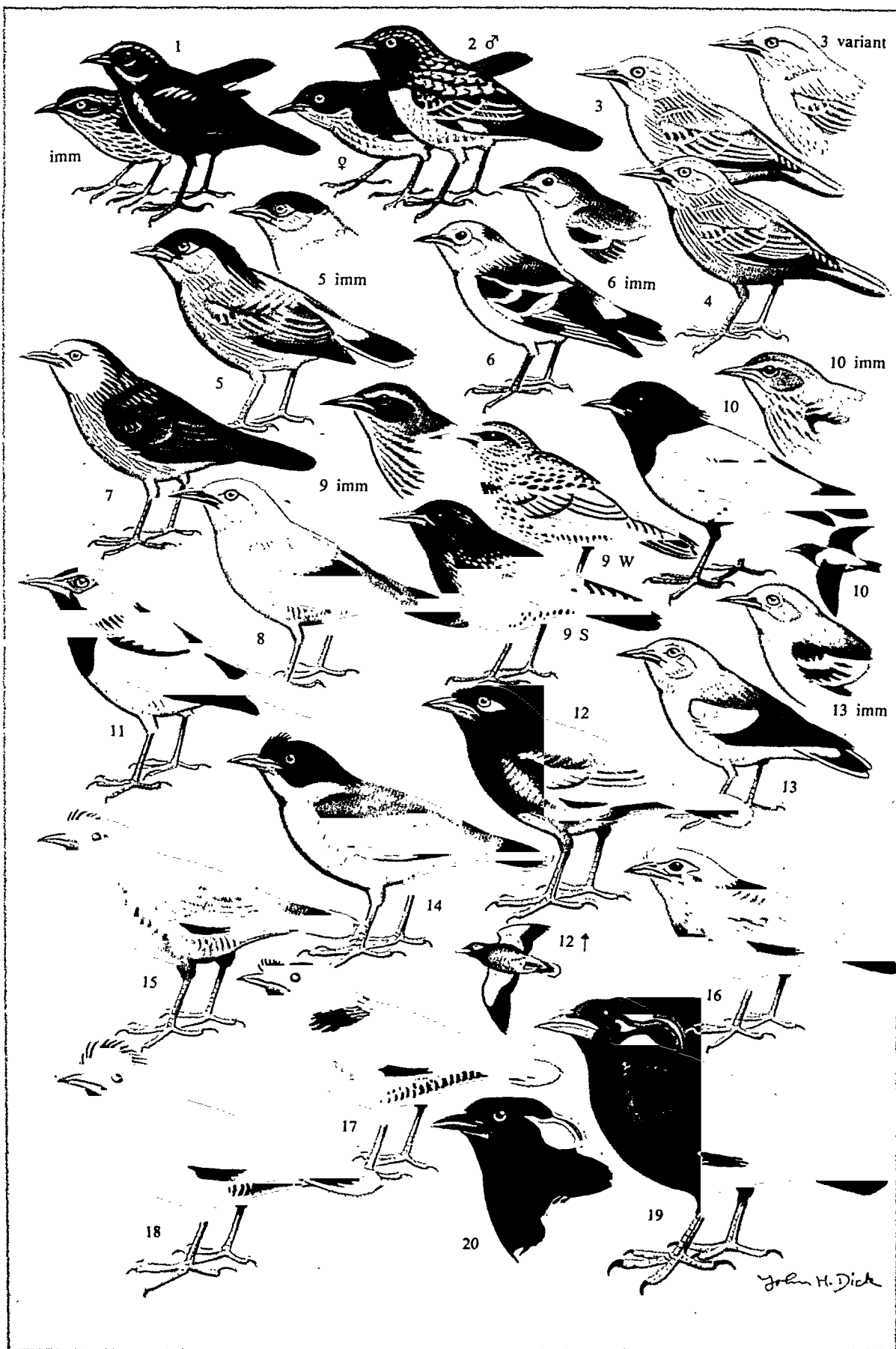


PLATE 68

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| 1 <i>Aplonis panayensis</i> , Glossy Stare or Starling (986) | 11 <i>Sturnus contra</i> , Pied Myna (1002) |
| 2 <i>Saroglossa spiloptera</i> , Spottedwinged Stare (984) | 12 <i>Acridotheres tristis</i> , Common Myna (1006) |
| 3 <i>Sturnus malabaricus</i> , Greyheaded Myna (987) | 13 <i>Sturnus sinensis</i> , Chinese or Greybacked Myna (1005) |
| 4 <i>Sturnus m. blythi</i> (988), ssp of 987 | 14 <i>Acridotheres ginginianus</i> , Bank Myna (1008) |
| 5 <i>Sturnus pagodarum</i> , Blackheaded or Brahminy Myna (994) | 15 <i>Acridotheres fuscus</i> , Jungle Myna (1009) |
| 6 <i>Sturnus sturninus</i> , Daurian Myna (995) | 16 <i>Mino coronatus</i> , Goldcrested Myna (1014) |
| 7 <i>Sturnus senex</i> , Ceylon Whiteheaded Myna or Starling (993) | 17 <i>Acridotheres albocinctus</i> , Collared Myna (1013) |
| 8 <i>Sturnus erythropygius</i> , Whiteheaded Myna (991) | 18 <i>Acridotheres javanicus</i> , Orangebilled Jungle Myna (1012) |
| 9 <i>Sturnus vulgaris</i> , Starling (997) | 19 <i>Gracula religiosa</i> , Hill Myna (1015) |
| 10 <i>Sturnus roseus</i> , Rosy Pastor (996) | 20 <i>Gracula ptilogynys</i> , Ceylon Hill Myna (1019) |



PLATE 69

- 1 *Garrulus lanceolatus*, Blackthroated Jay (1022)
- 2 *Garrulus glandarius*, Redcrowned Jay (1020)
- 3 *Pica pica*, Whiterumped Magpie (1029)
- 4 *Cissa chinensis*, Green Magpie (1023)
- 5 *Cissa ornata*, Ceylon Magpie (1024)
- 6 *Cissa flavirostris*, Yellowbilled Blue Magpie (1026)
- 7 *Cissa erythrorhyncha*, Redbilled Blue Magpie (1027)
- 8 *Dendrocitta formosae*, Himalayan Tree Pie (1038)

- 9 *Dendrocitta leucogastra*, Whitebellied Tree Pie (1036)
- 10 *Dendrocitta vagabunda*, Indian Tree Pie (1032)
- 11 *Dendrocitta frontalis*, Blackbrowed Tree Pie (1035)
- 12 *Dendrocitta bayleyi*, Andaman Tree Pie (1040)
- 13 *Nucifraga caryocatactes*, Nutcracker (1042)
- 14 *Nucifraga c. hemispila* (1043), ssp of 1042
- 15 *Podoces humilis*, Hume's Ground Chough (1041)

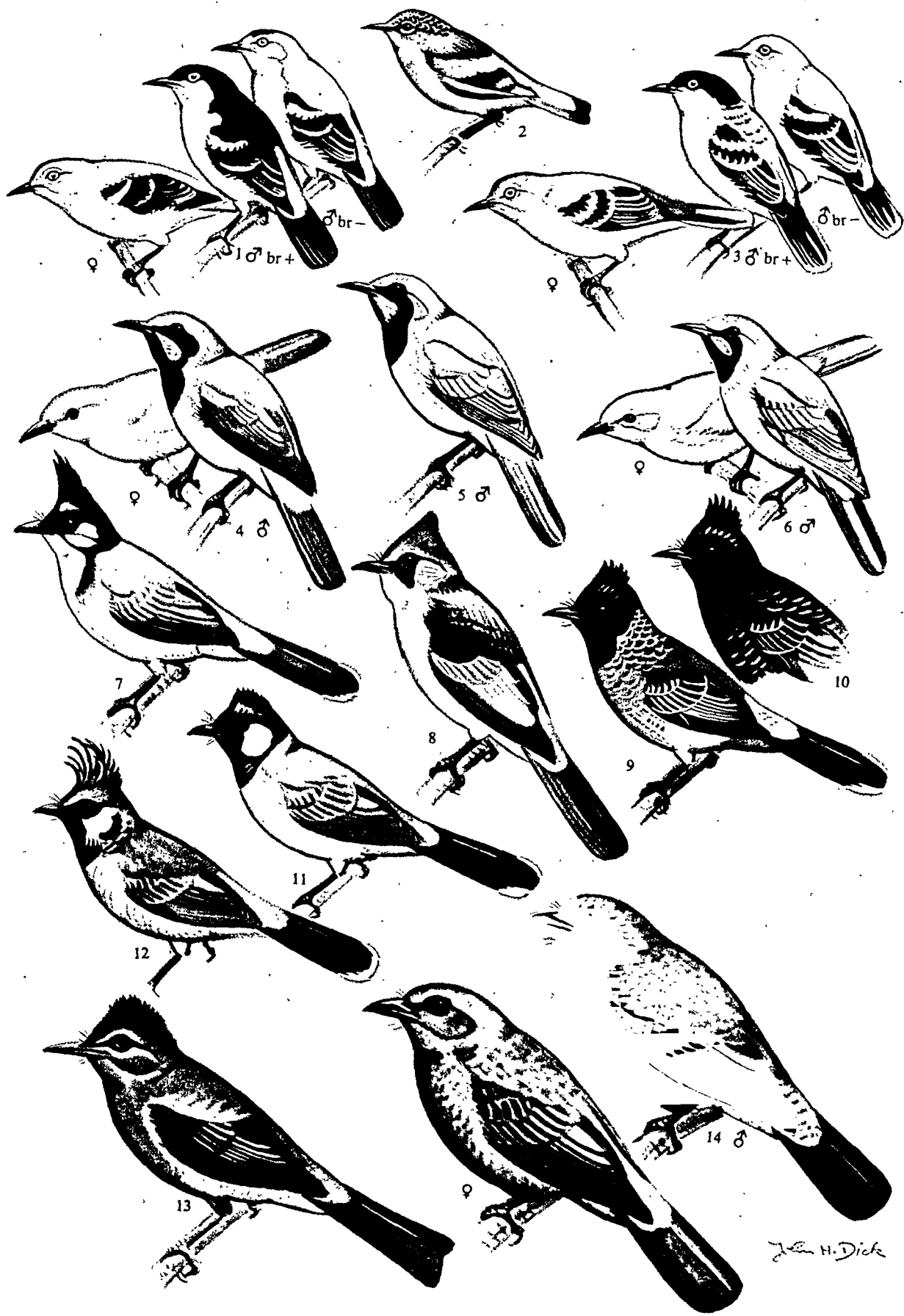


PLATE 72

- | | |
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| 1 <i>Aegithina tiphia</i> , Common Iora (1098) | 7 <i>Pycnonotus jocosus</i> , Redwhiskered Bulbul (1121) |
| 2 <i>Myzornis pyrrhura</i> , Firetailed Myzornis (1338) | 8 <i>Hypsipetes flavalus</i> , Browneared Bulbul (1147) |
| 3 <i>Aegithina nigrolutea</i> , Marshall's Iora (1102) | 9 <i>Pycnonotus cafer</i> , Redvented Bulbul (1128) |
| 4 <i>Chloropsis hardwickii</i> , Orangebellied Chloropsis or Leaf Bird (1106) | 10 <i>Pycnonotus c. bengalensis</i> (1131), ssp of 1128 |
| 5 <i>Chloropsis aurifrons</i> , Goldenfronted Chloropsis or Leaf Bird (1103) | 11 <i>Pycnonotus l. leucotis</i> (1123), ssp of 1125 |
| 6 <i>Chloropsis cochinchinensis</i> , Goldmantled Chloropsis or Leaf Bird (1108) | 12 <i>Pycnonotus leucogenys</i> , Whitechecked Bulbul (1125) |
| | 13 <i>Hypsipetes madagascariensis</i> , Black Bulbul (1148) |
| | 14 <i>Irena puella</i> , Fairy Bluebird (1109) |

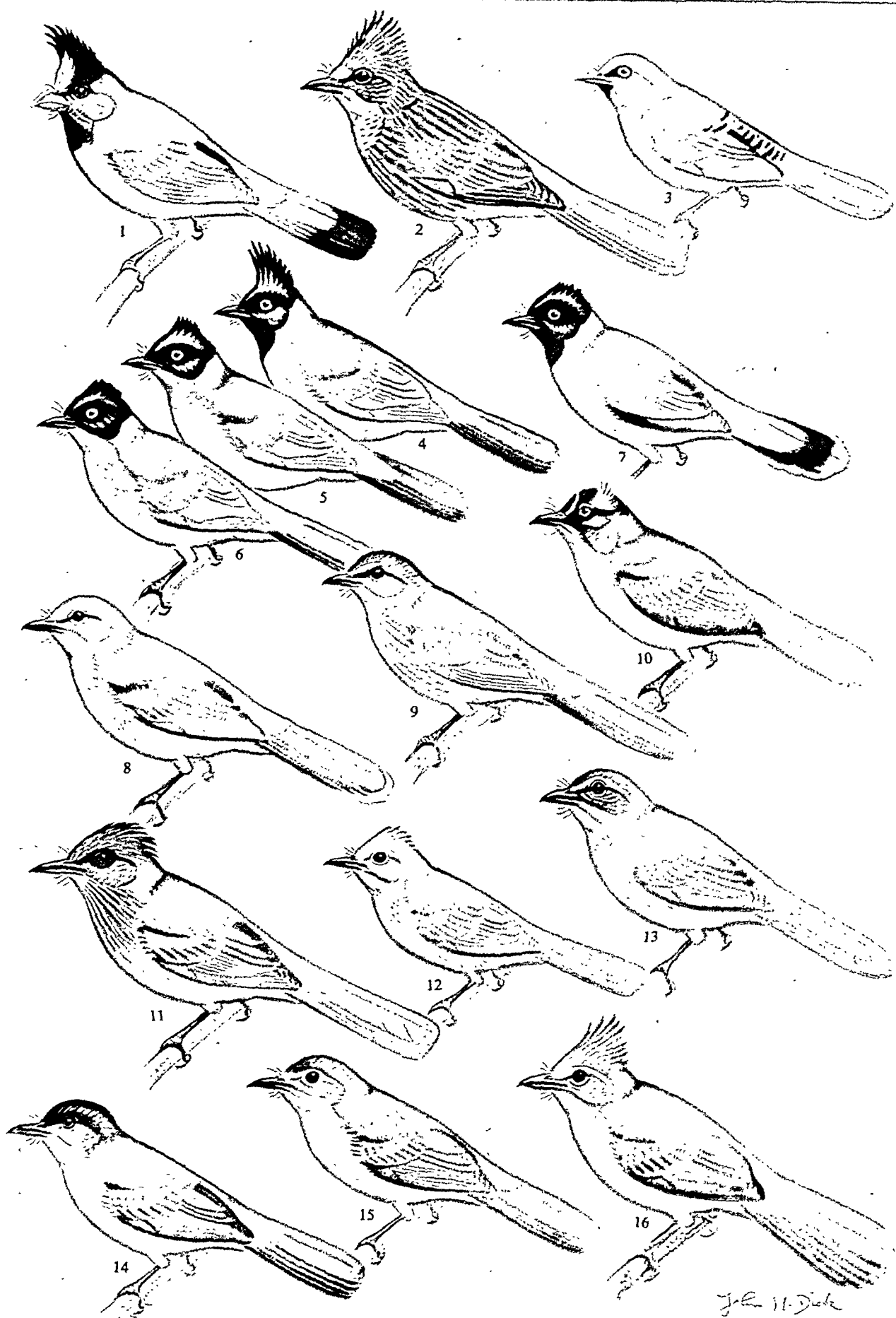


PLATE 73

- | | |
|---|---|
| 1 <i>Spizixos canifrons</i> , Finchbilled Bulbul (1111) | 9 <i>Pycnonotus flavescens</i> , Blyth's Bulbul (1137) |
| 2 <i>Pycnonotus striatus</i> , Striated Green Bulbul (1133) | 10 <i>Pycnonotus penicillatus</i> , Yelloweared Bulbul (1136) |
| 3 <i>Pycnonotus priocephalus</i> , Greyheaded Bulbul (1114) | 11 <i>Hypsipetes mclellandi</i> , Rufousbellied Bulbul (1146) |
| 4 <i>Pycnonotus m. fulviventris</i> (1115), ssp of 1117 | 12 <i>Hypsipetes viridescens</i> , Olive Bulbul (1141) |
| 5 <i>Pycnonotus m. gularis</i> (1116), ssp of 1117 | 13 <i>Pycnonotus luteolus</i> , Whitebrowed Bulbul (1138) |
| 6 <i>Pycnonotus melanicterus</i> , Blackheaded Yellow Bulbul (1117) | 14 <i>Hypsipetes nicobariensis</i> , Nicobar Bulbul (1142) |
| 7 <i>Pycnonotus atriceps</i> , Blackheaded Bulbul (1112) | 15 <i>Hypsipetes indicus</i> , Yellowbrowed Bulbul (1144) |
| 8 <i>Pycnonotus xantholaemus</i> , Yellowthroated Bulbul (1135) | 16 <i>Cringer flaveolus</i> , Whitethroated Bulbul (1140) |

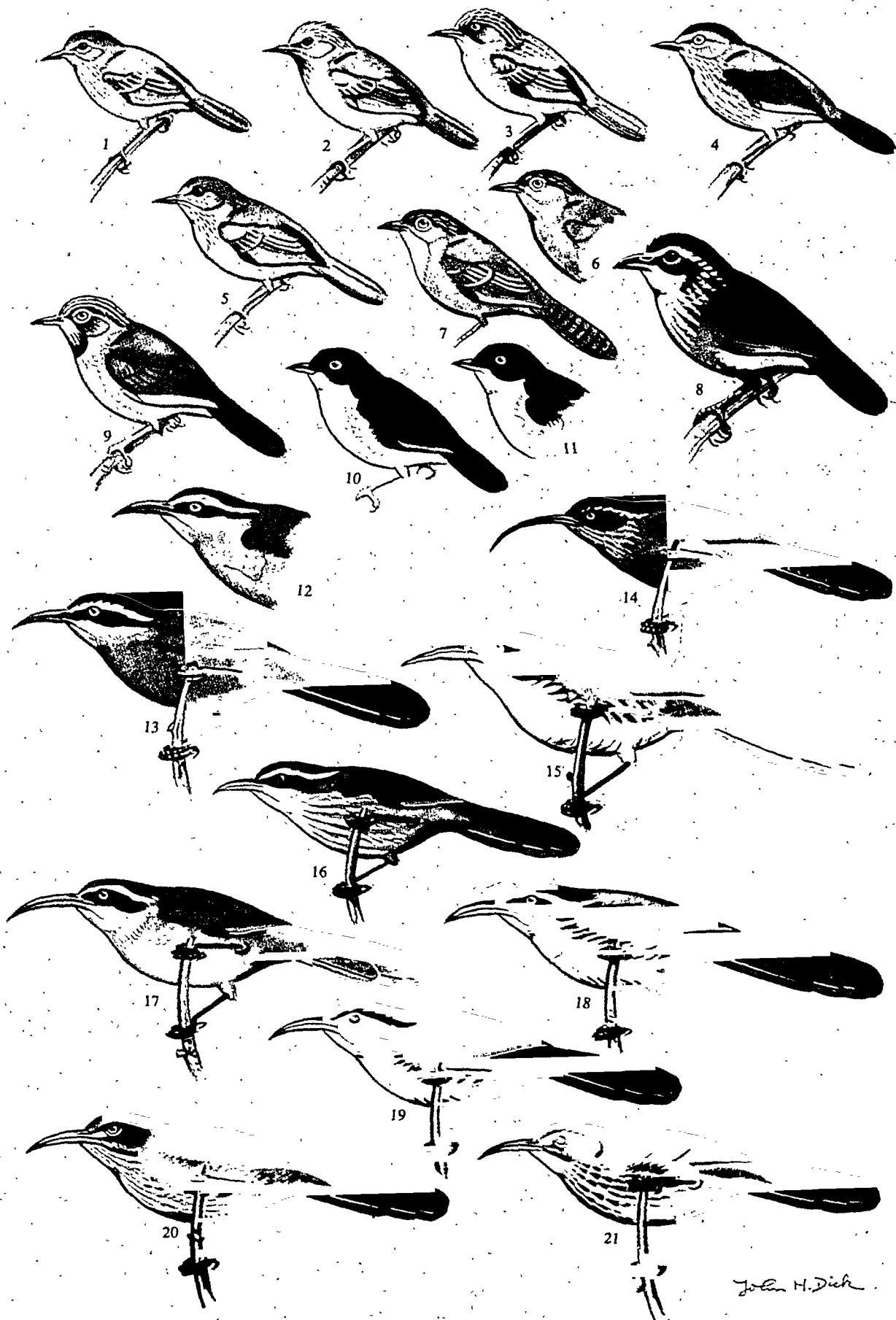


PLATE 74

- 1 *Stachyris rufifrons*, Redfronted Babbler (1209)
- 2 *Stachyris pyrrhops*, Redbilled Babbler (1211)
- 3 *Stachyris chrysaea*, Goldheaded Babbler (1212)
- 4 *Macronous gularis*, Yellowbreasted Babbler (1228)
- 5 *Stachyris ruficeps*, Redheaded Babbler (1210)
- 6 *Dumetia hyperythra*, Rufousbellied Babbler (1222)
- 7 *Dumetia h. abuensis* (1219), ssp of 1222
- 8 *Stachyris oglei*, Austen's Spotted Babbler (1218)
- 9 *Stachyris nigriceps*, Blackthroated Babbler (1214)
- 10 *Rhopocichla atriceps*, Blackheaded Babbler (1224)
- 11 *Rhopocichla a. siccatus* (1226), ssp of 1224
- 12 *Pomatorhinus f. formosus* (1187), ssp of 1186
- 13 *Pomatorhinus ferruginosus*, Coralbilled Scimitar Babbler (1186)
- 14 *Xiphirhynchus superciliaris*, Slenderbilled Scimitar Babbler (1191)
- 15 *Pomatorhinus hypoleucos*, Large Scimitar Babbler (1185)
- 16 *Pomatorhinus ruficollis*, Rufousnecked Scimitar Babbler (1178)
- 17 *Pomatorhinus ochraceiceps*, Longbilled Scimitar Babbler (1189)
- 18 *Pomatorhinus h. schisticeps* (1169), ssp of 1173
- 19 *Pomatorhinus horsfieldi*, Slatyheaded Scimitar Babbler (1173)
- 20 *Pomatorhinus erythrogeus*, Rustycheeked Scimitar Babbler (1181)
- 21 *Pomatorhinus erythrocnemis*, Spotbreasted Scimitar Babbler (SE)

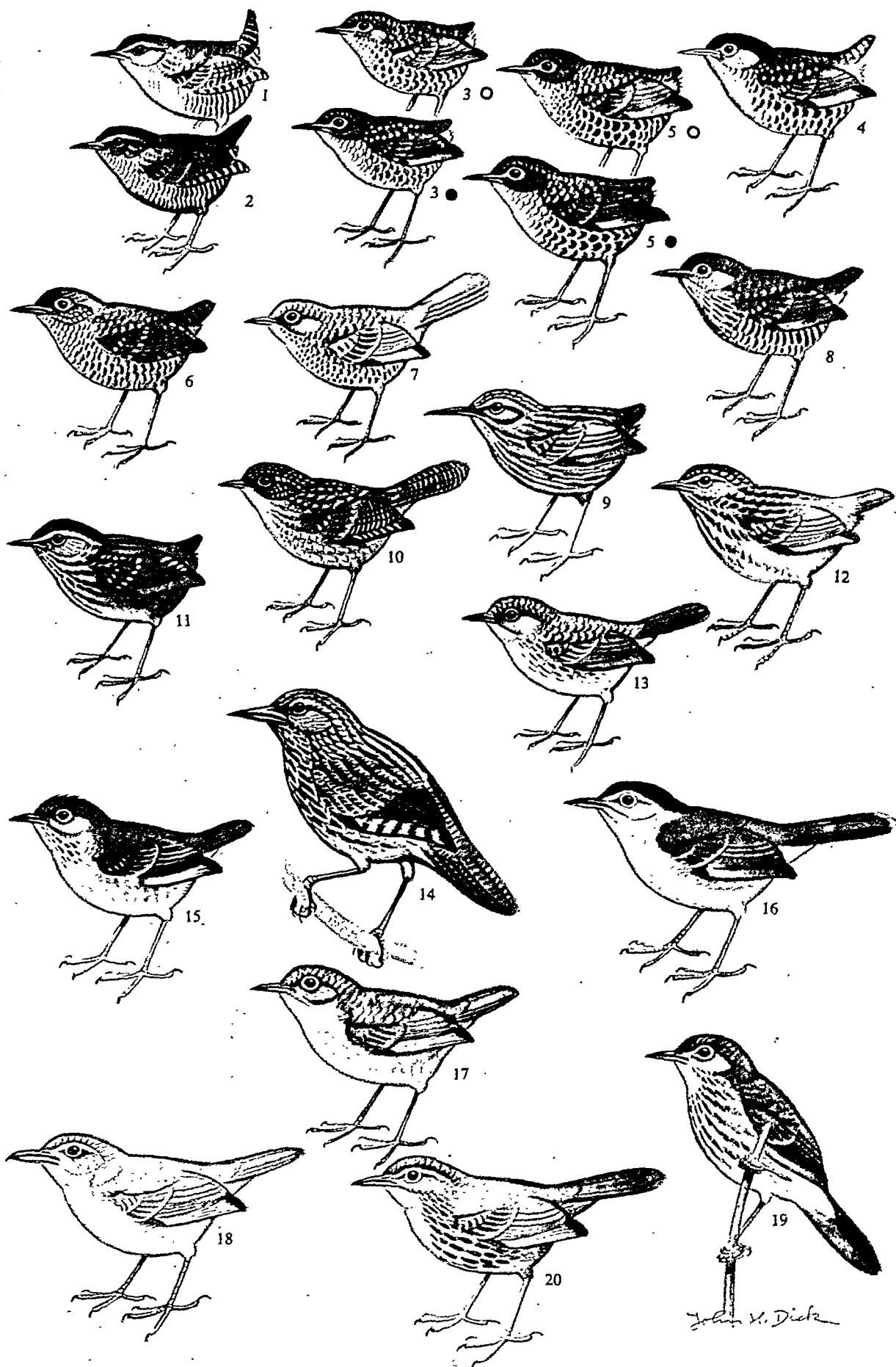


PLATE 75

- | | |
|---|---|
| 1 <i>Troglodytes troglodytes</i> , Wren (1770) | 11 <i>Napothera epilepidota</i> , Small Wren-Babbler (1195) |
| 2 <i>Troglodytes t. nipalensis</i> (1771), ssp of 1770 | 12 <i>Napothera brevicaudata</i> , Streaked, or Short-tailed, Wren-Babbler (1194) |
| 3 <i>Pnoepyga pusilla</i> , Brown, or Lesser Scalybreasted, Wren-Babbler (1199) | 13 <i>Spelaeornis longicaudatus</i> , Longtailed Wren-Babbler (1202) |
| 4 <i>Spelaeornis caudatus</i> , Tailed Wren-Babbler (1200) | 14 <i>Sphenocichla humei</i> , Wedgebilled Wren (1207) |
| 5 <i>Pnoepyga albirostris</i> , Scalybreasted Wren-Babbler (1198) | 15 <i>Pellorneum albiventre</i> , Brown Babbler (1164) |
| 6 <i>Spelaeornis formosus</i> , Spotted Wren-Babbler (1206) | 16 <i>Pellorneum fuscicapillum</i> , Brown-capped Babbler (1161) |
| 7 <i>Spelaeornis chocolatinus</i> , Streaked Longtailed Wren-Babbler (1203) | 17 <i>Trichastoma tickelli</i> , Tickell's Babbler (1166) |
| 8 <i>Spelaeornis badeigularis</i> , Mishmi Wren (1201) | 18 <i>Trichastoma abbotti</i> , Abbott's Babbler (1167) |
| 9 <i>Rimator malacoptilus</i> , Longbilled Wren-Babbler (1193) | 19 <i>Pellorneum palustre</i> , Marsh Spotted Babbler (1160) |
| 10 <i>Spelaeornis troglodytoides</i> , Longtailed Spotted Wren-Babbler (1205) | 20 <i>Pellorneum ruficeps</i> , Spotted Babbler (1154) |

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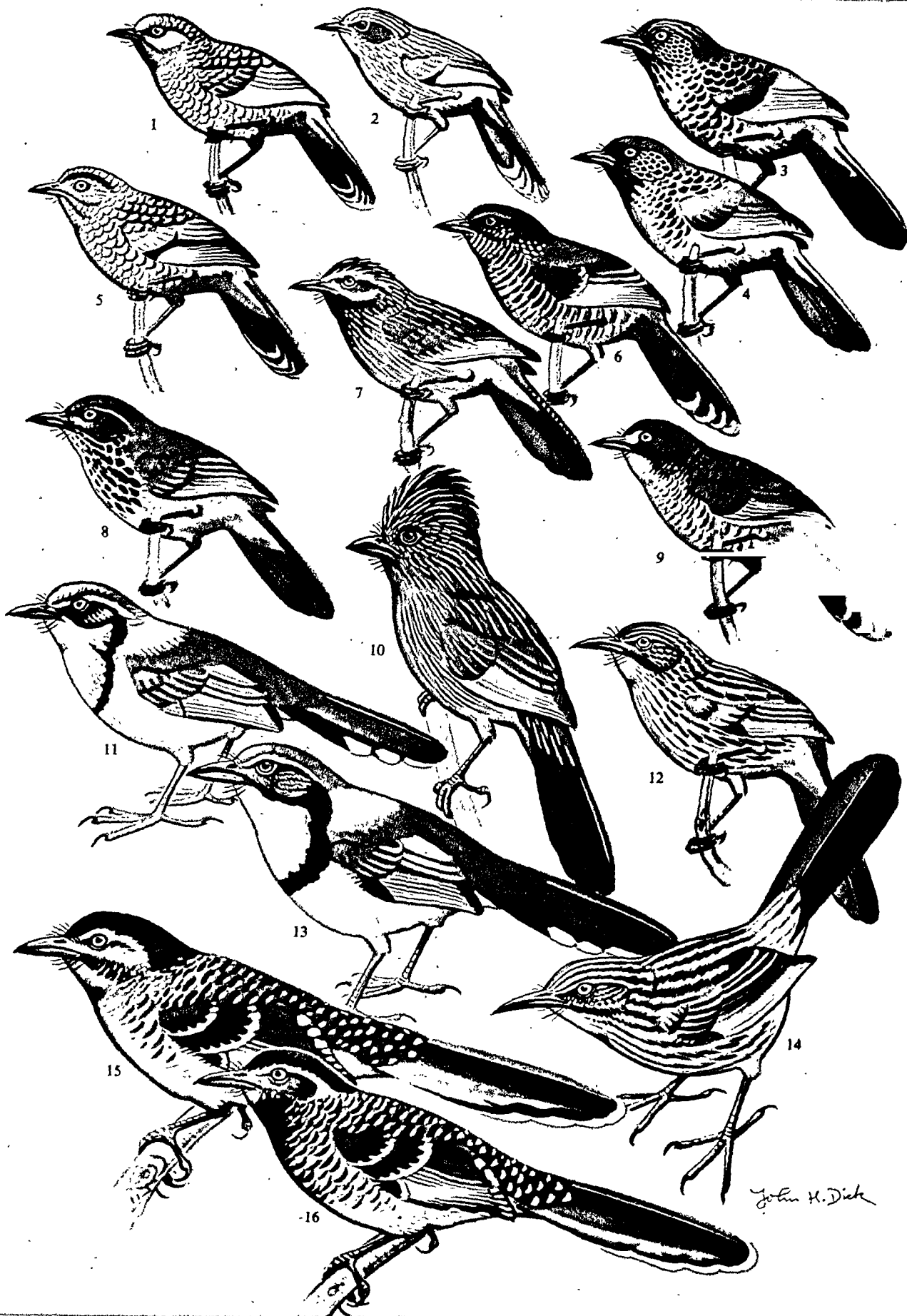
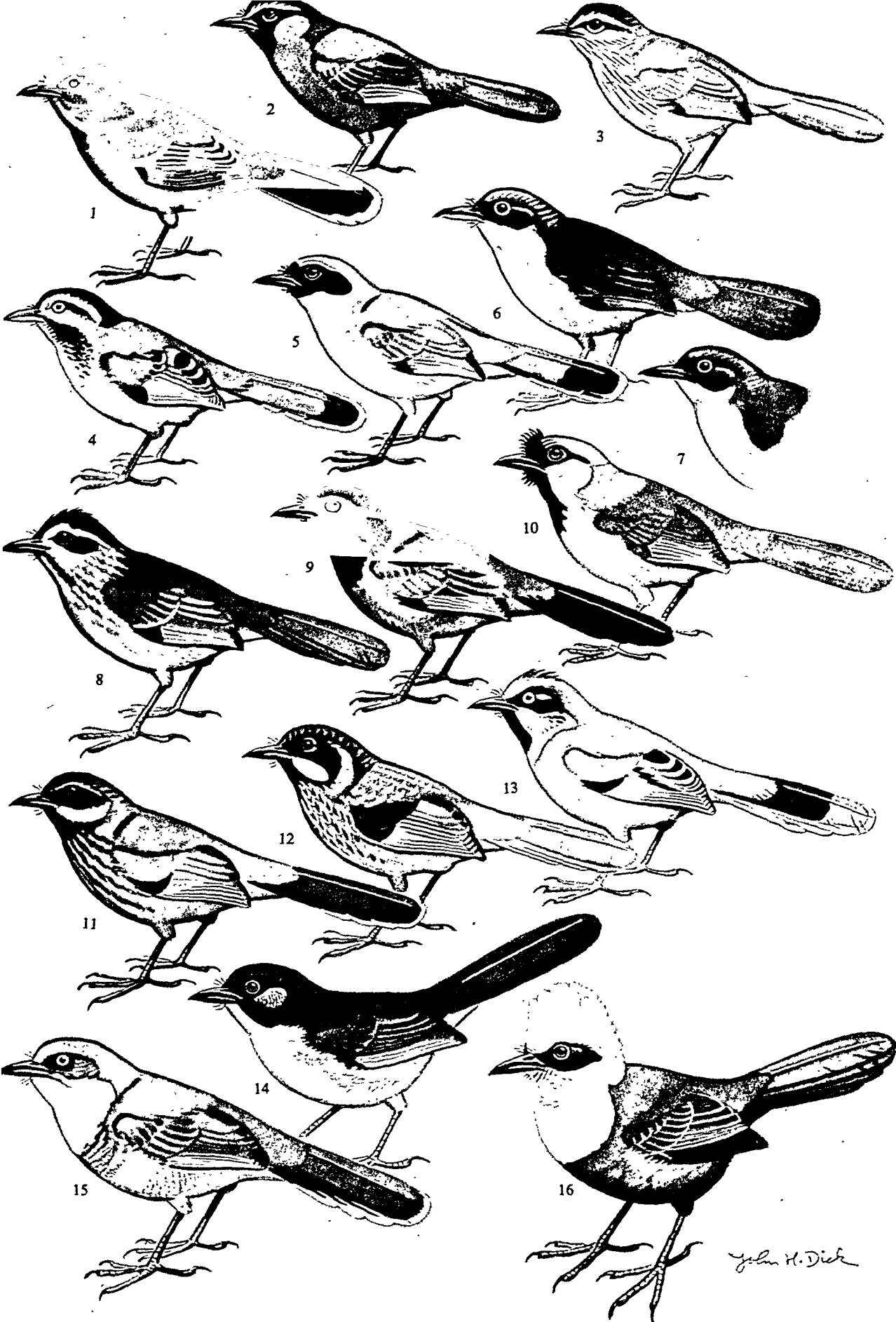


PLATE 76

- | | |
|--|--|
| 1 <i>Garrulax subunicolor</i> , Plaincoloured Laughing Thrush (1320) | 9 <i>Garrulax rufogularis</i> , Rufouschinned Laughing Thrush (1294) |
| 2 <i>Garrulax lineatus</i> , Streaked Laughing Thrush (1314) | 10 <i>Garrulax striatus</i> , Striated Laughing Thrush (1279) |
| 3 <i>Garrulax e. nigrimentum</i> (1326), ssp of 1324 | 11 <i>Garrulax moniligerus</i> , Necklaced Laughing Thrush (1275) |
| 4 <i>Garrulax erythrocephalus</i> , Redheaded Laughing Thrush (1324) | 12 <i>Babax lanceolatus</i> , Chinese Babax (1270) |
| 5 <i>Garrulax squamatus</i> , Bluewinged Laughing Thrush (1319) | 13 <i>Garrulax pectoralis</i> , Blackgorgeted Laughing Thrush (1277) |
| 6 <i>Garrulax austeni</i> , Browncapped Laughing Thrush (1318) | 14 <i>Babax waddelli</i> , Giant Tibetan Babax (1271) |
| 7 <i>Garrulax virgatus</i> , Manipur Streaked Laughing Thrush (1317) | 15 <i>Garrulax o. maximus</i> (1297), ssp of 1299 |
| 8 <i>Garrulax merulinus</i> , Spottedbreasted Laughing Thrush (1304) | 16 <i>Garrulax ocellatus</i> , Whitespotted Laughing Thrush (1299) |



John H. Dick

PLATE 77

- 1 *Garrulax phoeniceus*, Crimsonwinged Laughing Thrush (1331)
- 2 *Garrulax cachinnans*, Nilgiri Laughing Thrush (1307)
- 3 *Garrulax jerdoni*, Whitebreasted Laughing Thrush (1310)
- 4 *Garrulax cineraceus*, Ashy Laughing Thrush (1291)
- 5 *Garrulax galbanus*, Yellowthroated Laughing Thrush (1286)
- 6 *Garrulax delesserti*, Yellowbreasted Laughing Thrush (1287)
- 7 *Garrulax d. gularis* (1288), ssp of 1287
- 8 *Garrulax sannio*, Whitebrowed Laughing Thrush (1306)
- 9 *Garrulax ruficollis*, Rufousnecked Laughing Thrush (1303)
- 10 *Garrulax nuchalis*, Chestnutbacked Laughing Thrush (1285)
- 11 *Garrulax henrici*, Prince Henri's Laughing Thrush (1321)
- 12 *Garrulax affinis*, Blackfaced Laughing Thrush (1322)
- 13 *Garrulax variegatus*, Variegated Laughing Thrush (1290)
- 14 *Garrulax caerulatus*, Greysided Laughing Thrush (1300)
- 15 *Garrulax albogularis*, Whitethroated Laughing Thrush (1274)
- 16 *Garrulax leucolophus*, Whitecrested Laughing Thrush (1283)



PLATE 78

- | | |
|---|--|
| 1 <i>Gampsorhynchus rufulus</i> , Whiteheaded Shrike-Babbler (1347) | 9 <i>Alcippe nipalensis</i> , Nepal Babbler (1392) |
| 2 <i>Actinodura nipalensis</i> , Hoary Barwing (1352) | 10 <i>Alcippe cinereiceps</i> , Brownheaded Tit-Babbler (1384) |
| 3 <i>Alcippe brunnea</i> , Rufousheaded Tit-Babbler (1388) | 11 <i>Alcippe poiocephala</i> , Quaker Babbler (1390) |
| 4 <i>Actinodura egertoni</i> , Spectacled Barwing (1348) | 12 <i>Yuhina xantholeuca</i> , Whitebellied Yuhina (1375) |
| 5 <i>Actinodura waldeni</i> , Austen's Barwing (1355) | 13 <i>Yuhina castaniceps</i> , Whitebrowed Yuhina (1363) |
| 6 <i>Alcippe castaneiceps</i> , Chestnut-headed Tit-Babbler (1379) | 14 <i>Alcippe vinipectus</i> , Whitebrowed Tit-Babbler (1381) |
| 7 <i>Alcippe cinerea</i> , Dusky-Green or Yellowthroated Tit-Babbler (1378) | 15 <i>Yuhina flavicollis</i> , Yellownaped Yuhina (1368) |
| 8 <i>Alcippe rufogularis</i> , Redthroated Tit-Babbler (1386) | 16 <i>Yuhina nigrimenta</i> , Blackchinned Yuhina (1374) |
| | 17 <i>Yuhina occipitalis</i> , Rufousvented Yuhina (1373) |
| | 18 <i>Yuhina gularis</i> , Stripethroated Yuhina (1372) |
| | 19 <i>Yuhina bakeri</i> , Whitenaped Yuhina (1366) |

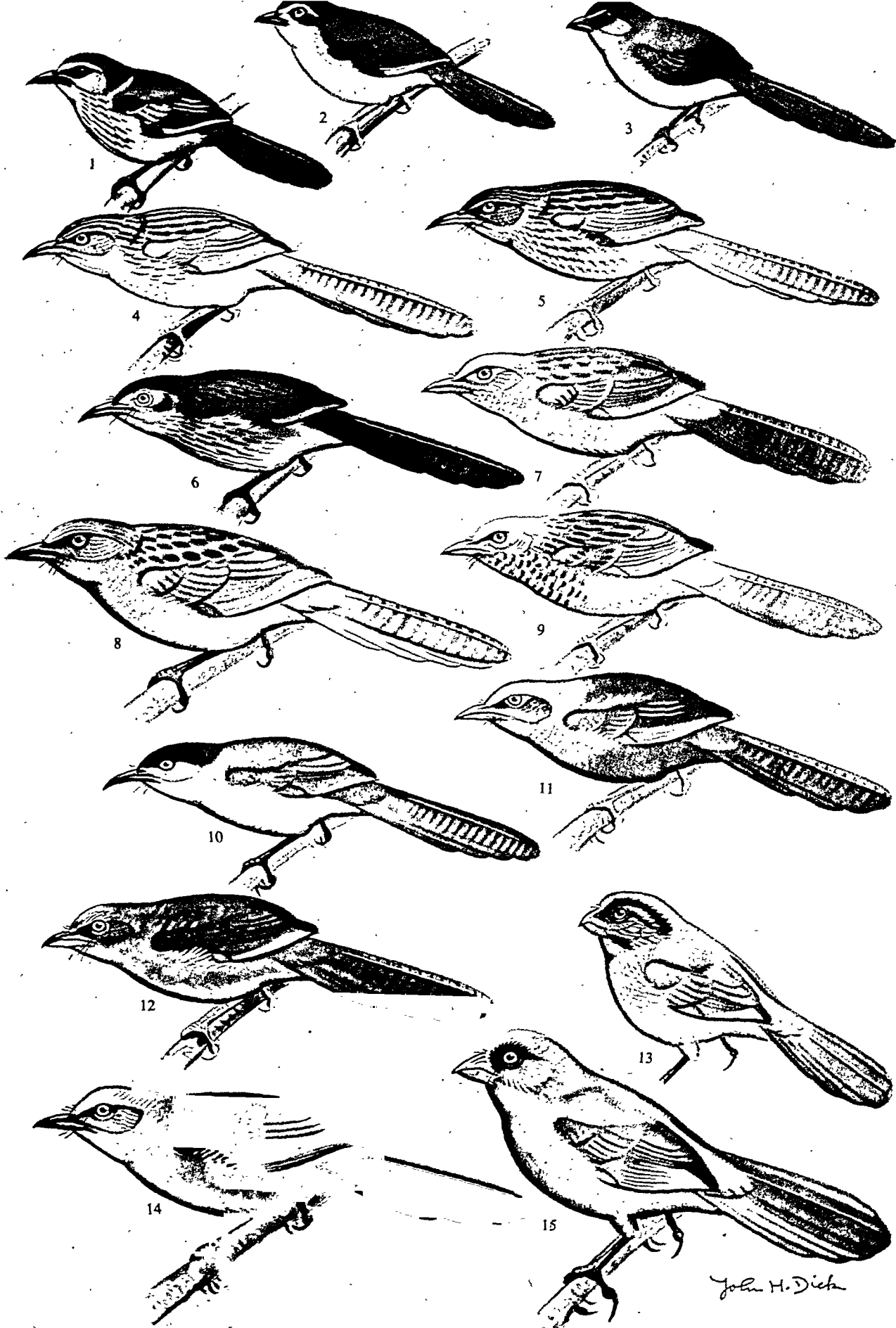


PLATE 79

- 1 *Timalia pileata*, Redcapped Babbler (1229)
- 2 *Chrysomma sinense*, Yelloweyed Babbler (1231)
- 3 *Chrysomma altirostre*, Jerdon's Babbler (1233)
- 4 *Turdoides caudatus*, Common Babbler (1254)
- 5 *Turdoides earlei*, Striated Babbler (1256)
- 6 *Turdoides nipalensis*, Spiny Babbler (1269)
- 7 *Turdoides striatus*, Jungle Babbler (1265)
- 8 *Turdoides malcolmi*, Large Grey Babbler (1258)
- 9 *Turdoides affinis*, Whiteheaded Babbler (1267)

- 10 *Turdoides longirostris*, Slenderbilled Babbler (1257)
- 11 *Turdoides rufescens*, Ceylon Rufous Babbler (1266)
- 12 *Turdoides subrufus*, Rufous Babbler (1259)
- 13 *Paradoxornis unicolor*, Brown Suthora or Parrotbill (1237)
- 14 *Garrulax cinereifrons*, Ashyheaded Laughing Thrush (1272)
- 15 *Conostoma aemodium*, Great Parrotbill (1236)

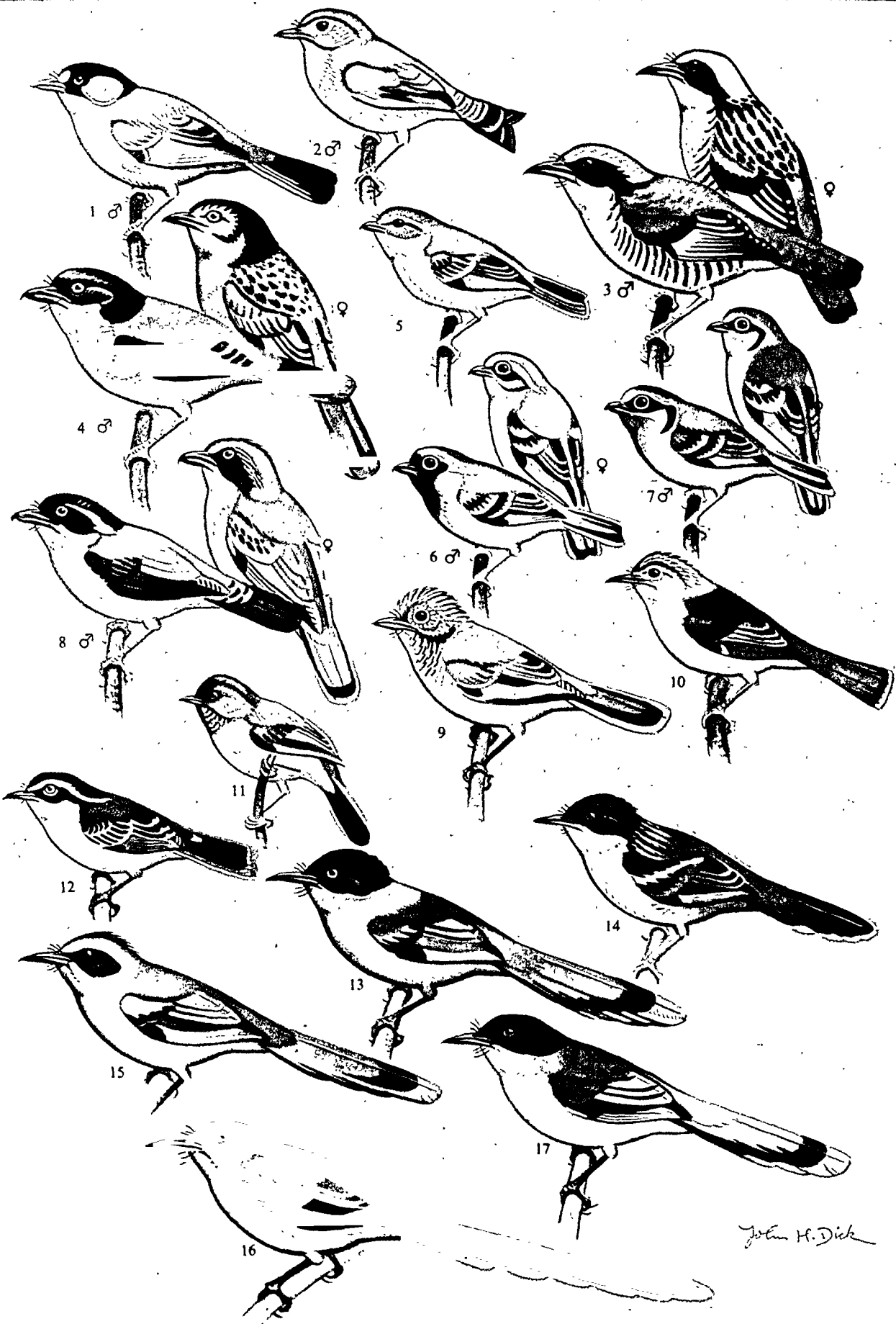


PLATE 80

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|---|---|
| 1 <i>Leiothrix argentauris</i> , Silvereared Mesia (1333) | 8 <i>Pteruthius flaviscapis</i> , Redwinged Shrike-Babbler (1341) |
| 2 <i>Leiothrix lutea</i> , Redbilled Leiothrix (1336) | 9 <i>Minla strigula</i> , Barthroated Siva (1359) |
| 3 <i>Cutia nipalensis</i> , Nepal Cutia (1339) | 10 <i>Minla cyanouroptera</i> , Bluewinged Siva (1362) |
| 4 <i>Pteruthius rufiventer</i> , Rufousbellied Shrike-Babbler (1340) | 11 <i>Alcippe chrysotis</i> , Goldenbreasted Tit-Babbler (1376) |
| 5 <i>Pteruthius xanthochlorus</i> , Green Shrike-Babbler (1343) | 12 <i>Minla ignotincta</i> , Redtailed Minla (1357) |
| 6 <i>Pteruthius aenobarbus</i> , Chestnutfronted Shrike-Babbler (1346) | 13 <i>Heterophasia capistrata</i> , Blackcapped Sibia (1396) |
| 7 <i>Pteruthius melanotis</i> , Chestnut-throated Shrike-Babbler (1345) | 14 <i>Heterophasia annectens</i> , Chestnutbacked Sibia (1395) |
| | 15 <i>Heterophasia pulchella</i> , Beautiful Sibia (1400) |
| | 16 <i>Heterophasia picaoides</i> , Longtailed Sibia (1401) |
| | 17 <i>Heterophasia gracilis</i> , Grey Sibia (1399) |

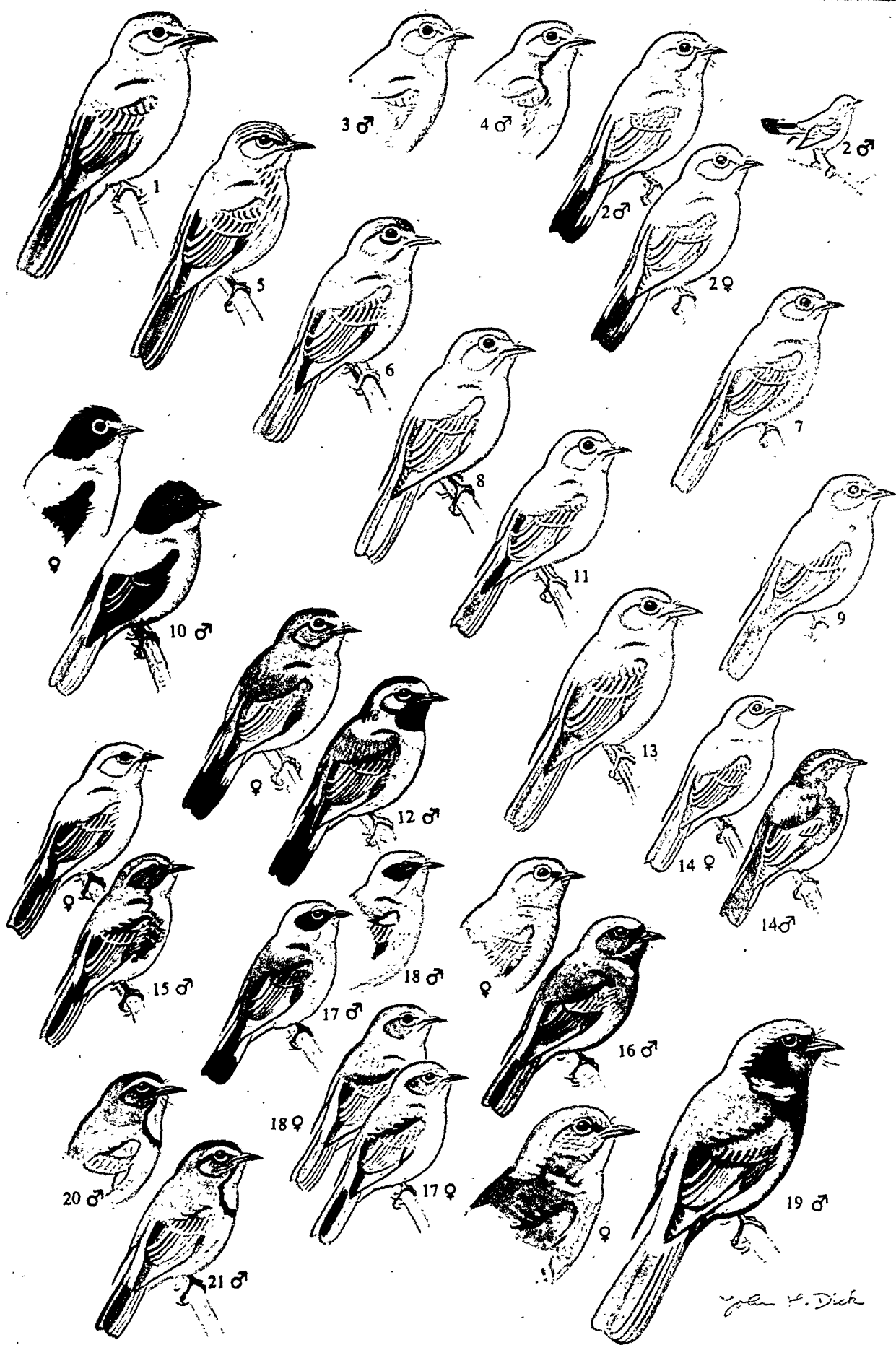


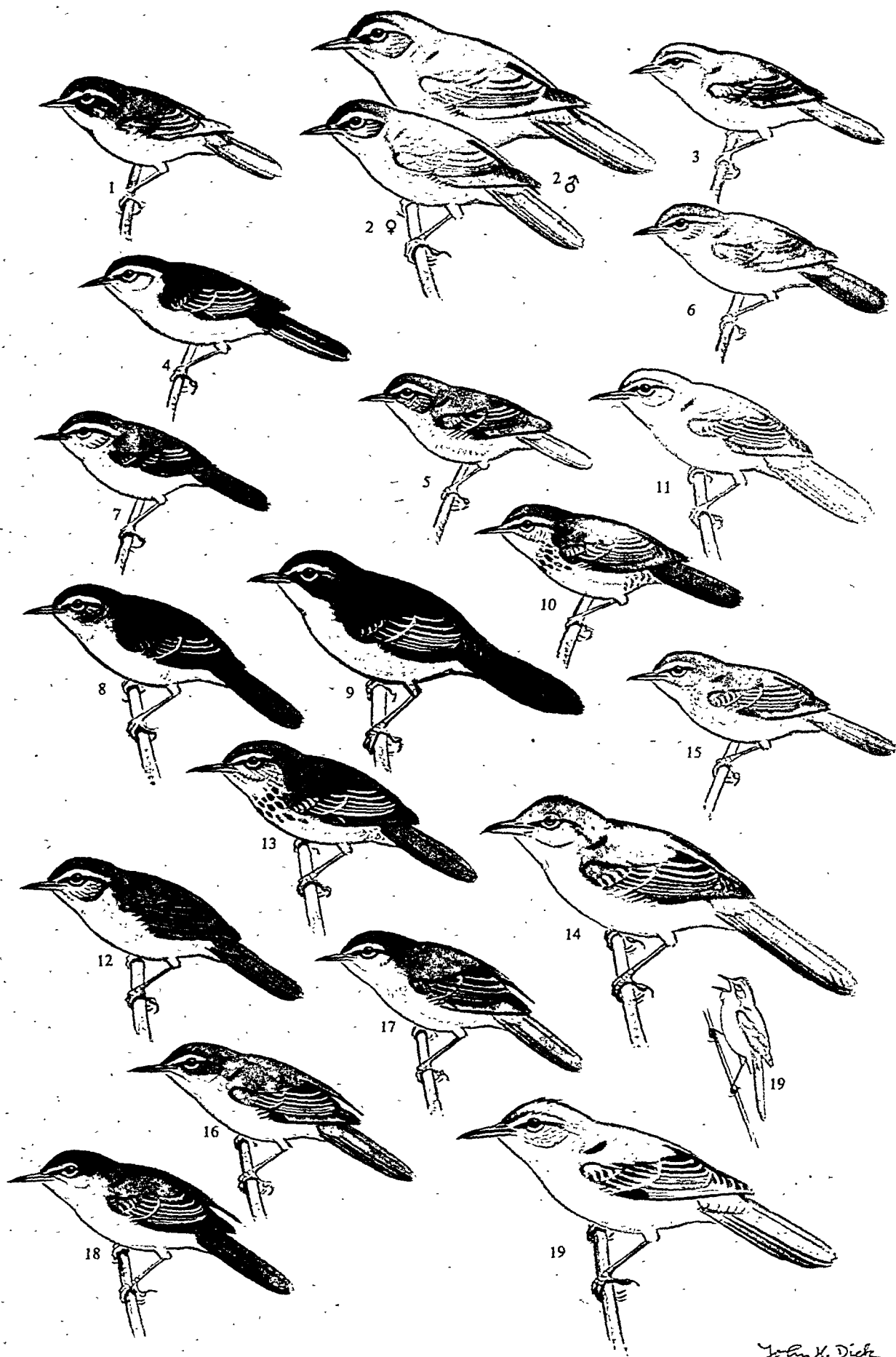
PLATE 81

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| 1 <i>Pachycephala grisola</i> , Grey Thickhead or Mangrove Whistler (1470) | 12 <i>Muscicapa strophliata</i> , Orangegorgeted Flycatcher (1414) |
| 2 <i>Muscicapa parva</i> , Redbreasted Flycatcher (1411) | 13 <i>Rhinomyias brunneata</i> , Olive Flycatcher (1402) |
| 3 <i>Muscicapa p. albicilla</i> (1412), ssp of 1411 | 14 <i>Muscicapa westermanni</i> , Little Pied Flycatcher (1419) |
| 4 <i>Muscicapa subrubra</i> , Kashmir Redbreasted Flycatcher (1413) | 15 <i>Muscicapa superciliaris</i> , Whitebrowed Blue Flycatcher (1421) |
| 5 <i>Muscicapa striata</i> , Spotted Flycatcher (1403) | 16 <i>Muscicapa macgrigoriae</i> , Small Niltava (1429) |
| 6 <i>Muscicapa muttui</i> , Brownbreasted Flycatcher (1408) | 17 <i>Muscicapa l. minuta</i> (1424), ssp of 1423 |
| 7 <i>Muscicapa sibirica</i> , Sooty Flycatcher (1406) | 18 <i>Muscicapa leucomelanura</i> , Slaty Blue Flycatcher (1423) |
| 8 <i>Muscicapa ruficauda</i> , Rufoustailed Flycatcher (1409) | 19 <i>Muscicapa grandis</i> , Large Niltava (1428) |
| 9 <i>Muscicapa ferruginea</i> , Ferruginous Flycatcher (1410) | 20 <i>Muscicapa m. leucops</i> (1416), ssp of 1415 |
| 10 <i>Muscicapa nigrorufa</i> , Black-and-Orange Flycatcher (1427) | 21 <i>Muscicapa monileger</i> , Whitegorgeted Flycatcher (1415) |
| 11 <i>Muscicapa latirostris</i> , Brown Flycatcher (1407) | |



PLATE 82

- | | |
|---|---|
| 1 <i>Muscicapa tickelliae</i> , Tickell's Blue Flycatcher (1442) | 8 <i>Muscicapa poliogenys</i> , Brooks's Flycatcher (1436) |
| 2 <i>Muscicapa sapphira</i> , Sapphireheaded Flycatcher (1426) | 9 <i>Muscicapa pallipes</i> , Whitebelly Blue Flycatcher (1435) |
| 3 <i>Muscicapella hodgsoni</i> , Pigmy Blue Flycatcher (1447) | 10 <i>Muscicapa thalassina</i> , Verditer Flycatcher (1445) |
| 4 <i>Muscicapa hodgsonii</i> , Rustybreasted Blue Flycatcher (1418) | 11 <i>Muscicapa unicolor</i> , Pale Blue Flycatcher (1439) |
| 5 <i>Muscicapa hyperythra</i> , Rufousbreasted Blue Flycatcher (1417) | 12 <i>Muscicapa sordida</i> , Dusky Blue Flycatcher (1444) |
| 6 <i>Muscicapa rubeculoides</i> , Bluethroated Flycatcher (1440) | 13 <i>Muscicapa albicaudata</i> , Nilgiri Flycatcher (1446) |
| 7 <i>Muscicapa banyumas</i> , Largebilled Blue Flycatcher (1441) | 14 <i>Muscicapa sundara</i> , Rufousbelly Niltava (1432) |
| | 15 <i>Muscicapa concreta</i> , Whitetailed Blue Flycatcher (1434) |
| | 16 <i>Muscicapa vivida</i> , Rufousbelly Blue Flycatcher (1433) |



John X. Dick

PLATE 83

- | | |
|--|--|
| 1 <i>Cettia pallidipes</i> , Palefooted Bush Warbler (1474) | 12 <i>Acrocephalus bistrigiceps</i> , Blackbrowed Reed Warbler (1555) |
| 2 <i>Cettia diphone</i> , Chinese Bush Warbler (1476) | 13 <i>Bradypterus major</i> , Largebilled Bush Warbler (1491) |
| 3 <i>Cettia montana</i> , Strongfooted Bush Warbler (1478) | 14 <i>Acrocephalus aedon</i> , Thickbilled Warbler (1549) |
| 4 <i>Cettia flavolivacea</i> , Aberrant Bush Warbler (1481) | 15 <i>Bradypterus tacsanowskii</i> , Central Asian Bush Warbler (1492) |
| 5 <i>Cettia brunnifrons</i> , Rufouscapped Bush Warbler (1486) | 16 <i>Acrocephalus dumetorum</i> , Blyth's Reed Warbler (1556) |
| 6 <i>Cettia major</i> , Large Bush Warbler (1479) | 17 <i>Acrocephalus agricola</i> , Paddyfield Warbler (1557) |
| 7 <i>Cettia acanthizoides</i> , Verreaux's Bush Warbler (1484) | 18 <i>Acrocephalus scirpaceus</i> , Reed Warbler (1555a) |
| 8 <i>Bradypterus luteoventris</i> , Brown Bush Warbler (1493) | 19 <i>Acrocephalus stentoreus</i> , Indian Great Reed Warbler (1550) |
| 9 <i>Bradypterus palliseri</i> , Palliser's Warbler (1494) | |
| 10 <i>Bradypterus thoracicus</i> , Spotted Bush Warbler (1490) | |
| 11 <i>Cettia cetti</i> , Cetti's Warbler (1488) | |

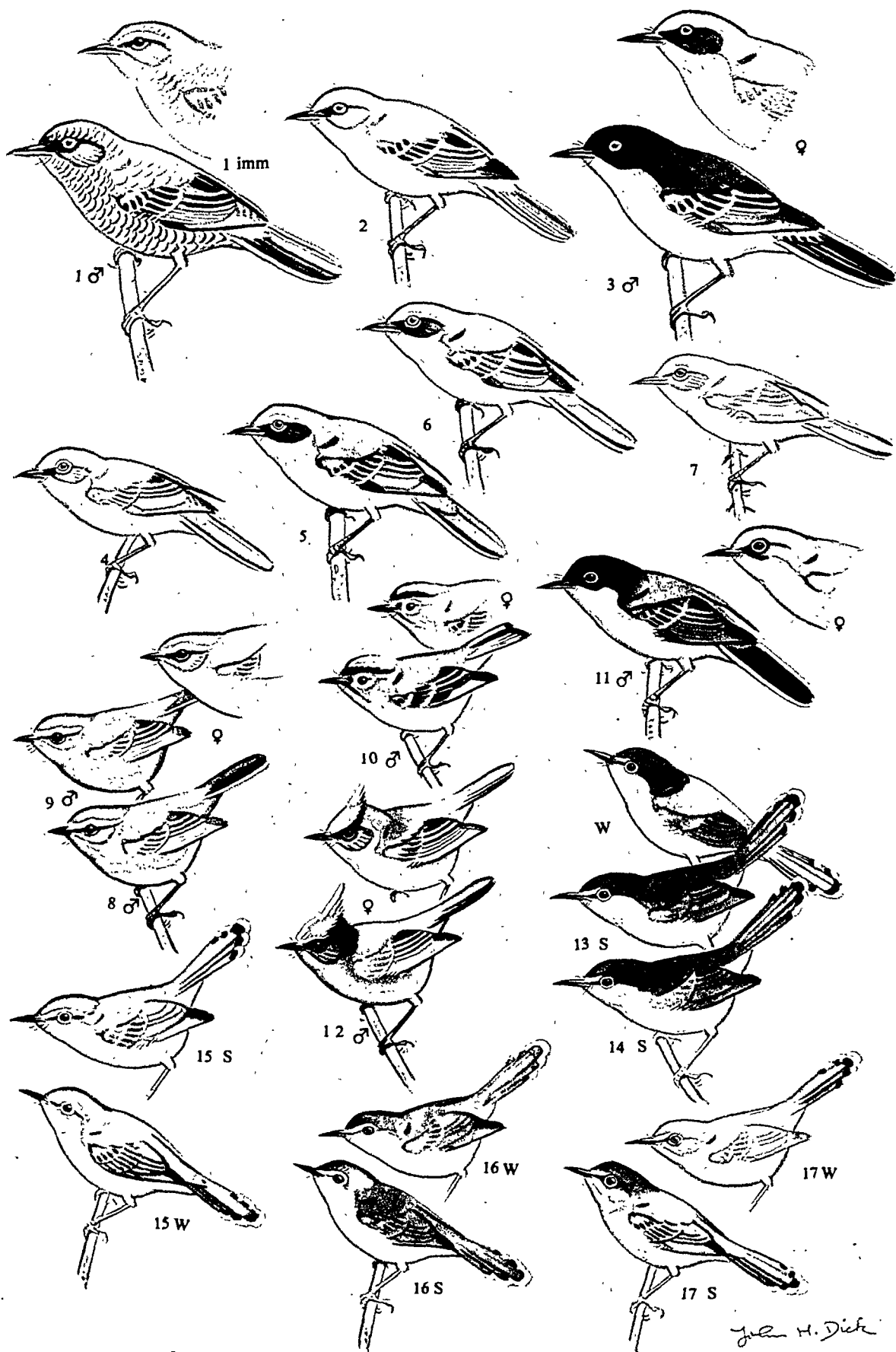


PLATE 84

- | | |
|---|---|
| 1 <i>Sylvia nisoria</i> , Barred Warbler (1564a) | 10 <i>Regulus regulus</i> , Goldcrest (1629) |
| 2 <i>Sylvia communis</i> , Whitethroat (1566) | 11 <i>Sylvia mystacea</i> , Menetries's Warbler (1571a) |
| 3 <i>Sylvia hortensis</i> , Orphean Warbler (1565) | 12 <i>Leptopoeile elegans</i> , Crested Tit-Warbler (1632) |
| 4 <i>Sylvia curruca minula</i> , Lesser Whitethroat (1569) | 13 <i>Prinia socialis</i> , Ashy Wren-Warbler (1517) |
| 5 <i>Sylvia curruca althaea</i> , Lesser Whitethroat (1570) | 14 <i>Prinia s. stewarti</i> (1515), ssp of 1517 |
| 6 <i>Sylvia curruca blythi</i> , Lesser Whitethroat (1567) | 15 <i>Prinia cinereocapilla</i> , Hodgson's Wren-Warbler (1507) |
| 7 <i>Sylvia nana</i> , Desert Warbler (1571) | 16 <i>Prinia rufescens</i> , Rufous Wren-Warbler (1501) |
| 8 <i>Leptopoeile sophiae</i> , Stoliczka's Tit-Warbler (1633) | 17 <i>Prinia hodgsonii</i> , Franklin's Wren-Warbler (1503) |
| 9 <i>Leptopoeile s. obscura</i> (1634), ssp of 1633 | |

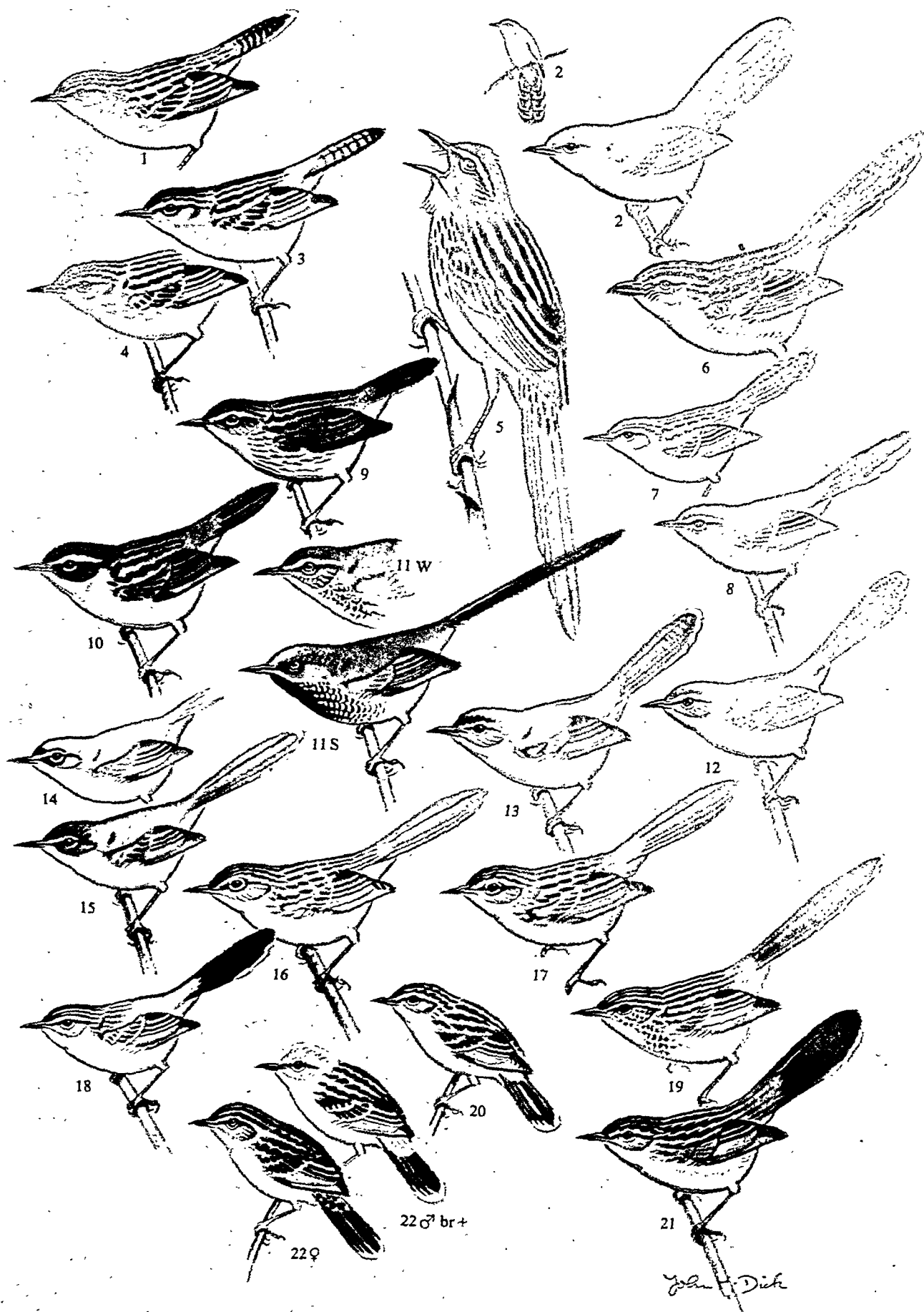


PLATE 85

- 1 *Locustella certhiola*, Pallas's Grasshopper Warbler (1543)
- 2 *Schoenicola platyura*, Broadtailed Grass Warbler (1546)
- 3 *Locustella naevia*, Grasshopper Warbler (1545)
- 4 *Locustella n. obscurior* (RE), ssp of 1545
- 5 *Megalurus plaustris*, Striated Marsh Warbler (1548)
- 6 *Chaetornis striatus*, Bristled Grass Warbler (1547)
- 7 *Prinia gracilis*, Streaked Wren-Warbler (1508)
- 8 *Prinia buchanani*, Rufousfronted Wren-Warbler (1506)
- 9 *Locustella lanceolata*, Streaked Grasshopper Warbler (1544)
- 10 *Acrocephalus melanopogon*, Moustached Sedge Warbler (1495)
- 11 *Prinia atrogularis*, Blackthroated Hill Warbler (1529)
- 12 *Prinia subflava*, Plain Wren-Warbler (1511)
- 13 *Prinia sylvatica*, Jungle Wren-Warbler (1521)
- 14 *Prinia s. sindiana* (1524), ssp of 1521
- 15 *Prinia flaviventris*, Yellowbellied Wren-Warbler (1525)
- 16 *Prinia b. cinerascens* (1532), ssp of 1531
- 17 *Prinia burnesii*, Longtailed Grass Warbler (1531)
- 18 *Scotocerca inquieta*, Streaked Scrub Warbler (1533)
- 19 *Prinia criniger*, Brown Hill Warbler (1527)
- 20 *Cisticola juncidis*, Streaked Fantail Warbler (1498)
- 21 *Graminicola bengalensis*, Large Grass Warbler (1534)
- 22 *Cisticola exilis*, Fantail Warbler (1497)

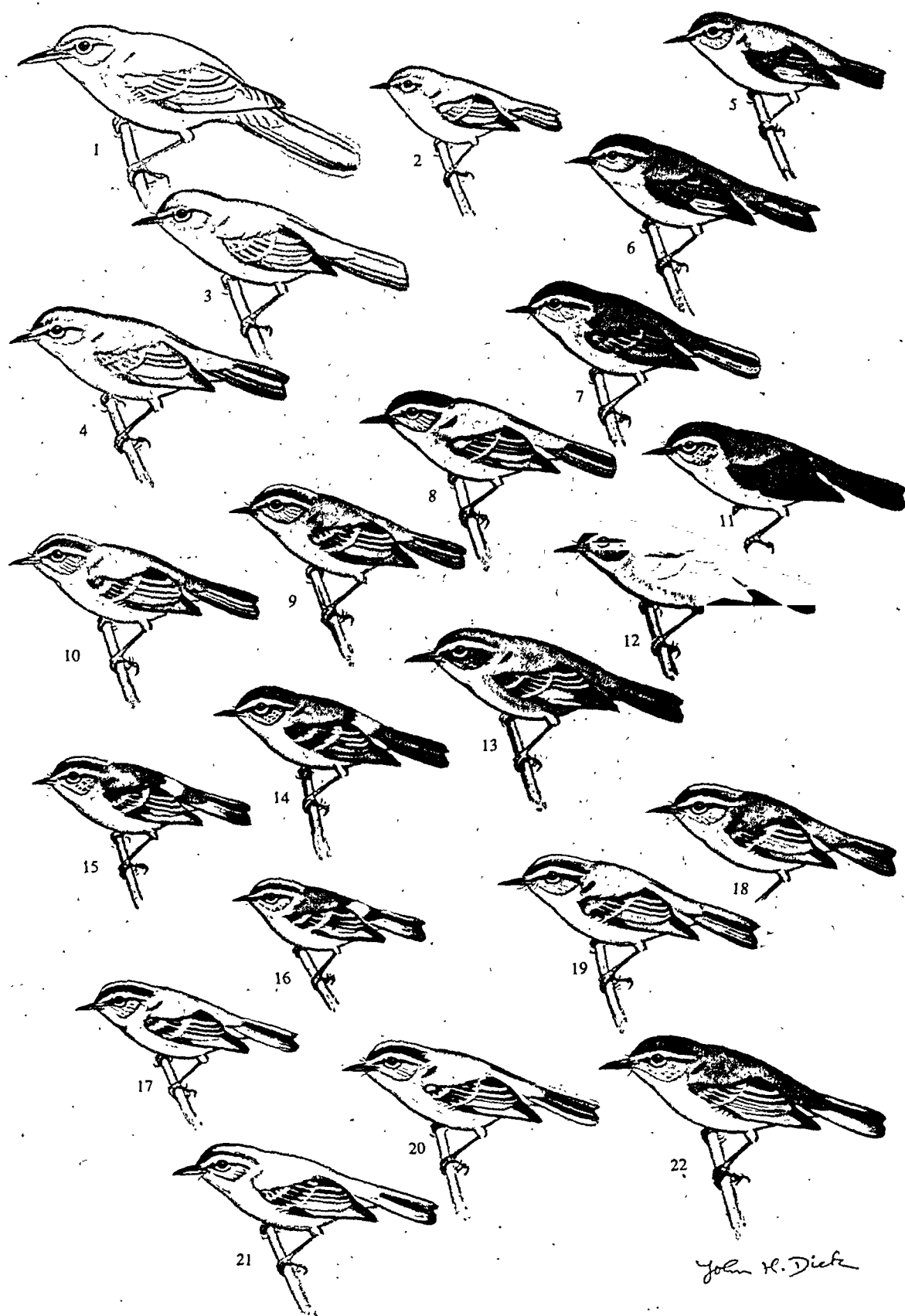


PLATE 86

- | | |
|--|--|
| 1 <i>Hippolais languida</i> , Upcher's Warbler (1564) | 13 <i>Phylloscopus schwarzi</i> , Radde's Leaf Warbler (SE) |
| 2 <i>Phylloscopus neglectus</i> , Plain Leaf Warbler (1577) | 14 <i>Phylloscopus pulcher</i> , Orangebarred Leaf Warbler (1588) |
| 3 <i>Hippolais caligata</i> , Booted Warbler (1562) | 15 <i>Phylloscopus proregulus</i> , Pallas's Leaf Warbler (1594) |
| 4 <i>Phylloscopus collybita</i> , Brown Leaf Warbler or Chiffchaff (1574) | 16 <i>Phylloscopus maculipennis</i> , Greysaced Leaf Warbler (1599) |
| 5 <i>Phylloscopus tytleri</i> , Tytler's Leaf Warbler (1578) | 17 <i>Phylloscopus cantator</i> , Blackbrowed Leaf Warbler (1612) |
| 6 <i>Phylloscopus affinis</i> , Tickell's Leaf Warbler (1579) | 18 <i>Phylloscopus occipitalis</i> , Large Crowned Leaf Warbler (1606) |
| 7 <i>Phylloscopus a. arcanus</i> (1580), ssp of 1579 | 19 <i>Phylloscopus o. coronatus</i> (1607), ssp of 1606 |
| 8 <i>Phylloscopus griseolus</i> , Olivaceous Leaf Warbler (1581) | 20 <i>Phylloscopus reguloides</i> , Blyth's Leaf Warbler (1609) |
| 9 <i>Phylloscopus subviridis</i> , Brooks's Leaf Warbler (1593) | 21 <i>Phylloscopus trochiloides</i> , Dull Green Leaf Warbler (1605) |
| 10 <i>Phylloscopus inornatus</i> , Plain, or Yellowbrowed, Leaf Warbler (1592) | 22 <i>Phylloscopus magnirostris</i> , Largebilled Leaf Warbler (1601) |
| 11 <i>Phylloscopus fuscatus</i> , Dusky Leaf Warbler (1586) | |
| 12 <i>Phylloscopus fuliginenter</i> , Smoky Willow Warbler (1582) | |

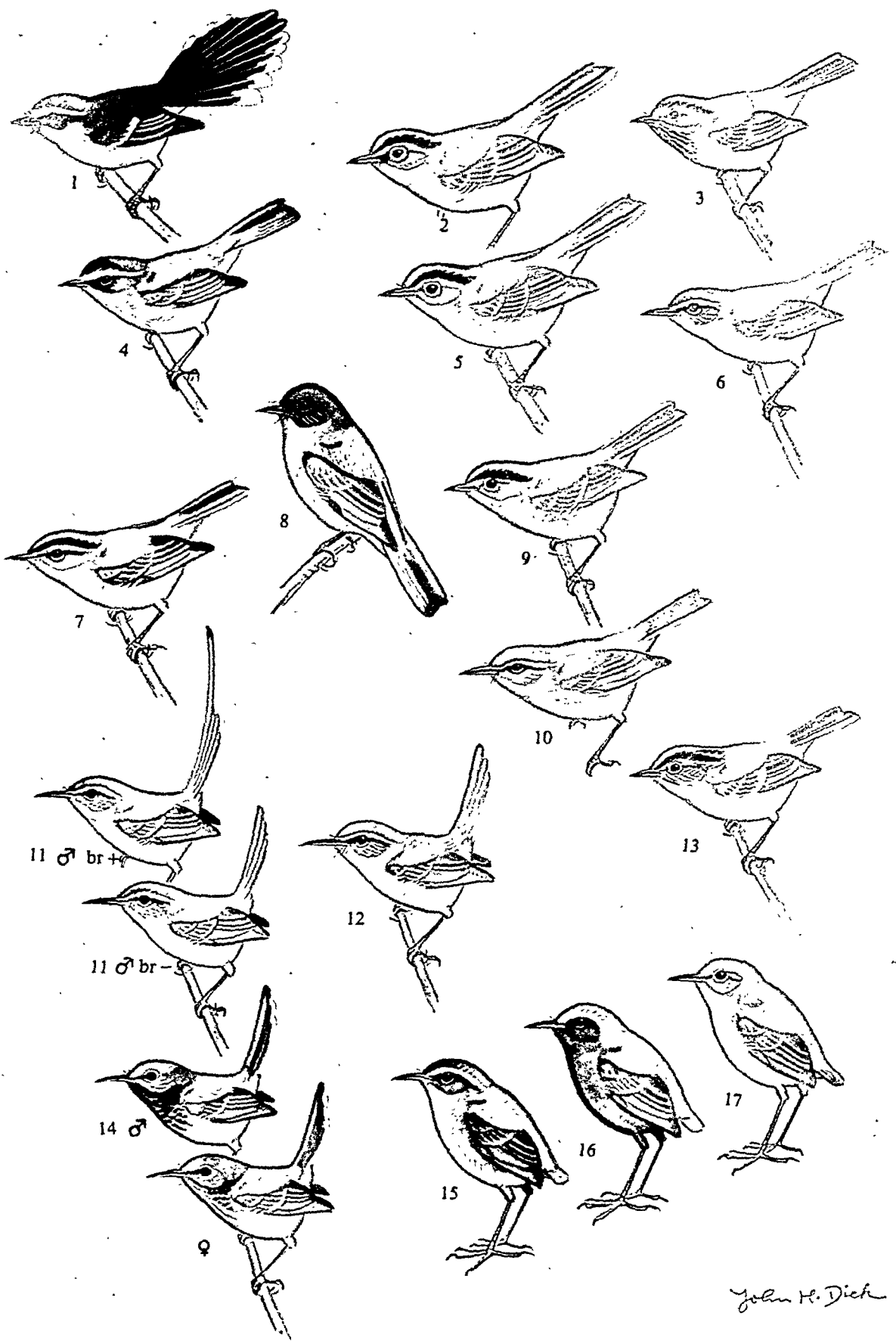


PLATE 87

- | | |
|---|--|
| 1 <i>Rhipidura hypoxantha</i> , Yellowbellied Fantail Flycatcher (1450) | 10 <i>Abroscopus hodgsoni</i> , Broadbilled Flycatcher-Warbler (1627) |
| 2 <i>Seicercus burkii</i> , Blackbrowed Flycatcher-Warbler (1615) | 11 <i>Orthotomus sutorius</i> , Tailor Bird (1535) |
| 3 <i>Abroscopus albogularis</i> , Whitethroated Flycatcher-Warbler (1626) | 12 <i>Orthotomus cucullatus</i> , Goldenheaded Tailor Bird (1541) |
| 4 <i>Abroscopus schisticeps</i> , Blackfaced Flycatcher-Warbler (1624) | 13 <i>Seicercus castaneiceps</i> , Chestnut-headed Flycatcher-Warbler (1621) |
| 5 <i>Seicercus affinis</i> , Allied Flycatcher-Warbler (1613) | 14 <i>Orthotomus atrogularis</i> , Blacknecked Tailor Bird (1540) |
| 6 <i>Abroscopus superciliaris</i> , Yellowbellied Flycatcher-Warbler (1622) | 15 <i>Tesia cyaniventer</i> , Dull Slatybellied Ground Warbler (1471) |
| 7 <i>Seicercus xanthoschistos</i> , Greyheaded Flycatcher-Warbler (1617) | 16 <i>Tesia olivea</i> , Slatybellied Ground Warbler (1472) |
| 8 <i>Culicicapa ceylonensis</i> , Greyheaded Flycatcher (1448) | 17 <i>Tesia castaneocoronata</i> , Chestnut-headed Ground Warbler (1473) |
| 9 <i>Seicercus poliopteryx</i> , Greycheeked Flycatcher-Warbler (1620) | |

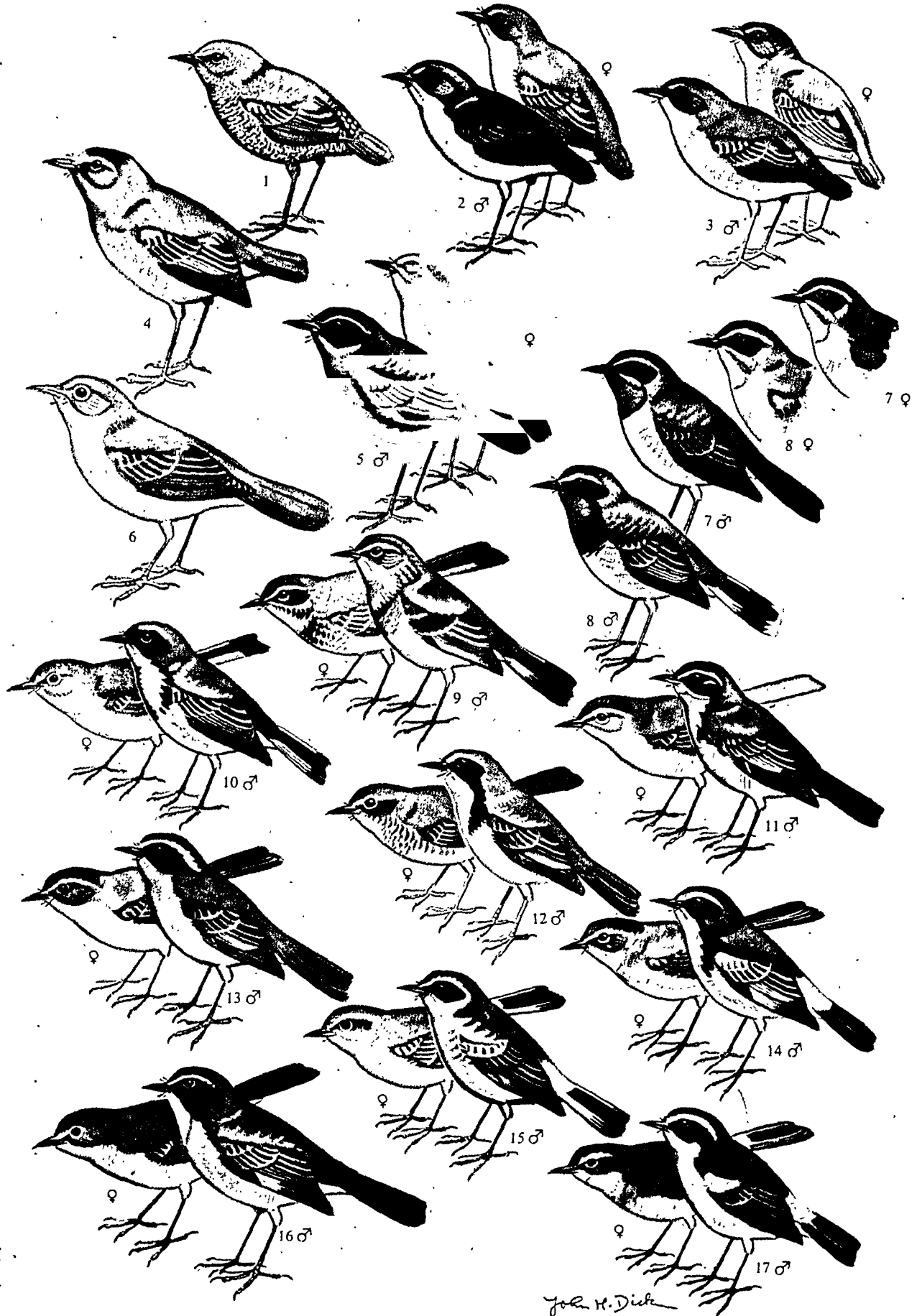


PLATE 88

- | | |
|---|---|
| 1 <i>Brachypteryx stellata</i> , Gould's Shortwing (1635) | 10 <i>Erithacus pectardens</i> , Firethroat (1652) |
| 2 <i>Brachypteryx hyperythra</i> , Rustybelled Shortwing (1636) | 11 <i>Erithacus brunneus</i> , Blue Chat (1650) |
| 3 <i>Brachypteryx leucophrys</i> , Lesser Shortwing (1639) | 12 <i>Erithacus cyane</i> , Siberian Blue Chat (1653) |
| 4 <i>Brachypteryx major</i> , Rufousbelly Shortwing (1637) | 13 <i>Erithacus indicus</i> , Whitebrowed Bush Robin (1659) |
| 5 <i>Brachypteryx montana</i> , Whitebrowed Shortwing (1640) | 14 <i>Erithacus cyanurus</i> , Orangeflanked Bush Robin (1655) |
| 6 <i>Erithacus megarhynchos</i> , Nightingale (1642) | 15 <i>Erithacus chrysaeus</i> , Golden Bush Robin (1658) |
| 7 <i>Erithacus calliope</i> , Rubythroat (1643) | 16 <i>Irania gutturalis</i> , Whitethroated Robin (SE) |
| 8 <i>Erithacus pectoralis</i> , Himalayan Rubythroat (1647) | 17 <i>Erithacus hyperythrus</i> , Rufousbelly Bush Robin (1660) |
| 9 <i>Erithacus svecicus</i> , Bluethroat (1644) | |



PLATE 89

- | | |
|--|---|
| 1 <i>Erythropygia galactotes</i> , Rufous Chat (1641) | 11 <i>Phoenicurus aureus</i> , Daurian Redstart (1677) |
| 2 <i>Phoenicurus erythronotus</i> , Eversmann's Redstart (1669) | 12 <i>Rhyacornis fuliginosus</i> , Plumbeous Redstart (1679) |
| 3 <i>Phoenicurus ochruros rufiventris</i> , Black Redstart (1672) | 13 <i>Hodgsonius phoenicuroides</i> , Hodgson's Shortwing (1680) |
| 4 <i>Phoenicurus ochruros phoenicuroides</i> , Black Redstart (1671) | 14 <i>Cinclidium leucurum</i> , Whitetailed Blue Robin (1681) |
| 5 <i>Phoenicurus caeruleocephalus</i> , Blueheaded Redstart (1670) | 15 <i>Cinclidium frontale</i> , Bluefronted Robin (1682) |
| 6 <i>Phoenicurus phoenicurus</i> , Redstart (1673) | 16 * <i>Saxicoloides fulicata</i> , Indian Robin (1720) |
| 7 <i>Phoenicurus hodgsoni</i> , Hodgson's Redstart (1674) | 17 * <i>Saxicoloides f. cambaiensis</i> , (1717). ssp of 1720 |
| 8 <i>Phoenicurus frontalis</i> , Bluefronted Redstart (1675) | 18 <i>Cercomela fusca</i> , Brown Rock Chat (1692) |
| 9 <i>Phoenicurus schisticeps</i> , Whitethroated Redstart (1676) | 19 <i>Chaimarrornis leucocephalus</i> , Whitecapped Redstart or River Chat (1716) |
| 0 <i>Phoenicurus erythrogaster</i> , Guldenstadt's Redstart (1678) | |

* Illustrations Nos. 16 and 17 are incorrect. In both cases the blue colour shown should be jet black with a bluish sheen. Also, the chestnut on the underparts should be restricted to the vent and under tail-coverts.



PLATE 90

- | | |
|---|--|
| 1 <i>Copsychus malabaricus</i> , Shama (1665) | 9 <i>Enicurus leschenaulti</i> , Leschenault's Forktail (1687) |
| 2 <i>Copsychus m. albiventris</i> (1668), ssp of 1665 | 10 <i>Cochoa viridis</i> , Green Cochoa (1691) |
| 3 <i>Grandala coelicolor</i> , Hodgson's Grandala (1683) | 11 <i>Cochoa purpurea</i> , Purple Cochoa (1690) |
| 4 <i>Copsychus saularis</i> , Magpie-Robin (1661) | 12 <i>Myiophonus blighi</i> , Ceylon Whistling Thrush (1727) |
| 5 <i>Enicurus scouleri</i> , Little Forktail (1684) | 13 <i>Myiophonus horsfieldii</i> , Malabar Whistling Thrush (1728) |
| 6 <i>Enicurus schistaceus</i> , Slatybacked Forktail (1686) | 14 <i>Myiophonus caeruleus</i> , Blue Whistling Thrush (1729) |
| 7 <i>Enicurus immaculatus</i> , Blackbacked Forktail (1685) | |
| 8 <i>Enicurus maculatus</i> , Spotted Forktail (1688) | |

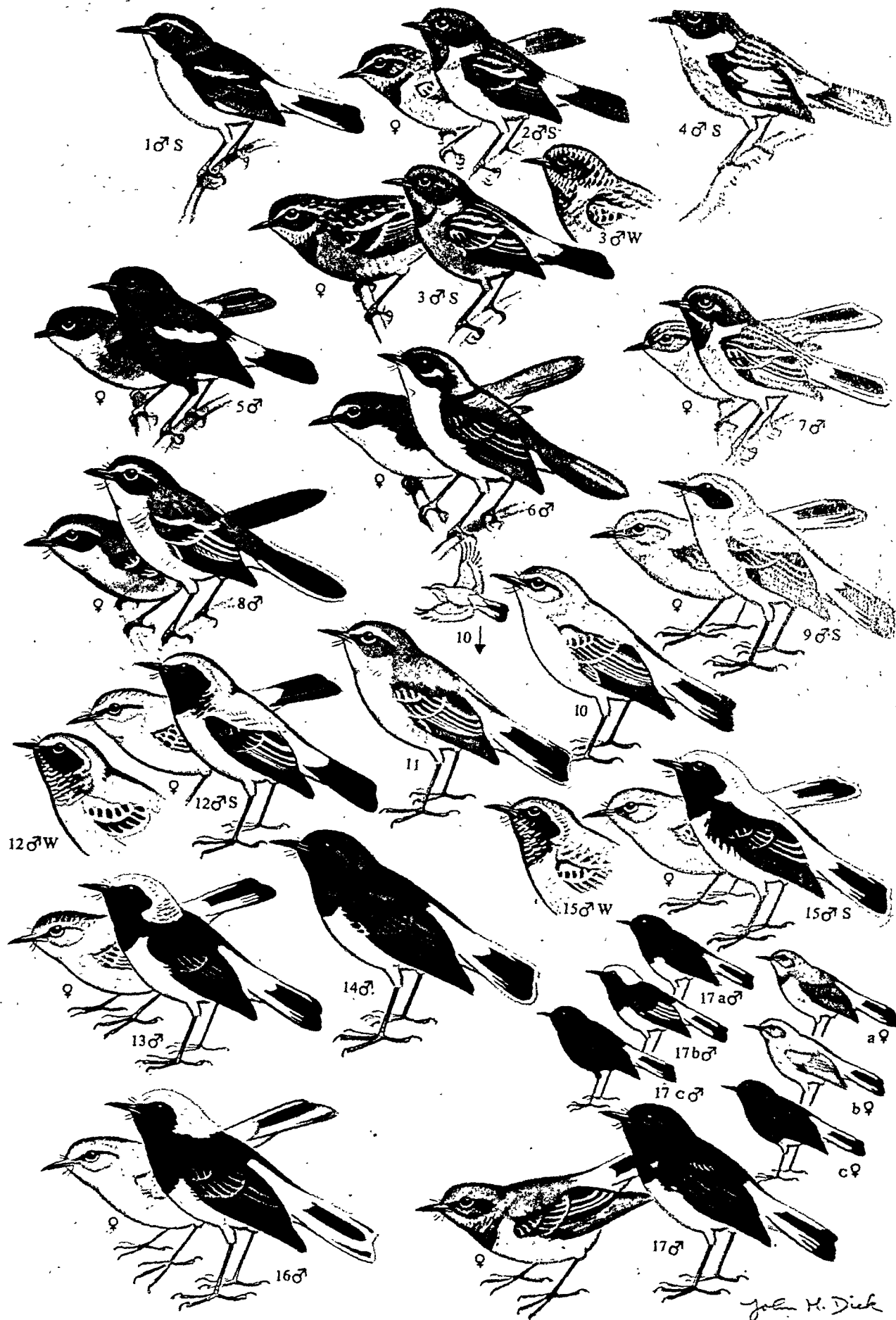


PLATE 91

- 1 *Saxicola macrorhyncha*, Stoliczka's Bush Chat (1693)
- 2 *Saxicola torquata*, Stone Chat or Collared Bush Chat (1697)
- 3 *Saxicola t. przewalskii* (1696), ssp of 1697
- 4 *Saxicola insignis*, Hodgson's Bush Chat (1694)
- 5 *Saxicola caprata*, Pied Bush Chat (1701)
- 6 *Saxicola jerdoni*, Jerdon's Bush Chat (1704)
- 7 *Saxicola leucura*, Whitetailed Stone Chat (1699)
- 8 *Saxicola ferrea*, Dark-Grey Bush Chat (1705)
- 9 *Oenanthe oenanthe*, Wheatear (1708)

- 10 *Oenanthe isabellina*, Isabelline Chat (1706)
- 11 *Oenanthe xanthopyrma*, Redtailed Chat (1707)
- 12 *Oenanthe deserti*, Desert Wheatear (1710)
- 13 *Oenanthe pleschanka*, Pleschanka's Pied Chat or Wheatear (1715)
- 14 *Oenanthe alboniger*, Hume's Chat (1714)
- 15 *Oenanthe finschi*, Barnes's Chat (1711)
- 16 *Oenanthe monacha*, Hooded Chat (1713)
- 17 *Oenanthe picata*, Pied Chat (1712)

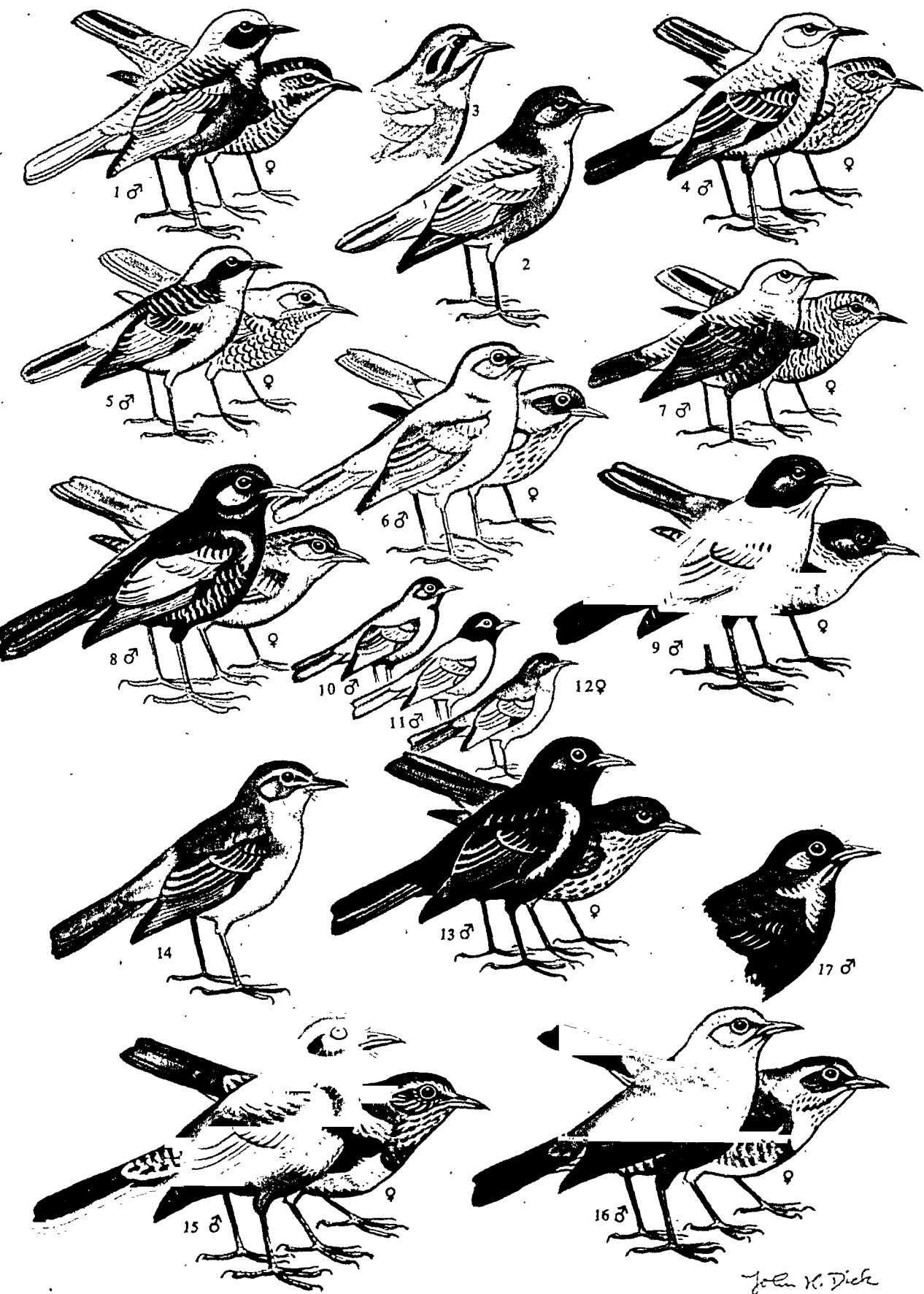


PLATE 92

- | | |
|--|--|
| 1 <i>Monticola rufiventris</i> , Chestnutbelled Rock Thrush (1724) | 8 <i>Turdus boulboul</i> , Greywinged Blackbird (1750) |
| 2 <i>Zoothera citrina</i> , Orangeheaded Ground Thrush (1733) | 9 <i>Turdus albocinctus</i> , Whitecollared Blackbird (1749) |
| 3 <i>Zoothera c. cyanotus</i> (1734), ssp of 1733 | 10 <i>Turdus m. kinnisii</i> (1757), ssp of 1752 |
| 4 <i>Monticola solitarius</i> , Blue Rock Thrush (1726) | 11 <i>Turdus m. nigropileus</i> (1753), ssp of 1752 |
| 5 <i>Monticola cinclorhynchus</i> , Blueheaded Rock Thrush (1723) | 12 <i>Turdus m. simillimus</i> (1755), ssp of 1752 |
| 6 <i>Turdus unicolor</i> , Tickell's Thrush (1748) | 13 <i>Turdus merula</i> , Blackbird (1752) |
| 7 <i>Monticola saxatilis</i> , Rock Thrush (1722). | 14 <i>Turdus feai</i> , Fea's Thrush (1761) |
| | 15 <i>Turdus kessleri</i> , Kessler's Thrush (1760) |
| | 16 <i>Turdus rubrocanus</i> , Greyheaded Thrush (1758) |
| | 17 <i>Turdus r. gouldii</i> (1759), ssp of 1758 |

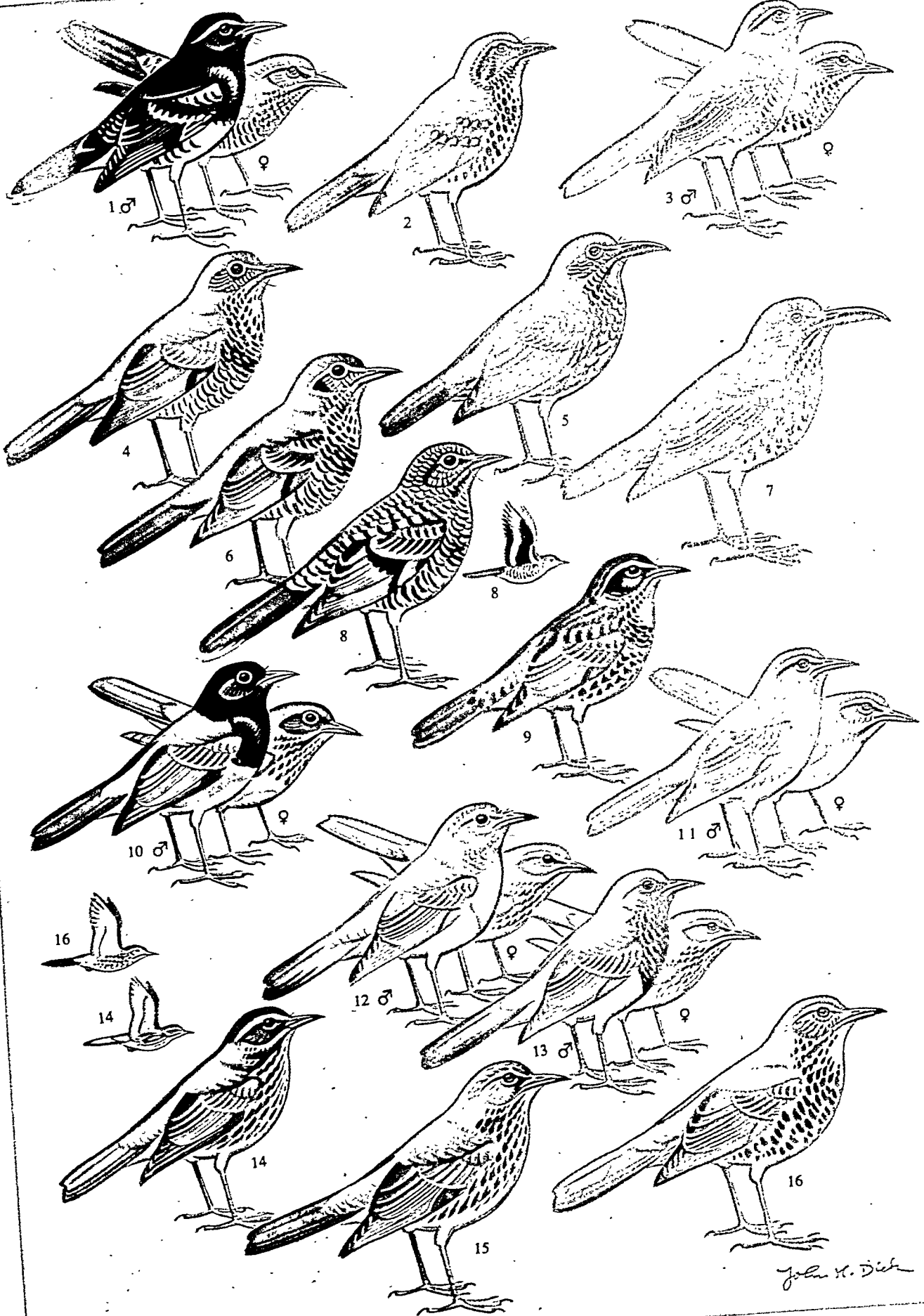


PLATE 93

- 1 *Zoothera wardii*, Pied Ground Thrush (1731)
- 2 *Zoothera spiloptera*, Spottedwinged Ground Thrush (1737)
- 3 *Zoothera sibirica*, Siberian Ground Thrush (1732)
- 4 *Zoothera mollissima*, Plainbacked Mountain Thrush (1739)
- 5 *Zoothera marginata*, Lesser Brown Thrush (1746)
- 6 *Zoothera dixonii*, Longtailed Mountain Thrush (1740)
- 7 *Zoothera monticola*, Large Brown Thrush (1745)
- 8 *Zoothera dauma*, Golden, or Smallbilled, Mountain Thrush (1741)

- 9 *Turdus naumanni*, Dusky Thrush (1765)
- 10 *Turdus dissimilis*, Blackbreasted Thrush (1747)
- 11 *Turdus obscurus*, Dark Thrush (1762)
- 12 *Turdus ruficollis*, Redthroated Thrush (1764)
- 13 *Turdus r. atrogularis*, Blackthroated Thrush (1763), ssp of 1764
- 14 *Turdus iliacus*, Redwing (1767)
- 15 *Turdus pilaris*, Fieldfare (1766)
- 16 *Turdus viscivorus*, Mistle Thrush (1768)

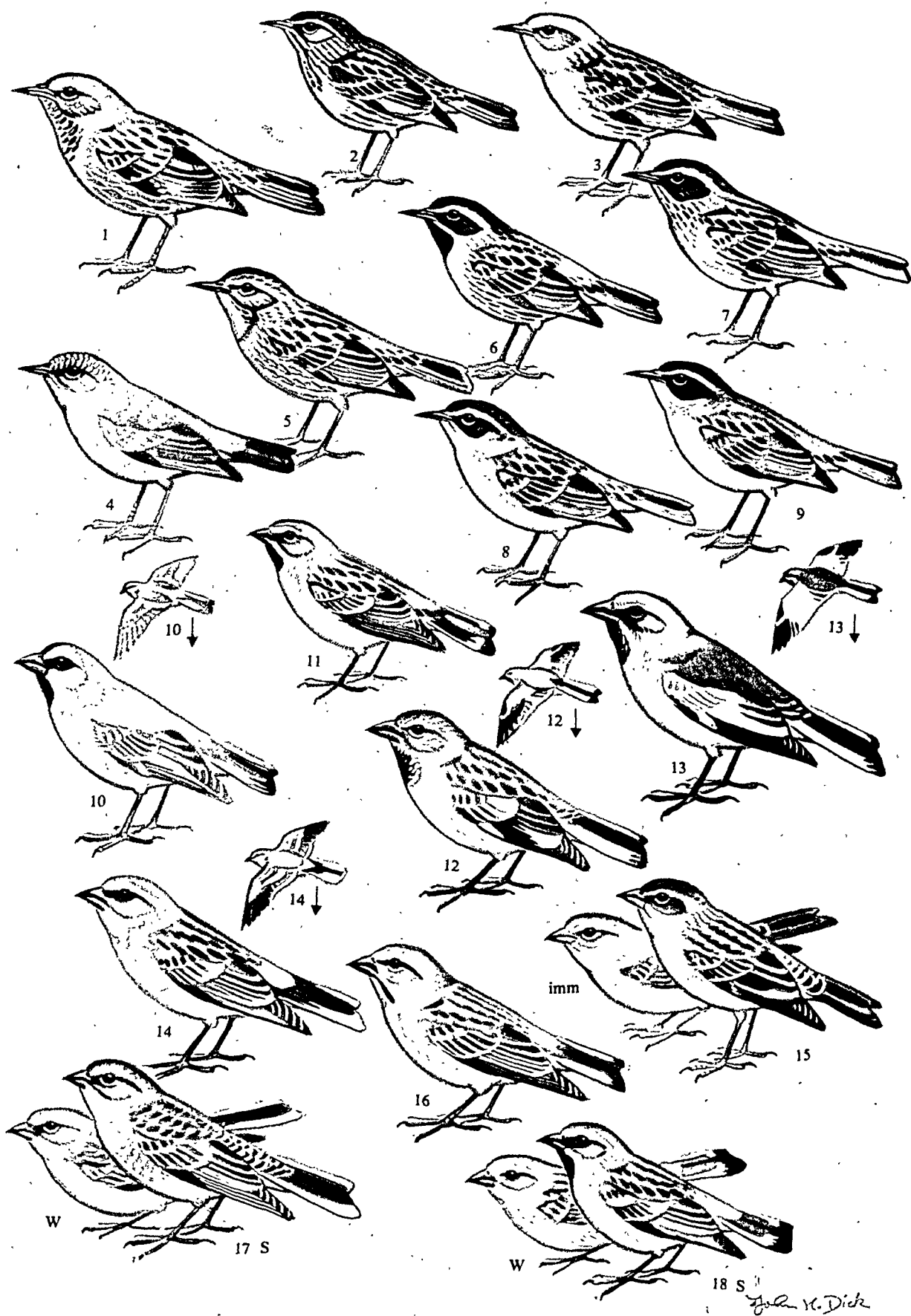


PLATE 94

- | | |
|---|--|
| 1 <i>Prunella collaris</i> , Alpine Accentor (1779) | 12 <i>Montifringilla adamsi</i> , Tibet Snow Finch (1952) |
| 2 <i>Prunella strophiata</i> , Rufousbreasted Accentor (1783) | 13 <i>Montifringilla nivalis</i> , Snow Finch (1951) |
| 3 <i>Prunella rubeculoides</i> , Robin Accentor (1781) | 14 <i>Montifringilla taczanowskii</i> , Mandelli's Snow Finch (1953) |
| 4 <i>Prunella immaculata</i> , Maroonbacked Accentor (1788) | 15 <i>Leucosticte nemoricola</i> , Hodgson's Mountain Finch (2000) |
| 5 <i>Prunella himalayana</i> , Altai Accentor (1780) | 16 <i>Montifringilla ruficollis</i> , Rednecked Snow Finch (1954) |
| 6 <i>Prunella atrogularis</i> , Blackthroated Accentor (1787) | 17 <i>Leucosticte brandti</i> , Brandt's Mountain Finch (2003) |
| 7 <i>Prunella f. ocularis</i> (1785a), ssp of 1784 | 18 <i>Montifringilla theresae</i> , Bartailed Snow Finch (SE) |
| 8 <i>Prunella montanella</i> , Siberian Accentor (1787a) | |
| 9 <i>Prunella fulvescens</i> , Brown Accentor (1784) | |
| 10 <i>Montifringilla blanfordi</i> , Blandford's Snow Finch (1955) | |
| 11 <i>Montifringilla davidiana</i> , Pere David's Snow Finch (1956) | |



PLATE 95

- | | |
|--|--|
| 1 <i>Aegithalos leucogenys</i> , Whitecheeked Tit (1821) | 14 <i>Parus spilonotus</i> , Blackspotted Yellow Tit (1812) |
| 2 <i>Aegithalos niveogularis</i> , Whitethroated Tit (1822) | 15 <i>Parus cyanus flavipectus</i> , Yellowbreasted Blue Tit or Azure Tit (1800) |
| 3 <i>Aegithalos iouschistos</i> , Rufousfronted Tit (1823) | 16 <i>Parus cyanus tianschanicus</i> (Tien Shan) |
| 4 <i>Aegithalos cocinnus</i> , Redheaded Tit (1818) | Yellowbreasted Blue Tit (1800a) |
| 5 <i>Aegithalos c. manipurensis</i> (1820), ssp of 1818 | 17 <i>Parus monticolus</i> , Greenbacked Tit (1799) |
| 6 <i>Cephalopyrus flammiceps</i> , Firecapped Tit (1815) | 18 <i>Parus major</i> , Grey Tit (1794) |
| 7 <i>Remiz pendulinus</i> , Penduline Tit (1817) | 19 <i>Parus nuchalis</i> , Whitewinged Black Tit (1798) |
| 8 <i>Remiz p. nigricans</i> (RE), ssp of 1817 | 20 <i>Melanochlora sultanea</i> , Sultan Tit (1789) |
| 9 <i>Parus dichrous</i> , Brown Crested Tit (1808) | 21 <i>Sylviparus modestus</i> , Yellowbrowed Tit (1814) |
| 10 <i>Parus ater</i> , Coal Tit (1803) | 22 <i>Parus xanthogenys</i> , Yellowcheeked Tit (1811) |
| 11 <i>Parus rufonuchalis</i> , Black Tit (1804) | 23 <i>Parus bokharensis</i> , Blue-Grey Tit (SE) |
| 12 <i>Parus melanolophus</i> , Crested Black Tit (1802) | |
| 13 <i>Parus rubidiventris</i> , Rufousbellied Crested Tit (1805) | |

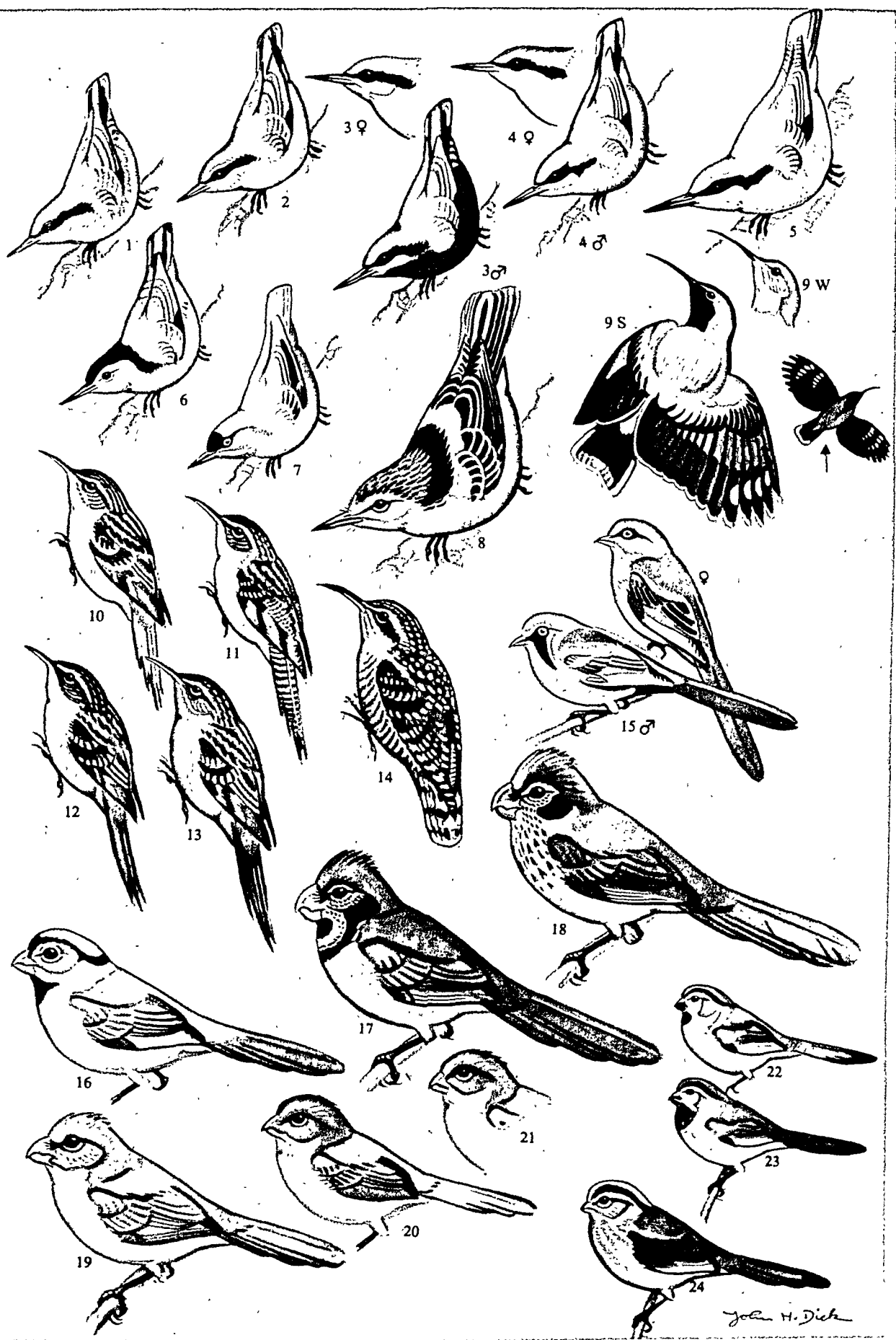


PLATE 96

- 1 *Sitta europea nagaensis*, European Nuthatch (1826)
- 2 *Sitta himalayensis*, Whitetailed Nuthatch (1834)
- 3 *Sitta castanea*, Chestnutbelled Nuthatch (1830)
- 4 *Sitta europea cashmirensis*, European Nuthatch (1824)
- 5 *Sitta tephronota*, Rock Nuthatch (1836)
- 6 *Sitta leucopsis*, Whitechecked Nuthatch (1832)
- 7 *Sitta frontalis*, Velvetfronted Nuthatch (1838)
- 8 *Sitta formosa*, Beautiful Nuthatch (1837)
- 9 *Tichodroma muraria*, Wall Creeper (1839)
- 10 *Certhia familiaris*, Tree Creeper (1843)
- 11 *Certhia himalayana*, Himalayan Tree Creeper (1847)
- 12 *Certhia nipalensis*, Nepal Tree Creeper (1851)
- 13 *Certhia discolor*, Sikkim Tree Creeper (1849)
- 14 *Salpornis spilonotos*, Spotted Grey Creeper (1841)
- 15 *Panurus biarmicus*, Bearded Tit-Babbler or Reedling (1235)
- 16 *Paradoxornis gularis*, Greyheaded Parrotbill (1249)
- 17 *Paradoxornis flavirostris*, Blackthroated Parrotbill (1251)
- 18 *Paradoxornis guttaticollis*, Whitethroated Parrotbill (1252)
- 19 *Paradoxornis ruficeps*, Greater Redheaded Parrotbill (1247)
- 20 *Paradoxornis a. oatesi* (1245), ssp of 1246
- 21 *Paradoxornis atrosuperciliaris*, Lesser Redheaded Suthora or Parrotbill (1246)
- 22 *Paradoxornis nipalensis humii*, Orange Suthora (1241)
- 23 *Paradoxornis nipalensis poliotis*, Orange Suthora (1242)
- 24 *Paradoxornis fulvifrons*, Fulvousfronted Suthora or Parrotbill (1238)

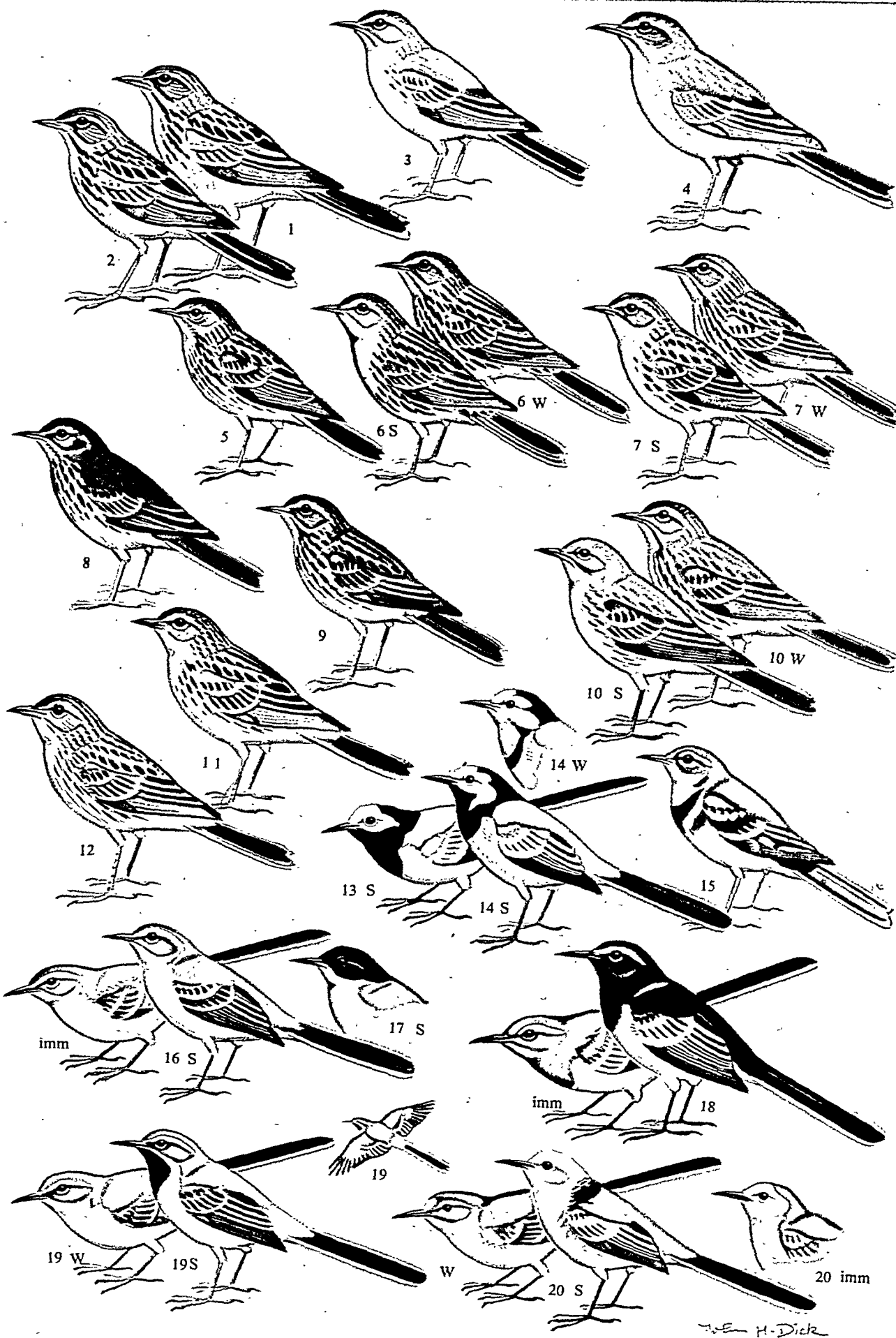


PLATE 97

- 1 *Anthus n. richardi* (1857), ssp of 1859
- 2 *Anthus novaeseelandiae*, Paddyfield Pipit (1859)
- 3 *Anthus campestris*, Tawny Pipit (1861)
- 4 *Anthus similis*, Brown Rock Pipit (1868)
- 5 *Anthus pratensis*, Meadow Pipit (1856)
- 6 *Anthus cervinus*, Redthroated Pipit (1864)
- 7 *Anthus roseatus*, Vinaceousbreasted Pipit (1865)
- 8 *Anthus hodgsoni*, Indian Tree Pipit (1852)
- 9 *Anthus trivialis*, Tree Pipit (1854)
- 10 *Anthus spinoletta*, Water Pipit or Alpine Pipit (1871)
- 11 *Anthus nilghiriensis*, Nilgiri Pipit (1870)
- 12 *Anthus sylvanus*, Upland Pipit (1873)
- 13 *Motacilla alba personata*, Pied or White Wagtail (1886)
- 14 *Motacilla alba dukhunensis*, Pied or White Wagtail (1885)
- 15 *Motacilla indica*, Forest Wagtail (1874)
- 16 *Motacilla flava*, Yellow Wagtail (1880)
- 17 *Motacilla f. melanogrisea* (1878), ssp of 1880
- 18 *Motacilla maderaspatensis*, Large Pied Wagtail (1891)
- 19 *Motacilla cinerea*, Grey Wagtail (1884)
- 20 *Motacilla citreola*, Yellowheaded Wagtail (1881)

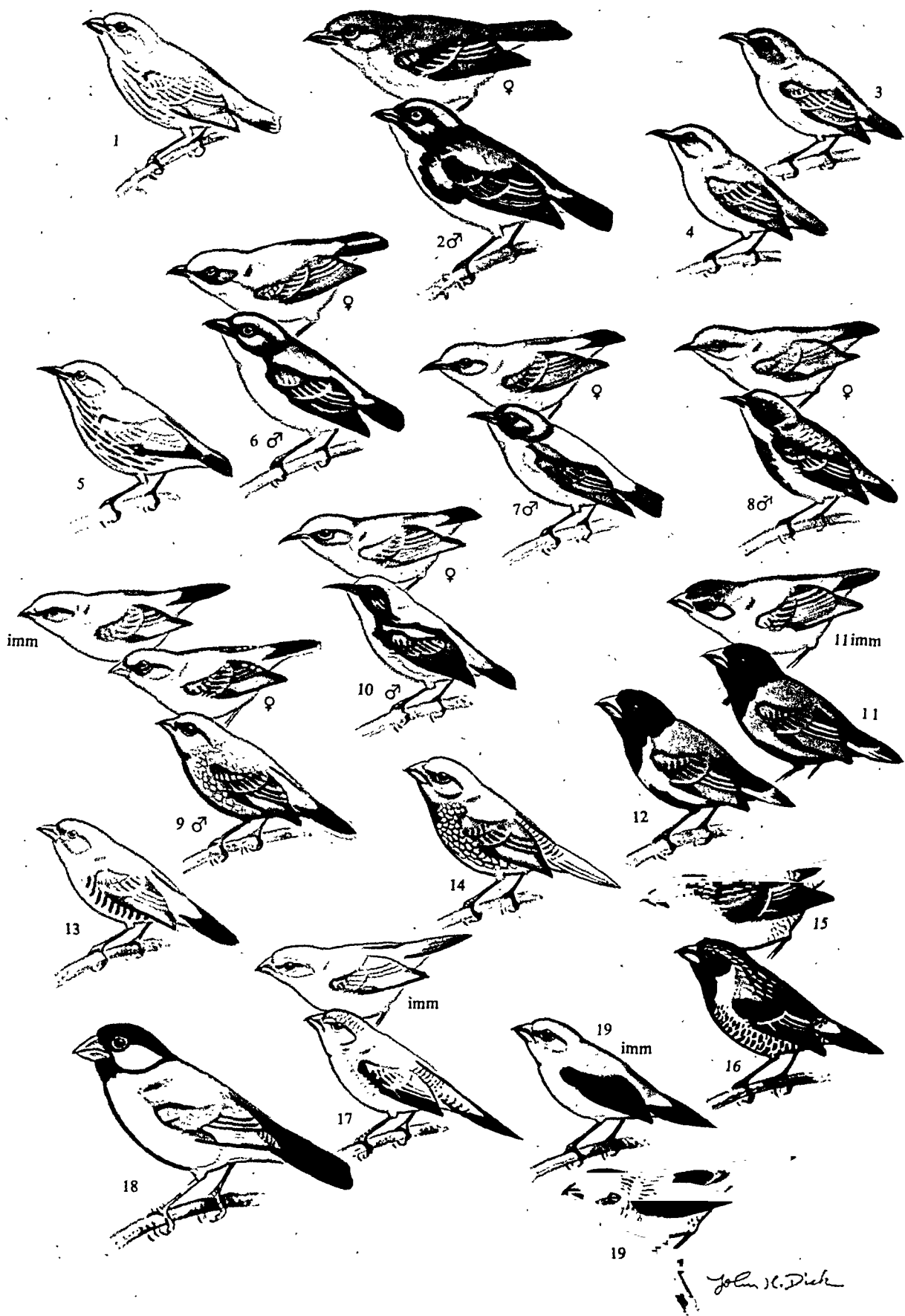


PLATE 98

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| 1 <i>Dicaeum agile</i> , Thickbilled Flowerpecker (1892) | 9 <i>Estrilda amandava</i> , Red Munia or Avadavat (1964) |
| 2 <i>Dicaeum melanoxanthum</i> , Yellowbellied Flowerpecker (1896) | 10 <i>Dicaeum cruentatum</i> , Scarletbacked Flowerpecker (1904) |
| 3 <i>Dicaeum erythrorhynchos</i> , Tickell's Flowerpecker (1899) | 11 <i>Lonchura m. atricapilla</i> (1977), ssp of 1978 |
| 4 <i>Dicaeum concolor</i> , Plaincoloured Flowerpecker (1902) | 12 <i>Lonchura malacca</i> , Blackheaded Munia (1978) |
| 5 <i>Dicaeum chrysorrheum</i> , Yellowvented Flowerpecker (1895) | 13 <i>Estrilda formosa</i> , Green Munia (1965) |
| 6 <i>Dicaeum vinctus</i> , Legge's Flowerpecker (1897) | 14 <i>Lonchura punctulata</i> , Spotted Munia (1974) |
| 7 <i>Dicaeum trigonostigma</i> , Orangebellied Flowerpecker (1898) | 15 <i>Lonchura k. jerdoni</i> (1971), ssp of 1973 |
| 8 <i>Dicaeum ignipectus</i> , Firebreasted Flowerpecker (1905) | 16 <i>Lonchura kelaarti</i> , Rufousbellied Munia (1973) |
| | 17 <i>Lonchura malabarica</i> , Whitethroated Munia (1966) |
| | 18 <i>Padda oryzivora</i> , Java Sparrow (1978a) |
| | 19 <i>Lonchura striata</i> , Whitebacked Munia (1968) |

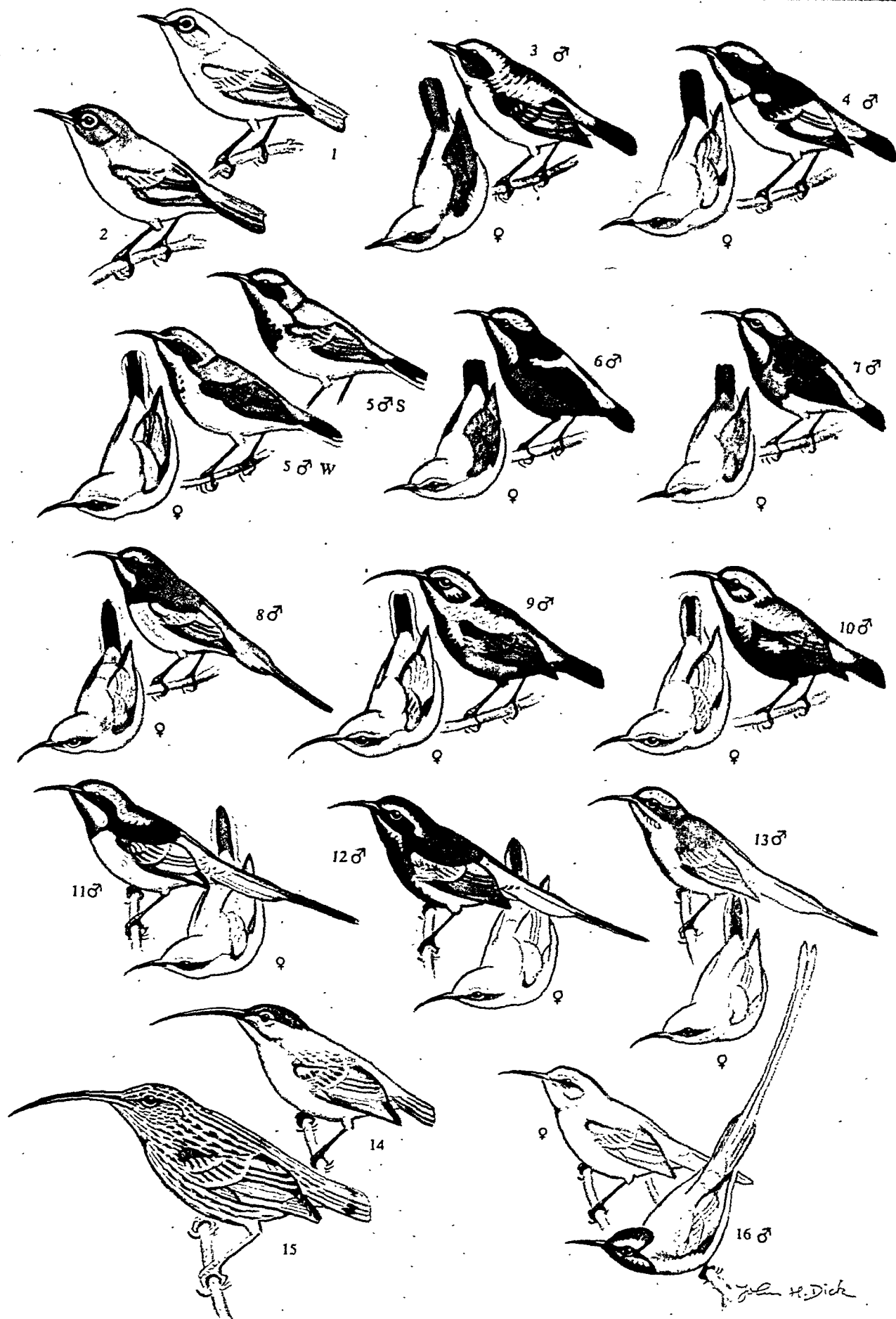


PLATE 99

- 1 *Zosterops palpebrosa*, White-eye (1933)
- 2 *Zosterops ceylonensis*, Ceylon White-eye (1937)
- 3 *Anthreptes singalensis*, Rubycheek (1906)
- 4 *Nectarinia zeylonica*, Purplerumped Sunbird (1907)
- 5 *Nectarinia jugularis*, Olivebacked Sunbird (1914)
- 6 *Nectarinia sperata*, Van Hasselt's Sunbird (1910)
- 7 *Nectarinia minima*, Small Sunbird (1909)
- 8 *Aethopyga gouldiae*, Mrs Gould's Sunbird (1919)
- 9 *Nectarinia lotenia*, Loten's Sunbird (1911)

- 10 *Nectarinia asiatica*, Purple Sunbird (1917)
- 11 *Aethopyga nipalensis*, Nepal Yellowbacked Sunbird (1923)
- 12 *Aethopyga saturata*, Blackbreasted Sunbird (1925)
- 13 *Aethopyga siparaja*, Yellowbacked Sunbird (1927)
- 14 *Arachnothera longirostris*, Little Spiderhunter (1931)
- 15 *Arachnothera magna*, Streaked Spiderhunter (1932)
- 16 *Aethopyga ignicauda*, Firetailed Sunbird (1930)

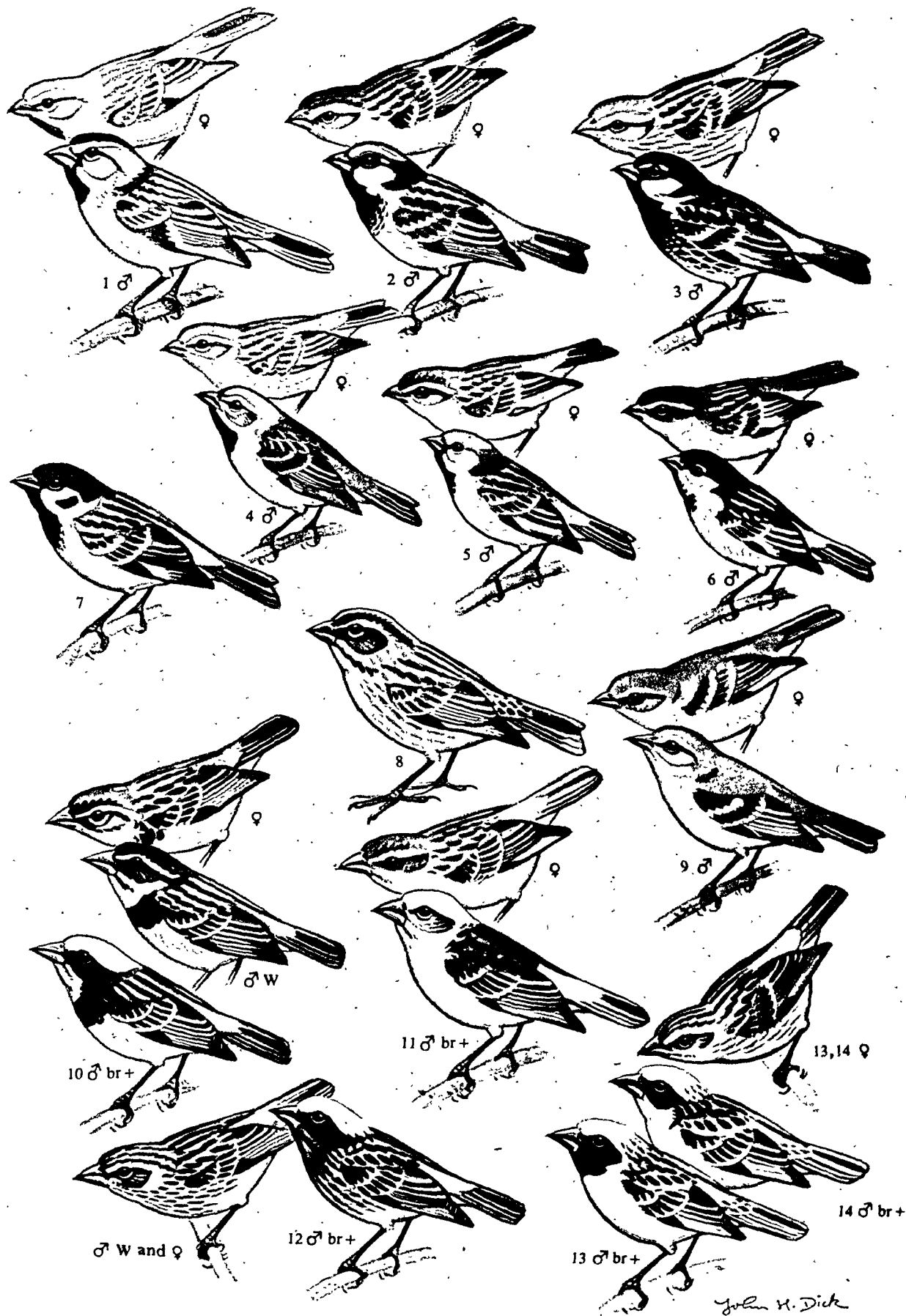


PLATE 100

- 1 *Passer ammodendri*, Saxaul Sparrow (SE)
- 2 *Passer domesticus*, House Sparrow (1938)
- 3 *Passer hispaniolensis*, Spanish Sparrow (1940)
- 4 *Passer moabiticus*, Scrub Sparrow (1947a)
- 5 *Passer pyrrhonotus*, Sind Jungle Sparrow (1945)
- 6 *Passer rutilans*, Cinnamon Tree Sparrow (1916)
- 7 *Passer montanus*, Tree Sparrow (1942)
- 8 *Petronia petronia*, Rock Sparrow (1950)
- 9 *Petronia xanthocollis*, Yellowthroated Sparrow (1949)
- 10 *Ploceus benghalensis*, Blackthroated Weaver Bird (1961)
- 11 *Ploceus megarhynchus*, Finn's Baya (1960)
- 12 *Ploceus manyar*, Streaked Weaver Bird (1962)
- 13 *Ploceus philippinus*, Baya (1957)
- 14 *Ploceus p. burmanicus* (1959), ssp of 1957



PLATE 101

- | | |
|--|--|
| 1 <i>Fringilla coelebs</i> , Chaffinch (1979) | 10 <i>Carduelis carduelis</i> , Goldfinch (1989) |
| 2 <i>Fringilla montifringilla</i> , Brambling (1980) | 11 <i>Rhodospiza obsoleta</i> , Lichtenstein's Desert Finch (2008) |
| 3 <i>Serinus pusillus</i> , Goldfronted Finch (1998) | 12 <i>Callacanthus sanguinea</i> , Crimsonwinged Desert Finch (2009) |
| 4 <i>Serinus thibetanus</i> , Tibetan Siskin (1993) | 13 <i>Carpodacus githagineus</i> , Trumpeter Bullfinch (2006) |
| 5 <i>Carduelis chloris</i> , European Greenfinch (SE) | 14 <i>Carpodacus mongolicus</i> , Mongolian Trumpeter Bullfinch (2007) |
| 6 <i>Carduelis spinoides</i> , Himalayan Greenfinch (1990) | 15 <i>Carpodacus synoicus</i> , Sinai Rosefinch (SE) |
| 7 <i>Carduelis ambigua</i> , Blackheaded Greenfinch (SE) | |
| 8 <i>Acanthis cannabina</i> , Linnet (1994) | |
| 9 <i>Acanthis flavirostris</i> , Twite (1996) | |

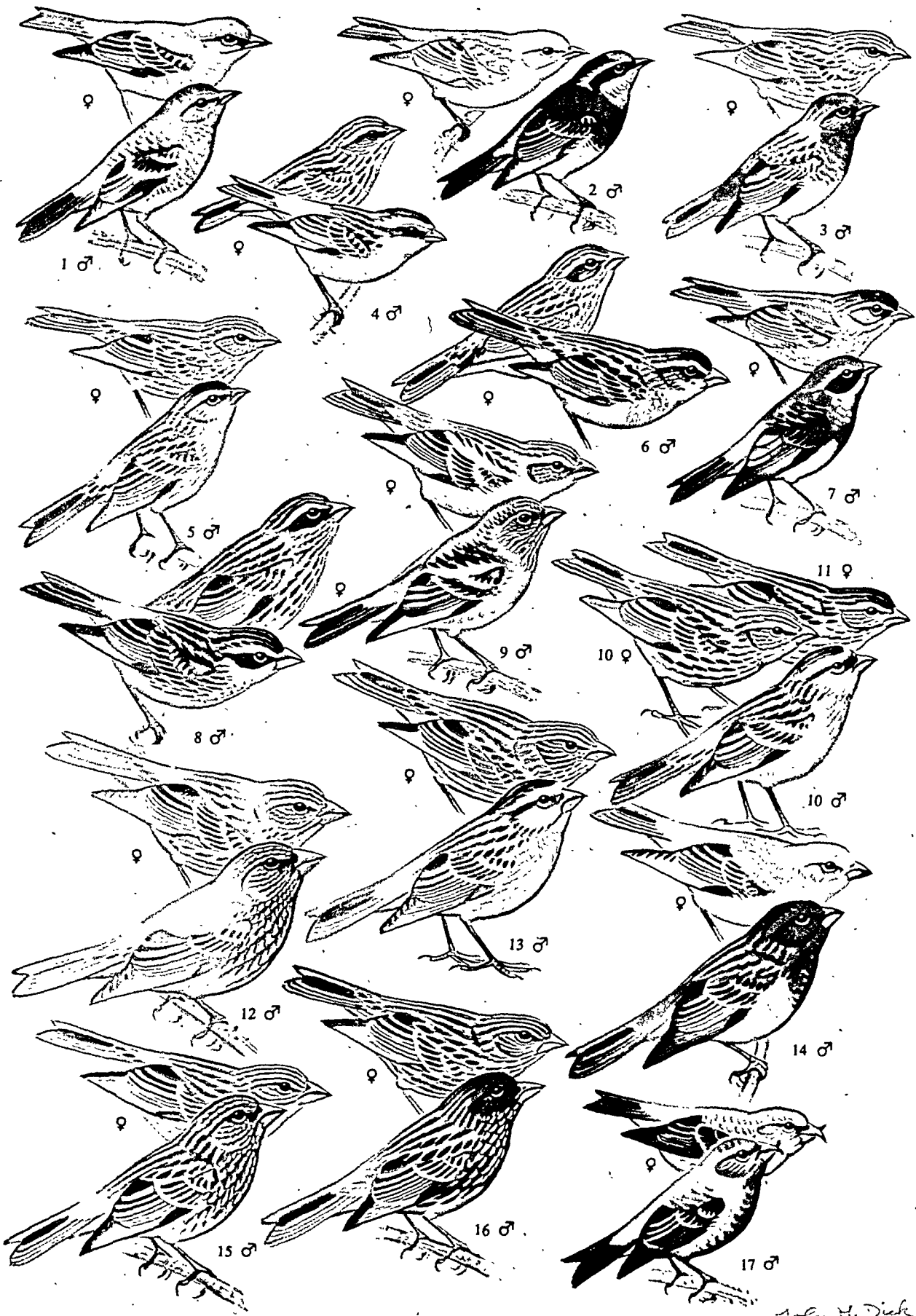


PLATE 102

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|--|---|
| 1 <i>Carpodacus rubescens</i> , Blanford's Rosefinch (2016) | 10 <i>Carpodacus thura</i> , Whitebrowed Rosefinch (2021) |
| 2 <i>Carpodacus nipalensis</i> , Nepal Rosefinch (2015) | 11 <i>Carpodacus t. blythi</i> (2020), ssp of 2021 |
| 3 <i>Carpodacus erythrinus</i> , Common Rosefinch or Scarlet Grosbeak (2011) | 12 <i>Carpodacus rubicilloides</i> , Eastern Great Rosefinch (2028) |
| 4 <i>Carpodacus rhodochrous</i> , Pinkbrowed Rosefinch (2017) | 13 <i>Carpodacus rhodochlamys</i> , Redmantled Rosefinch (2018) |
| 5 <i>Carpodacus pulcherrimus</i> , Beautiful Rosefinch (2023) | 14 <i>Propyrrhula subhimachala</i> , Redheaded Rosefinch (2033) |
| 6 <i>Carpodacus edwardsii</i> , Large Rosefinch (2025) | 15 <i>Carpodacus rubicilla</i> , Great Rosefinch (2027) |
| 7 <i>Carpodacus vinaceus</i> , Vinaceous Rosefinch (2017a) | 16 <i>Carpodacus puniceus</i> , Redbreasted Rosefinch (2031) |
| 8 <i>Carpodacus rhodopeplus</i> , Spottedwinged Rosefinch (2019) | 17 <i>Loxia curvirostra</i> , Crossbill (2032) |
| 9 <i>Carpodacus trifasciatus</i> , Threebanded Rosefinch (2026) | |

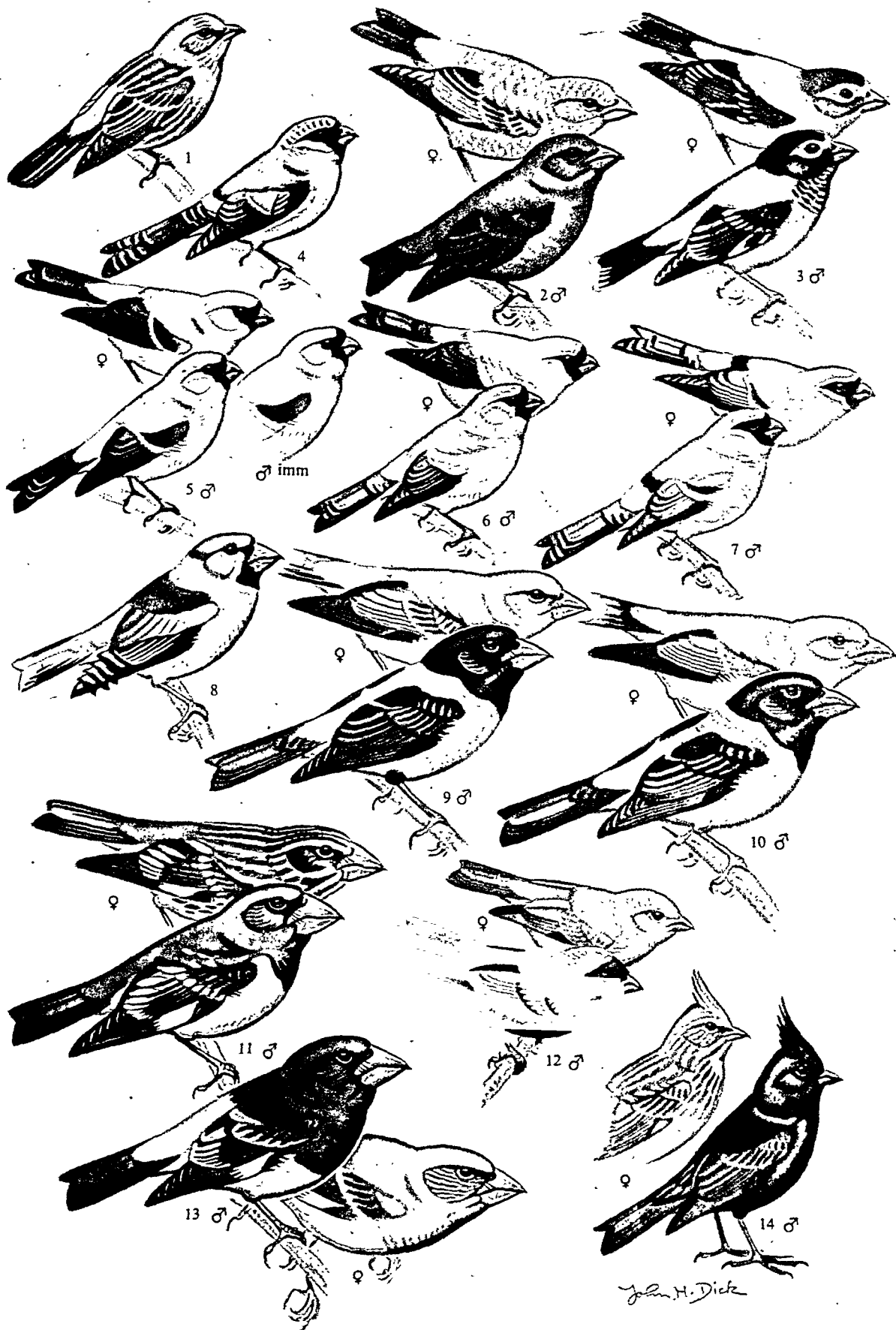


PLATE 103

- 1 *Indicator xanthonotus*, Honeyguide (794)
- 2 *Haematospiza sipahi*, Scarlet Finch (2034)
- 3 *Callacanthis burtoni*, Redbrowed Finch (1997)
- 4 *Pyrrhula nipalensis*, Brown Bullfinch (2036)
- 5 *Pyrrhula aurantiaca*, Orange Bullfinch (2040)
- 6 *Pyrrhula erythrocephala*, Redheaded Bullfinch (2039)
- 7 *Pyrrhula erythaca*, Beavan's Bullfinch (2038)
- 8 *Coccothraustes coccothraustes*, Hawfinch (1981)
- 9 *Coccothraustes icteroides*, Black-and-Yellow Grosbeak (1982)
- 10 *Coccothraustes affinis*, Allied Grosbeak (1983)
- 11 *Coccothraustes melanozanthos*, Spottedwinged Grosbeak (1986)
- 12 *Pyrrhoptes epauletta*, Goldheaded Black Finch (2035)
- 13 *Coccothraustes carripes*, Whitewinged Grosbeak (1985)
- 14 *Melophus lathami*, Crested Bunting (2060)

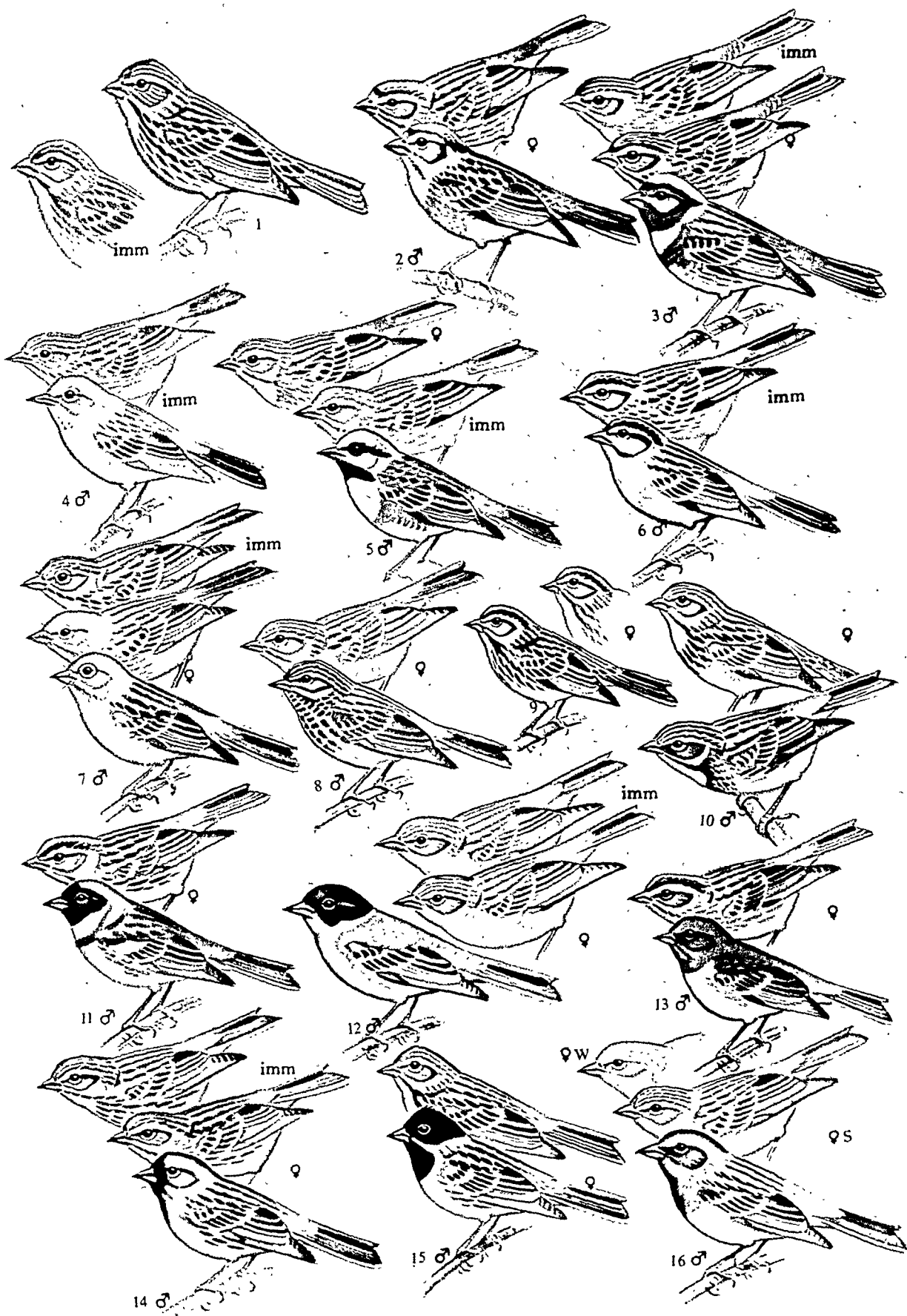


PLATE 104

- | | |
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| 1 <i>Emberiza calandra</i> , Corn Bunting (2041) | 9 <i>Emberiza pusilla</i> , Little Bunting (2056) |
| 2 <i>Emberiza citrinella</i> , Yellowhammer (SE) | 10 <i>Emberiza fucata</i> , Greyheaded Bunting (2055) |
| 3 <i>Emberiza leucocephalos</i> , Pine Bunting (2042) | 11 <i>Emberiza aureola</i> , Yellowbreasted Bunting (2046) |
| 4 <i>Emberiza buechanani</i> , Greynecked Bunting (2050) | 12 <i>Emberiza melanocephala</i> , Blackheaded Bunting (2043) |
| 5 <i>Emberiza stewarti</i> , Whitecapped Bunting (2048) | 13 <i>Emberiza rutila</i> , Chestnut Bunting (2045) |
| 6 <i>Emberiza cia</i> , Rock Bunting (2052) | 14 <i>Emberiza spodocephala</i> , Blackfaced Bunting (2047) |
| 7 <i>Emberiza hortulana</i> , Ortolan Bunting (2049) | 15 <i>Emberiza schoeniclus</i> , Reed Bunting (2058) |
| 8 <i>Emberiza striolata</i> , Striolated Bunting (2057) | 16 <i>Emberiza bruniceps</i> , Redheaded Bunting (2044) |

INDEX TO THE VOLUMES BY FAMILY *English names (for Latin names see front endpaper)*

- | | |
|------------------------------|------------------------|
| Accentors, 9 | Heron, 1 |
| Avadavat, 10 | Honeyguides, 4 |
| Avocet, 2 | Hoopoes, 4 |
| | Hornbills, 4 |
| Babblers, 6-7 | House Sparrows, 10 |
| Barbets, 4 | Hypocolius, 5 |
| Barn Owls, 3 | |
| Bee-eaters, 4 | Ibisbill, 2 |
| Bitterns, 1 | Ibises, 1 |
| Boobies, 1 | Ioras, 6 |
| Broadbills, 4 | |
| Bulbuls, 6 | Jaçanas, 2 |
| Buntings, 10 | Jaegers, 3 |
| Bustards, 2 | Jays, 5 |
| Button and Bustard-Quails, 2 | |
| | Kingfishers, 4 |
| Chaffinch, 10 | |
| Chats, 8-9 | Larks, 5 |
| Coots, 2 | Laughing Thrushes, 7 |
| Cormorants, 1 | Leaf Birds, 6 |
| Couriers, 3 | Leaf Warblers, 8 |
| Crab Plover, 2 | Longtailed Titmice, 9 |
| Cranes, 2 | Loons, 1 |
| Creepers, 9 | |
| Crested Swift, 4 | Magpies, 5 |
| Crows, 5 | Megapodes, 2 |
| Cuckoo-Shrikes, 6 | Minivets, 6 |
| Cuckoos, 3 | Monarch Flycatchers, 7 |
| Curlews, 2 | Munias, 10 |
| | Mynas, 5 |
| Darter, 1 | |
| Dippers, 9 | Nightjars, 4 |
| Divers, 1 | Nuthatches, 9 |
| Doves, 3 | |
| Drongos, 5 | Orioles, 5 |
| Ducks, 1 | Owls, 3 |
| | Oystercatchers, 2 |
| Egrets, 1 | |
| Fairy Bluebird, 6 | Painted Snipe, 2 |
| Falcons, 1 | Parrots, 3 |
| Finches, 10 | Partridges, 2 |
| Finfoot, 2 | Pelicans, 1 |
| Flamingos, 1 | Penduline Titmice, 9 |
| Flowerpeckers, 10 | Petrels, 1 |
| Flycatchers, 7 | Phalaropes, 2 |
| Frigate Birds, 1 | Pheasants, 2 |
| Frogmouths, 4 | Pigeons, 3 |
| | Pipits, 9 |
| Greese, 1 | Pittas, 4 |
| Goatsuckers, 4 | Plovers, 2 |
| Goldfinches, 10 | Pratincoles, 3 |
| Grebes, 1 | |
| Grey Creeper, 9 | Quails, 2 |
| Gulls, 3 | |
| | Rails, 2 |
| Hawks, 1 | Robins, 8 |
| Hedge Sparrows, 9 | Rollers, 4 |

Sandgrouse, 3
Sandpipers, 2
Scimitar Babblers, 6
Shearwaters, 1
Shrikebilled Flycatcher, 7
Shrikes, 5
Skuas, 3
Snipe, 2
Sparrows, 10
Spiderhunters, 10
Spoonbill, 1
Spotted Creepers, 9
Starlings, 5
Stilts, 2
Stone Curlews, 3
Storks, 1
Storm Petrels, 1
Sunbirds, 10
Swallow-Shrikes, 5
Swallows, 5
Swans, 1
Swifts, 4
Terns, 3

Thick-knees, 3
Thickhead, 7
Thrushes, 8-9
Tits, 9
Titmice, 9
Tree Creepers, 9
Trogon, 4
Tropic-birds, 1

Vultures, 1

Wagtails, 9
Wall Creeper, 9
Warblers, 8
Waxbills, 10
Waxwing, 5
Weaver Birds, 10
White-eyes, 10
Wood Swallows, 5
Woodcock, 2
Woodpeckers, 4
Wrens, 9